

Religion and End-of-Life Treatment Preferences: Assessing the Effects of Religious Denomination and Beliefs

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We use Wisconsin Longitudinal Study data ($n = 2,678$) to assess the effects of religious denomination and ideology on end-of-life treatment preferences in two hypothetical terminal illness scenarios: physical pain and severe cognitive impairment. We found no statistically significant differences when comparing traditionally defined religious denominational groups (i.e., conservative, moderate and liberal Protestants; Catholics; other religions; no religion). However, when we considered the intersection of broad denominational group and adherence to Christian fundamentalist beliefs, we found that fundamentalist Catholics and fundamentalist Protestants were significantly more likely than their nonfundamentalist counterparts to desire life-extending treatments in both scenarios. These effects were fully explained by beliefs about quality of life and religious control over medical decisions. We end with a discussion of the study's theoretical and policy implications.

End-of-life decision making has received intense attention from the medical community, policy makers, ethicists and the popular media over the past decade, triggered in part by the 2005 Terri Schiavo controversy. Recently, heated debates surrounding the Patient Protection and Affordable Care Act have perpetuated the myth that Medicare coverage of one voluntary doctor-patient discussion of the patient's end-of-life treatment preferences would force older adults to hasten

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their own deaths because they would be encouraged to reject life-extending treatments. The emotionally and politically charged “death panel” rhetoric contributed to President Obama’s removal of the proposed Medicare benefit from health care reform legislation in January 2011 (Pear 2011).

Given heightened interest in end-of-life decision making, recent studies have investigated structural and cognitive factors that influence end-of-life preferences (Carr and Khodyakov 2007; Carr and Moorman 2009; Hopp 2000). Emerging research also has investigated the role of religiosity in shaping end-of-life preferences. Most religions uphold specific beliefs concerning life and death; thus, it is plausible that one’s religious beliefs would influence preferences for life-extending treatments versus palliative care that provides comfort yet may also hasten death. Recent studies exploring the influence of religion on end-of-life medical decisions are limited in their conceptualization and measurement of both end-of-life preferences and religion, however. Studies typically measure attitudes towards hypothetical others making end-of-life decisions rather than personal preferences for one’s own care (Burdette, Hill and Moulton 2005; Hamil-Luker and Smith 1998). Moreover, most studies use only a single indicator to capture personal religiosity (typically denominational group) and fail to consider that there may be tremendous heterogeneity in beliefs and practices within a single denominational group (Carr and Moorman 2009).

Within-denominational group heterogeneity in attitudes and behavior may be particularly acute during an era when “religious authority’s capacity to regulate actions of individuals has...declined” (Chaves 1994:169). Personal religious beliefs may transcend denominational teachings and encompass global beliefs, such as the relative importance one gives to personal authority versus God’s authority; beliefs about the literal interpretation of scripture; and beliefs pertaining to secular activities (e.g., euthanasia) that may be guided indirectly by religious teachings.

However, we know of no studies of end-of-life decision making that consider *theological heterogeneity* within denominational groups. We propose that one’s theological fundamentalism – defined as the extent to which one views God and the Bible as one’s personal authority – may be a more robust predictor of end-of-life treatment preferences than a broad indicator of one’s denominational group. Scholars have recently observed that theological and behavioral differences have diminished between traditionally defined denominational groups (moderate Protestant, Catholic, etc.), giving way to a “devotional divide” where measures of fundamentalist theological beliefs are powerful predictors of secular behaviors such as voting, sexual behavior and family formation (Cahn and Carbone 2010; Pew Forum 2008a; 2008b). Given certain theological beliefs regarding the sanctity of life, we expect that the specific outcome of end-of-life treatment preferences will also vary based on one’s adherence to fundamentalist religious beliefs (i.e., beliefs regarding biblical literalism).

We evaluate the extent to which: (1 end-of-life treatment preferences vary based on two different indicators of religious affiliation: traditionally defined denominational categories (i.e., conservative, moderate and liberal Protestants; Catholics; persons of other religions and the unaffiliated) and religious categories defined by

both denominational group and adherence to a theologically conservative or “fundamentalist” worldview; (2) religious subgroup differences in treatment preferences are explained by specific beliefs that may derive from one’s theological worldviews (i.e., sanctity of life, influence of religion on medical decision making); and (3) religious subgroup differences in treatment preferences are moderated by the personal salience of religion to one’s everyday life. Analyses are based on the Wisconsin Longitudinal Study (WLS), a long-term study of adults in their early 60s. Identifying whether, how and for whom religious beliefs affect end-of-life treatment preferences carries potentially important implications for the delivery of patient-centered end of life care (Institute of Medicine 2001).

Theoretical Background

Scholars have debated the extent to which religious affiliation affects social attitudes and behaviors. Classic secularization theory proposed that the importance of religion in society would decline throughout the 20th century due to widespread social, educational and economic advances (Tschannen 1991). Empirical studies fail to confirm these predictions, however; national survey data indicate that church attendance and belief in God have been relatively stable through much of the late 20th and early 21st centuries in the United States (e.g., Chaves 2011; Stark and Finke 2000).

Some scholars have responded to the continued vibrancy of religion in America by redefining secularization as “not the decline of religion, but...the declining scope of religious authority,” where religious authority encompasses governing denominational bodies and clergy (Chaves 1994:750). According to these neo-secularization theories, secular forces such as the desire for personal autonomy and other social institutions such as education, family and science have replaced (or supplemented) formal religious authority as a guide for making personal choices (Chaves 1994; Yamane 1997). Although individuals may still rely on their religious teachings when faced with major decisions, they may not strictly follow the edicts of their faith and instead adapt religious teachings to mesh with their personal convictions (Bolzendahl and Brooks 2005; Hamil-Luker and Smith 1998; Wuthnow 1998; Yamane 1997). National survey data provide some support for this claim: for example, despite the Catholic Church’s prohibitions against birth control and abortion, the majority of American Catholics endorse the use of birth control, and one-third believe abortion is acceptable under any circumstance (Pew Forum 2008c).

The assertion that the influence of religious authority has declined uniformly throughout the late 20th century has been contested, however. Adherents to the “culture wars” or “polarization” perspectives (Evans 1997; Hunter 1991) hold that religious authority remains a powerful influence on the values and practices of some Americans. According to these scholars, cultural, social and economic changes in the contemporary United States have reignited ideological cleavages between religious liberals guided by personal or secular convictions and conservatives guided by a religious authority (Roof and McKinney 1987). However, whereas Chaves (1994) conceptualized religious authority in formal/structural

terms, polarization perspectives conceptualize religious authority in sweeping pan-denominational terms, such as adherence to the beliefs that God is the ultimate authority figure and the Bible is God's inerrant guide for human action. Empirical studies suggest that adherence to a symbolic religious authority is pervasive today; national data show that more than 60 percent of Americans believe that the Bible is the "Word of God," and one half report that the Bible is an "important" or "very important" resource in making life decisions ([Pew Forum 2008b](#)).

