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Examining the Covariance of Political and Religious Beliefs Within Individuals and Across Generations

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EXAMINING THE COVARIANCE OF RELIGIOUS AND POLITICAL BELIEFS WITHIN INDIVIDUALS AND ACROSS GENERATIONS

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The political and religious are demonstrably intertwined in American politics and within the preferences of individual citizens. This dissertation has attempted to examine possible theoretical reasons for the overlap and sources of development of these belief systems within individuals and across generations. In sum, different Moral Foundations are associated with different preferences for organizing society and approaching religion; grandparents, parents and children share many political and religious beliefs, though not all Moral Foundations; and genetics influence part of the variance on religious and political preferences and part of their overlap is due to a shared genetic path. Most scholarship exploring the nature of religious and political beliefs divide the world into political liberals and conservatives or religious modernists and traditionalists, but this dissertation suggests there may be an even broader orientation that shapes the lens through which individuals view the world. Whether this orientation is socialized, heritable or a combination of both, understanding that moral decisions and political and religious preferences shape and are shaped by this orientation may help explain the "culture wars" in American society (Hunter 1991). Investigating this psychology behind political and religious ideologies will provide better insight into the reasons people believe and act the way they do as well as understanding the stability of beliefs across generations and, therefore, of the relative intractability of people's positions on controversial issues.

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Chapter 1: Why do political and religious beliefs overlap?

Why are evangelical Christians drawn to conservative policies and American Jews to the political left? Why do some Lutherans support increased social services while other Lutherans favor reduced government? Social scientists have long recognized and sought to explain a connection between religious and political beliefs. Alignment theories, for example, seek to explain why religious groups associate with American political parties, and individual-level studies of "believing, behaving and belonging" suggest levels of religious commitment and orthodoxy co-vary with individual differences in political beliefs (Smidt et. al 2010; Smidt, Kellstedt, and Guth 2009; Layman 2001; Wald and Calhoun-Brown 2007). Yet, such frameworks do not provide comprehensive answers to questions of why specific religious beliefs intersect with specific political beliefs. At least in part, this is because existing frameworks tend to treat political and religious attitudes as independent concepts and frequently ignore the origins of these belief systems.

The notion that these belief systems may *not* be independent, that they may be the product of common environmental and, especially, biological forces has yet to be fully integrated into a single, comprehensive theoretical framework. We know that political and religious socialization occurs in families (Jennings and Niemi 1974; Clark and Worthington 1987; Cornwall 1989), that political and religious traits may be partially heritable (Alford, Funk and Hibbing 2005; Vance, Maes and Kendler 2010), and that political attitudes associated with religion are more consistently transmitted from parent to child as compared to other political items (Jennings, Stoker and Bowers 2009; Tedin 1974; Thomas 1971). What we do not know is why these belief sets are mutually socialized across generations or whether they have common biological origins. In short we do not fully understand why or

how political orientations and religious beliefs co-vary within individuals and across generations.

Rather than thinking about religious beliefs influencing political attitudes through an intentional cognitive process (e.g. The Bible says homosexuality is wrong, therefore I oppose gay marriage), this dissertation examines whether these belief systems overlap because they both represent an individual's preferences for "bedrock principles of group life" (Alford, Funk and Hibbing 2008). My research challenges the traditional view of separate but related belief sets with a conceptual model that explains both political and religious beliefs as rooted in the same underlying psychological construct reflecting first principle beliefs on social organization. A particular contribution of my dissertation is to examine the transmission of political and religious orientations across more than two generations, and to empirically test the biological-based heritability of these social attitudes. This contrasts with the general approach to studying the intergenerational transmission of social attitudes in general and political attitudes in particular, which is to focus exclusively on socialization, rather than genetics, as the agent of transmission.

By extending the study of social orientations across three generations (grandparent → parent → child), I seek to test the robustness of general inferences drawn from the socialization literature, and also to better examine whether the notion of biological-based heritability plays a role in explaining the consistency of political and religious orientations. To extend the latter study, I will employ a twin data set to explicitly test the hypothesis that political and religious orientations spring from common genetic influences. In particular, the focus of the study will be on the covariation of religious and political value sets as they pass from generation to generation. If intergenerational agreement is occurring with political and religious attitudes, two value sets with evidence of heritability, what does their combination

say about whether this transfer is strictly socialization, purely genetic or a combination of both?

The current chapter provides a theoretical framework to support the claim that political and religious beliefs share an underlying psychological construct. Rather than suggesting a causal order between religion and politics, I argue that Jonathan Haidt and Jesse Graham's Moral Foundations Theory (MFT) may provide the basis for understanding how a set of first principles, derived from individual moral judgments, may underlie both political and religious beliefs within individuals, representing how they wish to organize the world. Because MFT has not been widely applied to the study of religion (though more so to politics), I address how this framework relates to the work already being done on the intersection of religion and American politics and provide two other theoretical frameworks to represent broad, general beliefs within religion and politics.

After establishing an argument for a common underlying psychological construct that drives both religious and political beliefs, the second section of this chapter will explain why bedrock principles and accompanying political and religious belief systems seem stable across generations. Revisiting the socialization literature suggests that broad, moral orientations, as opposed to specific issues of the day, are more likely to be transmitted within families and extending the unit of analysis to include grandparents may demonstrate an even stronger case for the passage of these beliefs. The final section provides an argument for a biological basis of religious and political beliefs, especially in the sense of a shared genetic pathway. The latter is to be expected if, (1) the argument for a common psychological construct in section two is correct, and (2) political and religious beliefs, as existing empirical studies suggest, are heritable. These arguments provide the bases for the hypotheses outlined and tested in the remaining chapters of this dissertation.

Moral Foundations: Integrating Theories of Religion and Politics

Religious and political belief systems are the primary means by which individuals organize and understand mass-scale human societies. Political ideology is typically conceptualized as a coherent set of stable beliefs about group life (Jost 2006, see also Converse 1964) or as Downs put it, "We define an ideology as a verbal image of the good society and of the chief means of constructing such a society" (Downs 1957, 96). Religious beliefs likewise provide a central source of preferences for social rules and order (Hunter 1991; Wuthnow 1988; Mockabee et al. forthcoming; Emerson and Smith 2000). In terms of social beliefs, those on the political left place more emphasis on correcting inequality and promoting progressive social change while those on the right support individuality and maintenance of traditional values (Jost 2006). Similarly, when it comes to religion and society, American Christians[1] on the theological left emphasize social justice here on earth while the theological right focus on an individual's relationship with God and the afterlife (Emerson and Smith 2000; Layman 2001; Hunter 1991; Smidt, Kellstedt and Guth 2009; Wuthnow 1988; Balzer and Wagner, forthcoming). Traditionally, the religious and the political have been treated as separate but related realms – institutionally, across society and within individuals. But there is clear evidence that these belief systems have shared elements that may point to individuals possessing a single underlying predisposition toward the organization of society. At the very least, individuals may draw upon similar bedrock principles in forming their religious and political preferences.

Moral Foundations and Political Attitudes. Evidence for a set of common, underlying dispositional traits that influence both political and religious beliefs is found in Moral Foundations Theory. Jonathan Haidt and Jesse Graham (2007) identify five dimensions that

[1] This dissertation will focus on Christianity as its primary religious system as it is the overwhelming majority religion in the United States.

provide the basis for most moral decision-making across cultures: Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. Individual scores on these dimensions are calculated based upon answers to a battery of questions, such as "when you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking?"[2]

- Whether or not someone suffered emotionally (Harm)
- Whether or not some people were treated differently than others (Fairness)
- Whether or not someone's action showed love for his or her country (Loyalty)
- Whether or not someone showed a lack of respect for authority (Authority)
- Whether or not someone did something disgusting (Purity)

Scoring on the dimensions are calculated by the degree of relevance that an individual rates each statement – "This consideration has nothing to do with my judgments of right and wrong" through "This is one of the most important factors when I judge right and wrong." McAdams et al. (2008, 984-985) provide a nice summary of the basic values undergirding each Moral Foundation:

- (a) Harm-Care (it is wrong to hurt people; it is good to relieve suffering);
- (b) Fairness-Reciprocity (justice and fairness are good; people have certain rights that need to be upheld in social interactions);
- (c) In-group-Loyalty (people should be true to the group and be wary of threats from the outside; allegiance, loyalty, and patriotism are all virtues; betrayal is bad);
- (d) Authority-Respect (people should respect social hierarchy; social order is necessary for human life);
- (e) Purity-Sanctity (the body and certain aspects of life are sacred; cleanliness and health, as well as their derivatives of chastity and piety, are all good; dirt, pollution,

[2] A complete list of questions and the answer key can be found at www.moralfoundations.org.

contamination, and the associated character traits – lust, gluttony, and greed – are all bad).

When applied to the political spectrum, ideological liberals and conservatives both rely upon Harm and Fairness intuitions in moral judgments, but conservatives also endorse notions of Loyalty, Authority and Purity in their decisions (Graham, Haidt and Nosek 2009). This partially explains why liberals and conservatives seem to talk past one another – Fairness and Harm usually outweigh the other moral considerations for liberals whereas conservatives rely on all five dimensions equally. Extending individual moral decision-making to political attitudes, Koleva, Graham, Haidt, Iyer, and Ditto (2012) discover that the Moral Foundations are predictive of certain "culture war" issues (Hunter 1991) that are often grounded in religious beliefs. These types of issues – abortion, gay marriage, the death penalty – polarize Americans, both politically and religiously (Hunter 1991; Wuthnow 1988; Carmines and Layman 1997; Carmines and Stimson 1989; Layman 2001). A common thread underlying this culture divide is a general set of preferences on social order and behavior. On one side are orthodox individuals who believe in unchanging moral codes emanating from an authoritative source while progressives adhere to an ever-evolving understanding of the human condition and associated morality (Koleva et al. 2012; Hunter 1991). Orthodox folks may cling to the Constitution (politically), the Bible (religiously) and tradition as a way to solve society's ills, and progressives advocate a "modern, secular, or relativist position" to address ever-changing circumstances (Koleva et al. 2012 185).

Using all five Moral Foundations as independent variables, Koleva et al. (2012) predicted participants' personal disapproval of the culture war issues, with Harm and Purity demonstrating the strongest relationships. Purity was associated with disagreement on sexual issues (e.g. casual sex and same-sex marriage) as well as "sanctity of life" issues (e.g. stem-cell

research and abortion) (Koleva et al. 2012), and Harm was associated with disapproval of the death penalty and medical testing of animals.

Moral Foundations and Religiosity. The Moral Foundations framework seems to offer a natural extension into the study of religion, but up until recently, it has mostly been applied to political attitudes and behavior. In the Durkheim tradition of religion as moral community, Graham and Haidt (2010, 140) argue that moral foundations theory provides a more comprehensive understanding of religiosity in that it moves beyond isolated, individual belief to capture the "group-focused 'binding' foundations of Ingroup/Loyalty, Authority/Respect, Purity/Sanctity." The dimensions of Fairness and avoiding Harm are certainly important aspects of most religions, but they focus more on individual people and human rights whereas the other three foundations serve in "limiting autonomy and self-expression to bind people into emergent social entities" (Graham and Haidt 2010, 144). Theoretically, the five moral foundations seem to be present in most religions or religious groups, but this doesn't necessarily mean that each religious person draws upon each intuition equally when making moral decisions.

Similar to the findings about political conservatives and liberals, McAdams et al. (2008) identified left-right differences in how highly religious, highly political people described their beliefs. Using autobiographical narrative study, Christian individuals in the study were asked to explain the content, development and salience of their "religious-moral beliefs" in response to open-ended questions (McAdams et al. 2008, 985). The authors then coded the narratives for references to the five Moral Foundations, assigning a level of concern score for each individual on each dimension. Harm/Care and Fairness/Reciprocity were negatively correlated with the other three foundations, though they were not significantly related to each other. When the Moral Foundation scores were separately regressed on self-reported

political ideology and Right Wing Authoritarianism, conservatives were more likely than liberals to describe affinity for the community-binding intuitions (Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity) whereas liberals demonstrated more concern for individual rights (Harm/Care and Fairness/Reciprocity) than conservatives, holding demographic variables constant. These findings and the negative relationship between the individual rights and community-binding dimensions suggest personal narratives to open-ended questions about religious faith match up with past findings on liberal-conservative answers to general moral dilemmas in the Moral Foundations question battery (Graham, Haidt and Nosek 2009). These findings strongly suggest that political and religious beliefs are shaped by the same set of broad intuitions—specifically a set of underlying bedrock principles reflecting preferences for social order. This underlines the need to rethink traditional accounts of the two as separate orientations, which will be supported further by examining the evidence of overlapping belief systems within the Moral Foundations framework.

The Intersection of Religion and Politics

Rather than investigating whether religious and political beliefs are rooted in the same psychological predispositions, scholars have been more interested in developing measures of how these beliefs systems relate, especially in the United States. For the past 20 years, most of these studies have approached religion and politics with three key measurements of religiosity – believing, behaving and belonging – that help to classify traditionalists and modernists (Stark and Finke 2000; Layman 2001). Religious traditionalists tend to report having a born-again experience, believe in a literal translation of the Bible, and ascribe to orthodox beliefs, while mainline Protestants or religious modernists, usually belonging to Methodist, Episcopalian, or Presbyterian churches, usually do not view the

Bible as the literal word of God and focus more on social justice issues on earth rather than an emphasis on personal salvation and the afterlife (Steensland et al. 2000; Smith 1990; Layman 2001; Smidt, Kellstedt and Guth 2009). Thinking in Moral Foundations terms, religious traditionalists are more likely to emphasize Authority, Purity and Loyalty in their moral judgments, along with Fairness and Harm, whereas modernists will mostly emphasize Fairness and Harm, or the dimensions related to protecting individuals/social justice.

Specific religious beliefs, such as being born again or believing in a literal translation of the Bible, have been connected to specific political issue attitudes like gay marriage and abortion as well as more general ideological leanings (Layman 2001; Wuthnow 1988; Mockabee at al. forthcoming; Emerson and Smith 2000). In keeping with the focus on general, non-culture specific preferences, the current study is interested in broader religious beliefs that are more likely to correspond to an underlying predisposition. Furthermore, some scholars have argued that specific measures of orthodoxy bias results toward conservative Protestants as these behaviors and beliefs are more tied to those traditions than other faith communities (Mockabee, Monson and Grant 2001; Mockabee, Wald and Leege, forthcoming). For example, a devout Catholic would most likely not consider herself born again and would thus score lower on a religiosity scale. Use of broader political and religious measures may better capture the bedrock principle argument since both the religious right and left will be represented. Referred to as individualists and communitarians, the delineation may best be summarized by whether individuals believe being a Christian is more about "personal piety or serving others" (Mockabee et al. forthcoming, 2). For the former, society works best when people are responsible for their own problems, while the latter emphasize the role of the community in addressing the needs of all (Leege 1988). In addition to asking traditional questions of church attendance and religious salience, Mockabee et al.

(forthcoming) included the following on the 2006 and 2008 American National Election Study:

- Have there been times in your life when you tried to be a good Christian, or is that not something you have tried to do?
    - [If "yes"] When you have tried to be a good Christian, which did you try to do more: avoid doing sinful things yourself, or help other people?

A factor analysis of these religious items revealed an individual piety dimension for attendance and salience and a communitarian dimension for trying to help others more than avoiding sin. Challenging the "God gap" notion that higher levels of religiosity are always associated with Republican Party identification and conservative issue attitudes, Mockabee et al. (forthcoming) found those scoring higher on the communitarian dimension were significantly less likely to be Republican and held more liberal positions on abortion, gay rights and women's role in society than those who were less communitarian. The individual piety dimension demonstrated the opposite effects, or conservative responses to these social issues. When testing social welfare attitudes, communitarians also were significantly associated with liberal preferences for government health care, universal health care, and government aid to blacks.

By definition, it would seem that Mockabee et al.'s individualist classification would correspond with the individual rights dimensions of Moral Foundations Theory (Harm and Fairness) and the communitarian to the community-binding concerns (Loyalty, Authority and Purity). But these relationships are exactly the opposite. Liberal Christians and liberal clergy (Graham, Haidt and Nosek 2009) draw upon Fairness/Reciprocity and Harm/Care in reference to *protecting* individuals and granting rights; whereas religious individualism refers more to a person's concern with his own piety and relationship to God. Communitarian values, such as helping others when trying to be a better Christian, differ from community-

binding foundations in that the former seems to be proactive community-building rather than a restrictive set of rules to limit selfishness for the sake of the community. Thus, individuals may rely upon different combinations of the Moral Foundations to bind them within moral communities. Political liberals, religious modernists and communitarians may see Fairness/Reciprocity and Harm/Care manifested as social justice that corrects inequalities and protects the vulnerable in order to bind the community through compassion. Therefore, they support abortion, women's and gay rights as a matter of fairness and health care provisions and aid to blacks as protecting marginalized citizens from harm. In this way, they are freeing individuals from societal structures (e.g. institutional racism) that inhibit their ability to succeed in life (Emerson and Smith 2000).

Conversely, political conservatives, religious traditionalists and individualists believe reliance on Authority/Respect, Purity/Sanctity, and Ingroup/Loyalty are necessary for society to function properly. Therefore, these individuals may oppose challenges to traditional family structures manifested through abortion, gay rights and women's roles in society. The relationship to social welfare attitudes is less clear. According to McAdams et al. (2008) and Graham, Haidt and Nosek (2009), fairness and harm concerns are not as salient as the other three foundations for politically conservative religious people, but Haidt, Graham, and Nosek (2009) also have established across several studies that all five dimensions matter to political conservatives. This suggests that political conservatives, at least in the United States, may separate their economic issue preferences from their religious beliefs or have a different interpretation of Fairness/Reciprocity, at least when applied to government intervention.

Because political scientists argue that social welfare/government intervention on behalf of the poor is now associated with racial attitudes (Carmines and Stimson 1989), it is

helpful to examine Emerson and Smith's (2000) work on religion, racism and inequality. In matters of race relations, they suggest that white American evangelicals (who would fit the classifications of conservative, traditionalist and individualist) are more likely to support individual change and interpersonal relationships over societal change. That is, the way to solve the problem of racism is for individuals to be kind when they encounter others of another race and for blacks to take responsibility for their own welfare, rather than relying upon the government to correct past wrongs or try to alter current societal structures. Though the spirit of individualism is common among all Americans, Emerson and Smith argue that white evangelicals adhere more strongly to the notion of individual freewill, unhampered by societal structures or cultural traditions, as it ties directly into their religious worldview. One's personal relationship with God is of the utmost importance, and thus relationships with one's family, friends and acquaintances are how one affects change in the world. Individuals are completely responsible for their misdeeds; blaming the system is evading personal accountability. Furthermore, individuals are inherently flawed and thus need laws from God (Authority) to teach them how to live (e.g. Purity) in community with one another. Thus, racism is a personal sin from which certain individuals need to repent and constructing laws or proactively reversing the effects of racism are unnecessary and usually ineffective. Only repentance and Christian conversion can change the world. This comports with Graham and Haidt's (2010) community-binding theory that individuals need Authority, Purity and Ingroup intuitions to limit autonomy and corral selfish desires.

In summary, division along the five Moral Foundations may explain both political and religious differences. With the same dispositional traits influencing both belief sets, it is not surprising that religion and politics have been strongly related, especially in a highly religious advanced democracy like the United States where people are free to choose both

their religion and their politics. A common underlying disposition also helps explain why both religious and political beliefs are successfully transmitted across generations, as all three belief systems may mutually reinforce one another. This transmission is not automatic and often falters with specific attitudes, causing some scholars to argue that early life experiences are not as important as adult socialization. As argued above, however, specific issue attitudes will change depending on the cultural context, but broad dispositions like Moral Foundations or society works best preferences may be more likely to run in families.

