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Religious and Spiritual Responses to 9/11: Evidence from the Add Health Study*

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Abstract

Despite a great deal of public discourse concerning the effect of the September 11th attacks on Americans' religious and spiritual lives, social scientists know very little about the nature, size, and duration of this effect. Using panel data from the National Longitudinal Study of Adolescent Health, this study analyzes the influence of 9/11 on the religious and spiritual lives of American young adults. The results suggest that the 9/11 attacks exerted only modest and short-lived effects on various aspects of young adults' religiosity and spirituality, and these effects were variable across different groups. These findings suggest that no remarkable religious revival occurred among young adults after September 11th, and researchers interested in analyzing religious development across the life course or religious change over time need not worry about sea changes in religiosity and spirituality brought on by 9/11.

The terrorist attacks of September 11, 2001, are without question the defining moment of the 21st century to date. In the wake of this national tragedy, many people exhibited renewed religious commitment. According to Gallup polls, religious attendance the first weekend after the attacks was up six percent from the weekend before (Walsh 2002). Religious pundits proclaimed the last months of 2001 to be a time of unprecedented religious and spiritual revival in the United States. But not everyone bought into this appraisal of the situation. Indeed, by November polls were already indicating that church attendance had retreated back to normal levels. Despite the immensity of the attacks and the considerable amount of public discourse regarding their religious and spiritual implications for Americans, however, these simple church attendance figures are the basis for much of our social scientific knowledge about Americans' religious and spiritual responses to 9/11.

Social scientists have only touched on religious and spiritual reactions to 9/11, choosing instead to focus much more intently on how 9/11 impacted the mental health of Americans. This is not without good justification. The vast majority of American adults—about 90 percent—exhibited at least one symptom of stress in the week following the attack, and a significant minority—44 percent—displayed substantial symptoms of stress (Schuster et al. 2001). Even two months after the attacks, 17 percent of Americans outside of New York City reported symptoms of posttraumatic stress stemming from 9/11 (Silver et al. 2002), though the overall level of distress throughout the country was within a normal range (Schlenger et al. 2002). These stressful responses were highest among women, young adults, divorcees, the previously-depressed, and those who had more exposure to television coverage of the events (Schlenger et al. 2002; Silver et al. 2002).

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¹The distinction between “religion” and “spirituality” is often difficult to discern in social scientific writing. In the present study, religion refers to institutional aspects of faith, such as commitment to a religious tradition. Spirituality refers to more personal experiences that may happen either inside or outside of an institutionalized religious tradition.

Other than the flurry of media reports² and the church attendance figures documenting Americans' increased attention to religious and spiritual matters, evidence examining a "return-to-religion" trend is scant. Data from an online survey (posted at positivopsychology.org and thus subject to a considerable amount of selectivity bias) indicate that respondents reported significantly higher levels of spirituality and faith in the two months after 9/11 than respondents who took the survey prior to that date. These respondents also reported higher levels of what the study authors refer to as "theological virtues"—an index of faith, hope, gratitude, kindness, love, leadership, and teamwork—for at least ten months after the attacks (Peterson and Seligman 2003). Furthermore, Americans overwhelmingly claim to have used religion and spirituality as methods of coping with the events of 9/11; 90 percent claim to have turned to prayer, religion, or spiritual feelings at some level in order to deal with the tragedy, including 44 percent who said they relied heavily on these coping mechanisms (Schuster et al. 2001). Indeed, these numbers are quite impressive. A study of young adults, however, finds only modest increases in religiosity and spirituality, and only among young men. Whereas 45 percent of young men claimed religion was at least very important to them prior to 9/11, 50 percent did so in the two months following the attacks. Similar increases were documented in men's reported importance of their spiritual lives, and both religiosity and spirituality seemed to peak in the second week following the attacks (Ford et al. 2004).

Although there appears to be some social scientific evidence that many Americans did indeed turn to religion and spirituality in the wake of 9/11, no thorough investigation has been conducted to determine what *types* of people are more or less likely to do so. As Spilka and his colleagues (2003:480) note, "we must await more definitive studies of *who* was affected by the September 11 disaster" (emphasis added). Such studies are important not only for understanding the effect of 9/11 on Americans, but they may also shed light on if and why people turn to religion and spirituality in times of national crisis. Indeed, there has been little explanation at all for why Americans turned to religion and spirituality after the attacks, and even fewer *sociological* explanations. This study begins to address these questions by developing a theoretical framework informed by the sociological literatures on religious legitimation, stress, and religious coping. I then examine the extent and duration of religious and spiritual responses to 9/11, and assess how individuals' social location, personal resources (both social and psychological), and religious characteristics may affect the extent and duration of their response to the attacks.