Polarization perspectives presume that religious conservatives and liberals each hold a distinctive set of worldviews, or "unprovable assumptions about 'being' ...that we use to make moral judgments" ([Hunter 1991:119](#)). Conservatives emphasize "orthodoxy" through their belief in an external and transcendent authority such as God and literal interpretation of the Bible, whereas persons with a theologically "progressive" or liberal outlook emphasize personal choice in all areas of life ([Hunter 1991](#)). Although these theological orientations may correlate with one's formal religious denomination, the correlation is far from perfect. Rather, each of these two worldviews is crosscutting, and adherents may belong to a wide range of denominations ([Evans 1997](#); [Hunter 1991](#); [Wuthnow 1988](#)). Persons who adhere to an "orthodox" worldview are disproportionately members of conservative Catholic or evangelical Protestant congregations, whereas those with a "progressive" worldview are overrepresented among liberal Protestants and Catholics and Jews – yet the two social classifications do not wholly overlap ([Ammerman 1994](#)).

Taken together, both neo-secularization and polarization perspectives suggest that "traditional religious denominations may not be particularly useful analytic categories" for understanding social attitudes and practices in the United States ([Evans 1997:375](#)). Neo-secularization theorists view the influence of formal religious authority as waning, whereas polarization theorists argue that general theological orientations rather than formal denomination-specific teachings may have a far-ranging influence on personal decisions. As such, a "devotional divide" has replaced a "denominational divide" ([Cahn and Carbone 2010](#)). In the former formulation, measures of symbolic religious authority – such as the personal importance of God and the Bible – may be more robust predictors than denomination when studying secular behaviors, such as sexual activity and family formation ([Cahn and Carbone 2010](#); [Pew Forum 2008a](#); [2008b](#)).

Drawing on prior work, our first aim is to evaluate the extent to which one specific set of attitudes – one's preferences for or against life-extending medical treatments in two terminal illness scenarios – is affected by two distinct measures of religion. The first is one's traditionally defined religious denomination (Catholic, moderate Protestant, etc.); the second is a composite measure that reflects both one's major denominational group membership *and* one's general ideological orientation toward God's authority. In order to capture one's tendency toward an "orthodox" versus "progressive" orientation ([Hunter 1991](#)), we classify individuals based on their agreement with two theologically conservative attitudes that tap Christian fundamentalism: the belief that the Bible has all the answers, and that the Bible is the actual word of God.

Religion and End-of-Life Preferences

End-of-life treatment preferences are a highly relevant outcome for scholars seeking to understand the impact of religious authority on personal attitudes (see also [Burdette, Hill and Moulton 2005](#); [Hamil-Luker and Smith 1998](#)). The inevitability of death is at the core of most religious teachings: “Of all sources of religion, the supreme and final crisis of life – death – is of the greatest importance” ([Malinowski 1948:47](#)).

Most religious organizations have issued formal statements regarding the acceptability of specific end-of-life treatment options. These statements reveal each denomination’s perspective on questions regarding the “quality of life” versus “sanctity of life,” and the role of individual choice versus “God’s will” in the dying process ([Macklin 1987](#)). If formal aspects of religious authority influence secular attitudes and behaviors, then patients may follow their denomination’s teachings when making difficult end-of-life medical decisions.

Most religious denominations are similar with respect to their formal teachings on end-of-life decision making, with the exceptions of the Roman Catholic Church and Southern Baptist Convention. Liberal and moderate Protestant denominations state that the rejection of life-sustaining treatments is ethical and desirable when the chances of recovery are low and quality of life is compromised. Most conservative Protestant denominations, with the exception of the Southern Baptist Convention, also allow withholding or withdrawing medical treatments at the end of life. While most are opposed to active euthanasia (i.e., physician-assisted suicide), they are receptive to passive euthanasia, including the termination of ineffective medical treatments when a patient has no hope for recovery. For example, the [National Association of Evangelicals \(1994\)](#) states that in cases of incurable terminal illness, “it is morally appropriate to request the withdrawal of life support systems, allowing natural death to occur.”

By contrast, leaders of the Catholic Church have issued formal statements affirming the sanctity of human life, opposing any actions that might hasten a person’s death – including the withdrawal of artificially provided hydration and nutrition – and arguing that “suffering, especially suffering during the last moments of life, has a special place in God’s saving plan” (Sacred Congregation for the Doctrine of Faith 1980). Although the Catholic Church does not necessarily require that “extraordinary actions” be taken to extend life, it does urge the use of “ordinary” means including use of food and water to sustain life ([John Paul II 2004](#)).¹

If formal religious authority does influence individual thought and action, then we might predict that Protestants (except Southern Baptists) would differ significantly from Catholics with respect to their end-of-life treatment preferences. Protestants are taught that it is morally acceptable to reject futile treatments, whereas Catholics are taught that it is immoral to make medical decisions that may cause death, whether directly or indirectly. However, such a hypothesis would presume that individuals uniformly adhere to formal religious authority and that there is little theological heterogeneity within each denomination. Prior research and theory on “secularization as declining religious authority” shows

individuals may question or defy their church's teachings and instead adapt their religion to meet their personal needs and beliefs (Bolzendahl and Brooks 2005; Chaves 1994; Wuthnow 1998; Yamane 1997).

One such belief is a general orientation toward personal authority versus God's authority when faced with major life decisions (Evans 1997; Hunter 1991). Thus, we expect that one's denominational group as well as one's theological orientation (i.e., orthodox vs. progressive) will shape one's end-of-life preferences. Specifically, we expect that persons adhering to an "orthodox" worldview will be more likely to favor life-extending treatments relative to their denominational group peers who do not adhere to orthodox beliefs. Persons adhering to an orthodox view believe in the "external and transcendent authority of God" (Hunter 1991:119), and may extrapolate that view when making decisions regarding end-of-life medical treatments. Biblical passages underscore that God has the ultimate authority to determine when death occurs (e.g., Ecclesiastes 8:8, "As no one has power over the wind to contain it, so no one has power over the time of their death"), suggesting that human activity that might hasten death could be considered a violation of God's authority.

Individuals with a "progressive" worldview, by contrast, may rely on personal authority when deciding whether to accept or reject treatment. Progressives tend to emphasize "this-worldly considerations' based on either 'self-grounded rational discourse' or 'personal experience'" when making major decisions (Hunter 1991:124-25). "This-worldly" concerns such as physical comfort, "rational discourse" such as one's expectation of recovery from illness and "personal experiences" such as the preferences of one's family may lead to the rejection of life-extending treatments if there is no reasonable hope for recovery.

Potential Mechanisms Linking Religion to End-of-Life Preferences

A further aim of our analysis is to identify the specific beliefs that may explain the hypothesized association between religion and treatment preferences. We focus on two possible mechanisms: beliefs in the sanctity versus quality of life and the importance of religious teachings when making end-of-life decisions. First, we expect that theologically orthodox persons may endorse the belief that staying alive is more important than maintaining a high-quality life, and that this personal value, in turn, is associated with a desire for life-extending treatments. They may cede to the authority of God in matters of life and death. For example, orthodox worldviews are associated with pro-life beliefs regarding abortion (e.g., Evans 1997), reflecting the overarching belief that "[all] human life... is sacred" (Hunter 1991:122). We expect that this general orientation regarding the sanctity of life ideology will also extend to the specific outcome of end-of-life decision making (Perl and McClintock 2001). By contrast, persons adhering to a progressive worldview would rate life quality as more important than merely staying alive: "The one most qualified to judge quality of life is the person whose life it is" (Macklin 1987:53). Persons who highly value quality of life are less likely to accept life extending treatments that are believed to be futile or physically distressing (Carr and Moorman 2009).