Generational Transmission of Political and Religious Beliefs

Arguing for a single, underlying psychological construct may be aided by looking for evidence that religious and political beliefs are the kinds of traits that are consistently shared across generations. The socialization literature notes that the most successful transmission corresponds to "when the parents' political views are crystallized, stable, and communicated via consistent cues over long stretches of time" (Jennings, Stoker and Bowers 2009, 788). After children had left the home, Jennings and Niemi (1974) found the strongest parent-child agreement on political preferences that had religious components associated with emotion and tradition. Most socialization scholars explain these results with the powerful, consistent parental cues that often accompany moral issue attitudes (Jennings, Stoker and Bowers 2009; Tedin 1974; Thomas 1971). In short, the general approach has been to treat inter-generational transmission of coupled political/religious belief as an intentional cognitive process driven by purposive socialization. The same evidence, however, is also perfectly consistent with the idea that these belief systems overlap because they both represent a broader set of predispositions manifested as preferences for social order. If these predispositions are transmitted across generations, it logically follows that political and religious beliefs would also be passed down.

Regardless of the particular conceptual perspective, however, it is not completely clear that the transmission of political and religious beliefs, let alone any common underlying psychological construct, is a truly multi-generational phenomenon. In political science, the socialization research paradigm began with the study of dyadic parent-child observations that assumed parents begin their political lives at marriage. As a result the birth of subsequent children and the potential influence of previous generations have been largely ignored. Thirty-five years ago, Beck and Jennings (1975) proposed that parents are not originators of what political content may or may not be passed on to children; rather, they serve as "middlepersons" who transmit the partisanship and attitudes they may have acquired from their own parents. Since this time, the parental socialization agenda has marched on with updated panel studies, numerous replications and continued insight into exactly how political attitudes and behaviors are transmitted in families (Zuckerman, Dasović, and Fitzgerald 2007; Jennings, Stoker and Bowers 2009; Stoker and Jennings 2008; Beck and Jennings 1991), yet the conceptualization of parents as "middlepersons" seems to have been lost. Understanding whether parents serve as value relays between generations may shed light on socialization processes as well as provide evidence for the genetic influence of shared preferences. For example, the homogeneity of partisanship between mothers and fathers is "the strongest and most consistent of factors predicting parent-child similarity" and serves as a "multiplier effect" in the socialization process (Jennings and Niemi 1974, 154, 156). Because political agreement is greater in dual- rather than single parent households, Jennings and Niemi conclude that it is the presence of two complementary cue-giving sources that reinforce partisan transmission. This consistent cue-giving effect extends to agreement between parents and teachers and parents and peers, suggesting that the lack of

disharmonious messages within an individual's social network strengthens the likelihood of successful parent-child transmission.

If this is the case, what happens if we add grandparents? In other words, should we take the concept of parents as "middle persons" seriously and treat inter-generational transmission as something more than a parent-child dyad? Will the addition of intergenerational homogeneity increase this multiplier effect? In families where parents come from different partisan backgrounds, one parent often changes his or her mind in agreement with the other, which results in children sharing party affiliation with one set of grandparents and not the other (Beck and Jennings 1975). But the multiplier effect of homogenous parental agreement suggests homogeneity of grandparents on both sides would generate an even stronger chance at successful transmission. It is not necessarily the case that grandparents influence the politics of grandchildren first-hand through something like frequent political discussion, though this may be a possibility in some families. It is more likely that political attitudes are passed from generation to generation in a series of "linked family relationships," similar to the likelihood of grandparent-grandchild interaction (Mueller and Elder 2003, 405; Monserud 2008). Because most political socialization within families seems to be "low-key and haphazard" (Jennings and Niemi 1974, 330), the transmission of bedrock principles may be more consistent than even partisanship or attitudes on issues of the day, as they reflect a more general psychological orientation that may influence political and religious beliefs. If there is a shared psychological construct between religious and political beliefs, which types of measures will best capture this relationship? Preliminary evidence for these innate dispositions has been established in behavioral genetics and can point us to measures that may best capture the latent bedrock principles undergirding the intersection of the political and religious.

Why Do Religious and Political Beliefs Co-vary?

Though political science traditionally treats behavior and attitudes as products of purposive political socialization from parents, peers and schools (Jennings and Niemi 1974; Jennings, Stoker and Bowers 2009; Zuckerman, Dasović, and Fitzgerald 2007), Alford, Funk and Hibbing's (2005) work on the heritability of political attitudes challenged this environmental determinism and launched numerous studies demonstrating that political orientations, beliefs, interest and participation are at least partially heritable and can be linked to specific genes (Hatemi et al. 2007; Settle et al. 2008; Fowler and Dawes 2008). Heritability studies do not argue for biological determinism, but indicate that genetics explain some portion of the variance in the transmission of political items across generations. Numerous heritability studies of religiosity have also demonstrated genetic influence that provides a helpful starting point in determining which measures of religiosity may share genetic variance with, and therefore psychological underpinnings of, political attitudes. What follows is a brief outline of the behavior genetics findings on religious attitudes and behavior, which will be explicated and expanded in Chapter 4.

Though a common social scientific measure of religiosity, religious affiliation or belonging seems to be more a product of nurture than nature (Eaves, Martin and Heath 1990; Bouchard and McGue 2003), and the heritability studies for church attendance have been mixed, from minimal to substantial genetic effects (Truett 1992; Bradshaw and Ellison 2008). The strongest heritability findings have been for specific religious beliefs (such as being born again) and the influence of religious beliefs in one's life (Bradshaw and Ellison 2008; Bouchard et al. 1999). Bradshaw and Ellison (2008) suggest that higher genetic effects for individual beliefs and religious orientations versus outward religious behavior demonstrate that private actions may be motivated more by predispositions and the latter by

social influences. Though the internal/external divide on behavior may delineate heritability and environmental causes, some scholars have suggested motivational differences for these behaviors are partially genetic and may better explain individual approaches to religiosity.

Bouchard et al. (1999) examined the heritability of intrinsic and extrinsic religious motivations, measures with a rich history in the psychology of religion research tradition (Gorsuch and McPherson 1989). Those who view religion as what it can do for them are *extrinsically* motivated and answer affirmatively to statements like "What religion offers me most is comfort in times of trouble and sorrow," while *intrinsically* motivated individuals are more likely to say, "My whole approach to life is based upon my religion" (Gorsuch and McPherson 1989, 352). Using these statements in addition to the full intrinsic/extrinsic scales on twins raised apart, Bouchard et al. (1999, 96) found a "modest degree of genetic influence" and confirmed that there are at least two dimensions of religiosity. They suggest that "the extrinsically motivated person uses his religion, whereas the intrinsically motivated person lives his religion" (Allport and Ross 1967, 434), indicating that individuals may be approaching religious belief and behavior using different psychological processes.

In fact, the I/E indices have been extended to non-religious orientations, such as belief and motivation in the Communist Party in the USSR, and predict similar social attitudes found with the I/E studies on American Christians (McFarland 1998). Though McFarland's (1998) study did not use behavior genetics, extending these phenotypes across cultures and from religion to politics provides support for an I/E genotype that is dependent or "activated" by one's environment. For example, certain individuals may have a psychological propensity to approach life based on an organized set of beliefs, and whether this manifests in a religion, political party or something else depends upon where they were born, how they

were raised and what they encounter as adults. Some individuals will become political, some religious, some both and some neither.

One of the most comprehensive studies of behavioral genetics and religiosity found significant genetic effects for all seven of their dimensions of religiosity (Vance, Maes and Kendler 2010; Kendler et al. 2003, 498):

- General religiosity: personal concern with spiritual issues and interaction with God daily and in difficult times.
- Social religiosity: church attendance and relationships with other religious individuals.
- An involved God: belief in a higher power that intervenes in human lives.
- Forgiveness/love: an individual's tendency toward love and forgiveness to those around them.
- God as judge: belief in God as a "punitive" authority.
- Unvengefulness: an individual's tendency against revenge and retaliation.
- Thankfulness: individual "feelings of thankfulness versus anger toward life and God."

In a standard factor analysis of 78 religious questions, Kendler et al. (2003) identified the above seven factors of religiosity. But when these factors were entered into a multivariate behavior genetic analysis, results revealed that, "one common genetic factor affects the predisposition to become religious, whereas unique environmental factors shape the specificity of how religiosity phenotypes are expressed" (Vance, Maes and Kendler 2010, 759). In this way, religious attitudes may or may not intersect with overlap or influence political beliefs, depending on the environment. If political elites are not tapping into

religious frames (Snow et al. 1986) or individuals are simply unengaged in politics – or religion -- there may be very little overlap between the two realms.

In one of the few studies of political-religious genetic relationships, Bouchard (2009, 169; Koenig and Bouchard 2006) provides an empirical basis for this explanation by arguing for the presence of a "Traditional Moral Values Triad" (TMVT), which includes the following:

- Authoritarianism (How families should be organized)
- Religiousness (Who controls the universe)
- Conservatism (How societies should be organized)

These items strongly correlate, replicate across studies and demonstrate strong heritability effects. Bouchard explains this phenomenon, "Traditionalism," as the evolutionary adaptiveness toward obedience and respect for authority, aspects of social organization that are foundational to both theology and ideology. Bouchard offers a theoretical and empirical base for a genetic connection that seems to tap into the Moral Foundation of Authority/Respect, and possibly Ingroup/Loyalty, demonstrating that individuals who believe in a strict religious moral code also enforce a strict code in their homes and expect a similar orientation in society.

What is left unexamined is whether intrinsic/extrinsic motivation and external/internal belief are related to constructs like the Moral Foundations, the religious individualist/communitarian dimension and religious traditionalist/modernist classifications. Demonstrating empirical relationships between these items may aid in developing a more integrated theory of religion and politics that allows for the possibility of a primary predisposition toward ordering the world. Examining an individual's familial heritage of religious and political leanings will provide a starting point of understanding what types of

political and religious beliefs tend to move together and a behavior genetic analysis could reveal a shared genetic path between some of these belief sub-sets, explaining both how and why religion and politics connect.

Summary

Understanding the psychology behind belief will provide a more comprehensive explanation of the intersection of religion and politics and what this means for understanding human behavior. Religion's influence on political attitudes and behaviors, in the U.S. and in much of the world, is well known. What is unknown is whether these belief systems overlap because they are generated from the same root cause. Addressing these unknowns has the potential to provide insight into the origins of political ideology, the stability of beliefs across generations, and the relative intractability of many controversial issues. If political and religious beliefs share common, underlying principles within individuals, it may be possible for those that disagree religiously to speak to one another in political terms and vice versa, leading to more productive political discussions, policy debates and possibly political compromise. In addition, there has been a long-standing tension between religion and the academy, and establishing a common psychological basis for organizing society and understanding reality may also help the dialogue between scholars and people of faith. Finally, uncovering a set of bedrock principles that may manifest themselves in different ways politically and religiously may lead to better communication across generations, within communities and throughout the political sphere.

The remaining chapters of this dissertation will describe and test hypotheses generated from the above arguments. Using a sample of undergraduate students, Chapter 2 will investigate the relationships between bedrock principles, political attitudes and religious beliefs within individuals to determine whether Moral Foundations serve as underlying traits

for the other two belief systems. Chapter 3 expands this sample to the parents and grandparents of the students, in a three-generation dataset, to examine the transmission of these belief sets within families. In Chapter 4, a twin study will be used to test whether religious and political beliefs share a genetic path, and Chapter 5 will provide a discussion of the results and implications of the findings.

Chapter 2: Moral Foundations: Integrating Theories of Religion and Politics

Rather than thinking about religious beliefs influencing political attitudes through an intentional cognitive process, this chapter empirically examines whether these belief systems overlap because they both represent an underlying psychological construct reflecting first principle beliefs on social organization. Drawing on the discussion and theoretical arguments in Chapter 1, this chapter examines two core hypotheses regarding the systematic relationship between the various dimensions of Moral Foundations theory and political and religious orientations.

Using three original datasets, there is evidence that Haidt and Graham's Moral Foundations of Ingroup, Authority and Purity help to explain an individualist orientation toward society that manifests itself in conservative political beliefs and religious salience and beliefs like being born again and believing in the Bible as the literal word of God. Furthermore, the Moral Foundations of Fairness and Harm are associated with liberal political views and a communitarian religious orientation that emphasizes helping others more than simply avoiding personal wrongdoing. In this way, Moral Foundations may help to guide which types of religious and political beliefs into which individuals select. If the Foundations are underlying both kinds of beliefs, this may help explain why the religious and the political tend to intersect and reflect systematic preference orientations – in this case individualist versus communitarian – for ordering and understanding society. The following hypotheses outline the nature of these relationships to be tested within this chapter.

Hypotheses

Hypothesis 2.1: Higher scores on Ingroup, Authority and Purity foundations are positively associated with individualist religious measures and conservative political views. Political liberals more

often rely on the Moral Foundations of Harm and Fairness than Ingroup, Authority and Purity; whereas political conservatives rely on all five (Graham, Haidt and Nosek 2009; Koleva et al. 2012). When examining these preferences among religious individuals, the relationships remain the same for political liberals but political conservatives show more concern for Ingroup, Authority and Purity than the other two (McAdams et al. 2008; Graham, Haidt and Nosek 2009). Furthermore, Graham and Haidt (2010) argue that these latter three Foundations serve to bind moral communities as they limit selfish behavior, which may also extend to individuals' political beliefs. That is, those who view individuals as fundamentally flawed and in need of external rules most likely rely upon Ingroup, Authority and Purity concerns and would thus support more conservative policies that protect from outgroups, respect a rigid moral code and adhere to traditional notions of sexual purity. This individualist approach also may encompass how people approach religion and may be best captured by individual piety measures, such as being born again, the importance of religion in one's life and beliefs on the nature of the Bible (Mockabee et al. forthcoming).

Hypothesis 2.2: Higher scores on Harm and Fairness will be associated with liberal political views and selection of "helping others" as the means to living more religiously. Conversely, individuals who are more concerned with Harm and Fairness in their moral judgments see the "system," rather than individuals, as problematic, and it is up to the community to ensure that justice and equality are upheld to bind moral and political communities. Thus, instead of being concerned with one's own religious salvation, relationship to God and a fixed moral code, these individuals view religion as fundamentally aimed at actively helping other people, not hoping that simply avoiding personal wrongdoing will result in a healthy community. Politically, these individuals favor government intervention on behalf of those in need but are not interested in legislating personal morality.

Sample and Methods

In January 2011, undergraduates at a Midwestern university were sent an email inviting them to participate in an online survey about religion and politics. The invitation included a link to Qualtrics.com where individuals completed the 20-minute survey in exchange for course credit. The survey was repeated in September 2011 by having students take the survey at a computer lab on campus. The total sample included 583 subjects, after dropping those who did not complete the entire questionnaire, foreign students[3], three participants whose ages (greater than 45) indicated they were not representative of this population and 75 individuals who did not "pass" the survey accuracy check detailed below. The sample is split almost equally between genders (281 males, 302 females), with an average age of 19.5 years and a median family income of $80,001 to $100,000. Ninety-six percent of participants are single, 93% identify as white/Caucasian and there is a fair division between those who grew up on a rural farm (16%), in a rural town (23%), in a suburban (29%) or urban area (28%).

In order to create a three-generation sample, the spring 2011 subjects were asked to voluntarily provide the names and addresses of their parents and grandparents; after receiving a National Science Foundation grant for the project, the fall 2011 subjects were given $5 for providing this same information. A professional survey organization was contracted to design and mail surveys to the parents of the subjects. In the first mailing, a self-addressed stamped envelope and $2 were included as a thank you incentive for completing the questionnaire. A few weeks later, a second copy of the survey was mailed to those who had not yet returned the questionnaire. At the end of this survey, the parent subjects were asked to provide contact information for their parents. This information was

[3] The religious and political questions in the survey are based upon the U.S. system, culture and society and may not be applicable to individuals from other nations.

combined with the grandparent names and addresses already obtained from the student subjects, and the grandparents were mailed surveys, with a self-addressed stamped envelope and a $2 incentive (Warriner et al. 1996). A few weeks later, a second copy of the survey was mailed. These series of surveys were mailed, completed and returned between November 2011 and February 2012. With a 64% response rate, the parent sample included 227 individuals, which were 53% female and 99% white, with an average age of 50.41, a median income of $80,001 to $100,000 and median education of "college graduate." The grandparent sample contains 102 individuals, a 67% response rate, which was 68% female and 99% white, with an average age of 73.25, a median income of $60,001 to $80,000 and median education of "some college." Coding and explanation of the key variables are listed below, with summary statistics displayed in Table 1.

Moral Foundations. A 20-item questionnaire was used to measure an individual's Moral Foundations' scores (www.moralfoundations.org). For the first set of items, participants were asked to rate statements from "not at all relevant" (1) to "extremely relevant" (5) to whether the consideration in question influences their judgments of right and wrong. Two statements are tied to each of the five Moral Foundations, with examples listed below:

- Harm – "Whether or not someone suffered emotionally"
- Fairness – "Whether or not some people were treated differently than others"
- Ingroup – "Whether or not someone did something to betray his or her group"
- Authority – "Whether or not someone showed a lack of respect for authority"
- Purity – "Whether or not someone violated standards of purity and decency"

This set also included an item, which tested for accuracy and full use of the scale: "Whether or not someone was good at math." Thirty-six individuals scored a four ("somewhat relevant") or above and were dropped from the analysis. The second set of questions provided a list of statements with which participants were asked to indicate their degree of

agreement – "strongly disagree" (1) to "strongly agree" (6). Example statements for each Foundation are listed below (the full instrument is listed in Appendix A):

- Harm – "Compassion for those who are suffering is the most crucial virtue."
- Fairness – "Justice is the most important requirement for a society."
- Ingroup – "I am proud of my country's history."
- Authority – "Respect for authority is something all children need to learn."
- Purity – "People should not do things that are disgusting, even if no one is harmed."

This list also contained an item response check --"It is better to do good than to do bad" – and individuals who slightly disagreed through strongly disagreed were dropped. When combined with the math item, a total of 75 participants were removed from this measure.[4] Because of the small sample size from the parent and grandparent generations, individuals were only removed from analysis if they "inaccurately" marked both the math and good items; this resulted in dropping one case in the parent sample and zero cases in the grandparent sample. Conforming to Haidt and Graham's coding scheme,[5] the scores for the four statements per Moral Foundation were averaged.

Political Preferences. Smith et al. (2011, 381) developed a "society works best" (SWB) index to tap a psychological construct argued to be the basis of political ideology by addressing "the core dilemmas facing all mass-scale societies." Individuals select among a forced choice on statements, such as "Society works best when leaders are obeyed OR when leaders are questioned" to "Society works best when we take care of our own people first OR we realize people everywhere deserve our help." With this battery, Smith et al. (2011) identified the following five factors:

- Traditional values/moral codes
- Outgroups/rulebreakers
- Leadership
- Role of group/individual
- Absolutes

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[4] Dropping these cases did not substantially alter the demographic make-up of this sample.
[5] www.moralfoundations.org

The first three dimensions demonstrated strong bivariate relationships with the Wilson-Patterson index, a battery of attitudes toward specific issues like abortion and welfare spending, and all five dimensions were significantly associated with self-placement on an ideological scale (extremely liberal to extremely conservative). Though never tested empirically, these societal dimensions appear to theoretically overlap with key elements of the Moral Foundations; both address the role of the group, how justice should be served, orientations toward authority or leadership and deference to traditional values. Each of the 12 items was coded -1 for the more liberal position (e.g. "Society works best when people assume that all those in far away places are kindly") and 1 for the more conservative answer (e.g. "Society works best when people realize the world is dangerous"); see Appendix A for the full instrument. The items were added together to create a SWB index to test bivariate relationships with the other key measures.

Religious Preferences. In addition to a range of common religious questions detailed below, a measure was employed to try to capture bedrock principles underlying other religious beliefs. Already tested on the American National Election Study, the following question coupling taps into the communitarian aspect of religiosity (Mockabee et al. forthcoming). If participants answered in a previous question that they considered themselves a Christian, they received the following questions:[6]

- Have there been times in your life when you tried to be a good Christian, or is that not something you have tried to do?
    - Yes, have tried
    - No, have not tried
    - Don't know

[6] This question was repeated, with appropriate wording, for participants who selected Jewish or Muslim as their religious identity. There were no Muslims in this sample. There were only three Jewish participants, who will be excluded from the analyses at this point.