For this study, I analyze data from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health ("Add Health"), a longitudinal, nationally-representative panel study that has tracked adolescents into young adulthood. Wave 3 of the Add Health is particularly suited to the present study because it was collected between July 2001 and May 2002, which allows for pre-and post-9/11 comparisons on a variety of outcomes, including many religious and spiritual ones. This "natural experiment" helps avoid the issue of recall bias, wherein people tend to over- or underestimate the intensity of their emotional responses to significant events depending on their current appraisal of the event (Levine and Safer 2002; Levine et al. 2005).

A study of young adults' responses to 9/11 is not representative of all Americans. It is widely accepted that young adulthood is the least religious stage of the life course. As young adults leave their family and experience increased autonomy, religious participation is crowded out of their lives. Nearly 70% of young adults who attended religious services at least semi-regularly as adolescents report lower levels of religious service attendance as young adults (Uecker, Regnerus, and Vaaler 2007). This is not to say, however, that

²For two excellent reviews of this media coverage, see Walsh (2001) and Walsh (2002).

religious faith and affiliation are typically cast aside.³ Only 20% of young adults report less religious salience than they did as adolescents, and only 17% disaffiliate altogether from the religion of their youth (Uecker, Regnerus, and Vaaler 2007). The nature of the religious faith of young adults, then, is important. Arnett and Jensen (2002) find that young adults take a highly individualized view of religion and are skeptical of religious institutions. Beliefs are chosen and pieced together from numerous religious traditions, and religion and spirituality are not necessarily found within church walls. Although her study is of adolescents, Trinitapoli (2007) finds quantitative evidence to support these trends. Just 29% of adolescents believe only one religion is true, only 51% of adolescents believe one should accept church teachings as a whole, and only 20% believe both of these things. These findings are also corroborated by Williams and Davidson's (1996) study of Catholics, which finds each new generation of Catholics is increasingly individualistic. Despite these peculiarities of young adult religion, these data allow for a more detailed investigation into the religious and spiritual responses to 9/11 among an important group of Americans. Before launching into the current study, however, I first provide a theoretical framework for why young adults might turn to religion and spirituality, and why religious and spiritual responses may vary among different subgroups of young adults.

THEORETICAL BACKGROUND

Turning to Religion and Spirituality in Response to Tragedy⁴

A major function of religion is what Berger (1967) calls world-maintenance. Humans' understanding of the social order is socially constructed and thus in need of legitimation in order for it to be maintained. Religion, according to Berger (1967:33), "legitimizes social institutions by bestowing upon them an ultimately valid ontological status, that is, by *locating* them within a sacred and cosmic frame of reference" (emphasis in original). Although religion serves a world-maintaining function in everyday life, it is especially good at providing answers when everyday understandings of reality are called into question by marginal situations, such as the 9/11 attacks. Indeed, Berger (1967:44) suggests that in catastrophic situations, "religious legitimations almost invariably come to the front." Just as religion legitimizes social institutions by locating them in a sacred frame of reference, it accommodates marginal situations into a sacred frame of reference. Put another way, religion is able to explain, situate, or give meaning to catastrophic events in light of a superempirical reality. This is attractive to many people, as humans are, at bottom, meaning-seeking creatures (Smith 2003). The explanations religion provides are of course variable across (and even within) religious traditions. Disasters can be cast as "the will of a God who works in mysterious ways" or as the result of human "sinfulness," among myriad other possible explanations. Though the content of the explanations varies, the function of them does not: Religion serves to provide meaning and legitimation, especially during times of threat such as the 9/11 attacks. Religious explanations may be more or less plausible to or necessary for individuals, so it is important to ask which people are most likely to appropriate these explanations.

Socially-Conditioned Turns to Religion and Spirituality in Response to Tragedy

A central task of a sociological study of religious and spiritual responses to September 11th—or a sociological study of any sort—is to explain why the same event evokes different responses from different groups of people (Pearlin 1989). Following Ellison and Taylor

³This is also not to say that this decline is a permanent thing. Young adults tend to return to religion as they marry and raise children (Stolzenberg, Blair-Loy, and Waite 1995).

⁴Because the literature on which this framework is based is specifically about *religion*, I do not use the word *spirituality* throughout this section. But the same arguments could be made for spirituality as for religion.