Second, we expect that persons with theologically orthodox worldviews, regardless of denominational group, are more likely to defer to God or religious teachings when making decisions regarding end-of-life treatments (Pargament et al. 1988). As noted above, theologically conservative persons believe in the authority of God and the Bible. This general belief in the “absolute domination of God in matters of life and death” may be enacted through a specific preference for life-extending treatments (Burdette, Hill and Moulton 2005:80). The rejection of life-extending technologies may be viewed as a usurpation of God’s authority. By contrast, persons who have a progressive worldview are less heavily influenced by the religious authority of God and the Bible, instead emphasizing personal autonomy and a rational/scientific approach to decision making. These values, we expect, may shape one’s decision to reject medical treatments if one has no hope for recovery. In our empirical analyses, we also control for frequency of attendance at religious services, because the extent to which one is exposed to religious teachings regarding the sanctity of life and the role of religion and decision making presumably varies based on the frequency with which one has contact with his or her religious community.

Religious Salience as a Potential Moderator

The extent to which religious affiliation and beliefs affect treatment preferences may be contingent upon the personal salience of religion in one’s life. Identity salience theory states that the social roles and identities deemed most important are most likely to shape one’s beliefs and behaviors (Stryker and Serpe 1982). Thus, we expect that the effect of religiosity on treatment preferences will be significantly larger among persons who self-identify as “very religious,” compared with persons who identify less strongly.

Other Potential Influences on Treatment Preferences

We also control for two sets of factors that may account for a statistical association between religion and end-of-life treatment preferences: physical health and sociodemographic characteristics. Religious beliefs and practices are associated with a range of health outcomes including self-rated health, morbidity, mortality risk and hospitalizations (Idler 2010). Physical health, in turn, is associated with one’s tolerance of and desire for life-extending treatments; evidence is equivocal, but recent research concludes that as one’s health worsens, the desire for life-extending treatments increases (Fried et al. 2006). Recent hospitalizations may prompt formal advance care planning; the *Patient Self-Determination Act (1990)* requires that all patients seeking care at federally funded health care facilities are offered the opportunity to complete an advance directive or “living will.” Exposure to and knowledge of advance care planning increases one’s tendency to reject life-sustaining treatments (Carr and Moorman 2009; Ditto, Hawkins and Pizzaro 2006). Thus, we include two indicators of health in our analysis (self-rated health, recent hospitalization).

Religiosity also is associated with socioeconomic and demographic characteristics including educational attainment, marital status and family size (Pew

Forum 2008b); each of these characteristics is associated with attitudes toward end-of-life medical care (Carr and Khodyakov 2007). For example, college-educated persons are less likely than those with only a high school education to seek life-extending treatment (Carr and Moorman 2009), and to agree with theologically conservative statements such as “the Bible is the actual word of God” (Newport 2007). Thus, all models control for health, demographic and socioeconomic characteristics that could confound the statistical association between religion and end-of-life treatment preferences.

Data and Methods

Sample

We use data from the WLS, a random sample of men and women who graduated from Wisconsin high schools in 1957. Participants completed surveys during their senior year when they were 17-18 years of age (in 1957) and at 36 years of age (in 1975), 53-54 years of age (in 1992-93) and 64-65 years of age (in 2003-04). Of the 10,317 original participants, 9,139 (88.6%) were interviewed in 1975, 8,493 (82.3%) in 1992-1993 and 6,278 (61%) in 2003-2004. As of 2004, 1,297 (12.6%) of the original participants were deceased. The WLS is representative of older White, non-Hispanic Americans with at least a high school education (U.S. Census Bureau 2003).

We focus on persons who completed telephone interviews and self-administered mail questionnaires in 1992-93 and 2003-04. We further limit our analysis to the random 70 percent subsample that was asked the end-of-life planning questions in 2003-04. Religious denomination was asked of a random 80 percent subsample in 2003-04; for the 20 percent who were not administered the religion module, we imputed responses provided to identical questions in 1992-93.² Topical modules were given to random subsamples to reduce the interview length. Investigators generated each random subsample independently, so individuals who received one module may not necessarily have received the other. Our analytic sample includes 2,678 respondents.

Dependent Variables

Our outcome is *preferences for end-of-life medical care* in two hypothetical terminal illness scenarios: severe physical pain and cognitive impairment. Participants were asked: “Suppose you had a serious illness today with very low chances of survival. If you were mentally intact, but in severe and constant physical pain, would you want to continue all medical treatments or stop all life-prolonging treatments?” and “If you had no physical pain, but were not able to speak, walk, or recognize others, and had very low chances of survival, would you want to continue all medical treatments or stop all life-prolonging treatments?” Items are adapted from a 1999 Detroit Area Study module (“Health Care and End of Life Decisions”), administered by the Survey Research Center at the University of Michigan. Response options are “Continue all treatment so I could survive (staying alive is most important

to me)” and “Stop all treatment to prolong my life (quality of life is more important than length of life).” A small proportion (8% in physical pain and 5% in cognitive impairment scenario) volunteered the response “don’t know.” We combined these uncertain cases with the “stop all treatment” categories. Prior research shows that preferences for sustained treatment are more strongly held and less subject to deliberation than preferences to withhold treatment (Carr and Moorman 2009). We use two mutually exclusive outcome categories: continue versus stop all life-prolonging treatments.

Key Independent Variables

Our main goal is to evaluate whether religious affiliation affects end-of-life treatment preferences, with particular attention to within-denominational group theological heterogeneity. Our key predictor is *religious affiliation*, measured with the question “What is your religious preference?” Specific affiliations are coded as: conservative Protestant (e.g., Pentecostal), moderate Protestant (e.g., Lutheran), liberal Protestant (e.g., Episcopalian), Catholic, other (e.g., Jewish, Buddhist) and no religion.³ Less than 1 percent of the WLS sample is Jewish; thus, we classify Jews and all other persons with a non-Christian religion in the small “other” category. Conservative Protestant is the reference category.

The religious composition of the WLS sample is comparable to the composition of the state of Wisconsin (ARDA 2000). However, the WLS sample (and the state of Wisconsin) has fewer conservative Protestants and more moderate Protestants and Catholics than the overall United States (Pew Forum 2008b). The religious distribution of the WLS sample is 8.9 percent conservative Protestant, 35.1 percent moderate Protestant, 8 percent liberal Protestant, 38.3 percent Catholic, 1.4 percent other and 8.4 percent no religion. By contrast, the overall U.S. population is just 24 percent Catholic, yet 26 percent conservative Protestant.

We are also interested in theological diversity within denominational groups. Thus, we constructed a second measure based on one’s responses to the denomination question and adherence to fundamentalist views. *Christian fundamentalism* or biblical literalism (referred to as “fundamentalism” throughout the piece) is defined as agreeing or agreeing strongly with both of two statements: (1 the Bible is God’s word and everything happened or will happen exactly as it says and (2 the Bible is the answer to all important human problems. In the WLS, 43 percent and 37 percent agree or agree strongly with each statement, respectively. Based on a crosstabulation of denominational groups and fundamentalism, respondents are classified as follows: fundamentalist Protestant, nonfundamentalist Protestant [reference category], fundamentalist Catholic, nonfundamentalist Catholic, other religion and no religious affiliation.

We do not stratify the “other” and “no affiliation” categories by fundamentalist beliefs because of small cell sizes and because preliminary analyses revealed that the effects of these categories on end-of-life treatment preferences did not differ significantly based on one’s theology. The two way-interaction terms between fundamentalism and other denomination was not statistically significant ($p < .05$), perhaps reflecting the small number of persons in the

“other” category. Of the 38, only 8 percent adhered to fundamentalist views. Not one person with “no religion” adhered to fundamentalist views, so we could not evaluate a two-way interaction between those two indicators.