- [If "yes"] When you have tried to be a good Christian, which did you try to do more: avoid doing sinful things yourself, or help other people?
  - Avoid sin
  - Help others
  - Don't know

Ninety-three percent of the Christians in the student sample indicated they have tried to be a good Christian, 3% said they have not tried and 4% answered, "don't know." Of those who answered, "yes," 39% selected avoiding sin, 58% chose helping others and 3% answered, "don't know" as to which actions they attempted in trying to be a better Christian. The parent and grandparent samples included similar proportions, with the percentage choosing "avoid sin" slightly higher in each generation. A dichotomous variable, communitarian, was generated from the above questions coded 1 for "help others" and 0 for "avoid sin."

The survey also inquired about the importance of religion in one's daily life, whether one has had a born again experience and feelings about the Bible. Regarding the importance of religion in day-to-day living, participants could select from "religious beliefs are not an important part of your life" (1) to "religious beliefs provide a great deal of guidance in your day-to-day living" (4). The parent and grandparent generations leaned more heavily toward religion providing a great deal of guidance than the student generation. If indicated in a previous question that one considers oneself a Christian, participants were asked follow-up questions about being born again and feelings on the Bible. The proportion of individuals in the categories of born again, not born again and don't know were very similar in all three samples. This variable is coded 1 for born again and 0 for not born again and don't know. On biblical views, proportions were very similar across samples with about ¼ to 1/3 believing the Bible is the actual word of God, to be taken literally (coded as 3); 2/3 indicated the Bible is the inspired word of God and not everything should be taken literally (coded 2);

and 5 to 11% of the participants said the Bible is an ancient book of fables, legends, etc. recorded by men (coded 1).

[Table 1 about here]

Bivariate Associations. Table 2 displays the Pearson's correlations between the Moral Foundations, society works best factors and religious preferences for all three generations. With the largest sample size, the student sample (Generation 3 or G3) demonstrated the most significant relationships, though some of these are replicated in the first (G1) and second (G2) generation samples, which will be described below. In the G3 sample, all of the Moral Foundations are positively and significantly associated with each other, though the relationships are stronger between Harm and Fairness and between Ingroup, Authority and Purity. Generally, Ingroup, Authority and Purity are positively associated with conservative positions on the SWB factors and the individualist religious measures, supporting Hypothesis 2.1, though the relationships are not significant across the board. Supporting Hypothesis 2.2, there is a negative relationship between Harm and Fairness and the three society works best factors, indicating that those who score higher on these Moral Foundations tend to have liberal views on organizing society politically, replicating previous results between ideology and MF (Graham, Haidt and Nosek 2009; Koleva et al. 2012). Harm and Fairness are also positively associated with communitarianism, indicating that Christians who rely upon these foundations for moral decision-making are more likely to say helping others is the way to be a better Christian. Harm and Fairness were also negatively associated with views on the Bible, as higher scores on these foundations indicate less literal views of the Bible. Fairness was negatively related to importance of religion in one's life, but neither it nor Harm was significantly associated with being born again. Regarding the direct correlations between religious and political beliefs, conservative religious positions tend to

be related to conservative political views in the SWB batteries and the Moral Foundations associated with conservatives, and the importance of religion in guiding one's daily life also seems to serve as an additional "conservative" religious measure as it demonstrates the same relationships with the political and moral variables.

In the parent and grandparent samples, also displayed in Table 2, all of the relationships between the Moral Foundations replicate from the student sample, with general increases in effect size with the age of the generation. For example, the correlation between Fairness and Ingroup is r=.20 for G3, r=.44 for G2 and r=.70 for G1. The SWB index performs similarly for Authority and Purity in G2 and Purity in G1, with higher scores on these Foundations associated with more conservative views toward society. Harm, Fairness and Ingroup, however, are not significantly related to SWB in G1 or G2, and the effect sizes are so small, it's unlikely a power problem. Regarding the communitarian measure, the grandparent sample performs similarly to G3 with negative relationships between Authority and Purity and SWB and a positive relationship with Fairness, supporting the hypotheses that helping others is associated with Fairness and liberal views on society and avoiding sin is more associated with reliance on Authority and Purity in making moral decisions. In the parent sample, however, zero significant relationships emerge for communitarianism. When breaking it down by gender, women in G2 demonstrate significant relationships between communitarianism and the key variables but the men do not – so combining the two obscures the pattern in a bivariate correlation. In Chapter 3, the measurement and modeling will be split by gender to examine these differences. For the purposes of this chapter, however, the group as a whole will be tested.

Views on the Bible had similar relationships with the other key variables as was tested in G3, except for Harm in G1. Higher scores on harm are associated with more

conservative views on the Bible, which is the opposite direction of the student sample. Otherwise, conservative biblical views demonstrated somewhat stronger relationships in G1 and G2, as compared to G3, on items such as reliance on Ingroup, Authority and Purity and conservative views on society. Importance of religion also demonstrated these relationships with those same variables in all three generations.

Full Models

G3 Sample. To test the theory that Moral Foundations undergird both political and religious beliefs and explain the intersection of these two belief frameworks, it is necessary to create a measure that captures this overlap. As displayed in Table 3, a principal components factor analysis on the individual SWB items and four religious measures in the student sample revealed three factors. Most of the Society Works Best items and the communitarian measure formed the first factor, which will be referred to as Group/Values as the SWB items are mostly related to the role of the group and the individual and traditional/moral values. Though communitarian demonstrated a lower loading than the other items at -.306, this supports the hypothesis that one's approach to religion – whether it is to avoid sin or help others – is similar to one's approach to values and the role of the group and individual in society.

The second factor, labeled Individual Religiosity, is comprised of the traditional religious measures: being born again, views on the Bible and the importance of religion in one's life. With the exception of the SWB 6 item, measuring one's preferences for upholding traditional values or changing values to fit current circumstances, these aspects of religion, though significantly correlated with political items, seem to be capturing a different element of an individual's worldview. The SWB item measuring preferences for traditional values is multi-vocal in that it had a factor loading around .44 for both the first and second factor.

This multi-vocality is indicative in itself of the overlap between religious and political values. Because principal-components factoring seeks to maximize the amount of variance within individual items attributable to an underlying factor (and unrelated to other factors), items demonstrating multi-vocality following the orthogonality-maximizing linear transformations and rotations inherent in the factoring process are strong evidence of variance shared between latent dimensions.[7] For simplicity's sake, this multi-vocal item was kept in the first factor with the other SWB items in the indices created below. The third factor includes the three items that loaded on the SWB Leader factor mentioned above and will be referred to as Leadership.

Z scores were generated for each of the items in the factor analysis, and then indices were created by adding together each of the items multiplied by their respective factor loadings. These factors demonstrate that communitarianism seems to be the only religious measure that is explained significantly by a latent trait representing political measures. Additionally, it appears that preferences for traditional values is explained by both the group/values and individual religiosity factors, which may be indicative of overlap between political and religious preferences.

[Table 3 about here]

The factor analyses detailed above provide three dependent variables that capture the overlap of political and religious preferences in G3. Providing a multivariate test of H2.1 and H2.2, OLS regression models were performed on each of the factors outlined above, with results displayed in Table 5. As hypothesized, all of the Moral Foundations were significantly

[7] Importantly, multi-vocality can manifest as the result of either variance explained by multiple latent dimensions or simple measurement error, a characteristic of social traits that is indicated by the fact that none of the individual items are completely uncorrelated with any of the factors (which, if present, would be exhibited in a multitude of .000 factor loadings in the table below). That the SWB6 item loads on both the first and second factors at the .44 level is indicative of a large amount of variance (20 percent) that is attributable to two factors and unlikely to be the result of simple measurement error.

associated, only Ingroup fell just below the traditional .05 level, with the Group/Values factor in the expected directions, holding all other variables constant. In fact, the Moral Foundations had higher standardized betas, on average, than the demographic variables of gender, income and age. Specifically, Harm and Fairness were negatively associated with Group/Values such that increases in these Moral Foundations for making moral judgments resulted in liberal political views and an orientation toward helping others rather than avoiding sin. Ingroup, Authority and Purity were positively associated with the Group/Values factor, indicating that reliance on these foundations results in conservative political views and more of a likelihood to avoid sin rather than help others.

[Table 4 about here]

Moral Foundations are less explanatory of the Individual Religiosity factor, as the R^2 drops to .078 and only Authority and Purity are significantly associated with scores on the factor. As individuals increase their scores on Authority and Purity, they are more likely to say religion is an important guide in their lives, that the Bible is the literal word of God and that they have had a born again experience, holding all other variables constant. The other Moral Foundations are in the expected directions, even if they do not reach traditional levels of significance, with Harm and Fairness negatively related to Individual Religiosity and Ingroup positively related. These findings comport with Haidt and Graham's morally binding theory in that Authority, Purity and Ingroup concerns help to curb selfish desires and possibly lead to a type of religiosity that emphasizes personal responsibility – as evidenced in the individualist measures. The third model tells more of the same story, with only Fairness and Authority significantly associated with the Leadership factor, but they and the remaining Foundations demonstrate relationships in the expected direction. That is,

Harm and Fairness are negatively related, or predict liberal attitudes on Leadership, and Ingroup and Authority are positively related, or predict conservative attitudes.

G1 and G2 Samples. Because religious and political beliefs stabilize over one's lifetime and can differ by generation or cohort, separate principal components analyses were conducted on the parent and grandparent samples and are displayed in Table 4. Each PCA indicated a four-factor solution. For both G1 and G2 samples, the individual religiosity items as well as the SWB item concerning values based on an external code loaded on the first factor, which will be labeled Individual Religiosity. Five SWB items and the communitarian measure loaded on the second factor in the parent sample. Six SWB items – some different than in the parent sample – and the communitarian measure also loaded on the second factor in the G1 sample, which will be labeled Group/Absolutes as the items relate either to the role of the group and individual or to society working best in black-and-white versus grey areas. Interestingly, communitarianism has a negative loading on this factor for the grandparent sample, similar to the findings for the student sample, but has a positive loading for the parent sample. The third factor contains three SWB items – though only one shared item in both samples -- dealing with Ingroup/Outgroup dynamics, and the fourth factor includes the remaining three SWB items dealing with Traditional Values. In sum, though there is a discrepancy between a few items, all three generations demonstrated similar factor structures in that the individualist religious measures reflect a nearly orthogonal factor from the communitarian religious measure and most political items.

[Table 5 about here]

Though the factor structures and associated factor index variables differ for the parent and grandparent samples, similar types of relationships emerge with the Moral Foundations. In the parent sample, Moral Foundations and demographic variables were

regressed on Individual Religiosity, Group/Absolutes, Ingroup/Outgroup and Traditional Values. The Group/Absolutes model had a nonsignificant F, which makes the results unable to be interpreted. The other three models were significant. Authority and Purity predict higher levels of Individual Religiosity, indicating that desires for social order and avoidance of contamination in making moral judgments is related to being born again, literal views of the Bible and religion as an important guide in day–to-day living. This is consistent with findings in the student sample, which may suggest possible transmission of these values. In addition, Harm and Purity are predictive of scores on Traditional Values, with higher scores on Harm resulting in lower scores on Traditional Values and higher scores on Purity resulting in higher scores on Traditional Values. Harm was also negatively related to the Ingroup/Outgroup factor, but Fairness almost reached traditional levels of significance in a positive direction – indicating that higher scores on Fairness are associated with more conservative views on Ingroup/Outgroup. In both of these models, the respective Moral Foundations are the only significant predictors, even when accounting for demographic variables.

For the grandparent sample, the Moral Foundations were regressed on the four factors, but only the Group/Absolutes model was significant, most likely due to power issues with the small sample size. Within this model, only Fairness and education were significant predictors – though both had large standardized betas and the model demonstrated the largest R^2 of any of the generation models at .399. Fairness is negatively related to Group/Absolutes, as a one-unit increase in using Fairness when making moral judgments results in a decrease ($ß=-.55$, $p < .01$) of conservative views on the role of the group and society working best with absolutes. Education also decreases conservative views ($ß=-.42$, $p < .05$). As will be explored and discussed Chapter 3, part of the discrepancy in the

models and relationships across generations may have more to do with measurement error and differences onto which latent factors the Moral Foundation items load than the idea that the findings in the student generation are unique to that sample, with limited external validity.

Discussion

Supporting the hypotheses in this chapter, the findings in the student sample indicate that the Moral Foundations predict political attitudes, with Harm and Fairness associated with liberal views on organizing society and Ingroup, Authority and Purity with conservative. To my knowledge, this is the first test of common religious measures and the Moral Foundations battery, as previous applications only included content analyses of online sermon content (Graham, Haidt and Nosek 2009) and written narratives of highly religious and political individuals (McAdams et al. 2008). There is some evidence that some of these relationships exist in the other generations, with most in the same direction as the larger student sample. With small sample sizes, many of the models had low power and were uninterpretable. At the very least, the religious and political measures demonstrate some overlap in a principal components analysis, indicating there are some preferences that may be expressed religiously and politically, and by replicating these relationships in multiple generations, it's possible the areas of this overlap may explain the transmission of political and religious beliefs. What is less clear is whether Moral Foundations are the psychological constructs explaining these relationships since there are differences between the generations. A glimpse at the descriptive statistics for the means on each Foundation between generations suggests these Foundations may not be similar across generations, which will be explored in Chapter 3. This suggests that Moral Foundations may be as influenced as

political and religious beliefs are by other dispositions, perhaps like personality or some other sort of value structure.

The associations between Harm and Purity and the communitarian measure in the student sample provide support for my argument that individuals rely upon different foundations for binding moral communities, challenging Graham and Haidt's (2010) untested assertion that only Ingroup, Authority and Purity concerns are necessary for other-regarding behavior. For the religious individuals in my sample, those who believe "it is wrong to hurt people; it is good to relieve suffering" (Harm/Care) (McAdams et al. 2008, 984) are more likely to say that being a better Christian means helping other people; whereas those who believe "the body and certain aspects of life are sacred; cleanliness and health, as well as their derivatives of chastity and piety, are all good" (Purity/Sanctity) (McAdams et al. 2008, 985) are more likely to select avoiding sin in trying to be more religious. As argued earlier, regarding others is the way Harm/Care believers build community and act beyond self-interest, and Purity/Sanctity believers perhaps think limiting autonomy through personal responsibility for one's actions is the answer to a well-functioning society. And these beliefs seem to permeate both the political and religious realms. Authority and Purity seem to be the most consistent predictive relationships, across all three samples and especially regarding scores on the individualist religiosity measures, suggesting that perhaps the individualist orientation is more likely to be shared within families or perhaps these measures have just been vetted more over time and are more reliable than the fairly new communitarian and SWB measures. Chapter 3 will explore whether Moral Foundations, religious preferences and political preferences are shared within families, and if this is a possible explanation for the source of the overlap between these belief systems.

Table 1: Descriptive Statistics of Moral Foundations, Political Preferences, Religious Preferences and Demographics

	Student (G3)	Parent (G2)	Grandparent (G1)
Harm	M=4.30, SD=.79	M=4.35, SD=.81	M=4.71, SD=.73
Fairness	M=4.50, SD=.73	M=4.54, SD=.75	M=4.95, SD=.65
Ingroup	M=4.29, SD=.79	M=4.26, SD=.81	M=4.95, SD=.65
Authority	M=4.09, SD=.76	M=4.26, SD=.77	M=4.72, SD=.66
Purity	M=3.69, SD=.90	M=4.27, SD=.95	M=4.77, SD=.73
Society Works Best	M=-1.67, SD=4.77	M=-1.12, SD=4.70	M=-1.12, SD=4.54
Communitarian	39% Avoid sin 58% Help others 3% Don't know	42% Avoid sin 53% Help others 5% Don't know	55% Avoid sin 41% Help others 4% Don't know
Born Again	33% Yes 52% No 14% Don't know	29% Yes 63% No 8% Don't know	31% Yes 54% No 15% Don't know
Bible Views	26% Actual word 67% Inspired word 7% Book of fables	30% Actual word 65% Inspired word 5% Book of fables	31% Actual word 58% Inspired word 11% Book of fables
Importance of Religion	12% Not important 29% Some guidance 28% Quite a bit 31% A great deal	5% Not important 17% Some guidance 28% Quite a bit 50% A great deal	2% Not important 14% Some guidance 18% Quite a bit 66% A great deal
Age	M=19.48, SD=1.74	M=50.42 SD=6.05	M=73.25, SD=6.20
Income	Median=$80,001 to $100,000	Median=$80,001 to $100,000	Median=$60,001 to $80,000
Education	Median=Some college	Median=College graduate	Median=Some college
Sex	48% Male 52% Female	47% Male 53% Female	32% Male 68% Female
N (range)	451-583	137-225	64-94

Notes: Sample size is dependent on variable in question; all subsequent relationships use casewise deletion.

Table 2: Bivariate Correlations Between Moral Foundations, Political Preferences and Religious Preferences for G1, G2 and G3 Sample

	1	2	3	4	5	6	7	8	9	10
1. Harm										
	.60									
2. Fairness	**.65**									
	.61									
	.11	**.20**								
3. Ingroup	**.45**	**.44**								
	.53	**.70**								
	.10	**.18**	**.56**							
4. Authority	**.26**	**.28**	**.55**							
	.47	**.36**	**.50**							
	.21	**.17**	**.41**	**.52**						
5. Purity	**.22**	**.21**	**.46**	**.66**						
	.31	**.21**	**.33**	**.47**						
	-.31	**-.30**	**.23**	**.26**	**.18**					
6. Society Works Best	-.10	.02	.13	**.34**	**.42**					
	-.06	-.12	-.03	.06	**.47**					
	.19	**.10**	.01	**-.10**	-.09	**-.22**				
7. Communitarian	.15	.03	.04	.01	-.05	.01				
	.07	**.24**	-.01	**-.28**	**-.31**	**-.28**				
	.02	-.01	.09	**.13**	.08	.02	.03			
8. Born Again	-.10	-.11	.00	**.15**	.13	.09	-.11			
	.07	-.03	.06	.06	-.01	.11	**-.24**			
	-.14	-.08	**.09**	**.14**	**.11**	**.14**	-.07	**.33**		
9. Bible Views	-.08	-.10	.13	**.28**	**.21**	**.24**	-.15	**.30**		
	.28	.11	**.37**	**.27**	**.33**	.20	**-.37**	**.27**		
	-.03	**-.10**	**.18**	**.30**	**.31**	**.17**	-.09	**.39**	**.45**	
10. Importance of Religion	.00	.01	**.15**	**.30**	**.37**	**.23**	-.11	**.37**	**.34**	
	.08	.06	**.20**	**.29**	**.34**	.04	-.20	**.29**	**.55**	

Notes: All bolded correlations are significant at $p < .05$.
Correlations in the top row of each cell correspond to the student sample (G3), the second row the parent sample (G2) and the third row the grandparent sample (G1).

Table 3: Principal Components Factor Analysis on G3 Society Works Best and Religiosity Items

	Group/Values	Individual Religiosity	Leadership
SWB1	.309	-.007	**-.479**
SWB2	.006	.019	**.72**
SWB3	**.507**	.085	.319
SWB4	**.627**	-.20	-.111
SWB5	**.267**	.172	-.062
SWB6	**.447**	.437	.158
SWB7	**.65**	-.076	-.084
SWB8	.243	.069	**.492**
SWB9	**.512**	-.094	.135
SWB10	**.358**	.049	.134
SWB11	**.358**	.049	.134
SWB12	**.455**	-.064	-.267
Importance of Religion	-.053	**.779**	.105
Born Again	-.09	**.718**	-.184
Bible Views	.05	**.681**	.101
Communitarian	**-.306**	-.107	-.127

Note: Results are reported after a varimax rotation was performed.