(1996), I suggest that an individual's response to a tragic event may vary by that individual's social location, personal resources, and religious characteristics.⁵

Social location—Individuals embedded in different social contexts may have experienced and interpreted 9/11 in different ways. There are at least five key aspects of social location that may affect how young adults responded to the September 11th attacks: gender, race, region of residence, educational attainment, and religious tradition. Men and women are known to respond differently to stressors. While men tend to utilize solitary coping techniques, women are more likely to seek out social or relational coping techniques (Westbrook and Viney 1983; Idler 1987; Ellison and Taylor 1996). If religion is indeed an individualistic phenomenon among young adults, men may have been more prone to respond religiously and spiritually to the 9/11 terrorist attacks. Young adults from different race-ethnic groups may also have interpreted the attacks differently. The 9/11 attacks may have been viewed as an attack on America and its dominant culture, so race-ethnic minorities such as Blacks, Hispanics, and Asians might have perceived the attacks as less threatening to their way of life than their White counterparts, and thus be less likely to respond religiously or spiritually. At the same time, Blacks are more likely than Whites to respond religiously to stressors (Ferraro and Koch 1994; Koenig 1994; for a counterexample, however, see Ferraro and Kelley-Moore 2000), so even if their reaction to 9/11 was not as strong as Whites', their heightened tendency to cope religiously may result in more noticeable religious and spiritual responses to the event.

In addition to gender and race, young adults' relative proximity to the attacks may have affected their responses to them. Those who were closer to the attacks geographically may have interpreted the events as more threatening than those who lived far away. Indeed, young adults who lived closer to an attack site were more likely to display symptoms of post-traumatic stress disorder and sadness (Blanchard et al. 2004; Ford et al. 2004). Thus, young adults living in the northeastern United States may be most likely to exhibit a religious or spiritual response to 9/11 as a means of coping. Alternatively, in regions where conservative civil religion—which envisions America as a chosen nation of God tasked to preach Christianity to the world (Wuthnow 1988)—is strong, such as the South and the Midwest (i.e., “red states”), the attacks might have been interpreted through a more directly religious lens and might have evoked a stronger religious and spiritual response among young adults.

Young adults with different levels of educational attainment may also have had different religious and spiritual responses to September 11th. Young adults with lower educational attainment may have been more likely to employ a religious framework to interpret 9/11 because they may possess more restricted symbolic codes as the result of less sophisticated cognitive capacities (Pollner 1989).

Finally, young adults from different religious traditions may have responded differently to the attacks. Because religion appears to be an individualistic phenomenon for young adults (Williams and Davidson 1996; Arnett and Jensen 2002; Trinitapoli 2007), and religious and spiritual responses can be viewed as solitary coping mechanisms, we might expect personal religious and spiritual responses to be strongest among members of religious traditions that are most individualistic. Trinitapoli's (2007) study of adolescents suggests that mainline Protestant, Catholic, and religiously unaffiliated youth are the most religiously individualistic, while evangelical and black Protestant youth are more likely to accept their church teachings as a whole. So, 9/11 may have spurred religious responses among mainline

⁵Ellison and Taylor (1996) also identify the type of stressor as a source of variability in religious responses. In my case, the stressor is a constant (September 11th).

Protestants, Catholics, and the nonreligious, but not among evangelical and black Protestants.

Personal resources—Young adults with different social and psychological resources may have responded differently to 9/11. Religion may serve as a compensatory coping device for young adults who are lacking other means of social support; thus, those who are not in a marital or cohabiting union, those who have suboptimal relationships with their parents, and those who have no friends to support them (or to whom they can offer their support) may be more likely to turn to religion as a provider of either social support (which is not likely given the individualistic nature of young adult religion) or the support of a “divine other” (Pollner 1989). Similarly, young adults who feel alone, depressed, or are otherwise psychologically distressed may also be more likely to turn to religion and spirituality for support in the face of adversity.

Religious characteristics—Berger (1967) asserts that the less stable the religious plausibility structures (i.e., religious communities) upholding religious belief, the more religious legitimation is needed. If this is indeed the case, those individuals who are uninvolved or minimally involved in their religious communities, or who attach little-to-no importance to their religious faith, may be more likely than the religiously involved to seek out religion and spiritually in the aftermath of a tragic event (since the religiously involved will already be able to accommodate the event into their worldview). The opposite case, however, could also be made. Many studies have found, for example, that those with higher religiosity are more likely to use religion as a coping mechanism (Johnson and Spilka 1991; Pargament et al. 1992; Ellison and Taylor 1996; Ferraro and Kelley-Moore 2000). As Pargament (1997) argues, individuals cope with the tools that are most available to them. Those for whom religion is a more important part of life are more likely to draw upon it in times of trouble simply because it is a larger part of their orienting system. In more economic terms, increased involvement in religion can be viewed as the accumulation of religious capital that can be drawn upon when hardship arises (Iannaccone 1990).

DATA AND SAMPLE

The data for this study come from Waves 1 and 3 of the National Longitudinal Study of Adolescent Health (Add Health), a panel study funded by the National Institute of Child Health and Human Development (NICHD) and 17 other federal agencies. It is a school-based study of health-related behaviors and their causes, with an emphasis on social context and social networks.