We agglomerated the three Protestant subgroups of conservative, moderate and liberal into a single category of Protestant in this cross-classification to maintain adequate cell sizes and to simplify the presentation and interpretation of the regression results. In preliminary analyses we evaluated the effect on end-of-life treatment preferences of two-way interaction terms between the detailed denomination categories described above and adherence to fundamentalist views. The two-way interaction terms were not statistically significant for the specific Protestant subgroups of liberal, moderate and conservative. However, the two-way interactions between fundamentalism and the amalgamated category of Protestants (including conservative, moderate and liberal) and Catholics were statistically significant and the model fit was superior. Thus, we use the composite indicators of fundamentalist Catholic, nonfundamentalist Catholic, fundamentalist Protestant and nonfundamentalist Protestant and the unstratified categories of “other” and “no” religion.

Our second aim is to identify potential mechanisms through which denominational group membership and theology may affect treatment preferences. We consider two beliefs: *priority for length versus quality of life*, and the *importance of religion in medical decisions*. Respondents indicate their level of agreement with the statement: “having a good quality of life is more important than just keeping alive.” Responses range from strongly disagree to strongly agree; higher scores reflect greater importance of maintaining life quality. Participants also are asked: “How much would your spiritual or religious beliefs influence your medical decisions if you were to become gravely ill?” Responses of “extremely” and “very” are coded as 1; responses of “somewhat,” “not very” and “not at all” are coded as 0. We also control for *frequency of attendance* at services in the past year because one’s level of contact with a religious community may shape his or her exposure to doctrine regarding end of life issues. Attendance is coded as frequent (once a week or more), occasional (at least once a year, but less than weekly) and never (has not attended once in the past year). Occasional attendance is the omitted category.

Control Variables

We control for sociodemographic and health characteristics that may confound the association between religion and end-of-life preparations. *Physical health* is assessed with a single self-rated health measure: “How would you rate your health at the present time: excellent, good, fair, poor, or very poor?” Responses range from 1 to 5, where five is very poor health.⁴ *Recent hospitalization* is a dichotomous variable indicating whether one has spent at least one night in the hospital over the past year. *Education* is the number of years of schooling one has completed. *Marital status* refers to whether one is currently married or cohabiting with romantic partner [reference category], never married, divorced/separated or widowed. *Parental status* refers to the number of living children one has.

Moderator Variable

We evaluate whether the effects of denominational group membership and ideology on treatment preferences differ based on the salience of religion. *Religious salience* is assessed with the question “How religious are you?” Responses of “very” or “extremely” religious are coded as 1, the reference group comprises all others (i.e., somewhat, not very and not at all).⁵

Analytic Plan

We first evaluate the extent to which treatment preferences are affected by traditionally defined denomination categories, as well as religious categories that reflect both denominational groups and fundamentalist beliefs. We conducted analysis of variance with post hoc tests to assess statistically significant subgroup differences in treatment preferences. We next estimated multivariate logistic regression models to evaluate religious subgroup differences in treatment preferences, net of potential confound and attitudinal variables.

In both the bivariate and multivariate analyses, we found no statistically significant differences in treatment preferences in either the pain or the cognitive impairment scenario ($p < .05$) when comparing traditionally defined denominational categories (i.e., conservative, moderate, liberal Protestant, Catholic, other and no religion). We suspect that these nonsignificant differences reflect the fact that each denominational category shows tremendous theological heterogeneity. For example, sizeable proportions of even liberal and moderate denominations agreed with the two fundamentalist beliefs: 46.7 percent of conservative Protestant, 38.1 percent of moderate Protestant, 21.6 percent of liberal Protestants, 18.5 percent of Catholics, 8 percent of persons from another religion and zero percent of persons with no religion.

By contrast, we found sizeable and statistically significant differences in treatment preferences using the alternative measure of religion, which comprised both denominational group and theology. Protestants and Catholics who adhere to fundamentalist ideologies are significantly more likely to desire treatments relative to their nonfundamentalist counterparts, and this difference is considerably larger among Catholics than Protestants. As noted earlier, these differences were confirmed in prior analyses, in which we estimated two-way interaction terms of ideology by denominational category. Thus, the remainder of our analyses focuses on religious subgroups defined by denominational group and adherence to fundamentalist views. (All models for traditionally defined denomination groups are available from the authors).

Results

Bivariate Analysis

Descriptive statistics for all variables, by religious subgroup, are presented in Table 1. Several religious subgroup differences emerge with respect to the two treatment preferences. A significantly higher proportion of fundamentalist

Table 1: Means (and Standard Deviations) or Proportions for All Variables Used in Analysis, Wisconsin Longitudinal Study 1957-2004

	Total Sample	NF Protestant ^a	Fundamentalist Protestant ^b	Fundamentalist Catholic ^c	NF Catholic ^d	Other Religion ^e	No Religion ^f	F-statistic	Significant Subgroup Differences
<i>Dependent Variables</i>									
Accept treatment: cognitive impairment	.082	.069	.098	.14	.062	.026	.094	4.71***	ac, cd
Accept treatment: physical pain	.20	.19	.22	.26	.16	.13	.25	4.58***	bd, cd, df,
<i>Independent Variables</i>									
<i>Demographic Characteristics</i>									
Sex (1 = female)	.55	.53	.58	.60	.54	.61	.57	1.44	
Currently married	.79	.78	.79	.85	.79	.74	.80	1.71	
Separated or divorced	.096	.10	.092	.055	.11	.13	.094	1.74	
Widowed	.076	.083	.081	.062	.066	.079	.089	.672	
Never married	.036	.041	.035	.033	.036	.053	.018	.617	
Number of children	3.07 (1.71)	2.91 (1.61)	3.19 (1.75)	3.16 (1.78)	3.08 (1.70)	3.21 (1.97)	3.27 (1.94)	2.86*	ab
Years of education	13.71 (2.31)	14.01 (2.42)	13.30 (2.05)	13.03 (1.81)	13.79 (2.37)	14.32 (2.49)	13.94 (2.43)	12.75***	ab, ac, bd, bf, cd, ce, cf
<i>Health Characteristics</i>									
Self-rated health (1 = excellent; 5 = poor)	2.21 (.97)	2.15 (.96)	2.33 (.99)	2.22 (.96)	2.19 (.98)	2.16 (.97)	2.23 (.95)	2.27*	ab
Spent night in hospital, past year (1 = yes)	.12	.12	.13	.13	.13	.10	.13	.051	

<i>Attitudes Towards Life and Death</i>									
Quality of life more important than duration (range: 1 = strongly disagree to 5 = strongly agree)	3.22 (.95)	3.27 (.87)	3.11 (1.04)	3.01 (1.17)	3.32 (.84)	3.42 (.79)	3.17 (.99)	7.11***	ab, ac, bd, cd
<i>Beliefs About Medical Decision Making</i>									
Religious beliefs guide medical decisions (1 = yes)	.47	.36	.74	.75	.33	.47	.46	77.51***	ab, ac, af, bd, be, bf, cd, ce, cf, df
<i>Other Religious Characteristics</i>									
Never attends services	.15	.16	.069	.059	.14	.11	.39	32.58***	ab, ac, af, bd, bf, cd, df, ef
Attends services at least once a week	.48	.41	.58	.69	.48	.34	.28	27.64***	ab, ac, ad, af, bc, bd, be, bf, cd, ce, cf, df
Very/ extremely religious	.44	.33	.70	.75	.29	.45	.42	83.12***	ab, ac, bd, be, bf, cd, ce, cf, df
N	2678	913	481	307	715	38	224		
%	100	34.1	18.0	11.5	26.7	1.4	8.4		

Note: Asterisks denote significance level of F statistic, where *p < .05, **p < .01, *** p < .001.