Table 4: Political and Religious Factors Regressed on Moral Foundations in G3

	Group/Values		**Individual Religiosity**		**Leadership**	
	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß
Harm	**-.833*** (.163)**	-.275	-.133 (.114)	-.066	-.10 (.072)	-.072
Fairness	**-.648*** (.18)**	-.199	-.25† (.13)	-.113	**-.221** (.077)**	-.148
Ingroup	.298† (.161)	.092	.041 (.114)	.019	.108 (.07)	.078
Authority	**.686*** (.176)**	.206	**.393** (.123)**	.177	**.168* (.076)**	.117
Purity	**.311* (.137)**	.11	**.245* (.096)**	.13	-.01 (.06)	-.009
Female	**-.417* (.209)**	-.088	.26† (.15)	.082	.153 (.095)	.07
Income	.034 (.061)	.024	-.029 (.042)	-.031	**-.071** (.026)**	-.109
Age	-.003 (.062)	-.002	-.052 (.046)	-.051	-.015 (.026)	-.023
Constant	1.816 (1.61)		-.14 (1.157)		.691 (.691)	
R^2	.253		.078		.063	
N	451		500		583	

Notes: Two-tailed tests where ***<.001, **<.01, *<.05, and †<.10. Standard errors are in parentheses.

Table 5: Principal Components Factor Analysis on G1 and G2 Society Works Best and Religiosity Items

	Individual Religiosity	Group/Absolutes	Ingroup/Outgroup	Traditional Values
SWB1	.006 -.095	-.014 .029	**.708** **.792**	-.10 -.29
SWB2	.086 -.054	**.502** .011	.307 -.065	-.055 **.743**
SWB3	-.179 .143	.153 **.62**	.255 .138	**.482** .146
SWB4	-.048 -.003	**.579** .079	.113 **.797**	.035 **.**241
SWB5	.259 .177	-.037 **.45**	**.506** -.124	.249 -.414
SWB6	.268 .177	.061 .167	-.074 .399	**.824** **.479**
SWB7	-.099 .342	**.607** **.57**	-.095 .413	.208 .061
SWB8	.286 .079	**.512** **.562**	.167 .356	.181 -.038
SWB9	-.398 -.132	-.088 **.508**	.272 -.026	**.565** .124
SWB10	-.057 -.271	.365 **.541**	**.447** -.321	.071 -.152
SWB11	**.478** **.455**	.273 .27	-.134 .277	.39 .322
SWB12	-.025 **.**224	**.377** .063	-.267 **.323**	.196 .285
Importance of Religion	**.782** **.88**	-.045 -.049	.047 -.129	.077 .078
Born Again	**.658** **.615**	-.159 -.174	.047 .34	.083 -.33
Bible Views	**.527** **.754**	.174 .182	.412 -.06	.08 .007
Communitarian	-.134 -.32	**.523** **-.514**	-.41 .012	-.214 .014

Note: Results are reported after a varimax rotation was performed. G1 factor loadings are displayed in italics; G2 in normal font.

Table 6: Political and Religious Factors Regressed on Moral Foundations in G2

	Individual Religiosity		**Group/ Absolutes**		**Ingroup/Outgroup**		**Traditional Values**	
	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß
Harm	-.284 (.215)	-.14	*Non-significant F*		**-.424** (.14)**	**-.30**	**-.343* (.169)**	-.21
Fairness	-.339† (.202)	-.16			.253† (.146)	.17	.134 (.169)	.08
Ingroup	-.149 (.205)	-.07			.168 (.14)	.12	-.14 (.163)	-.09
Authority	**.60* (.238)**	.25			.258 (.159)	.17	.058 (.185)	.03
Purity	**.42* (.176)**	.22			.077 (.126)	.06	**.479** (.145)**	.34
Female	.374 (.255)	.12			-.079 (.172)	-.03	-.194 (.202)	-.08
Income	-.092 (.092)	-.08			-.011 (.062)	-.01	-.011 (.07)	-.01
Age	-.001 (.021)	-.004			-.018 (.014)	-.10	.004 (.016)	.02
Education	-.003 (.068)	-.003			-.053 (.047)	-.09	-.042 (.054)	-.06
Constant	-.938 (1.575)				-.073 (1.055)		-.395 (1.217)	
R^2	.188				.136		.142	
N	160		131		174		172	

Notes: Two-tailed tests where ***<.001, **<.01, *<.05, and †<.10. Standard errors are in parentheses.

Table 7: Political and Religious Factors Regressed on Moral Foundations in G1

	Individual Religiosity		**Group/Absolutes**		**Ingroup/ Outgroup**		**Traditional Values**	
	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß	Coeff. (S.E.)	ß
Harm	*Nonsignificant F*		-.278 (.672)	-.09	*Nonsignificant F*		*Nonsignificant F*	
Fairness			**-2.159** (.784)**	**-.55**				
Ingroup			.541 (.849)	.14				
Authority			-.362 (.735)	-.10				
Purity			.088 (.678)	.03				
Female			-.996 (.701)	-.22				
Income			.068 (.216)	.05				
Age			.046 (.071)	.12				
Education			**-.376* (.168)**	**-.42**				
Constant			10.996 (5.21)					
R^2			.399					
N	59		41		63		68	

Notes: Two-tailed tests where ***<.001, **<.01, *<.05, and †<.10. Standard errors are in parentheses.

Chapter 3: Are Moral Foundations, Religiosity and Political Attitudes Transmitted across Generations?

Chapter 2 suggests that there is an underlying set of principles that explain the overlap between religious and political beliefs. Because previous findings indicate some of these beliefs are transmitted from parents to children, and Moral Foundations might explain the overlap of these types of beliefs, is it the case that Moral Foundations also run in families? Or is it possible that Moral Foundations are developed elsewhere and may explain how individuals connect the political and religious but do not necessarily explain these shared frameworks across generations?

Most of the socialization literature focuses on partisanship, political interest and participation or attitudes on issues of the day (Jennings and Niemi 1974; Jennings, Stoker and Bowers 2009; Tedin 1974; Thomas 1971). Parent-child agreement tends to be higher for "attitudes with a strong affective or moral component," such as abortion or views on school prayer (Jennings et al. 2009), and the strength of parental socialization depends upon the importance of an issue to the parent and how correctly a child identifies a parent's position (Tedin 1974; Thomas 1971). Because socialization is "low-key and haphazard" (Jennings and Niemi 1974, 330), it may be more likely that general values or "broad orientations" (Pearson-Merkowitz and Gimpel 2009, 166), like Moral Foundations, are more successfully transmitted and then possibly result in similar religious and political beliefs.

Nearly all of the political and religious socialization studies involve parent-child dyads, but this dissertation extends the unit analysis to include grandparents. The logic behind adding a third generation is to determine whether a "multiplier effect" exists, in that when paternal and maternal grandparents agree on political and religious preferences, mothers and fathers will agree and then be more likely to act as "middlepersons" in relaying these values

to the third generation (Jennings and Niemi 1974, 156; Beck and Jennings 1975). Unfortunately, because of the limitations of my data collection, I was unable to properly model these relationships on both sides of the family with mothers and fathers and their respective parents, as there are only eight families where there is data for G3, G2 mothers and fathers and G1 maternal *and* paternal grandparents. As such, the following hypotheses will reflect a proxy to these relationships by examining the association between the third generation, each parent and each set of grandparents. Thus, the relationships will be examined in aggregate across the sample because I am unable to model full family relationships. If there are positive associations between the generations' preferences, however, this may suggest a multiplier effect could be occurring in that parents (G2) enter marriage with shared preferences from their parents (G1), and then agreement with their spouse may increase the likelihood of agreement with their children (G3). But without modeling each family unit across generations on both sides of the family, a true test of the multiplier effect is not possible.

In addition, recent studies have suggested that children are more likely to share political preferences with their mothers because they tend to spend more time with them (Zuckerman et al. 2007); yet earlier studies indicated that fathers were the purveyors of these political orientations (Beck and Jennings 1975). Regarding transmission of religiosity, there are not clear, consistent findings on whether mothers or fathers are more dominant (Dollahite and Thatcher 2008), but much like the multiplier effect in shared partisanship, both parents together seem to exert more influence than one or the other (Kierun and Monroe 1987). Because there are not consistent theoretical findings on such gender effects and the majority of the measures in this dissertation have not been examined across generations, the hypotheses will not reflect directionality or strength of relationship based

upon parental gender and/or side of the family. That is, I do not hypothesize that fathers will exert more influence on their children than mothers or paternal grandparents more than maternal grandparents, but the statistical tests of the hypotheses will be divided by sides of the family to try to approximate the "multiplier effect" of intergenerational agreement and explore possible maternal/paternal differences. Finally, the only three-generation study of political preferences (Beck and Jennings 1975) indicated that generations nearest one another (Generation 1 and Generation 2, Generation 2 and Generation 3) are more likely to agree than those furthest apart (Generation 1 and Generation 3) because of the significant difference in level of contact. The following hypotheses will be tested to explore the relationships described above:

Hypothesis 3.1: There will be a positive association between the political preferences of G1, G2 and G3, with the generations closest together demonstrating stronger associations.

Hypothesis 3.2: There will be a positive association between the religious preferences of G1, G2 and G3, with the generations closest together demonstrating stronger associations.

Hypothesis 3.3: There will be a positive association between the Moral Foundations of G1, G2 and G3, with the generations closest together demonstrating stronger associations.

Methods

The data files from Chapter 2 were combined into one dataset where one row represents a family unit, including the variables for students, the mother and/or father and the maternal and/or paternal grandparents. To examine the transmission of Moral Foundations and political and religious beliefs across generations, separate models will be created for maternal and paternal relatives. Regarding the grandparent measures, the score

from one grandparent will be used if the other one is not present, and their scores will be averaged if they are both present (Amato and Cheadle 2005). For example, if a maternal grandmother answered the survey but the maternal grandfather did not, her score on Harm will be used in the models. In the matched family sample, there are 100 biological mothers, 117 biological fathers, two adoptive mothers, eight stepparents, 43 maternal grandmothers, 20 maternal grandfathers, 26 paternal grandmothers, and 13 paternal grandfathers. For the purposes of the following analyses, only biological relatives were included. Though Chapter 2 explored the overlap in political and religious beliefs by factoring these measures into latent factors, predicted by Moral Foundations, the current chapter will examine the relationships of the measures individually across generations because of the difference in factor structures between each generation.

Hypothesis 3.1: *There will be a positive association between the political preferences of G1, G2 and G3, with the generations closest together demonstrating stronger associations.*

Though the current study is not concerned with partisanship, it is the most consistent finding in the socialization literature, so it may be helpful to see if the sample and data I have collected – though not representative of the American citizenry -- can replicate previous findings. That is, demonstrating that G1, G2 and G3 share party identification adds some confidence that this sample is not unique. Furthermore, if "broad orientations" are more likely to be transmitted across generations than issues of the day, comparing the society works best battery to party identification gives some indication of whether the battery is capturing these orientations or if it is merely performing like specific issue attitudes that are more subject to generational effects.

Correlations of party identification and the political measure central to this dissertation, the society works best battery, are displayed in Table 1. The party measure asked individuals to place themselves on a nine-point scale (1-strong Democrat, 2-not strong Democrat, 3-

Independent, near Democrat, 4-Independent, 5-Independent, near Republican, 6-not strong Republican, 7-strong Republican, 8-other party, 9-don't know). Individuals selecting 8 or 9 were dropped, and the remaining were recoded 1-3 = 1 for Democrat, 4 = 2 for Independent, and 5-7 = 3 for Republican. As expected, there is strong correlation between the party identification of the student sample and both of their parents (mothers r=.62, p=.00; fathers r=.44, p=.00), with a stronger effect size for mothers – replicating earlier findings (Zuckerman et al. 2007; Jennings and Niemi 1974). These relationships were not as strong between G1 and G2, but this is most likely due to the small sample size. Interestingly, fathers in G2 have a stronger positive relationship with their in-laws' party identification (r=.37, p =.03) than with their own parents (r=.10, p=.71). But again, with sample sizes between 17 and 33, these findings should be interpreted with caution.

[Table 1 about here]

Regarding the society works best battery, there are significant, positive associations between G3 and mothers (r=.32, p<.05) and fathers (r=.22, p<.05) in G2. The relationships between G1 and the other generations are mixed, with negative associations between G2 mothers' party ID and her G1 parents' SWB (r=-.57, p<.05) and a nonsignificant but also negative association between both generations' SWB scores. Yet, the relationship between maternal grandparents and G3 is positive, though nonsignificant, just as the political preferences of G2 fathers and their G1 parents are nonsignificant but in the positive direction – indicating there might be an intergenerational multiplier effect occurring. Many of these effect sizes are small to medium so the nonsignificance is most likely a power problem. Other than the negative relationships between G2 mothers and their parents, the remaining correlations support Hypothesis 3.1 in that political preferences, as defined by the broad orientations toward organizing society, are transmitted within families. Some of the

relationships between individuals' SWB scores and their family members' party identification are stronger than between the SWB scores themselves – which may suggest that the SWB battery is capturing different dimensions between the generations. The latter is supported by the fact that the factor structures with SWB and the religiosity items found in Chapter 2 differ between samples. [Table 1 about here]

Hypothesis 3.2: *There will be a positive association between the religious preferences of G1, G2 and G3, with the generations closest together demonstrating stronger associations.*

Tables 2 and 3 display the bivariate relationships of religious preferences between maternal and paternal family members and the student sample. The most consistent relationships occur between importance of religion of one generation and various other measures in the other generations; suggesting that relying on religion to guide one's daily decisions may be guided by the multiplier effect in that there is a fairly steady relationship across generations. For example, the more important religion is to a mother or father in G2, the more important it is to her or his child in G3, and importance of religion in the maternal and paternal G1 sample demonstrates medium effect sizes and some significant relationships with religious measures in G2 and G3. Though there is no relationship between G2 and G3 regarding being born again in the maternal family sample, there is a strong significant relationship on this measure between G1 and G2 ($r=.63$, $p<.05$). In the paternal family sample, there are no cases that match on being born again for G1 and G2, but there is significant relationship, with a large effect size, between G1 and G3 ($r=.77$, $p<.05$). Regarding views on the Bible, there are strong, significant relationships between fathers in G2 and children in G3 but not between G1 and either generation. The association in the maternal family sample is only between G1 and G3.

[Tables 2 and 3 about here]

There is no significant relationship between a student and his or her mother or father's communitarianism (r=-.05, p>.05; r=.12, p>.05). Because some previous literature has indicated that there is a gender difference in a child's reception of parental religious influence (Kierun and Munro 1987), I split the student sample by gender, and another pattern emerged. Sons and mothers have a positive relationship (r=.39, p =.056), in that they are likely to agree on whether avoiding sin or helping others is the best way to be a Christian. Daughters, on the other hand, demonstrate a negative relationship with their mothers on communitarianism (r=-.36, p = .038). In this sense, G2 mothers may be acting as middlepersons between G1 parents and G3 sons regarding viewing on how to be a good Christian. Splitting by gender of G3 does not reveal any significant relationships between fathers and sons or daughters.

There is a positive association between the mother being born again and her son's views on the Bible, such that being born again results in the son being more likely to believe the Bible is the actual word of God (r=.41, p =.023). This same strong relationship emerges between fathers and sons (r=.49, p=.001) and to a lesser extent, fathers and daughters (r=.25, p=.08). This relationship is not significant for mothers and daughters, and, in fact, the correlation is in the opposite direction (r=-.13, p = .439). There is, however, a positive relationship between views on the Bible for mothers and daughters (r=.34, p =.031), fathers and sons (r=.42, p=.001) and fathers and daughters (r=.30, p=.033). Regarding religious importance, fathers and daughters are significantly associated, but there is no relationship for fathers and sons.

Kierun and Munro (1987) found that fathers exhibit more influence than mothers on daughters' religious behavior (mostly church involvement), whereas both parents are influential to sons. Because women tend to be more religious already, fathers are thought to

exhibit more influence because if they are attending church more, it signals to the rest of the family that this is an important behavior (Kierun and Munro 1987). This pattern of association can be found in some of the religious measures here, but the current sample involves a slightly older child generation at a different time period than the Kierun and Munro study (adolescents in the home ages 13 to 18 in 1983 and college-age youth in 2011), and the measure of concern is religious belief – not behavior – which could have different sources of influence. In sum, the statistical relationships in this data do not tell a uniform story as to the shared religiosity between sons, daughters, fathers and mothers, which is quite possibly due to the third generation being at an age where religious beliefs are in flux. Unfortunately, the sample sizes between G1 and G2 are generally too small to draw any major conclusions.

Hypothesis 3.3: *There will be a positive association between the Moral Foundations of G1, G2 and G3, with the generations closest together demonstrating stronger associations.*

Table 4 displays the bivariate relationships of Moral Foundations between the student, his or her mother and his or her maternal grandparents. Table 5 displays these same correlations for the paternal side. There are significant, positive relationships between Harm, Fairness, Authority and Purity in G2 and G3 in the maternal family sample, but only Ingroup and Authority reach traditional significance levels between G2 and G3 on the paternal side. Ingroup views are the only shared relationship on one Moral Foundation between G1 and G3. On the paternal side, G1 Purity is positively associated with G3 Purity, but the Ingroup scores are negatively associated between the two generations. More relationships emerge between the five Moral Foundations across generations than within them. For example, Fairness in G1 is significantly related to Ingroup views in G3.

Regarding the relationships between G1 and G2, no significant relationships emerge on the maternal side, but with small effect sizes (r=-.17 to .23), there is most likely a power

problem with the small sample. Furthermore, the relationships are not even all in the expected direction, as Harm, Fairness and Ingroup are negatively signed. Similar puzzling results occur in the paternal G1-G2 correlations, as the nonsignificant relationships demonstrate decent effect sizes (r=.08 to -.39), but in positive and negative directions. When the G3 sample is split by gender, the relationships between mothers in G2 and children in G3 shift a little bit but stay in the same general direction, with sons demonstrating stronger relationships than daughters with their mothers. No relationships, apart from a nearly significant association in Ingroup attitudes between fathers and sons, emerge on the paternal side when splitting G3 by gender.

[Tables 4 and 5 about here]

Because the relationships do not form a coherent pattern, it is difficult to speculate about any sort of multiplier effect or parents acting as middlepersons, relaying values between generations. Examining the correlations between mothers and fathers in G2 may be part of the answer: the only Moral Foundation association that achieves traditional levels of statistical significance is Purity (r=.24, $p<.05$). Harm, Fairness and Ingroup display positive relationships between parents at the .10 level, but all demonstrate low effect sizes (right around .2). This supports earlier literature that the most successful transmission occurs between attitudes that are shared by both parents (Jennings and Niemi 1974). That is, Hypothesis 3.3 is partially supported in that some Moral Foundations are passed down in families, but this may be moderated by parental agreement.

One possibility for the sporadic relationships could be due to differences in means across the generations. Two-sample, unpaired t tests were performed on the Moral Foundation measures between generations, displayed in Table 6. There were significant mean differences between scores on nearly all of the Moral Foundations between G3 and

both sets of grandparents and between G1 and G2, with higher scores corresponding with age of the generation. That is, the grandparents rated nearly every Moral Foundation higher than G2 and G3, regarding its relevance in making moral decisions. Parents and children in G2 and G3 demonstrated more similar scores on the Foundations, with Authority and Purity both demonstrating higher means for mothers and fathers as compared to their children. This suggests that perhaps concerns for Authority and Purity increase with one's age or may be a remnant of period effects. Without longitudinal data, it is impossible to determine whether the current student generation will maintain their current levels of Moral Foundation scores or if they will develop intuitions similar to the older generations as they reach that point in their life course.

[Table 6 about here]

Discussion

In sum, there are stronger relationships between the generations closest to one another (G1-G2 and G2-G3) than between generations one and three, which is consistent with previous three-generation findings on political items (Beck and Jennings 1975). It is possible that some of the relationships are mediated by demographic variables, such as income and education, or relational variables measuring level of contact between the generations. With the limitations of the small sample size due to incomplete three-generation triads, it is difficult to model these added parameters without jeopardizing already precious degrees of freedom. In addition, the G3 population is nearly identical on individual-level socio-economic status so should the model include the education and income of the parents or the grandparents? There is a dearth of theory as to whether demographic variables mediate or moderate transmission of political or religious attitudes across three generations. Measures such as interest in politics between the parent and grandparent generation may be the next

place to look for these effects, but is beyond the scope here as the current study is more concerned with underlying, general preferences and not necessarily politically charged items like partisanship or issues of the day.