Wave 1, conducted in 1994 and 1995, consisted of in-depth interviews with 20,745 American adolescents enrolled in grades 7–12. Schools included in the study were chosen from a sampling frame of U.S. high schools and were nationally representative with respect to size, urbanicity, ethnicity, type (public, private, religious, etc.), and region. The 132 schools that participated ranged in size from 100 to more than 3,000 students.

Wave 3 of the Add Health study was collected from July 2001 – May 2002, which allows for pre- and post-September 11th comparisons. Almost all of the 15,197 Wave 3 respondents (all of whom also participated in Wave 1 of the study) were ages 18–25, and this wave includes a detailed battery of religion and spirituality questions. For this study, I exclude the small number of Wave 3 respondents who were still in high school at the time of their interview, those who interviewed on September 11th, and those who were missing on at least one variable in the analysis. My working sample ranges from 13,188 to 13,257 respondents (the *N* varies slightly by the dependent variable in question).

At both waves, interviews were conducted in the respondents' homes. Less sensitive material was recorded by a trained interviewer, and more sensitive material was inputted directly by the respondent into a laptop computer. More information about Add Health is available online at www.cpc.unc.edu/addhealth.

MEASURES

Dependent Variables

The dependent variables for this study are four measures of religiosity and spirituality taken from the Wave 3 survey: the importance of religious faith, the importance of one's spiritual life, frequency of prayer, and employing religious or spiritual beliefs as a basis for how to live and act. As the purpose of this study is to identify changes after the events of September 11th, I do not include Add Health's measure of religious service attendance because it asks about attendance *over the past 12 months*, meaning those interviewed after 9/11 were asked to report their attendance for a time period stretching before and after the attacks.

Tragic events like September 11th may awaken or strengthen individuals' religious faith, or, by contrast, weaken that faith. The first measure of religiosity, the importance of religious faith, captures this private, subjective aspect of religiosity. To measure this aspect of religiousness, Add Health asked respondents, "How important is your religious faith to you?" Respondents could choose one of four response categories: "not important," "somewhat important," "very important," or "more important than anything else." This measure is coded from 0–3, with higher numbers indicating a higher level of religious salience.

Because many young adults may be quite spiritual, but not necessarily religious,⁶ I also consider respondents' self-reported importance of their spiritual life. Respondents were asked, "How important is your spiritual life to you?" The response categories for this variable are identical to those of the importance of religious faith variable, and they are coded identically to that variable (from 0–3).

These two measures capture individuals' subjective levels of religiosity and spirituality, but I am also concerned with more objective, tangible aspects of these phenomena that might be affected by the events of 9/11. Thus, I employ Add Health's measure of prayer frequency as a dependent variable in the analyses. When asked how often they prayed privately (that is, when they were alone), respondents could choose responses ranging from "never" to "more than once a day." This variable is coded from 0–7, with a higher score reflecting more frequent private prayer.

It is also important to know whether or not these religious and spiritual responses to the 9/11 attacks affected the day-to-day lives of the individuals in question. In order to determine whether 9/11 influenced the salience of religious and spiritual beliefs for daily living, I consider a fourth variable that I label "guided decision-making." Add Health asked each respondent their level of agreement with the following statement: "I employ my religious or spiritual beliefs as a basis for how I act and live on a daily basis." Higher levels of agreement were coded as higher numbers, and the range of the variable goes from 1–5.

Independent Variables

Date of interview—The key independent variable for this study is the date of the respondent's Wave 3 interview. I code the interview date as a series of dummy variables:

⁶More than half of *adolescents* say this is at least somewhat true of them (Regnerus 2007). Parallel figures for young adults are unknown.

those interviewed before September 11th, those interviewed from September 12th – October 11th, those interviewed from October 12th – November 11th, those interviewed from November 12th – December 11th, and those interviewed from December 12th through May of 2002 (the end of Add Health data collection). By creating these dichotomous variables, I am able not only to document the existence of post-September 11th changes, but also approximate how long-lasting these changes are. The month-long intervals were chosen because they are relatively short, yet include adequate numbers of respondents to yield meaningful results. Weekly intervals yielded large effect sizes but little statistical significance, which was attributable to small cell sizes. Those interviewed after December 12th are grouped together for three reasons. First, ancillary analyses showed little difference among the coefficients when these dates were disaggregated into monthly intervals. Second, the Ns for each month decline after December, which leads to small cell sizes for those individual months (January – May). And third, collapsing this category significantly reduces the number of coefficients to report. Since many of the results are interactions between interview date and the independent variables, this leads to a simpler presentation of findings.