Post hoc comparisons were conducted using analysis of variance; significant (p < .05) subgroup differences are denoted to indicate specific subgroups that differ from one another. NF refers to persons who do not endorse fundamentalist beliefs.

Catholics than nonfundamental Protestants and Catholics (1% vs. 6.9% and 6.2, respectively) would desire treatment in the case of terminal illness with severe cognitive impairment. Similarly, in the severe physical pain scenario, a significantly smaller proportion of nonfundamentalist Catholics desire treatment, compared with fundamental Protestants, fundamentalist Catholics or persons with no religion (16% vs. 22%, 26% and 25%, respectively). Despite these differences, however, the majority of respondents *in all religious subcategories* would reject life-sustaining treatments if faced with an incurable terminal illness (90% in cognitive impairment and 80% in physical pain scenario overall).

We find substantial subgroup differences in other attitudes and religious practices. Fundamentalist Catholics and Protestants report significantly lower levels of agreement with the belief that quality of life is more important than just staying alive, relative to their nonfundamentalist counterparts. Three quarters of fundamentalist Catholics and Protestants agree that their religious or spiritual beliefs would guide their medical decisions, while only a third of their nonfundamentalist counterparts and roughly half of persons with other or no religion do so. Similar patterns emerge for weekly attendance and high religious salience; a significantly higher proportion of fundamentalist Catholics and Protestants report weekly attendance at religious services than their more theologically liberal counterparts. They are also more than twice as likely as their nonfundamentalist counterparts to self-identify as “very” or “extremely” religious (75% and 70% of fundamentalist Catholics and Protestants, vs. 29% and 33% of nonfundamentalist Catholics and Protestants, respectively). We find few differences with respect to family characteristics or health, yet fundamentalist Protestants and Catholics report significantly less education than their more liberal counterparts (13.3 years and 13.03 years vs. 14.01 years and 13.79 years of schooling, respectively).

Multivariate Analyses

Our next goal is to evaluate the extent to which religious subgroup differences in end-of-life preferences persist after we control for potential explanatory factors. Tables 2 and 3 present logistic regression results for the scenarios of severe cognitive impairment and severe physical pain, respectively. Model 1 shows the effects of religious category net of sociodemographic and health characteristics, Model 2 adjusts for frequency of attendance at religious services and Models 3 and 4 further adjust for the potential mechanisms of beliefs toward life quality and religious control over medical decisions, respectively. Odds ratios are presented.

The results in Table 2 show that fundamentalist Protestants are 1.57 times as likely as their nonfundamentalist counterparts to desire treatment in the case of cognitive impairment, after sociodemographic and health characteristics are controlled (Model 1). This effect attenuates slightly when attendance at religious services is controlled, yet it is no longer statistically significant after we control attitudes about the desirability of life quality versus duration. Fundamentalist Catholics reveal an even stronger orientation for life extension; when health

Table 2: Logistic Regression Predicting Desire to Accept (vs. Withhold) Life-Sustaining Treatments in a Hypothetical Scenario With Severe Cognitive Impairment, by Religious Affiliation (N = 2678)

	Model 1	Model 2	Model 3	Model 4
<i>Religious Category</i>				
Fundamentalist Protestant	1.57*	1.47*	1.19	.98
Fundamentalist Catholic	2.37***	2.10**	1.59*	1.31
Nonfundamentalist Catholic	.89	.85	.94	.95
Other religion	.35	.37	.44	.42
No religious affiliation	1.42	1.44	1.22	1.10
<i>Demographic Characteristics</i>				
Sex (1 = female)	.77†	.75*	.79	.72*
Education (in years)	1.04	1.04	1.04	1.04
Never married	1.99†	1.93†	1.67	1.55
Separated/divorced	1.31	1.37	1.11	1.19
Widowed	.76	.76	.72	.71
Number of children	1.08*	1.08†	1.06	1.05
<i>Health Characteristics</i>				
Self-rated health	.83*	.84*	.78**	.78**
Spent night in hospital, past year (1 = yes)	.80	.80	.75	.75
<i>Religious Attendance</i>				
Never attends services		1.33	1.15	1.50
Attends at least weekly		1.69**	1.50*	1.39†
<i>Attitudes Towards Life and Death</i>				
Quality of life more important than duration			.41***	.42***
<i>Beliefs About Medical Decision Making</i>				
Religious beliefs guide medical decisions (1 = yes)				1.85***
X ² ; degree of freedom	43.8;13	53.9;15	250.6;16	263.6;17
Pseudo R ² (Nagelkerke)	.038	.046	.207	.217

Note: Significance levels noted are: † $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$.

Results are from binomial logistic regression models. The omitted religious affiliation category is theologically liberal (i.e., nonfundamentalist) Protestant. Relative odds (exponentiated betas) are presented.

and sociodemographics are controlled, then they are 2.37 times as likely as nonfundamentalist Protestants and 2.7 times as likely as their nonfundamentalist Catholic peers (odds ratio [OR] = 2.37/.89) to desire life-extending treatment. The former effect declines slightly when religious attendance is controlled, and

it declines substantially yet remains statistically significant after beliefs about life quality are controlled (OR = 1.7, $p < .05$). However, this effect becomes non-significant after beliefs about religious control over health care are controlled. We find no other statistically significant effects for religious category; nonfundamentalist Catholics, persons of other religion and those with no religion do not differ significantly from nonfundamentalist Protestants with respect to treatment preferences in the severe cognitive impairment scenario. Persons who attend services weekly are significantly more likely than those who attend less often to desire life-extending treatments, although nonattenders do not differ from occasional attenders.

Similar patterns emerge for the physical pain scenario, although the magnitude of effects is smaller. Model 1 in Table 3 shows fundamentalist Protestants are 1.29 times as likely as their nonfundamentalist counterparts to desire treatment after sociodemographics and health are controlled, although this effect only trends towards statistical significance ($p < .10$). Again, the effect is no longer statistically significant after beliefs about life quality are controlled. Similarly, fundamentalist Catholics are 1.63 times as likely as the reference category to desire treatment. This effect declines slightly to 1.51 ($p < .05$) after religious attendance is controlled, yet it declines more substantially and becomes marginally significant after life quality beliefs are controlled (OR = 1.28, $p < .10$). The effect is no longer statistically significant when beliefs about religious control over medical decisions are controlled. Models 1 and 2 show that nonfundamentalist Catholics are only three-quarters as likely as their Protestant counterparts to desire treatment, yet this effect is no longer statistically significant when life quality beliefs are controlled.

Most of the religious attitude and practice measures are powerful predictors of end-of-life preferences, net of the affiliation/theology measure. The stronger one's endorsement of the statement "having a good quality of life is more important than just keeping alive," the lower the odds that one desires life-extending treatments for both the cognitive functioning (OR = .42, $p < .001$) and physical pain (OR = .51, $p < .001$) scenarios. Persons who say that their medical decisions are guided by their religious or spiritual beliefs are 1.85 times as likely as those not guided by such beliefs to desire treatment in the case of severe cognitive impairment, and 1.24 times as likely to do so in the physical pain scenario. In sum, fundamentalist beliefs are associated with a heightened desire for life-extending treatment in both the cognitive impairment and the physical pain scenarios; these beliefs are particularly influential among Catholics relative to Protestants. However, fundamentalist Catholics' and Protestants' preferences for life-extension are fully accounted for by their strong belief that religious views should guide treatment decisions, and their tendency to prioritize length of life over its quality.