With n's ranging from 14 to 103 in the between-generation correlations, it is also difficult to determine whether these associations, or lack thereof, are due to actual differences in the participants and samples or due to statistical problems that plague small samples, such as measurement error. As mentioned in the last section, it is also possible that the Moral Foundations item battery is not capturing the same sorts of dimensions within each generation. To test this, a principal components factor analysis was performed on the 20 items in the Moral Foundations for each generation. Examination of Eigen values over 1 and scree plots revealed six-factor solutions for each generation, but a five-factor solution was imposed on the data to replicate the five Moral Foundations. Results are displayed in Table 7, with G3 in the top row, G2 in the middle row and G1 in the bottom row. Overall, the Harm and Fairness items are loading together on the first factor and Ingroup and Authority items on the second factor, but the rest of the items are scattered throughout those and the remaining three factors in no particular pattern. It is possible, then, that the way in which participants answered the individual questions corresponding with each Moral Foundation introduced more measurement error because their collective answers do not load on the latent factors pre-determined by Haidt and Graham's coding scheme. There is some evidence in Chapter 2 that Moral Foundations exhibit relationships with religious and political preferences, but these relationships may not carry across generations or even explain the covariance of the belief sets in the same way. Contrary to the conceptual model developed earlier in this dissertation, Moral Foundations do not seem to persist across generations and therefore may not explain the overlap of political and religious beliefs, as it

relates to socialization within families. It is uncertain why these Foundations are functioning differently across age groups and what this means for the stability of this construct within individuals. If the Foundations shift with age or shift by cohort, but many of the religious and political measures in this study are partially shared across generations, the Foundations are either problematic from a measurement perspective or reflect a disposition apart from the political and the religious – at least when regarding intergenerational transmission.

[Table 7 about here]

What the findings suggest is that regarding religiosity, there are more consistent relationships with the individualist items as compared to the communitarian measure between generations. This supports the literature that suggests a "highly literal" understanding of doctrine is more likely to result in "more accurate transmission to adolescents than mixtures of literal and symbolic beliefs" (Clark, Worthington, and Danser 1988, 464; Smith et al. 1998; Cornwall 1989; Clark and Worthington 1987). It is also possible the communitarian variable is plagued with measurement issues as it is a fairly new construct (first used in the 2006 and 2008 ANES) that only offers a forced choice resulting in a dichotomous outcome. The strong findings on party identification between generations suggests the current sample is following the patterns of the Jennings and Niemi rolling sample of generations – the major and one of the only intergenerational datasets used in political science. Though shared parent-child attitudes on issues of the day are often scarce in socialization studies, some of the inconsistent relationships on the broad principles of the society works best battery are puzzling, but also may be due to measurement in that the individual items load differently in each generation sample. It is also likely that the most successful transmission occurs at the tails – that is, within the most liberal, most conservative, most individualist or most communitarian families. Without an adequate

sample to drop out the middle or at least split the sample by the extremes, this is nearly impossible to test with the current data.

This is the first ever examination of all three frameworks across three generations, and even with challenges of measurement error and sample size, this analysis demonstrates that some aspects of political, religious and moral intuition belief sets are transmitted within families. The higher agreement between adjacent generations also hints at the possibility of both sides of the family in G1 and G2 spouses may serve as multipliers in the passage of these values to children in G3. Earlier, this dissertation argued that an underlying psychological construct might explain the covariance and persistence of political and religious preferences, yet this current chapter suggests that Moral Foundations may not be the best measurement tool for this construct. Moral Foundations are correlated within generations and with the religious and political measures within individuals in these generations, but this theoretical framework does not seem to persist across generations – at least according to this analysis. In other words, Moral Foundations could explain part of the covariance between religious and political preferences within individuals, but it may not explain the source of the covariance – or why these belief sets tend to be relayed within families. To further explore the sources of a latent trait underlying the political and the religious, the next chapter will examine how genetic and environmental influences may explain this relationship.

Table 1: Bivariate Correlations of SWB and Party ID between G3, G1 and G2

	1	2	3	4	5	6	7	8	9
G3									
1. SWB									
2. Party	**.39**								
G2 - Mother									
3. SWB	**.32**	**.32**							
4. Party	*.19*	**.62**	**.38**						
G2 – Father									
5. SWB	**.22**	**.44**	**.35**	.11					
6. Party	**.29**	**.44**	**.35**	**.58**	**.21**				
G1 - Maternal									
7. SWB	.27	.02	-.27	**-.57**	.29	-.22			
8. Party	**.33**	.07	.27	.24	.17	**.37**	.19		
G1 - Paternal									
9. SWB	.08	*.45*	.42	**.61**	.46	.35	.	1.00	
10. Party	.21	.22	.34	.25	.27	.10	.	.31	.20

Notes: All bolded correlations are significant at $p < .05$; italics are $p < .10$. N for G3-G2 relationships ranges from 79 to 105, G2-G1 ranges from 9 to 25 and G3-G1 ranges from 20 to 39.

Table 2: Bivariate correlations of Religiosity between G3 and maternal G1 and G2

	1	2	3	4	5	6	7	8	9	10	11
G3											
1. Communitarian											
2. Born Again	.03										
3. Bible	-.07	**.33**									
4. Importance of Religion	*-.09*	**.39**	**.40**								
G2											
5. Communitarian	-.05	-.13	-.04	*-.20*							
6. Born Again	.13	.09	.15	.12	**-.30**						
7. Bible	-.13	.15	.10	**.23**	**-.23**	**.42**					
8. Importance of Religion	.13	.12	.14	**.25**	**-.27**	**.40**	**.29**				
G1											
9. Communitarian	-.13	.17	-.17	-.08	-.21	-.34	-.13	.02			
10. Born Again	.13	-.15	-.05	.00	-.04	**.63**	.07	.14	*-.38*		
11. Bible	.11	.15	*.33*	*.28*	-.05	.33	.20	.12	**-.54**	**.44**	
12. Importance of Religion	-.02	.13	.25	.11	-.34	.29	*.39*	.34	*-.32*	**.51**	**.57**

Notes: All bolded correlations are significant at $p < .05$; italics are $p < .10$. N for G3-G2 relationships ranges from 58 to 74, G2-G1 ranges from 4 to 15 and G3-G1 ranges from 21 to 39.

Table 3: Bivariate correlations of Religiosity between G3 and paternal G1 and G2

	1	2	3	4	5	6	7	8	9	10	11
G3											
1. Communitarian											
2. Born Again	.03										
3. Bible	-.07	**.33**									
4. Importance of Religion	*-.09*	**.39**	**.40**								
G2											
5. Communitarian	.12	-.16	*.22*	**-.31**							
6. Born Again	-.08	.11	.14	.15	.07						
7. Bible	-.06	**.36**	**.36**	**.25**	-.15	**.25**					
8. Importance of Religion	.01	-.03	*.20*	**.24**	.07	**.35**	**.41**				
G1											
9. Communitarian	.37	*-.54*	-.46	**-.72**	.	.	-.64	*-.68*			
10. Born Again	-.05	**.77**	.23	**.67**	-1.0	.	.55	.20	-.34		
11. Bible	-.20	**.45**	.00	.21	-.38	.33	.04	.00	-.02	.19	
12. Importance of Religion	-.19	**.49**	.14	.06	-.06	.29	.19	.15	.24	.23	**.63**

Notes: All bolded correlations are significant at $p < .05$; italics are $p < .10$. N for G3-G2 relationships ranges from 70 to 104, G2-G1 ranges from 3 to 13 and G3-G1 ranges from 11 to 27.

Table 4: Bivariate correlations of Moral Foundations between G3 and maternal G1 and G2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
G3														
1. Harm														
2. Fairness	**.60**													
3. Ingroup	**.11**	**.20**												
4. Authority	**.10**	**.18**	**.56**											
5. Purity	**.21**	**.17**	**.41**	**.52**										
G2														
6. Harm	**.37**	.13	-.18	-.01	.15									
7. Fairness	**.21**	*.19*	-.09	.09	.06	**.58**								
8. Ingroup	.13	.00	.08	*.19*	**.25**	**.50**	**.40**							
9. Authority	.06	.05	**.27**	**.31**	**.29**	**.24**	*.19*	**.51**						
10. Purity	.01	-.06	.11	**.33**	**.37**	*.19*	.13	**.42**	**.62**					
G1														
11. Harm	.19	-.06	.17	.09	.24	-.17	-.09	-.17	-.04	-.16				
12. Fairness	.00	-.11	**.43**	**.34**	.15	-.16	-.09	-.11	.08	-.29	**.64**			
13. Ingroup	-.02	.12	**.48**	*.28*	.07	-.18	.08	-.19	.17	-.35	**.56**	**.78**		
14. Authority	-.16	.10	.08	.09	.12	.14	.11	.33	.24	*.41*	.19	.15	**.35**	
15. Purity	**-.36**	-.03	.11	.14	.09	-.26	-.09	.21	.29	.23	.24	.02	**.32**	**.63**

Notes: All bolded correlations are significant at $p < .05$; italics are $p < .10$. N for G3-G2 relationships ranges from 88 to 91, G2-G1 ranges from 19 to 23 and G3-G1 ranges from 34 to 38.

Table 5: Bivariate correlations of Moral Foundations between G3 and paternal G1 and G2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
G3														
1. Harm														
2. Fairness	**.60**													
3. Ingroup	**.11**	**.20**												
4. Authority	**.10**	**.18**	**.56**											
5. Purity	**.21**	**.17**	**.41**	**.52**										
G2														
6. Harm	.06	-.01	-.01	-.10	-.06									
7. Fairness	.06	*.07*	-.02	-.08	-.03	**.72**								
8. Ingroup	-.07	.01	**.22**	*.18*	**.13**	**.41**	**.47**							
9. Authority	-.09	-.08	**.21**	.16	**.07**	**.33**	**.36**	**.56**						
10. Purity	-.05	-.14	.06	.12	*.18*	**.27**	**.28**	**.47**	**.66**					
G1														
11. Harm	-.10	-.14	-.01	.01	-.03	.37	.26	.01	-.12	-.09				
12. Fairness	.17	.20	-.24	-.04	.02	.17	.08	-.37	**-.52**	**-.58**	**.64**			
13. Ingroup	.04	.19	**-.13**	*.26*	.19	.19	.31	-.39	-.38	-.41	**.54**	**.75**		
14. Authority	-.11	-.27	.00	.21	.20	.04	.20	-.05	-.28	-.04	**.69**	**.54**	**.62**	
15. Purity	.06	-.19	.17	**.47**	**.61**	-.07	-.13	-.21	*-.44*	-.17	.33	*.39*	*.39*	**.52**

Notes: All bolded correlations are significant at $p < .05$; italics are $p < .10$. N for G3-G2 relationships ranges from 99 to 103, G2-G1 ranges from 14 to 16 and G3-G1 ranges from 25 to 26.

Table 6: Two-sample T Tests of Moral Foundations between G1, G2 and G3

	Significant Mean Difference	**No Mean Difference**
G1: Maternal G2: Mother	Harm Fairness Ingroup Authority Purity	
G2: Mother G3: Student	Authority Purity	Harm Fairness Ingroup
G1: Maternal G3: Student	Harm Ingroup Authority Purity	Fairness
G1: Paternal G2: Father	Fairness Ingroup Authority Purity	Harm
G2: Father G3: Student	Harm Purity	Authority Fairness Ingroup
G1: Paternal G3: Student	Harm Ingroup Authority Purity	Fairness

Table 7: Principal Components Factor Analysis of Moral Foundations for Three Generations

	1	2	3	4	5
Emotionally (Harm)	**.70**	-.08	-.02	.14	.08
	.72	.03	-.12	.12	.04
	.44	-.02	.05	**.72**	-.09
Treated (Fairness)	**.71**	-.01	-.09	-.03	.25
	.72	.13	-.07	.09	-.23
	.69	-.18	.04	.42	.04
Lovecountry (Ingroup)	.15	**.48**	.43	.03	-.09
	.39	**.59**	.21	.29	-.07
	.60	.44	.15	.38	-.21
Respect (Authority)	.35	**.70**	.11	.15	-.06
	.30	**.64**	.35	.10	-.09
	.67	.01	-.01	.16	.41
Decency (Purity)	**.40**	.25	.30	.39	-.22
	.17	**.56**	.29	-.22	.23
	.56	-.07	.18	.27	.34
Weak (Harm)	**.70**	.11	.07	.06	-.01
	.74	.18	.00	.06	.08
	.54	.23	.16	.30	-.14
Unfairly (Fairness)	**.65**	.33	-.14	.01	.20
	.71	.33	.13	-.02	-.13
	.84	.16	.02	.04	-.09
Betray (Ingroup)	.46	**.49**	.27	-.02	-.01
	.41	.62	.00	.06	-.07
	.84	.05	.06	-.01	.04
Traditions (Authority)	.28	.15	**.32**	.31	-.10
	.07	**.72**	-.06	.17	.19
	.09	.22	.13	**.73**	.17
Disgusting (Purity)	.22	.09	-.07	**.72**	.02
	.43	**.47**	.09	-.01	.25
	.04	.14	.08	-.05	**.72**
Compassion (Harm)	**.49**	-.15	.10	.19	.37
	.49	-.20	**.49**	.33	.18
	.41	.27	.25	**.41**	-.32
Fairly (Fairness)	.25	.12	-.10	-.17	**.65**
	.13	.03	.24	**.64**	-.18
	.36	.20	**.47**	-.21	-.45

History (Ingroup)	-.26	**.60**	.31	.13	.08
	-.15	.29	**.69**	.02	.14
	.28	.18	**.46**	-.27	-.27
Kidrespect (Authority)	-.04	**.68**	.01	.27	.11
	-.03	.13	**.80**	-.05	.21
	.14	**.35**	.31	.03	.34
Harmlessdg (Purity)	-.06	.20	.15	**.73**	.16
	-.15	**.59**	.26	-.04	.28
	.06	**.57**	.02	.00	.56
Animal (Harm)	.15	-.25	.07	.11	**.65**
	.10	.14	-.05	**.80**	.02
	-.31	.16	**.61**	.34	-.14
Justice (Fairness)	.06	.26	.00	.33	**.63**
	.16	.07	**.61**	.44	-.11
	.13	.03	**.78**	.14	.08
Family (Ingroup)	.04	.11	**.63**	-.16	.33
	-.03	.03	.08	**.56**	.32
	.11	.03	**.64**	.05	.21
Sexroles (Authority)	-.08	.11	**.66**	.04	-.18
	-.02	-.02	.11	-.02	**.82**
	.04	**.75**	.11	.14	-.07
Unnatural (Purity)	-.08	.15	**.62**	.43	-.03
	-.08	.28	.18	.02	**.71**
	.07	**.84**	.05	.03	.12

Notes: Factor loadings in the top row of each cell correspond to the student sample (G3), the second row the parent sample (G2) and the third row the grandparent sample (G1). Factor analysis performed with a varimax rotation.

Chapter 4: Do Political Attitudes and Religiosity Share a Genetic Path?

Numerous studies show religious beliefs and individual-level political attitudes are correlated, and that religious and political beliefs are transmitted across generations. Yet though these belief systems are clearly related within individuals and across generations, they are conceptualized and studied as independent concepts that are exclusively products of purposive socialization and environmental experience. As outlined earlier in this dissertation, I challenge this traditional view with a conceptual model that explains political and religious beliefs as being rooted in the same underlying psychological construct that reflects first principle beliefs on social organization, resulting in mutually reinforcing beliefs in both the political and religious realm. This model does not exclude socialization and environmental experience as causal influences on the transmission and co-variation of political/religious beliefs, but it does conceptualize these belief systems as inter-related rather than wholly independent, and at least partially driven by genetic predispositions toward social order.

This framework is supported by recent studies on the heritability of political attitudes and other individual-level traits that suggest political beliefs are not "down stream" from and thus caused by other predispositions. For example, Verhulst, Eaves and Hatemi (2012) demonstrate that a good portion of the correlation between personality traits and political attitudes is due to a shared genetic path. In other words, personality traits are not exerting causal influence on political beliefs; instead personality and political temperament constitute predispositions that develop concurrently because they are under the same genetic influences. This type of relationships may also occur between religious and political beliefs in that individuals view the world in a certain way and select into religious or political frameworks that fit with this perspective, depending on what kinds of items are on the menu

in their environments. Previous chapters conceptualize Moral Foundations as a common psychological construct underlying political and religious beliefs, but it is quite possible that all three frameworks share genetic and environmental paths from which a causal order is difficult to empirically extract. There are not many consistent, replicated heritability findings on various religious measures often employed by political scientists (Bradshaw and Ellison 2008), and there is almost no work that attempts to explain the relationship between religion and politics by leveraging behavior genetics to identify both genetic and environmental influences.

The purpose of the current chapter is to explore the sources of variation within the population, for the overlap of religious and political beliefs. There is evidence that both of these frameworks are partially heritable, and if, indeed, a latent trait like Moral Foundations underlie how individuals organize the world politically and religiously, it is possible that this trait explains why these belief sets tend to go hand-in-hand. Using a classic twin design, I am able to partition this sample's variance into influences due to genetics, the shared environment and the unshared environment, concluding that the source of the shared relationship between the political and the religious is quite dependent on the measure at hand. That is, some political and religious relationships are more due to genetics, some to the environment and some both.

Methods and Hypotheses

Ideally, I would like to test the possibility of a shared genetic path between the Moral Foundations, society works best battery and the religious measures employed in the previous chapters. This would provide a more direct test of my theoretical model and allow me to impose theoretical (if not fully empirically test) causal order on these three constructs. Due to the necessity of dealing with secondary data, however, I am only able to test the

heritability of political and religious beliefs; there is no accessible data set that is suitable for heritability analysis that includes a Moral Foundations battery, and the resources required to create such a data source are prohibitive. However, accessible data are available to test the co-heritability of religious and political attitudes, which provides a platform for testing at least some of the expectations derived from my theoretical model. Based on that theoretical model, I assert that political and religious beliefs are heritable, and more importantly, that the correlation between political and religious beliefs is at least partially explained by a common genetic pathway.

H4.1: Part of the variance in individual political preferences and religious attitudes is explained by a genetic source.

H4.2: Part of the covariance between political preferences and religious attitudes is due to a shared genetic path.

Subjects

These hypotheses will be tested using a classic twin design with the Survey on Social and Political Issues through the Minnesota Twin Family Registry[8], a birth-record based registry containing approximately 8,000 twin pairs born in Minnesota from 1936 to 1955. The twins were recruited to the registry in middle age, from approximately 1983 to 1990. The sample of twins for this study was born from 1947 to 1956. Thus, all of the twins in this study were in middle age, ranging from 53 to 61 years. The Survey on Social and Political Issues is publicly available data that was collected between July 24 and December 22, 2008, with a second period of data collection conducted from July 13 to October 30, 2009, in order to increase the number of complete twin pairs in the study. The University of

[8] The data employed in this project were collected with the financial support of the National Science Foundation in the form of SES-0721378, PI: John R. Hibbing; Co-PIs: John R. Alford, Lindon J. Eaves, Carolyn L. Funk, Peter K. Hatemi, and Kevin B. Smith, and with the cooperation of the Minnesota Twin Registry at the University of Minnesota, Robert Krueger and Matthew McGue, Directors.

Minnesota implemented data collection, and most respondents completed a web survey. A survey invitation was sent to the twins by postal mail with a follow-up letter sent as needed, and a small number of respondents during the 2008 data collection completed a paper version of the questionnaire if their Internet access was limited. During the second period of data collection, all of the 146 respondents completed the survey by paper. All respondents were offered $35 for completion of the survey as an incentive to complete the fairly lengthy questionnaire (approximately 30 to 40 minutes) and as a token of appreciation. A total of 1,349 individuals completed the survey. Of these, 1,192 were members of twin pairs and 157 had a twin that did not complete the survey. The analysis for heritability is limited to the 1,192 respondents that were part of a matched twin pair.