Social location variables—Religious and spiritual responses to September 11th may vary by social location variables. I include dichotomous variables measuring gender, race, region of residence (South, Northeast, Midwest, West) at Wave 1, educational attainment at the Wave 3 interview (did not go to or finish college, enrolled in or graduated from two-year college, enrolled in or graduated from four-year college), and religious tradition as a youth (evangelical Protestant, mainline Protestant, black Protestant, Catholic, other religion, no religion). The coding scheme for the religious tradition variable follows that of Steensland et al. (2000). Because of small sample sizes, Muslims, Jews, and Mormons—among other groups—could not be analyzed separately.

Personal resource variables—September 11th may have differentially affected those with different levels of social and psychological resources. I include measures to gauge the respondents' union status (single, married, cohabiting), closeness to parents, contact with friends over the past week (at the Wave 3 interview), and score on the Center for Epidemiologic Studies Depression scale (CES-D). All these variables are dichotomously coded. The parent closeness variable is split into those who reported their parents cared for them “very much” at the Wave 1 interview (85% of the sample) and those who reported their parents cared for them “quite a bit,” “somewhat,” “very little,” and “not at all” (15% of the sample when combined). The contact with friends variable is derived from the Wave 3 question, “In the past seven days, how many times did you just “hang out” with friends, or talk on the telephone for more than five minutes?”⁷ Those who answered “none” are coded 1, all others are coded 0. The CES-D scale is a commonly-employed scale of 20 questions used to tap depressive symptoms over the prior week and measures agreement with statements such as, “I felt sad,” “I could not get ‘going,’” and “I felt like people dislike me.” The alpha coefficient for this scale is .87. Although this variable ranges from 0 to 54, it is likely that only those with a substantial score on this scale would be affected. Thus, I dichotomize this variable into those with a score higher than 20 at Wave 1 (the top 10% of the sample) and those with a score of 20 or lower (the bottom 90% of the sample).

Religiosity variables—Those with higher religiosity may be more apt to draw on that resource in a time of crisis, or may have less need to seek out a religious explanation for the event (since they already have one). I include two variables that measure the respondents' religiosity as an adolescent: one measuring their religious service attendance patterns, and

⁷Two thirds of the Wave 1 sample were asked this question about only their closest male and female friend, so I rely on the Wave 3 measure.

one measuring the self-reported importance of religion in their lives. I construct dummy variables for each response category. Unfortunately, Wave 1 respondents who indicated on the first religion-section question (about affiliation) that they had “no religion” were subsequently skipped out of all religion questions. Add Health analysts have typically assigned the lowest values of attendance and salience to these respondents; I do the same.

Control variables—Ideally, the date of interview would be randomly distributed among respondents and there would be no need to control for *any* covariates in the analyses. Unfortunately, however, this is not the case. Due to the logistics of data collection, the interview date varies by respondents’ living situation (i.e., whether or not the respondent lives with their family), age in months, and family (of origin) structure, so measures for each are included as controls in the models. For descriptive statistics of all variables in the analyses, see Table 1.

ANALYTIC APPROACH

In order to isolate the effects of September 11th on young adult religiosity, I employ one ordered logit regression model predicting each religious and spiritual outcome, net of social location, personal resources, religiosity, and control variables (Table 2). Then I calculate the marginal effects of the interview date on respondents’ religiosity and spirituality conditioned on their social location (Table 3), personal resources (Table 4), and religiosity as an adolescent (Table 5). The coefficients and standard errors reported in these last three tables are taken from models that include the independent variables in Table 2 and multiplicative interaction terms between the interview date and the independent variable in question. The marginal effects can be interpreted as the effect of the interview date on respondents with that particular characteristic. For example, the first row of Table 3 can be interpreted as the difference in the religiosity and spirituality of men interviewed between September 12th and October 11th compared to men interviewed prior to 9/11. In order to accommodate the multiple design weights that accompany Add Health data, I generated regression models in Stata using its *svy* estimators, which account for the primary sampling unit (the school), the region, and the unequal probability of being included in the sample (StataCorp 2007).

RESULTS

Table 2 reports the estimated coefficients predicting each religious and spiritual outcome, by interview date, social location, personal resources, religiosity, and control variables. Net of all these factors, only modest effects of September 11th are witnessed, and they are not consistent across all the religion and spirituality outcomes. Young adults were more likely to report higher religious salience and frequency of prayer from September 12th – October 11th (compared to before the attacks), but there was no notable increase in these characteristics after that time. Young adults’ spiritual salience and guided decision-making did not increase nor decrease significantly at any time following 9/11. Though the results from Table 2 suggest that the effects of September 11th are not overwhelming, the attacks could have exerted differential effects on various subgroups of young adults.