Moderation Analyses

Our final aim is to evaluate whether the effects of religious category on treatment preferences are moderated by religious salience. We added to each model (in Tables 2 and 3) a separate two-way interaction term between each of the

Table 3: Logistic Regression Predicting Desire to Accept (vs. Withhold) Life-Sustaining Treatments in a Hypothetical Scenario with Severe Physical Pain, by Religious Affiliation (N = 2678)

	Model 1	Model 2	Model 3	Model 4
<i>Religious Category</i>				
Fundamentalist Protestant	1.29†	1.24†	1.15	1.03
Fundamentalist Catholic	1.63**	1.51**	1.28†	1.20
Nonfundamentalist Catholic	.78†	.76*	.80	.80
Other religion	.61	.62	.67	.66
No religious affiliation	1.42*	1.49*	1.39†	1.36
<i>Demographic Characteristics</i>				
Sex (1 = female)	1.10	1.09	1.2†	1.12
Education (in years)	1.08***	1.09**	1.10***	1.10***
Never married	1.31	1.29	1.14	1.12
Separated/divorced	1.19	1.22	1.13	1.16
Widowed	.57*	.57*	.53**	.53**
Number of children	1.01	1.01	.99	.99
<i>Health Characteristics</i>				
Self-rated health	.96	.97	.94	.94
Spent night in hospital, past year (1 = yes)	.94	.94	.91	.90
<i>Religious Attendance</i>				
Never attends services		.93	.95	.96
Attends at least weekly		1.26*	1.16	1.13
<i>Attitudes Towards Life and Death</i>				
Quality of life more important than duration			.51***	.51***
<i>Beliefs about Medical Decision Making</i>				
Religious beliefs guide medical decisions (1 = yes)			.	1.24*
X ² ; degree of freedom	54.7;13	61.1; 15	251.2;16	254.7;17
Pseudo R ² (Nagelkerke)	.032	.036	.142	.144

Note: Significance levels noted are: † $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$.

Results are from binomial logistic regression models. The omitted religious affiliation category is theologically liberal (i.e., nonfundamentalist) Protestant. Relative odds (exponentiated betas) are presented.

religious membership categories and religious salience. The two-way interaction term was not statistically significant at the $p < .05$ level; thus, the impact of religious category on treatment preference does not differ significantly based on one's religious salience among participants in the WLS.

Discussion

We used data from a large sample of older adults to investigate how denominational group membership and theological orientation shape preferences for (or against) life-extending treatments in two terminal illness scenarios. We do not find statistically significant differences in treatment preferences based on one's traditionally defined denominational group. However, when we consider the intersection of denominational group and adherence to a theologically conservative worldview, we find that Protestants and Catholics who subscribe to beliefs of biblical literalism are significantly more likely than their progressive denominational group counterparts to desire treatment, with larger disparities evidenced among Catholics. The magnitude of these effects does not differ significantly based on the personal salience of religion. Moreover, these subgroup differences are wholly accounted for by two specific attitudes that derive from one's theological orientation: adherence to a quality versus sanctity of life edict and the importance of religious views when making medical decisions.

Impact of Religious Denomination and Ideology on End-of-Life Preferences

Our analyses revealed that preferences for life-extending treatment do not differ significantly across traditionally defined denominational groups. In both bivariate and multivariate analyses, we found no statistically significant differences in the treatment preferences of Catholics, liberal, moderate and conservative Protestants, persons of other religions and persons reporting no affiliation. This finding is consistent with "secularization as declining religious authority" theories that argue that ideological and behavioral differences across denominational groups are negligible given the decline of formal religious authority in everyday life (Chaves 1994; Yamane 1997).

Our results suggest that theological conservatism operates differently based on one's denominational group membership. The treatment preferences disparity between theologically fundamentalist and nonfundamentalist persons is larger among Catholics than Protestants. Among all Christian participants in the WLS, Catholics adhering to a progressive theological orientation are the least likely (6% and 16%) and fundamentalist Catholics the most likely (14% and 26%) to desire treatments in both the cognitive impairment and the physical pain scenarios, respectively. This endorsement of life-extending treatments among theologically conservative Catholics is consistent with the formal teachings of the church; although the Church does not encourage the use of "extraordinary" measures, it does support the use of "ordinary" measures such as nutrition and hydration to sustain life. However, progressive Catholics' departure from church teachings is consistent with mounting research documenting that many

Catholics accept only those aspects of formal church doctrine that are consistent with their own moral, ethical and political views (Pew Forum 2008c).

In the case of Protestants, most WLS participants belong to denominations that recommend the rejection of futile treatments. (Only 1% of study participants are Southern Baptists). In practice, however, many Protestant congregations and clergy are autonomous from larger denominational governing bodies, perhaps reflecting the weakening influence of formal religious institutions (Chaves 1994; 2011). Clergy from these independent congregations may preach ideas that oppose their denomination's formal declarations and reaffirm fundamentalist views. In the past decade, several popular and highly visible transdenominational conservative religious leaders (e.g., Pat Robertson, James Dobson) have voiced their opposition to active euthanasia and abortion. Individuals who adhere to an "orthodox" worldview may generalize these "pro-life" sentiments and use them as a guide when considering life-prolonging treatment in cases of terminal illness.

Our results provide some support for the argument of Evans (1997), Hunter (1991) and others who have observed sharp ideological and political cleavages in the United States and attribute them to broad theological views rather than formal denominational categories. The chasm between those holding "orthodox" versus "progressive" worldviews may be particularly sharp in the domain of end-of-life preferences. Preferences for end-of-life medical treatments reflect underlying orientations toward the sanctity of life and one's belief in personal autonomy versus God's control in matters concerning the cessation of life – two concepts at the core of the "orthodox" versus "progressive" divide.

Assessment of Mechanisms

A secondary aim of our analysis was to understand how a fundamentalist orientation might affect end-of-life treatment preferences. We found that fundamentalist Protestants' greater preference for life-extending treatment was wholly accounted for by their beliefs in the sanctity (vs. quality) of life. By contrast, fundamentalist Catholics' greater preferences for such treatments was largely accounted for by their belief in the sanctity (vs. quality) of life, but was wholly accounted for after we controlled for beliefs toward the importance of religious views in medical decision making. Both attitudes also affected treatment preferences directly, where persons who value quality of life over staying alive were less likely to desire life-extending treatments, and those who said religious views would guide their decision were more likely to desire treatments.

Our findings are consistent with theoretical writings stating that "orthodox" worldviews are distinguished by two specific components: the belief that "all life is sacred" (Hunter 1991:122) and the tendency to see God (and, by extension, religious teachings) as "tangibly and directly...known in the everyday experiences of individuals" (Hunter 1991:121). These attitudes, in turn, are associated with preference for life-extending treatments. If "all life is sacred," then that would presumably include a life marked by physical and cognitive suffering; to "hasten"

death would imply that the life of a dying older adult is not of value. Furthermore, persons who believe that religious views should guide their end-of-life preferences may believe that hastening death by rejecting even futile life-extending treatments represents a usurpation of God's authority.