Measures

The psychological constructs in my hypotheses have to be operationalized using the variables available within this dataset. Because the data was collected by the same principal investigators, the twin dataset includes the unique "society works best" (SWB) battery that taps into bedrock principles of group life (Smith et al. 2011). The questions gave respondents a forced choice between two options, such as "Society works best when people live according to traditional values or people adjust their values to fit changing circumstances." A factor analysis on the inaugural SWB survey revealed a five-factor solution, which Smith et al. labeled along the following dimensions:

- Traditional values/moral codes
- Outgroups/rulebreakers
- Role of group/individual
- Leadership
- Absolutes

After conducting a principal components analysis on the twin dataset, three factors emerged with Eigen values over 1:

- Traditional values/moral codes
- Role of group/individual
- Leadership

Items that loaded on the Absolutes factor in Smith et al. (2011) collapsed into the Traditional values/Moral codes factor, and the items from Smith et al.'s outgroups/rulebreakers factor loaded onto the Group/individual factor. The twin dataset is a larger sample (1,171 vs. 200), and this reduced factor solution makes intuitive sense in the way the questions combined to form three ways of thinking about how society should be organized. Appendix B displays these factors as compared to the factor structure of the SWB items in the student sample from Chapter 2. Aside from three items, the remaining nine SWB items load onto three similar factors in both the large student sample collected for the current study and the secondary data in the Minnesota Twins survey: Role of the group/individual, traditional values and authority/leadership. That is, the division of the items onto their respective factors demonstrates a consistent, underlying structure that also mirrors the same types of dimensions as Smith et al. (2011).

Each item was coded -1 for the more liberal position (e.g. "Society works best when people assume that all those in far away places are kindly") and 1 for the more conservative answer (e.g. "Society works best when people realize the world is dangerous"). These scores were combined into an additive index for all items – SWB Full -- then three additive indices were created, for the factors of SWB Values, SWB Group and SWB Leader, with the added products of the respective items times their factor scores. Because it is theorized, and demonstrated below, that not all political beliefs are related to religious beliefs, breaking it

down to individual factors facilitates a more fine-tuned analysis than using the full SWB battery.

Though political attitudes and behavior were the focus of the twin survey used in this analysis, there were a handful of religious measures included:

- Frequency of religious service attendance (m=3.6, SD= 1.45)
- Importance of religion in one's life (m=2.93, SD=.98)
- Religious affiliation (Protestant (44%), Catholic (35%), Jewish (.83%), Other (13%) and None (5%)
- Consideration of self as evangelical or born-again Christian (18% = yes)
- Consideration of self as a spiritual person, regardless of religious affiliation (86% = yes).

Religious affiliation is excluded from this analysis because the categories are too broad to tap into dimensions related to the overlap between religious and political beliefs as outlined elsewhere in this dissertation. Considering oneself as born again and the importance of religion are nearly identical measures as used in previous chapters. Church attendance was not included in previous chapters because this dissertation is interested in the intersection of beliefs, not behaviors, but it is included in the current analyses because its environmental sources of variance provide an interesting contrast to the more heritable religious beliefs and subsequent relationships with the political. Though Chapter 2 examined the overlap of political and religious preferences by factoring the society works best and religiosity items, that approach is not used in the current chapter as the sources of variance will vary depending on the measure. That is, certain religious measures or political items may be more heritable than others so collapsing them together obscures whether there is a shared genetic path between certain items and not others.

A correlation matrix of the key phenotypes are displayed in Table 1. Most of the society works best indices and religiosity variables are strongly and significantly correlated with one another. The spirituality measure is an exception, partially due to its lack of

variance (85% of respondents answered yes to this question), and the ambiguity of the question itself. In prefacing the question with "regardless of religious affiliation," it seems the investigators were trying to capture spirituality apart from religion, but religious respondents did not seem to interpret the question this way as there is a strong relationship between spirituality and the importance of religion in one's life and being born again. With religious and non-religious people both describing themselves as spiritual, it is not surprising the relationship with political factors is muddled. Interestingly, spirituality was the only religious variable that was correlated with the SWB Group factor.

Similar to the findings in previous chapters, importance of religion and being born again are positively related with the full SWB battery, SWB Values and SWB Leader, such that higher scores on the religious measures are associated with more conservative views on how society should work. It is unsurprising that the SWB Group factor is not significantly related to importance and born again as communitarianism is the only religious variable associated with the SWB Group factor in the student sample, suggesting that the individualist religiosity measures are not overlapping with preferences for the role of the individual and the group. SWB Leader demonstrated a similar relationship and effect size with importance of religion in the student and twin samples, and it was also significantly associated with views on the Bible in the student sample (which wasn't measured in the twin survey). In sum, there is further evidence of shared relationships between the SWB battery and religious measures.

[Table 1 about here]

Univariate Genetic Analyses

Classic twin designs (CTD) focus on population variance, rather than population means, in order to decompose the covariance between twins on a given trait into genetic,

shared environmental and unique environmental components (Medland and Hatemi 2009). A CTD is a natural experiment that uses a handful of simple assumptions to estimate these parameters: the difference in genetic relationships between monozygotic (identical) and dizygotic (nonidentical) twin pairs raised together and the similarity of their common environments. Specifically, monozygotic (MZ) twins are assumed to share all genetic variance because they come from a single fertilized egg, while dizygotic (DZ) twins (on average) are assumed to share 50% of their genes because they come from two fertilized eggs.

Secondly, the equal environments assumption posits that the shared environments of twin pairs (parents, schools, friends, time period, geographic region, etc.) are assumed to have the same influence on the phenotypes being studied, regardless of whether the twins are MZs or DZs. Though MZ twins may be treated similarly (e.g. more likely to be dressed alike), what is important is that this type of treatment or shared experience will not affect the trait in question – which seems to be the case for political and social attitudes that will be examined here (Smith et al. 2012). What varies in the model, then, is the number of genes shared by the twin pairs. As mentioned above, MZ twins share 100% of their genes and DZ twins share, on average, around 50% of their genes, the same as non-twin siblings. In comparing the difference in the correlations between each MZ and DZ twin pair, higher correlations for monozygotic twins indicate that a portion of that trait's variance may be due to genetic influences. If the correlations between the two types of twin pairs are very similar, then the resemblance will be due to common environmental experiences, as all twin pairs were raised together. Finally, if there is little relationship between twins on a certain trait, we can conclude that unshared or unique environmental experiences are influencing that phenotype. Figure 1 displays the path diagram of the relationships tested for each of the

following phenotypes. Using structural equation modeling, the unit of analysis is the family or twin pair, and the comparison of the variance decomposed into additive genetic (A), shared environment (C) and unique environment (E) components from MZ to DZ twins is akin to the between-groups and within-groups comparison in an ANOVA (Medland and Hatemi 2009; Smith et al. 2012).

Using OpenMx for R (Boker et al. 2011), the phenotypes in this study were decomposed into A-C-E. The additive genetic component explains how much of the similarities between individuals on a specific trait are due to "gene-based predispositions, needs, wants, desires, or motivations" (Bradshaw and Ellison 2008, 531). The shared environment accounts for the portion of similarity that stems from twins raised within the same families and reflects all of the influences in their environment that they have in common. The unique or nonshared environment refers to any experience that is not shared between the twins, whether it is differences realized during childhood or as adults. The "E" term also encompasses measurement error in the model. Structural equation modeling was used to develop a saturated model, then a full ACE, AE, CE and finally E. The latter model-fitting process allows for measures of statistical significance to provide confidence in the results. That is, if the full ACE model is not significantly different from the fully estimated, saturated model, then we can be more confident in the results produced from this well-fitting model. If we drop the various other components (A, C or E), model fit may be improved or deteriorate.

[Figure 1 about here]

Univariate analysis conducted on spirituality, born again and the society works best battery and its factors are displayed in Table 2. A maximum likelihood estimation revealed the A-E model was not significantly different from a saturated model or the A-C-E model

(as indicated by the p value), making it the best fit for the data for each of the phenotypes, except for spirituality and the society works best leadership dimension, because of the lack of variance in each of these measures to partition across A-C-E. Supporting earlier findings on the heritability of religiosity, church attendance is more due to the environment, both shared and unique (Truett et al. 1992), while the variance in the importance of religion in guiding one's life is divided between additive genetics and the unique environment and being born again is split between all three (Bradshaw and Ellison 2008). This reflects what Bradshaw and Ellison (2008, 538) refer to as the more internal dimensions of religiosity that probably stem from genetic influences/predispositions and are "less responsive to social factors" and the external expressions of religiosity, such as church attendance, that are more likely impacted by "environmental pressures."

The society works best index also performed as expected, with strong genetic effects. When broken down into the three factors of SWB, the group/individual and traditional values/moral code dimensions demonstrated significant genetic effects while variance on the leadership dimension seems mostly due to environment. This may be because there was very little variance on the leadership questions, with 80 to 90% of respondents answering in the "liberal" direction on the two questions. In sum, this population replicates findings demonstrated elsewhere in the heritability of religiosity and political attitudes and supports Hypothesis 4.1.

[Table 2 about here]

Multivariate Genetic Analyses

Because the SWB and religiosity phenotypes are correlated and variance on each measure is partially due to genetics, there is a good chance the correlation between the various measures is due to a shared genetic path. Using a bivariate correlated factors model

in OpenMx (Neale and Cardon 1992), I tested the shared relationships between the SWB and religious variables that demonstrated strong, significant relationships with each other, which essentially included SWB Values and importance of religion, being born again and church attendance.[9] The Values factor of SWB has the largest effect size of the factors and as compared to the full battery so it is probably driving the relationship with the religious variables. Without a strong correlation between the phenotypes, exploring the shared sources of this correlation does not carry much meaning so bivariate analyses were not performed on the remaining items from Table 2 (for a justification of this approach see Verhulst, Eaves and Hatemi 2012). A correlated factors model was selected over a bivariate Cholesky decomposition because the latter should only be used when theory dictates that one phenotype precedes another (Rice, van den Bree and Thapar 2004) or longitudinal data is being used (e.g. testing direction of causality between personality and political attitudes, see Verhulst, Eaves and Hatemi 2012).

The bivariate analysis partitions variance into unique A-C-E components for each trait as well as calculating how much of the correlation between the traits is due to variance from common additive genetics, the shared environment and the unshared environment. Each of the following figures display a path diagram with the respective coefficients for each trait pair as well as a table of fit statistics and a table of the division of the correlation between A-C-E. The latter proportions are calculated by multiplying the univariate path coefficients with each other and the correlation between the two. For example, in Figure 2, the square root of .41 would be multiplied times the A correlation of .51 and then by the square root of .39. The same would be done for the C and E components, with the products

[9] The individual ACE path values for each phenotype will shift slightly depending on which other variables are included in the model.

added to the A value from the previous sentence. Dividing these products by the total of all three results in the proportion of the correlation due to each source.

[Figures 2, 3, 4, 5, 6 about here]

As displayed in Figure 2, the shared relationship between the importance of religion and the SWB Values factor (r=.32) is divided between additive genetics (63%) and unique environment (37%). The r is simply the standardized measure of covariance between the two phenotypes, and this model portions that covariance such that the majority of the shared relationship, within the population, is due to genetic influences. Figure 3 displays the relationship between SWB Values and born again, demonstrating that the same basic effect size (r=.33) is explained about equally by genetic, shared and unique environmental effects. Conversely, a genetic path (13%) explains very little of the correlation between SWB Values and church attendance (r=.30), as most of this relationship is partioned into shared (60%) and unique (27%) environments. A bivariate model of church attendance and importance of religion reveals a high correlation (r=.58) that is due almost equally to genes (33%), shared (31%) and unique (36%) environments; church attendance and born again (r=.32) is explained similarly (A=40%, C=34% and E=25%); and finally born again and importance of religion (.33) is mostly explained by genetics (65%) while shared (13%) and unique (22%) environment contribute less. Except for church attendance, which is more a behavior than a belief, these findings support Hypothesis 4.2; the covariance between political and religious atitudes are due, at least in part, to shared genetic influences. This suggests that there is a latent, heritable trait or set of traits that influence both the religious and the political, which could explain why these belief systems tend to overlap and reinforce one another within individuals and families.

Discussion

Beyond understanding a possible innate predisposition that manifests in both political and religious beliefs, accounting for genetic sources of variance allows for better examination of environmental influences on these frameworks. As the first examination of a shared genetic path between political and religious beliefs, these results are not definitive but certainly suggest that the origins of the overlap between religious and political beliefs is very complex. The relationship between importance of religion in guiding one's daily decisions and political attitudes on moral issues in society seems mostly to evolve from a genetic predisposition, plus some unique experiences, that demonstrate preferences regarding order, traditional values and external authority; whereas frequency of church attendance – though highly correlated with religious importance – is more likely to be associated with these conservative societal preferences because of the common environment. That is, children develop the habit of going to religious services from their parents, where it is possible conservative belief sets are being advocated and accepted.

Because of the high correlation between religious service attendance and importance of religion, both genetic and environmenal factors are likely contributing to attitudes on organizing society. If the heritability of the overlapping political and religious attitudes can be thought of as the "ability to think or behave in accordance with one's internal, biological motivations" (Bradshaw and Ellison 2008), adding the reinforcement of an external behavior like church attendance may further strengthen or augment these beliefs, such that individuals high, or very low, on all levels of religiosity may demonstrate more consistent and possibly more stable attitudes in the political realm. Of course, this is assuming that somehow religion comes before politics, which is not necessarily the case. It is possible that religious attitudes and behaviors are merely expressions of a certain set of predispositions that would also

encompass social order, depending on when and what types of belief frameworks are introduced in one's environment.

The findings from this chapter support the general theoretical argument of this dissertation that part of the reason religious and political beliefs covary is due to an underlying disposition; a disposition which is partially innate. The previous chapter suggested that all five Moral Foundations may not be stable across generations, and I am unable to test the heritability of this framework in the current data. However, some of the strongest results from Chapter 2 are the associations between Authority, Purity, importance of religion and the society works best items, and in the heritability analysis, the traditional values/moral code dimension of societal preferences shared a genetic path with religious importance. Because notions of Purity and Authority could be conceived as fitting within this SWB value framework, and they are also the two most consistent Moral Foundations shared within the families in Chapter 3, it's possible that these moral intuitions – or similar constructs – underlie the shared covariance between religious and poltiical beliefs. This would support some of the most replicated value trait findings in behavior genetics research – what Bouchard (2009, 169; Koenig and Bouchard 2006) refers to as the "Traditional Moral Values Triad" (TMVT), which includes:

- Authoritarianism (How families should be organized)
- Religiousness (Who controls the universe)
- Conservatism (How societies should be organized)

Though Bouchard never tested a possible shared genetic pathway between these three constructs, evidence from the current analysis provide support for the idea of a predisposition toward traditionalism, which may manifest in political and religious beliefs and explain their overlap in American society. The mixed results in previous chapters,

combined with the findings in the current chapter, suggest that there is a latent trait that explains part of the variance in political and religious beliefs, but this trait, or set of traits, may not be Moral Foundations – at least not all five of them. If Moral Foundations are not heritable and also do not run in families from a socialization perspective, than an individual's unique environment is more influential on these traits, which has some interesting implications for how Foundations may be pushed around by outside influences. These implications and suggestions for future directions will be discussed in the final chapter of this dissertation.

Table 1: Bivariate correlations of religious and political phenotypes

	Importance of Religion	Attend	Spiritual	Born again	Full SWB	SWB Group	SWB Values	SWB Leader
Importance of Religion								
Attendance	.58***							
Spiritual	.40***	.28***						
Born again	.34***	.33***	.15***					
Full SWB	.18***	.17***	.00	.22***				
SWB Group	-.03	-.04	-.09**	.02	.80***			
SWB Values	.32***	.31***	.10***	.35***	.77***	.30***		
SWB Leader	.12***	.13***	.02	.11***	.46***	.16***	.26***	

Note: ***p<.001; **p<.01, *p<.05

Figure 1: Univariate ACE Model

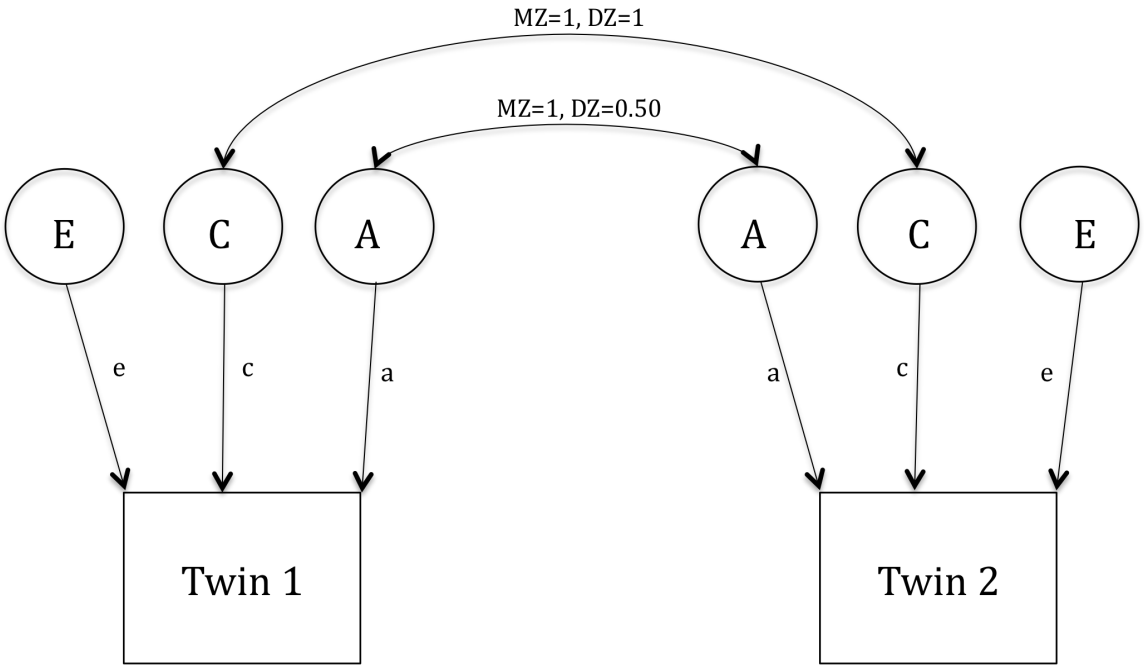
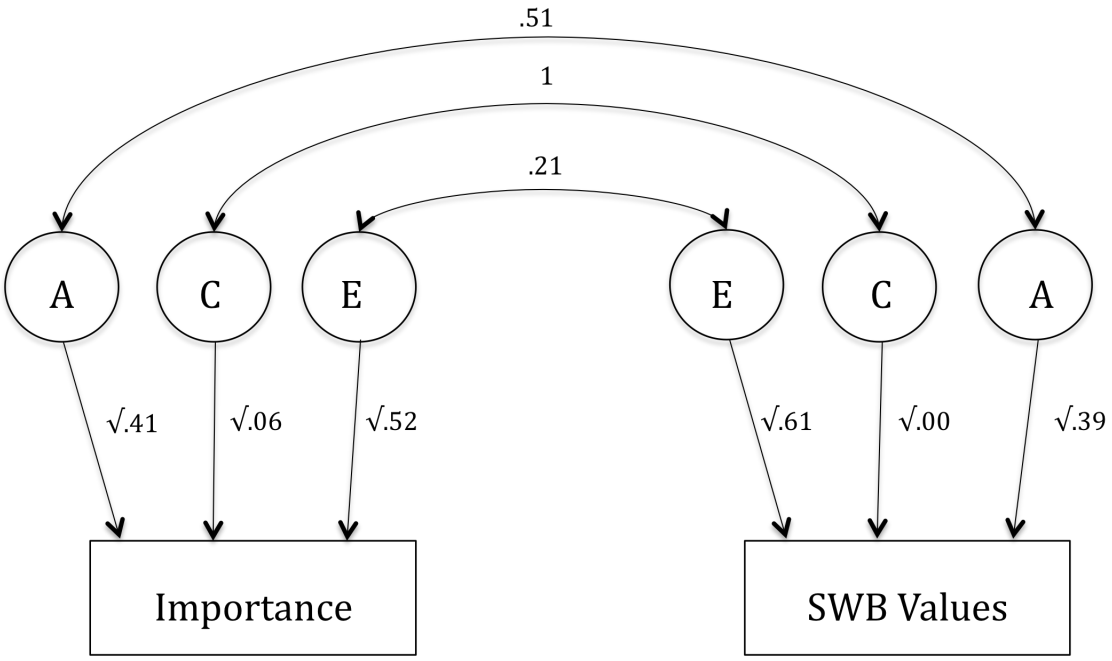