Table 3 begins to explore these possible conditional effects by social location. The effects of September 11th for religious salience and prayer hold for men. Those interviewed in the month after the attacks are more likely to report higher religious salience and frequency of prayer than their counterparts interviewed before the attacks. The effects for women, however, hold only for prayer. Women are neither more nor less likely to increase their religious salience after the attacks. The results are also variable by race-ethnic categories. White respondents interviewed from September 12th – October 11th were more likely to report higher religious salience and frequency of prayer than Whites interviewed pre-

September 11th, and Hispanics also show a marginally significant short-term increase in their frequency of prayer from September 12th–October 11th. Blacks do not appear to have increased their religiosity or spirituality at all in the wake of September 11th, but they do show a decrease in their spiritual salience and frequency of prayer from December 12th – May 2002.

Conditional effects are also apparent by region of the country. Southerners were more likely to report higher frequency of prayer in the month following the attacks, but there also appears to be a negative effect of September 11th on the long-term (December 12th – May 2002) religious and spiritual salience of these individuals. Despite, or perhaps because of, their close proximity to the World Trade Center attacks, Northeasterners did not show any immediate religious or spiritual responses to 9/11. They were marginally less likely to report higher religious salience from October 12th – November 11th but more likely to report higher spiritual salience from December 12th – May 2002. Midwesterners, like Southerners, exhibited an increase in prayer in the month following the attacks, but young adults from the Midwest did not show any other significant reactions to 9/11. The strongest conditional effects of September 11th appear to be for Westerners. These young adults were more likely to report higher religious salience in the three months following 9/11, and they also showed increases in prayer and guided decision-making from November 12th – December 11th.

I find very few conditional effects by level of education. Those who did not attend college or had attended college without earning a degree were marginally less likely to report higher religious salience from December 12th – May 2002. Both two-year and four-year college students and graduates were more likely to increase their prayer in the month after September 11th, though these are the only significant findings for these groups. Nonetheless, the “restricted symbolic code” argument finds little support here. If anything, it is the more educated who were the most likely to react religiously or spiritually to 9/11.

Lastly, the effect of September 11th on young adults’ religious and spiritual lives depends on the religious tradition in which the young adult was raised. Evangelical Protestants, despite the revivalist rhetoric of their spokespersons, are among the least likely to have increased their religiosity or spirituality in the wake of the terrorist attacks. Although they were more likely to pray more frequently in the month after 9/11 (at a marginal significance level), they were less likely to report higher religious salience from November 12th – May 2002 than they were prior to the attacks. Similarly, young adults who were evangelicals as adolescents were less likely to report higher spiritual salience and guided decision-making from December 12th – May 2002. Those raised in a mainline Protestant tradition, on the other hand, appear to have increased their religiosity and spirituality after 9/11, though the coefficients are only marginally significant. Mainline Protestants reported higher spiritual salience from October 12th – November 11th and from December 12th – May 2002 than they did prior to September 11th. They were also more likely to report higher frequency of prayer from November 12th – May 2002 and higher guided decision-making from December 12th – May 2002. Black Protestants, like evangelicals, were less likely to report higher spiritual salience from December 12th – May 2002 and show no other significant reactions to 9/11. Catholics, on the other hand, reported higher religious salience and frequency of prayer from September 12th – October 11th than Catholics interviewed before September 11th, and Catholics interviewed November 12th – December 11th reported higher religious salience, though the difference is only marginally significant. Members of other religions exhibited

⁸Black Protestantism is highly correlated with being Black, and it could be argued that the effects of Black Protestantism are being masked by the inclusion of race controls in the analysis. Models without race controls yield virtually identical results, however, with the exception that Black Protestants are marginally less likely to report more frequent prayer from December 12th–May 2002 ($\beta = -.33$, $SE = .18$).

decreases in prayer and guided decision-making from October 12th–November 11th, as well as diminished frequency of prayer from December 12th – May 2002, but the heterogeneous nature of this grouping renders these results uninterpretable. Finally, respondents who claimed no religious affiliation as an adolescent were more likely to report higher religious salience between November 12th and December 11th and higher spiritual salience from September 12th – October 11th and November 12th – May 2002.

Table 4 reports the marginal effect of interview date conditioned on personal resources. If religion is used as a compensator for a lack of other resources (both social and psychological), those with fewer of these resources may be especially prone to respond religiously and spiritually to 9/11. Indeed, single young adults interviewed between September 12th and October 11th reported higher religious salience, spiritual salience, and frequency of prayer than those single young adults interviewed before 9/11. But married adults were also more likely to report more prayer during this time, and although there are no other significant findings for married young adults, the effect sizes for these individuals tend to be larger than for singles. Cohabitators exhibit no increases in religiosity or spirituality post-9/11, but those interviewed from September 12th–October 11th and December 12th – May 2002 were marginally less likely to report higher spiritual salience.