Few Desire Life-Extending Treatments If Terminally Ill

Despite the religious subgroup differences detected here, we must underscore that the vast majority of participants said they would reject treatments, and this preference is more pronounced in the severe cognitive impairment (90%) than the severe physical pain (80%) scenario. Even among the one religious subgroup most in favor of life-extending treatments, fundamentalist Catholics, these proportions were high (86% and 74%, respectively). Although the contemporary United States has been characterized as a "death-denying society" (Kellehear 1984), most WLS participants would reject treatment if facing incurable illness and a compromised quality of life.

Respondents' stronger preference for treatment in the face of physical pain compared to cognitive impairment may reflect patients' values and definitions of what constitutes a "good life." However, it also may reflect personal definitions of a "good death" (Coppola et al. 1999); dying patients consistently rank burdening loved ones, being treated without dignity and lacking mental acuity as the least desirable end-of-life conditions (Ditto et al. 1996). Older adults' strong desire to maintain dignity and autonomy at the end of life, especially with respect to cognitive functioning, may reflect secular trends where all but the most orthodox in their religious beliefs place a high value on self-determination and independence (Cohler 1983).

Limitations and Future Directions

Our study has several limitations. First, we focused on relatively young persons in their mid-60s. Some research suggests that older adults who are near the end of life have more strongly held preferences regarding end-of-life treatments (Inman 2002). Second, we examined the preferences of a single birth cohort only. We look forward to future studies that explore whether these patterns vary across birth cohorts. Third, our sample included only non-Hispanic White men and women who had earned at least a high school diploma. Fully 70 percent were residing in Wisconsin. The ethnic and socioeconomic characteristics of our sample may partially account for the high proportions that wanted to withhold life-prolonging treatment; White educated persons are particularly likely to reject life-sustaining treatments (Kwak and Haley 2005).

Fourth, despite our large sample size, the WLS includes very small numbers of Jews, persons of non-Christian religions and unaffiliated persons. The religious characteristics of the WLS sample are consistent with the religious demography of the state of Wisconsin, which is more than 80 percent Christian (ARDA 2000). Thus, our study offers few insights into the preferences of non-Christian or unaffiliated persons. Furthermore, even among Protestants, the composition

of the WLS sample differs from the overall United States in that Wisconsin is home to greater proportions of moderate Protestants (especially Lutherans) and fewer conservative Protestants (Pew Forum 2008b). Protestant denominations more prevalent in the Southern United States tend to be more theologically conservative than their counterparts from other regions (Shibley 1996). We look forward to replications of our study that draw on nationally representative samples to evaluate whether similar patterns are documented.

Finally, we explored only a limited set of possible correlates of end-of-life treatment preferences. Our relatively low pseudo- R^2 values (21.7% in cognitive impairment scenario, and 14.4% in pain scenario) suggest that future studies should consider a broader set of influences. In-depth interviews also may provide insights into how individuals use their religious teachings, beliefs and social networks to formulate their end-of-life treatment preferences.

Our findings have potentially important implications for health care policy and practice. Practitioners strongly encourage older adults to hold end-of-life discussions early and prior to the onset of a serious health concern to ensure that one's preferences are articulated and heeded at the end of life (Ditto et al. 2006). However, patients and their families are reluctant to discuss such issues, and only half of older adults have executed advance directives to convey their treatment preferences to care providers (Hopp 2000; Carr and Khodyakov 2007). In an effort to ensure that patients discuss and convey their preferences to physicians, health care organizations have urged policy makers to include as part of the health care reform one voluntary advance care planning session as an option offered to Medicare beneficiaries. However, President Obama removed this benefit from the proposal in January 2011 in response to heated debates and unsubstantiated rumors that this consultation session would force older adults to reject life-extending treatments (Pear 2011). The "death panel" rumors were fueled, in part, by political and religious conservatives, many of whom framed their arguments using the "sanctity of life" edict.

Our results suggest that religious beliefs guide treatment preferences; patients should be encouraged by doctors to talk about their religious views, whether those views encourage rejection or acceptance of treatments. Health care providers could encourage patients to discuss their beliefs about what constitutes a "good life" and "a good death," and the specific ways that their faith may inform their end-of-life medical decisions. Acknowledgement of these beliefs may help patients to clarify their preferences and help medical practitioners to develop strategies to ensure that the patient's priorities are respected at the end of life.

Notes

1. Sources for formal statements of denominations and religious organizations regarding end-of-life treatment preferences are available from the authors.
2. We re-estimated all analyses using only the 80 percent subsample that received the 2003-04 religion module; results were virtually identical in both samples. The final

analysis uses the larger sample with the imputed denomination data, to ensure adequate cell sizes for the fine-grained denomination categories. The distribution of religious affiliations in 1992-93 was virtually identical to the distribution in 2003-04.

3. In supplementary analyses, we subdivided the conservative Protestant category into Southern Baptists versus all other conservative Protestants. We conducted these analyses because the Southern Baptist Convention is an exception to the general rule of conservative Protestant denominations stating that individuals should reject futile life-sustaining treatments. The two groups did not differ significantly with respect to the two outcome variables; thus, we use the aggregated category in our analyses.
4. We considered one alternate measure of health – whether one has at least one of the following chronic illnesses: cancer, heart disease and stroke. We found no statistically significant denominational differences in this measure, nor did it account for the effect of religious affiliation on preferences. We included a measure of perceived (i.e., self-rated) rather than objective health status as the former is more closely linked to end-of-life treatment preferences.
5. We also evaluated whether the effect of religious category on treatment preferences was moderated by “denominational switching” (i.e., convert) status. We conducted these supplementary analyses because research suggests that persons who convert during adulthood are particularly vigilant about following their new church’s teachings (Snow and Machalek 1984). We constructed a dichotomous variable indicating whether one reported a different religious denomination at 35 years of age (in 1975) compared with either 2004 (for members of the 80% random subsample for whom denomination was assessed in 2003) or 1992-93 (for members of the 20% random subsample in 2003-04, for whom we imputed 1992-93 denomination information). The interaction term was not statistically significant at the $p < .05$ level. Conversion status also was not a statistically significant predictor of the outcome variables, thus we dropped the measure from the final analysis.

References

- Ammerman, Nancy T. 1994. “Telling Congregational Stories.” *Review of Religious Research* 35:289-301.
- Association of Religion Data Archives. 2000. “State Report.” Available at: http://www.thearda.com/mapsReports/reports/state/55_2000.asp
- Bolzendahl, Catherine, and Clem Brooks. 2005. “Polarization, Secularization, or Differences as Usual? The Denominational Cleavage in U.S. Social Attitudes since the 1970s.” *The Sociological Quarterly* 46:47-8.
- Burdette, Amy M., Terrence D. Hill, and Benjamin E. Moulton. 2005. “Religion and Attitudes toward Physician-Assisted Suicide and Terminal Palliative Care.” *Journal for the Scientific Study of Religion* 44:79-93.
- Cahn, Naomi, and June Carbone. 2010. *Red Families v. Blue Families: Legal Polarization and the Creation of Culture*. New York, NY: Oxford University Press.
- Carr, Deborah, and Dmitry Khodyakov. 2007. “End of Life Health Care Planning among the Young-Old: An Assessment of Psychosocial Influences.” *Journal of Gerontology: Social Sciences* 62B:S135-41.
- Carr, Deborah, and Sara M. Moorman. 2009. “End-of-Life Treatment Preferences among Older Adults: An Assessment of Psychosocial Influences.” *Sociological Forum* 24:754-78.
- Chaves, Mark. 1994. “Secularization as Declining Religious Authority.” *Social Forces* 72:749-74.
- _____. 2011. *American Religion: Contemporary Trends*. Princeton, NJ: Princeton University Press.
- Cohler, Bertram J. 1983. “Autonomy and Interdependence in the Family of Adulthood.” *The Gerontologist* 3:33-9.