Table 2: Univariate Genetic and Environmental Estimates and Model Fitting for Political and Religious Phenotypes

	A	**C**	**E**	**-2LL** Saturated AE	**df** Saturated AE	**p**
Importance of Religion	.43	.04	.52	3164.21 3167.92	1153 1162	.93
Attendance	.23	.29	.48	4045.99 4049.19	1153 1162	.95
Spiritual	.25	.00	.75	840.82 850.89	1312 1315	.02
Born Again	.43	.30	.28	1246.47 1248.56	1503 1504	.15
Society Works Best	.42	.00	.58	7781.97 7784.43	1314 1317	.48
SWB Group	.42	.00	.58	6471.32 6472.75	1321 1324	.70
SWB Values	.39	.00	.61	6142.27 6142.46	1316 1319	.98
SWB Leader	.08	.11	.81	3951.91 3960.84	1326 1329	.03

Figure 2: Bivariate ACE Model for Religious Importance and SWB Values

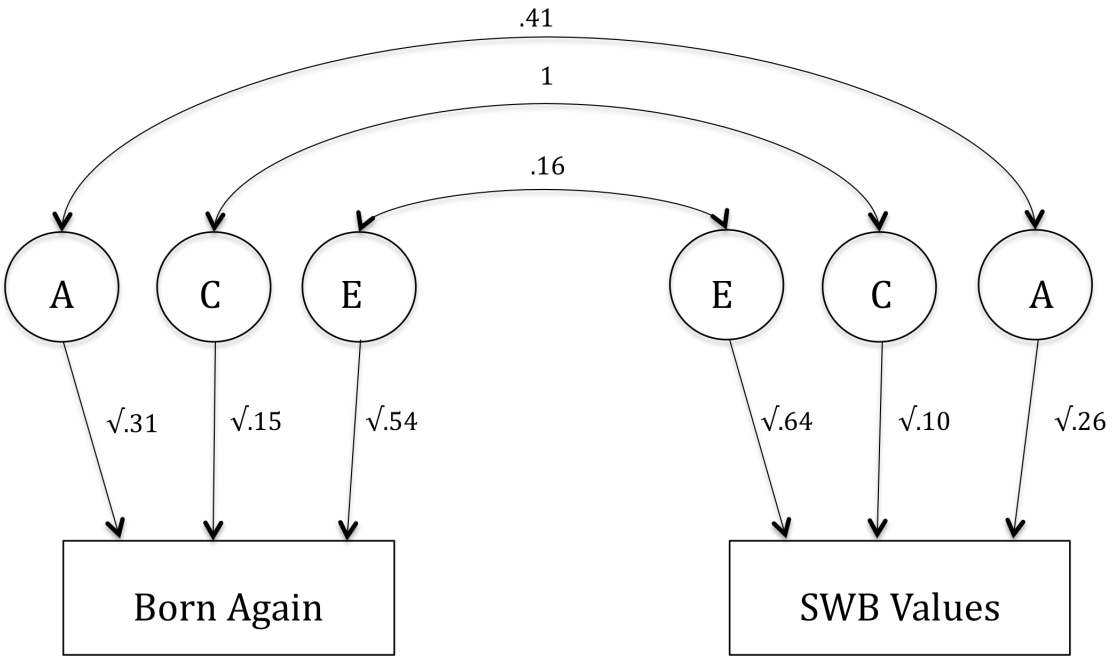


Model Fit Statistics

	-2LL	Df	AIC	p
Saturated	8518.82	2620	3278.82	
ACE	8533.22	2637	3259.22	.64

	Proportion of correlation shared by		
Correlation	A	C	E
.32	.63	0	.37

Figure 3: Bivariate ACE Model for Born Again and SWB Values

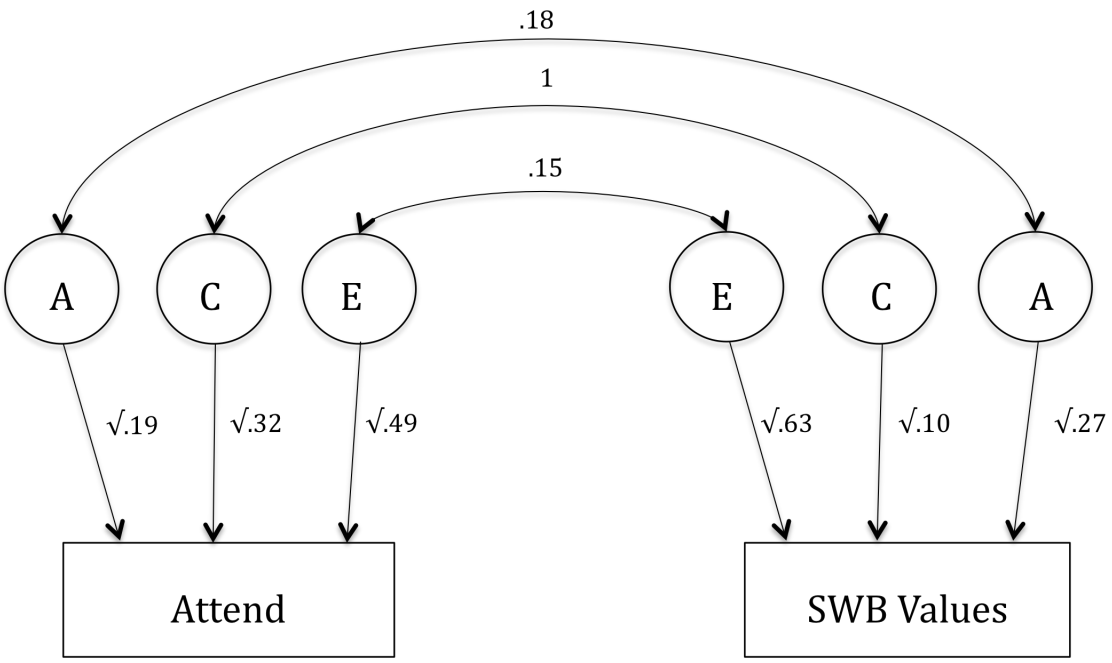


Model Fit Statistics

	-2LL	Df	AIC	p
Saturated	6041.05	2804	433.05	
ACE	6052.16	2821	410.16	.85

	Proportion of correlation shared by		
Correlation	A	C	E
.33	.36	.36	.27

Figure 4: Bivariate ACE Model for Church Attendance and SWB Values

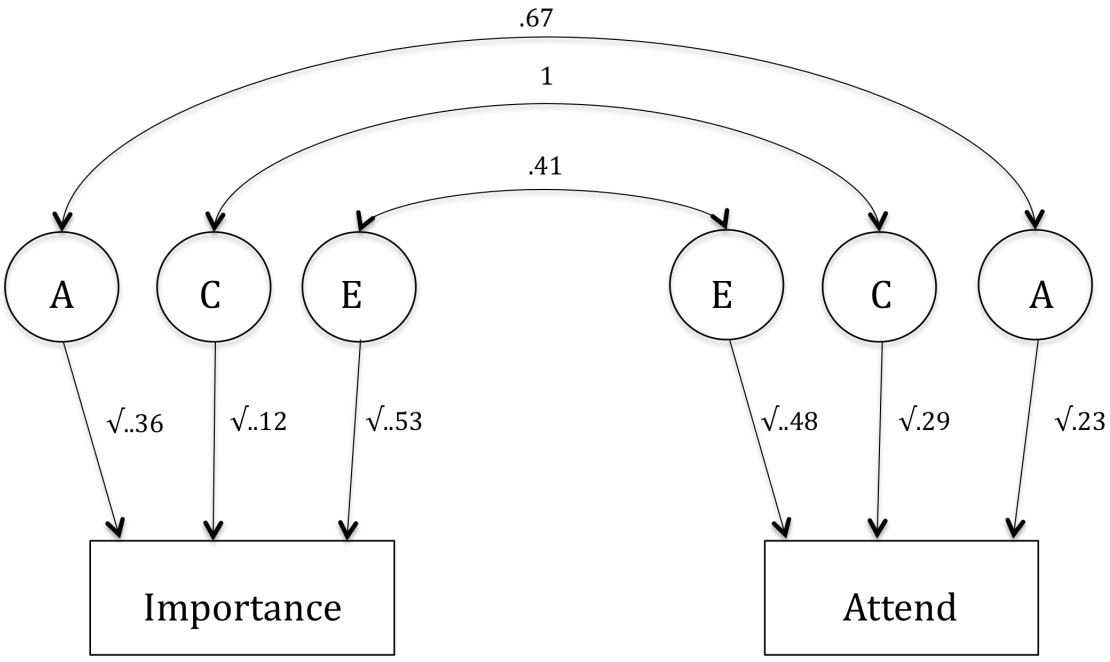


Model Fit Statistics

	-2LL	df	AIC	p
Saturated	9526.42	2620	4286.42	
ACE	9535.92	2637	4261.92	.92

	Proportion of correlation shared by		
Correlation	A	C	E
.30	.13	.60	.27

Figure 5: Bivariate ACE Model for Religious Importance and Church Attendance

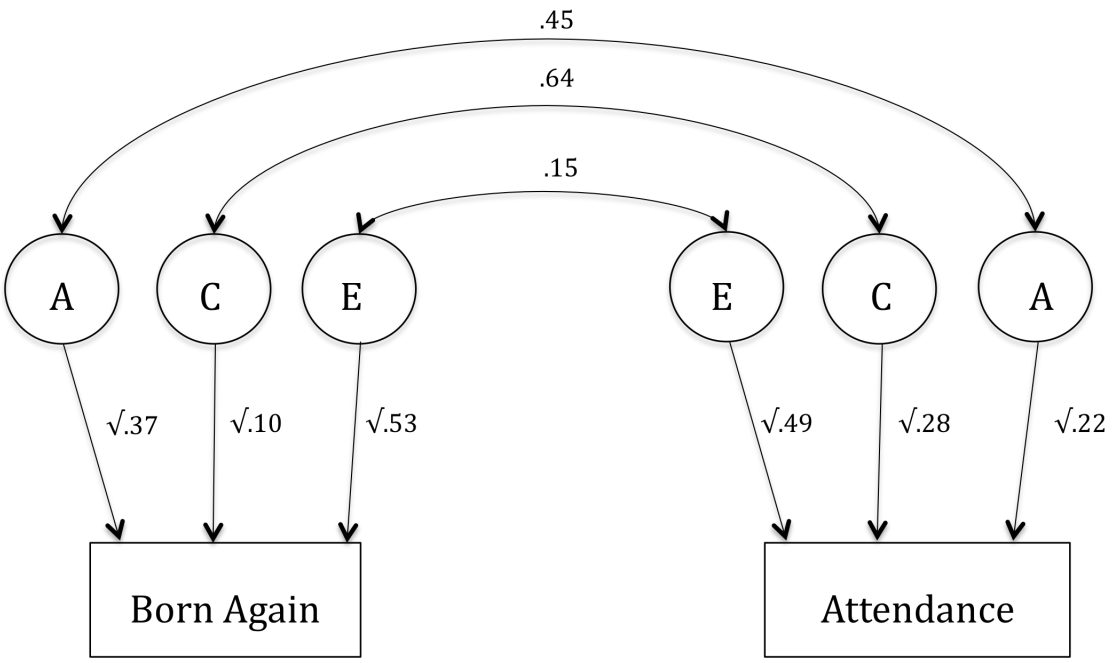


Model Fit Statistics

	-2LL	Df	AIC	p
Saturated	7676.79	2616	2444.79	
ACE	7693.82	2633	2427.82	.45

	Proportion of correlation shared by		
Correlation	A	C	E
.58	.33	.31	.36

Figure 6: Bivariate ACE Model for Born Again and Church Attendance

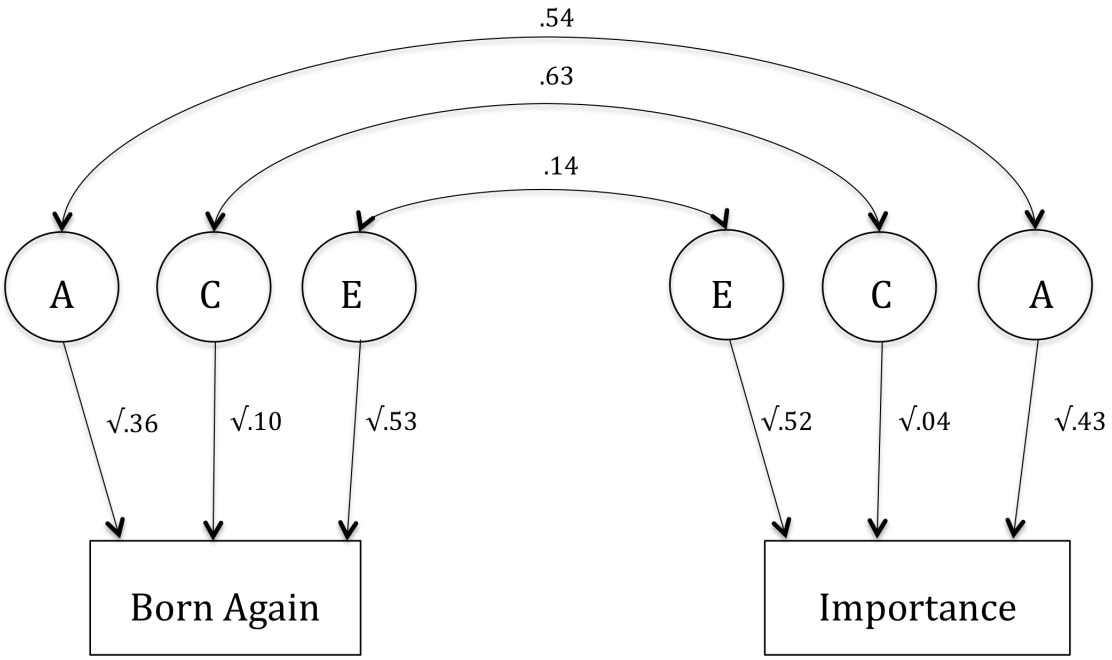


Model Fit Statistics

	-2LL	Df	AIC	p
Saturated	5584.73	2800	-15.27	
ACE	5593.76	2817	-40.24	.94

	Proportion of correlation shared by		
Correlation	A	C	E
.32	.40	.34	.25

Figure 7: Bivariate ACE Model for Born Again and Importance of Religion



Model Fit Statistics

	-2LL	Df	AIC	p
Saturated	4579.86	2800	-1020.14	
ACE	4597.24	2817	-1036.76	.43

	Proportion of correlation shared by		
Correlation	A	C	E
.33	.65	.13	.22

Chapter 5: Conclusion

The political and religious are demonstrably intertwined in American politics and within the preferences of individual citizens, and "though there have been studies on political socialization and other studies on religious socialization, little work has been done to relate the two" (Pearson-Merkowitz and Gimpel 2009, 172). This dissertation has attempted to examine possible theoretical reasons for the overlap and sources of development of these belief systems within individuals and across generations. The primary contribution of this dissertation in terms of theoretical development was to conceptualize the overlap between political and religious beliefs as being rooted in a single underlying psychological construct. This underlying construct was conceptualized and operationalized by employing the framework of Moral Foundations Theory. Treating religious and political beliefs as twin manifestations of a single underlying psychological construct is a stark contrast with the existing literature, which conceptualizes religious and political beliefs as related but independent concepts. This basic conceptual model was used to generate a key set of hypotheses. The first set of these hypotheses proposes that the intersection of political and religious preferences is explained by an underlying belief set related to moral intuitions -- Haidt and Graham's Moral Foundations theory. Specifically, Ingroup, Authority and Purity are associated with an individualist orientation comprised of conservative preferences for organizing society and an individual approach toward religion. Conversely, Harm and Fairness are associated with a communitarian orientation that results in liberal political views and an emphasis on serving others over personal piety in religious beliefs.

If Moral Foundations explain the overlap of political and religious beliefs in individuals, what are the possible sources of these beliefs? The second set of hypotheses posit that religious, political and moral preferences are transmitted in families, such that the

passage of Moral Foundations explains why certain political and religious beliefs are socialized. Finally, the third set of hypotheses predict that part of the variance in religious and political beliefs is explained by genetics and that the correlation between the beliefs sets is also partially due to a shared genetic path. In sum, different Moral Foundations are associated with different preferences for organizing society and approaching religion; grandparents, parents and children share many political and religious beliefs, though not Moral Foundations; and genetics influence part of the variance on religious and political preferences and part of their overlap is due to a shared genetic path.

Limitations

There are a number of limitations on the analyses presented in this dissertation that place caveats on the findings and inferences presented here. The single biggest source of such constraints is data limitation. The current results may only explain these sets of relationships for white, middle class American Christians with children in college in the Midwest. A more representative sample from different strata of socio-economic status, various races and ethnicities and different religious traditions would provide external validity to the suggestion that religious and political beliefs are shared in families and possibly explained by Moral Foundations in individuals. Race and socio-economic status certainly could influence these relationships and the passage within families as well (Schwadel 2008; Smith 2005). The findings here certainly suggest that it is possible that Moral Foundations underlie the relationship between political and religious beliefs for American Christians, but this may not extend to other religions within the United States or Christians in other cultures.

Data constraints are particularly notable in terms of drawing firm inferences about the intergenerational transmission of these belief systems. The extremely small sample of

intact three generations on both sides of the family (n=8) made it nearly impossible to draw definitive conclusions about the transmission of political and religious preferences and moral intuitions between spouses, between generations and across in-laws. With the effect sizes found in the current data, fully testing the conceptual model would require a sample size of 100 to 200 intact family units for adequate power. As there is no accessible twin data set that includes a Moral Foundations battery as well as measures of political and religious beliefs, I am unable to test a key implication of my theoretical framework—that Moral Foundations are heritable, and it is these heritable phenotypes that at least partially carries political and religious belief systems across generations. Because of the inability to test the heritability of Moral Foundations and the inconsistent relationships within families and difference in means between generations, it is difficult to speculate whether these intuitions just are not innate or socialized from parent to child or if they change across time within individuals.

Despite unavoidable data limitations, however, this dissertation makes several important contributions. It integrates theories and measures from political science, psychology, sociology and behavior genetics into a single, comprehensive framework in an attempt to explain the intersection of religion and politics. It provides empirical tests of core hypotheses drawn from this theoretical framework. In doing so, it employs unique samples (three generation) and analytical techniques (multivariate heritability analysis) rarely employed in political science that provide important insights. Though the empirical results are mixed regarding the theoretical précis argued here, the leverage of multiple samples, extended family units of analysis and a variety of measured constructs present further insight into the origins and development of ideology in American politics.

The Covariance of Religious and Political Beliefs within Individuals

Chapter 2 suggests that Haidt and Graham's Moral Foundations for decision-making may, as theorized, be part of a core underlying disposition within individuals that leads to particular political and religious orientations: with communitarianism guided by notions of Harm and Fairness and individualism guided by Ingroup, Authority and Purity. Specifically, the five Foundations are predictive of the dimension of religio-political orientations related to the role of the group and individual, preferences for traditional values in society and whether avoiding sin or helping others is more important when trying to be a better Christian. Ingroup, Authority and Purity are associated with conservative political views and a propensity to believe in "personal piety" rather than "serving others" (Mockabee et al. forthcoming, 2), and Harm and Fairness predict liberal societal preferences and an emphasis on helping other people in pursuit of being a better Christian. But these relationships mostly held for the large student sample, and not for the G1 and G2 samples.