Young adults who reported during adolescence that their parents cared for them not at all, very little, somewhat, or quite a bit did not appear to be affected religiously or spiritually in any way by 9/11. Those who reported their parents cared for them very much—the vast majority of young adults—did show a slight increase in religious salience and frequency of prayer in the month following 9/11, similar to those reported by the entire population. Increases in religious salience, spiritual salience, and frequency of prayer were also reported for September 12th–October 11th among those who had significant interaction with a friend over the past week. Significant negative effects on spiritual salience were apparent for those who had no interactions with friends in the past week for the entire post-9/11 period, with the exception of November 12th – December 11th. Taken together, the idea that religious and spiritual coping may be more common among those with little to no social support garners little support here.

The last two sections of Table 4 show the conditional effects of psychological status on religious and spiritual responses to 9/11. Those who scored in the bottom 90% of the CES-D scale as adolescents showed a modest increase in their prayer frequency the month after September 11th, but also modest (and marginally significant) decreases in their guided decision-making from October 12th – November 11th and spiritual salience from December 12th – May 2002. By contrast, those whose score on the CES-D was in the top 10% exhibited strong short-term reactions—from September 12th – October 11th—to 9/11. Increases in religious salience, frequency of prayer, and guided decision-making are sizable for these individuals. The increases are fairly sustained in the case of the latter two measures. Young adults who had scored in the top 10% on the CES-D as adolescents displayed heightened frequency of prayer through December 11th, and increased guided decision-making from October 12th – November 11th and December 12th – May 2002. Unlike those with a lack of social support, those with more psychological distress did appear to turn to religion and spirituality after 9/11.

Table 5 displays estimates for the marginal effect of interview date on respondents' religiosity and spirituality conditioned on their religiosity as an adolescent. Young adults who attended religious services weekly or more as adolescents, and those who claimed religious faith was very important to them, were more likely to report a higher frequency of prayer from September 12th – October 11th than they were prior to 9/11. On the other outcomes, however, those who were most religious as adolescents, if anything, exhibited

declines in their religiosity or spirituality. Young adults who attended religious services regularly as adolescents displayed a decreased likelihood of reporting higher religious and spiritual salience from December 12th–May 2002. Those who claimed religious faith was very important to them during the Wave 1 interview showed similar declines in religious and spiritual salience during that time, as well as a decline in spiritual salience from October 12th–November 11th, and a decrease in guided decision-making from October 12th–May 2002.

Young adults who were less religious as adolescents were the ones that seemed to respond most to the 9/11 attacks. Those who never attended religious services as youth were more likely to report higher religious salience from September 12th–October 11th and November 12th–December 11th. Those who attended only occasionally—less than once per month—displayed marginally significant increases in their religious salience from October 12th–November 11th and in their frequency of prayer from November 12th–December 11th. Semi-regular attenders did not display any significant changes in their religious or spiritual lives following the 9/11 attacks. Young adults who did not value religion at all as adolescents were more likely to report higher religious salience from November 12th–May 2002 than they were during the months leading up to September 11th. These young adults were also more likely to report higher spiritual salience during the entire post-9/11 period (though the effect for the first two months is only marginally significant), and a marginally significant increase in prayer is evident from December 12th–May 2002. Those who reported religion was fairly unimportant to them during the Wave 1 interview exhibited only a marginally significant increase in their frequency of prayer during the month after the attacks. Young adults whose religion had been fairly important to them during adolescence were marginally more likely to report higher religious salience from October 12th–November 11th and more likely to report higher frequency of prayer from November 12th–December 11th.

DISCUSSION AND CONCLUSIONS

What effect did 9/11 have on the religiosity and spirituality of American young adults? The evidence from the Add Health study suggests the answer is “not much.” On average, young adults exhibited only a modest, short-lived increase in religious salience and prayer, and no discernable increases in spiritual salience and guided decision-making. These findings have at least two important implications. First, it seems apparent that at least among young adults, no great religious revival took place after September 11th. Claims of widespread religious resurgence could be accurate, but the evidence presented here suggests young adults were not included in that number. Second, researchers interested in religious and spiritual development across the life course—as well as those interested in religious change over time—need not be overly concerned with sea changes resulting from 9/11. Among young adults, the attacks represent more of a blip on the religious and spiritual radar screen than any sort of long-term shift.

The 9/11 attacks affected the religious and spiritual lives of some young people more than it did others. Many of these subgroup variations were what one might have expected. The findings here suggest that religion and spirituality can indeed be considered individualistic phenomena for young adults. The effects of 9/11 on religious salience and prayer are evident for men, who tend toward solitary coping methods; similarly, young adults from religious traditions with the most individualistic adherents—Catholicism, mainline Protestantism, and the unaffiliated—were the most likely to increase their religiosity and spirituality.