- Coppola, Kristen M., Jamila Bookwala, Peter H. Ditto, Lisa K. Lockhart, Joseph H. Danks, and William D. Smucker. 1999. "Elderly Adults' Preferences for Life-Sustaining Treatments: The Role of Impairment, Prognosis, and Pain." *Death Studies* 23:617-34.
- Ditto, Peter H., Jennifer A. Druley, Kathleen A., Joseph H. Danks, and William D. Smucker. 1996. "Fates Worse Than Death: The Role of Valued Life Activities in Health State Evaluations." *Health Psychology* 15:332-43.
- Ditto, Peter H., Nikki A. Hawkins, and David A. Pizzaro. 2006. "Imagining the End of Life: On the Psychology of Advance Decision Making." *Motivation and Emotion* 27:481-502.
- Evans, John H. 1997. "Worldviews or Social Groups as the Source of Moral Value Attitudes: Implications for the Culture Wars Thesis." *Sociological Forum* 12:371-404.
- Fried, Terri R., Amy L. Byers, William T. Gallo, Peter H. Van Ness, Virginia R. Towle, John R. O'Leary, and Joel A. Dubin. 2006. "Prospective Study of Health Status Preferences and Changes in Preferences Over Time in Older Adults." *Archives of Internal Medicine* 166:890-895.
- Hamil-Luker, Jenifer, and Christian Smith. 1998. "Religious Authority and Public Opinion on the Right to Die." *Sociology of Religion* 59:373-91.
- Hopp, Faith. 2000. "Preferences for Surrogate Decision Makers, Informal Communication and Advance Directives among Community-Dwelling Elders: Results from a National Study." *The Gerontologist* 40:449-57.
- Hunter, James Davison. 1991. *Culture Wars: The Struggle to Redefine America*. New York, NY: Basic Books.
- Idler, Ellen. 2010. "Health and Religion." In *The New Blackwell Companion to Medical Sociology*. William Cockerham, Editor. Pp. 133-58 Oxford, UK: Wiley-Blackwell.
- Inman, Lorinda. 2002. "Advance Directives: Why Community Based Older Adults Do Not Discuss their Wishes." *Journal of Gerontological Nursing* 28:40-6.
- Institute of Medicine. 2001. *Crossing the Quality Chasm*. Washington, DC: National Academy of Sciences Press.
- John Paul II. 2004. *Life Sustaining Treatments and Vegetative State: Scientific Advances and Ethical Dilemmas*. Address presented to the International Congress, Rome, Italy.
- Kellehear Allan. 1984. "Are We a 'Death-Denying' Society? A Sociological Review." *Social Science and Medicine* 18:713-23.
- Kwak, Jung and William E. Haley. 2005. "Current Research Findings on End-of-Life Decision Making among Racially or Ethnically Diverse Groups." *The Gerontologist* 45:634-41.
- Macklin, Ruth. 1987. *Mortal Choices: Ethical Dilemmas in Modern Medicine*. Boston, MA: Houghton Mifflin.
- Malinowski, Bronislaw. 1948. *Magic, Science, and Religion and Other Essays*. Glencoe, IL: Free Press.
- National Association of Evangelicals. 1994. "Termination of Medical Treatment." National Association of Evangelicals. Available at: <http://www.nae.net/resolutions/317-termination-of-medical-treatment-1994>
- Newport, Frank. 1997. "One-Third of Americans Believe the Bible Is Literally True." Washington, DC: Gallup Inc. Available at: <http://www.gallup.com/poll/27682/one-third-americans-believe-bible-literally-true.aspx>
- Pargament, Kenneth I., Joseph Kennell, William Hathaway, Nancy Grevengoed, Jon Newman, and Wendy Jones. 1988. "Religion and the Problem-Solving Process: Three Styles of Coping." *Journal for the Scientific Study of Religion* 27:90-104.
- Patient Self-Determination Act of 1990. 554206, 4751 of the Omnibus Reconciliation Act of 1990. Pubs. No. 101-508.
- Pear, Robert. 2011. "U.S. Alters Rule on Paying for End-of-Life Planning." *New York Times* (January 4, 2011). Available at: <http://www.nytimes.com/2011/01/05/health/policy/05health.html> accessed
- Perl, Paul and Jamie S. McClintock. 2001. "The Catholic 'Consistent Life Ethic' and Attitudes toward Capital Punishment and Welfare Reform." *Sociology of Religion* 62:275-299.

- Pew Forum on Religion & Public Life. 2008a. Voting Religiously (November 5, 2008). Available at: <http://www.pewresearch.org/pubs/1022/exit-poll-analysis-religion>
- Pew Forum on Religion and Public Life. 2008b. *U.S. Religious Landscape Survey. Religious Beliefs and Practices: Diverse and Politically Relevant*. Pew Forum.
- Pew Forum on Religion and Public Life. 2008c. Social and Political Views of Catholics in the U.S. Available at: [http://pewforum.org/Christian/Catholic/A-Portrait-of-American-Catholics-on-the-Eve-of-Pope-Benedicts-Visit-to-the-US-\(3\).aspx](http://pewforum.org/Christian/Catholic/A-Portrait-of-American-Catholics-on-the-Eve-of-Pope-Benedicts-Visit-to-the-US-(3).aspx)
- Roof, Wade Clark, and William McKinney. 1987. *American Mainline Religion: Its Changing Shape and Future*. Piscataway, NJ: Rutgers University Press.
- Sacred Congregation for the Doctrine of Faith. 1980. "Declaration on Euthanasia." Roman Catholic Church. Available at: http://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_con_cfaith_doc_19800505_euthanasia_en.html
- Shibley, Mark. 1996. *Resurgent Evangelicalism in the United States*. Columbia, SC: University of South Carolina Press.
- Snow, David, and Richard Machalek. 1984. "The Sociology of Conversion." *Annual Review of Sociology* 10:167-90.
- Stark, Rodney, and Roger Finke. 2000. *Acts of Faith: Explaining the Human Side of Religion*. Berkeley, CA: University of California Press.
- Stryker, Sheldon, and Richard T. Serpe. 1982. "Commitment, Identity Salience, and Role Behavior: A Theory and Research Example." In *Personality, Roles, and Social Behavior*, edited by W. Ickes and E. S. Knowles. Pp. 199-218. New York, NY: Springer-Verlag.
- Tschannen, Oliver. 1991. "The Secularization Paradigm: A Systematization." *Journal for the Scientific Study of Religion* 30:395-416.
- United States Bureau of the Census. 2003. *Current Population Survey, Annual Social and Economic Supplement*. Washington, DC: Author.
- Wuthnow, Robert. 1988. *The Restructuring of American Religion*. Princeton, NJ: Princeton University Press.
- _____. 1998. *After Heaven: Spirituality in America since the 1950 s*. Berkeley, CA: University of California Press.
- Yamane, David. 1997. "Secularization on Trial: In Defense of a Neosecularization Paradigm." *Journal for the Scientific Study of Religion* 36:109-22.