Authority and Purity predicted an individualist orientation, which only included the measures of individual religiosity (and one multi-vocal SWB item regarding living by traditional values). These relationships suggest that the importance of religion in one's life, views on the Bible and being born again may be associated with political beliefs but are orthogonal to the underlying, latent factors in how individuals in this sample wish to organize society (at least as measured through the SWB battery). Some of these findings were replicated in all three samples – G1, G2 and G3 – though many of the models were limited by power problems due to small n's. Generally, though, the analyses provide a small amount of evidence that Moral Foundations are associated with political and religious preferences, in the direction predicted by the theoretical argument and hypotheses developed in this dissertation. Traditionally, political and religious preferences have been treated as

related to one another, but two separate ideological frameworks for understanding the world.

Chapter 2's analysis intimates that part of the reason the religious and political intersect within individuals is because they may be informed by basic moral intuitions that guide how people judge right and wrong. Because there is a difference in which Moral Foundations individuals rely upon (Haidt, Graham and Nosek 2009), the configuration of Foundations in a person's moral framework may manifest in specific political and religious beliefs. Individuals who place more importance on intuitions related to Ingroup, Authority and Purity may be attracted to conservative political views that reflect these values and an individual style of Christianity that emphasizes personal responsibility and a personal relationship with God more than an outward, serving others mentality. Conversely, preferences for Harm and Fairness in guiding moral decisions may be related to liberal views on organizing society, in that rulebreakers should be forgiven and we should care for the unfortunate. Harm and Fairness also are associated with a person's approach to religion, whether it is inwardly (avoiding sin) or outwardly focused (helping others).

These findings provide some insight into why Americans who believe in the same God and read the same holy book often talk past one another. If one believes that personal accountability through the guidance of Ingroup, Authority and Purity norms is the way to achieve a well-functioning society (Emerson and Smith 2000; Graham and Haidt 2010), there will be an emphasis on individual-level behavior and improving the state of the world through personal relationships – not structural changes. With an individualistic view of morality and social change, it is thought that people need to choose for themselves what is right, and work on one-on-one relationship-building in converting others to Christ will lead to social change (Smith et al. 1998; Wald and Calhoun-Brown 2007, 234). Several "culture

war" issues escape this apolitical approach, including abortion and same-sex marriage, in that even if they are personal choices, these choices are thought to negatively affect society (Hunter 1991; Smith et al. 1998, 200; Adams 1997; Koleva et al. 2012). These issues also may feel like a direct violation of concerns for Purity and Authority; whereas government intervention on behalf of racial reparations or economic disparities do not tap into key Moral Foundations for conservatives and so are thought to be a matter of personal responsibility (Emerson and Smith 2000; McAdams et al. 2008).

On the other hand, individuals with strong preferences for Harm and Fairness in guiding their moral decisions may take a communitarian approach to religion and politics. With religious leanings geared more toward serving other people than personal piety and liberal political views that emphasize egalitarianism and social justice, these individuals are less concerned about personal wrongdoing and believe society works best when people think beyond themselves and help other people. Of course, dividing an entire population into two categories is probably unrealistic, with most folks falling somewhere in between strict individualism or communitarianism. But the continued development and exploration of these general orientations may help us better understand how people face the same moral decisions, see the same society, read the same Bible – all in very different ways. Very disparate policy preferences emerge when one factors in worldviews that emphasize society functioning properly when individuals take care of their own problems versus the responsibility of the community to address individual needs (Leege 1988; Emerson and Smith 2000). Graham and Haidt (2010) may see Ingroup, Authority and Purity as religion's binding foundations toward community-building, but this dissertation suggests that because liberals are less concerned with these Foundations (Graham, Haidt and Nosek 2009;

McAdams et al. 2008; Koleva et al. 2012), Harm and Fairness serve as their "binding" values in both the religious and political realms.

The Covariance of Political and Religious Beliefs Across Generations

If Moral Foundations may explain the overlap of political and religious preferences within individuals, how are these intuitions developed? The basic expectation drawn from my conceptual model is that Moral Foundations should co-vary across as well as within generations at least partially through a process of socialization. Political and religious beliefs are also expected to run in families as they are often explained as a product of family socialization. If these latter belief systems are indeed rooted in an underlying psychological construct represented by Moral Foundations, then clearly all three key variables—Moral Foundations, political beliefs and religious beliefs—should co-vary within and across generations. The analyses of this dissertation point to mixed results on these expectations. Examining bivariate associations across generations uncovered consistent, positive relationships for political preferences within families, but the associations were sporadic for religious preferences (notably these sorts of beliefs in generation three seemed to reflect a gender effect from the second and first generations).

As most socialization studies have uncovered, partisanship is the strongest association between generations, but there were also positive relationships, mostly, on the society works best battery for broad principles in organizing group life. The broad measure of importance of religion in guiding one's day-to-day decisions was the most consistent religious preference shared between generations, followed by views on the Bible. Communitarianism demonstrated puzzling results in that mothers and sons are positively associated but mothers and daughters are negatively related, and fathers do not have significant relationships either way with their children. This measure is still relatively new,

and with a forced, dichotomous choice, there may not be enough potential variance in the measure to uncover the underlying construct's association. It is also possible that the communitarian orientation is influenced by other factors or socialized outside of the family.

Regarding Moral Foundations, simple means tests and exploratory factor analyses uncovered significant differences in both the scores attributed to each Foundation and the actual factor dimensions, between and across the three generations. With the widespread replication of findings on the Moral Foundations framework across samples in various countries, it seems to be a vetted measure – at least at the aggregate level across a population. What seems to be happening in the current data is some sort of age effect: concerns for each Foundation increases with the age of the cohorts in this sample, and there are especially large differences on Authority and Purity, such that the grandparents find these Foundations most relevant. The theoretical framework used in this dissertation conceptualized Moral Foundations as a stable and universal set of dimensions for the simple reason that this is how Moral Foundations Theory presents those dimensions. The findings in this dissertation at least raise the possibility that this assumption—implicitly central to Moral Foundations Theory—may not be correct. Some of the findings may be due to the limitations of data discussed above, but an alternate explanation is that what Haidt and Graham refer to as our innate, intuitive ethical systems either change with age or are significantly influenced by the larger cultural context of generational cohorts.

In most of the Haidt and Graham work, age is used as an independent variable, along with Moral Foundations, in predicting another variable of interest. There have been no longitudinal studies to determine whether Moral Foundations are stable across one's life course, similar to the Big 5 Personality traits, or if they change over time. That is, when the G3 students of the current study become parents and eventually grandparents, will their

concerns for Purity and Authority increase? Or will each cohort moving forward, at least in modernizing societies, have less and less concern for the binding foundations of Ingroup, Authority and Purity? For example, a recent Pew Research Center survey (October 2009) indicates an age divide for support for same-sex marriage, with 58% of 18-29-year-olds in favor, as compared to 38% of 30-49-year-olds and 35% of 50-64-year-olds.[10] Support for gay marriage has been associated with notions of purity and attitudes toward disgust (Inbar et al. 2009a; Smith et al. 2010; Balzer and Jacobs 2011); so is it the case that younger individuals are not as concerned with purity or that they do not associate gay marriage with disgust/purity?

If the latter is the case, than broad orientations may be transmitted within families but manifest themselves differently when applied to issues of the day. Several previous studies have demonstrated that value transmission is enhanced when parental views match the public mood or surrounding society (Jennings and Niemi 1974). Some issue attitudes, like race relations, seem to be shaped more by societal influences, or the prevailing "Zeitgeist," if it is in opposition to parental views (Beck and Jennings 1991, 757; Niemi and Jennings 1991; Jennings and Niemi 1974). For example, Jennings and Niemi (1974) found the largest discrepancies between parent and child attitudes on issues like busing and segregation – civil rights issues that definitely have a generational component similar to that of gay rights today. What is unknown, then, is whether different generations apply different Moral Foundations to their political and religious preferences. When thinking about gay marriage, do the G3 individuals rely upon notions of Fairness and G1 on notions of Purity? Indeed, the mean differences between generations on the "binding" Foundations suggest

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[10] The Pew Forum on Religion and Public Life. October 9, 2009. "Majority Continues to Support Civil Unions: Most Still Oppose Same-Sex Marriage." http://pewforum.org/docs/?DocID=481. (December 13, 2009)

that Harm and Fairness concerns may be more relevant to younger generations than notions of Authority and Purity, yet the older generations seem to score at relatively the same level for all five Foundations.

A larger portion of G1 and G2 than G3 also reported that religion provided a "great deal of guidance" in their lives and that avoiding sin was more important than helping others in trying to be a good Christian. Because of the significant relationship between religious importance, the binding Moral Foundations and conservative preferences for how society works best, it is possible that increases in religiosity is associated with increases in conservatism and Authority and Purity. Graham and Haidt (2010) suggest that moral communities, or religious institutions, teach and encourage the binding foundations so perhaps gains in religiosity over the life course, or in different cohorts, leads to higher scores on concerns for Ingroup, Authority and Purity. Conversely, individuals or generations that place a higher value on these Foundations may be more attracted to certain brands of religiosity, like an individualist orientation that seeks to avoid sin and rely on an external code to guide behavior. Without a longitudinal analysis, it is impossible to untangle causality, but these findings suggest that because Moral Foundations are associated with religious and political beliefs within individuals but are not shared across generations, perhaps the Foundations develop from unique experiences outside of the family, but may be learned or reinforced by political and religious preferences that *are* transmitted. For example, a child may learned that religion is an important guide for decision making from his or her parents but then may choose to attend a church that emphasizes different Moral Foundations than that of the parents. It is also possible that the religious and political preferences shared in families are partially due to genetic influences, and thus more likely to be passed along than Moral Foundations, with unknown heritability estimates.

Regardless of what is driving the mixed findings on Moral Foundations, the simple fact of the inconsistency raises an issue with the key causal element of my theoretical framework. The theory identified Moral Foundations as a likely candidate for the psychological construct underlying political and religious beliefs, and, as such, it would track across generations with religious and political beliefs. The data do little to confirm this expectation.

The Heritability of the Covariance of Political and Religious Beliefs

In the first study to suggest and test shared sources of influence on political and religious preferences, the heritability analysis in this dissertation reveals a large portion of the covariance between the importance of religion in one's life and preferences for values that organize society is due to a shared genetic influence. There also is a significant overlap between church attendance and political preferences that is mostly due to environmental influences. Thus, individuals may have an innate predisposition toward political conservatism and guidance from religion, but these orientations are likely reinforced through behaviors like participation in religious institutions. If political and religious beliefs originate from an innate trait or set of traits, this provides support for the theoretical argument of this dissertation – that there is an underlying disposition that explains an individual's broad orientation toward organizing society, approaching the world and understanding human nature. What is unknown is whether Moral Foundations are heritable and/or share a genetic pathway with political or religious beliefs or if it is merely one more framework that is influenced by the latent trait that explains part of the overlap between political and religious beliefs. The findings discussed in the previous section would seem to dampen expectations that Moral Foundations will be highly heritable.

Whether this underlying disposition exhibits political, religious or both belief sets, then, is dependent on an individual's exposure to these environments. As mentioned earlier, a 1980s study in the USSR (McFarland 1998) determined that applying a religiosity battery to attitudes toward the Communist Party predicted the same relationships with social preferences as those identified when these measurements were used with American Christians. This provides more evidence for predispositions toward social order, underlying religious and political beliefs that are dependent or "activated" by one's environment. Certain individuals may have a psychological propensity to approach life based on an organized set of beliefs, and whether this manifests in a religion, political party or something else depends upon where they were born, how they were raised and what they encounter as adults. Some individuals will become political, some religious, some both and some neither. Findings along these lines could contribute to our understanding of what drives individual political attitudes, how this contributes to the formation and shifts in public opinion and ultimately whether instantiated political-religious predispositions, much like personality, may drive political disagreement and conflict.

Future Directions

Even with the sizable limitations of the current study, the evidence presented here certainly calls for follow-up research to better understand the intersection of religion and politics and how these belief systems are relayed within families. Findings in the socialization literature have suggested that there are a number of mediating and moderating variables that can affect transmission of values within families. For example, a child's accurate perception of parental beliefs leads to more agreement on those beliefs (Okagaki and Bevis 1999); the quality and closeness of the parent-grandparent relationship – while growing up and as adults – are strong predictors of the grandchild-grandparent relationship and value sharing

(Mueller and Elder 2003; Whitbeck, Hoyt and Huck 1993); and a parent's level of political interest influences the transmission of political attitudes and partisanship (Beck and Jennings 1975; Jennings and Niemi 1974). Collecting a larger sample of intact, three-generation family units would allow for the exploration of these mediating factors, to better understand what kinds of political and religious preferences are shared within families and whether this is possibly due to a "multiplier" effect where parent-child agreement increases when the parents come from similar households. The presence of agreement in families with little contact between G1 and G3 could then suggest that these specific political and religious preferences are not necessarily purposefully socialized, but may result from general transmission of broader orientations – like moral intuitions – that may be socialized or possibly heritable.

The next step, then, would be to conduct a heritability analysis of Moral Foundations to investigate the sources of these intuitions. If they are somewhat innate and related to political and religious beliefs, there may be evidence for an overall, general orientation to how individuals approach nearly every aspect of their lives – from the personal to the political. If, however, Moral Foundations are mostly influenced by the environment – whether shared within families or unique to individuals – then it is more likely that religious institutions and other societal structures are "teaching" these Foundations, and individuals are adopting them because they are consistent with the rest of their belief frameworks. A recent study on cognition and Moral Foundations suggests that when under cognitive stress, conservatives suppress the binding Foundations of Ingroup, Authority and Purity and are more likely to highlight concerns of Harm and Fairness, similar to their liberal counterparts (Wright and Baril 2011). If simple cognitive overload in a lab experiment, completely unrelated to moral decisions, can shift an individual's Moral Foundations, it is possible that

the Foundations are more of a learned behavior susceptible to change than an innate disposition. Yet, there is something about conservatives that cause them to emphasize all five Moral Foundations when they are not under duress, and something that leads liberals to always prefer Harm and Fairness.

The theoretical framework of this dissertation suggested that a third thing, Moral Foundations, explains the overlap of political and religious preferences, but instead, there may be a "fourth" construct that informs all three frameworks. Moral Foundations may be just as much a "menu" item as religious and political beliefs, orientations and affiliations in that the Foundations are taught alongside the other belief sets in one's environment. In other words, it may not be the case that individuals are politically conservative or religiously individualistic because they value Ingroup, Authority and Purity. Another predisposition, whether it be personality, personal values or a construct yet to be uncovered and/or measured, may lead an individual to adopt specific political or religious preferences, that in turn come with a set of Moral Foundations that justify these beliefs. As argued elsewhere in this dissertation, those with a liberal disposition may view Harm and Fairness as the Foundations that bind communities together by forcing individuals to help others in an egalitarian manner. For those with a conservative disposition, however, the way society works best is for individuals to take personal responsibility and refrain from doing wrong themselves by obeying Authority, being loyal to the Ingroup and seeking Purity.

Most scholarship exploring the nature of religious and political beliefs divide the world into political liberals and conservatives or religious modernists and traditionalists, but this dissertation suggests there may be an even broader orientation that shapes the lens through which individuals view the world. Whether this orientation is socialized, heritable or a combination of both, understanding that moral decisions and political and religious

preferences shape and are shaped by this orientation may help explain the "culture wars" in American society (Hunter 1991). Examining the intersection of these frameworks across generations also may untangle why public opinion toward something like abortion remains stable across time and cohorts but attitudes toward gay marriage are changing. Do religious beliefs and general political preferences remain stable but the way in which individuals apply them to one another varies? Do the differences in moral frameworks between generations or over one's life course explain attitude change? Investigating this psychology behind political and religious ideologies will provide better insight into the reasons people believe and act the way they do as well as understanding the stability of beliefs across generations and, therefore, of the relative intractability of people's positions on controversial issues.

Appendix A: Survey Instruments

Moral Foundations Questionnaire: 20-Item Short Version
Item Key, July 2008[11]

--Below are the items that compose the MFQ20. Variable names are IN CAPS
--Besides the 20 test items there are 2 "catch" items, MATH and GOOD
--For more information about the theory, or to print out a version of this scale formatted for participants, or to learn about scoring this scale, please see: www.moralfoundations.org
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PART 1 ITEMS (responded to using the following response options: not at all relevant, not very relevant, slightly relevant, somewhat relevant, very relevant, extremely relevant)

MATH - Whether or not someone was good at math [This item is not scored; it is included both to force people to use the bottom end of the scale, and to catch and cut participants who respond with 3 or above]

Harm:
EMOTIONALLY - Whether or not someone suffered emotionally
WEAK - Whether or not someone cared for someone weak or vulnerable
Fairness:
TREATED - Whether or not some people were treated differently than others
UNFAIRLY - Whether or not someone acted unfairly
Ingroup:
LOVECOUNTRY - Whether or not someone's action showed love for his or her country
BETRAY - Whether or not someone did something to betray his or her group
Authority:
RESPECT - Whether or not someone showed a lack of respect for authority
TRADITIONS - Whether or not someone conformed to the traditions of society
Purity:
DECENCY - Whether or not someone violated standards of purity and decency
DISGUSTING - Whether or not someone did something disgusting

PART 2 ITEMS (responded to using the following response options: strongly disagree, moderately disagree, slightly disagree, slightly agree, moderately agree, strongly agree)

GOOD – It is better to do good than to do bad. [Not scored, included to force use of top of the scale, and to catch and cut people who respond with first 3 response options]

Harm:
COMPASSION - Compassion for those who are suffering is the most crucial virtue.
ANIMAL - One of the worst things a person could do is hurt a defenseless animal.
Fairness:

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FAIRLY - When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.
JUSTICE – Justice is the most important requirement for a society.

Ingroup:
HISTORY - I am proud of my country's history.
FAMILY - People should be loyal to their family members, even when they have done something wrong.

Authority:
KIDRESPECT - Respect for authority is something all children need to learn.
SEXROLES - Men and women each have different roles to play in society.

Purity:
HARMLESSDG - People should not do things that are disgusting, even if no one is harmed.
UNNATURAL - I would call some acts wrong on the grounds that they are unnatural.

Society Works Best Instrument

SWB1: Society works best when…
1-People realize the world is dangerous
-1-People assume all those in far away places are kindly

SWB2: Society works best when…
1-Leaders are obeyed
-1-Leaders are questioned

SWB3: Society works best when…
1-Established ideas are favored.
-1-New ideas are favored

SWB4: Society works best when…
1-We take care of our own people first
-1-We realize that people everywhere deserve our help

SWB5: Society works best when…
-1-Leaders compromise with their opponents in order to get things done
1-Leaders adhere to their principles no matter what

SWB6: Society works best when…
1-People live according to traditional values
-1-People adjust their values to fit changing circumstances

SWB7: Society works best when…
1-People take primary responsibility for their welfare
-1-People join together to help others

SWB8: Society works best when…
1-It speaks with one voice

-1-It speaks with many voices

SWB9: Society works best when…
1-People recognize the unavoidable flaws of human nature
-1-People recognize that humans can be changed in positive ways

SWB10: Society works best when…
1-Every member contributes the same amount
-1-More fortunate members contribute more in order to help others

SWB11: Society works best when…
1-Behavioral expectations are based on an external code
-1-Behavioral expectations are allowed to evolve over the decades

SWB12: Society works best when…
1-Those who break the rules are punished
-1-Those who break the rules are forgiven

Appendix B:
Society Works Best Factor Structures for Student and Twin Samples

	Twin	G3: Students
SWB1	Group	Leader
SWB2	Leader	Leader
SWB3	Values	Group
SWB4	Group	Group
SWB5	Values	Values
SWB6	Values	Values
SWB7	Group	Group
SWB8	Leader	Leader
SWB9	Group	Group
SWB10	Group	Group
SWB11	Values	Values
SWB12	Group	Group

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