Other findings might have been expected as well. Whites, as the primary creators of the dominant culture, appeared to feel more threatened by the terrorist attacks, as evidenced by

their increases in religious salience and prayer. Increases in prayer among Southerners and Midwesterners also make sense in light of the conservative civil religion characteristic of those regions that imbues America with religious significance. The findings that single young adults and those with a top 10% CES-D score tended to exhibit increases in religiosity and spirituality suggest that religion may serve as a compensator for individuals lacking social and psychological support.

The effects of 9/11 on young adults with different religious characteristics are not easy to summarize; rather, they appear to be somewhat of a mixed bag. With respect to religious and spiritual salience, it appears that those with little to no religious commitment as young adults were the most likely to turn to religion after September 11th, which suggests young adults with a tenuous or nonexistent religious worldview turned to religion and spirituality for answers after 9/11. On the other hand, young adults who attended religious services weekly or more as adolescents, and those who valued religion highly as adolescents, increased their frequency of prayer in the month after the attacks, which suggests that those with religious capital or a religious toolkit were likely to put their faith to work after 9/11. What this may reveal is the multifaceted nature of religion and a difference in the religious characteristics that this study has measured. It is not contradictory to say that those with weak religious plausibility structures turned to religion for answers after September 11th, while religious young adults coped with the attacks through prayer. In other words, the outcome variables are tapping quite different processes.

Although many of the findings here are consonant with what might be expected, others are not. Why, for instance, did young adults from the western United States exhibit increases in their religious lives? And why did young adults with social support systems—those who were married, had good relationships with parents, and had contact with friends—increase their religiosity and spirituality? Why did members of some religious traditions, like evangelical and black Protestants, show *declines* in their religiosity and spirituality post-9/11? Was the faith of these individuals shaken on 9/11? These findings are provocative and call for more extensive investigation than can be presented here.

Given that 90 percent of Americans claimed to have turned to prayer, religion, or spirituality following 9/11 (Schuster et al. 2001), it is perhaps surprising that the findings here are not more sizable or consistent. There are at least two reasons the religious and spiritual change among young adults was more modest than expected, however. First, there may be a considerable difference between “turning to religion” and increasing one’s religiosity or spirituality as reported on a survey. While many young adults likely leaned on religion in the wake of the attacks, their leaning did not significantly alter their perceived importance of religion or spirituality, nor the role these things played in their lives. Instead, turning toward religion simply helped them get through the aftermath of the event, but was not something that resulted in any considerable religious or spiritual change. Even levels of prayer remained fairly stable; perhaps turning to prayer is not out of the ordinary for young adults, or perhaps they did not turn there very often after the attacks. Second, young adults are notoriously irreligious (Uecker, Regnerus, and Vaaler 2007). If any age group were to resist religious and spiritual change after 9/11, it would likely be young adults.

Conclusions

Although the 9/11 attacks evoked a turn to religion and spirituality among many Americans, including young adults, they did not drastically alter the religious and spiritual makeup of the young adult population. Only modest differences were noted in young adults’ levels of religiosity and spirituality after the attacks, and the differences were generally short-lived. Rhetoric citing a religious and spiritual revival after 9/11 was overreaching, at least with respect to young adults. Additionally, this study has highlighted the need for more research

on religious and spiritual responses to national tragedies like 9/11, with particular attention needed to *who* reacts and *why*. Different responses to September 11th were found among young adults with different social locations, personal resources, and religious characteristics.

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Table 1

Means, Standard Deviations, and Ranges for All Variables

	Mean	SD	Range
Importance of religious faith, Wave 3	1.42	.86	0–3
Importance of spiritual life, Wave 3	1.48	.83	0–3
Frequency of prayer, Wave 3	3.57	2.61	0–7
Guided decision-making, Wave 3	3.41	1.08	1–5
Pre-September 11 Wave 3 interview date	.21	.41	0, 1
September 12–October 11 Wave 3 interview date	.15	.36	0, 1
October 12–November 11 Wave 3 interview date	.14	.35	0, 1
November 12–December 11 Wave 3 interview date	.13	.34	0, 1
December 12–May 2002 Wave 3 interview date	.36	.48	0, 1
Female	.50	.50	0, 1
White	.69	.46	0, 1
Black	.16	.36	0, 1
Hispanic	.11	.31	0, 1
Asian	.04	.20	0, 1
Lives in South	.39	.49	0, 1
Lives in Northeast	.14	.34	0, 1
Lives in Midwest	.31	.46	0, 1
Lives in West	.16	.37	0, 1
Did not go to or finish college, Wave 3	.53	.50	0, 1
Enrolled in or graduated from two-year college, Wave 3	.15	.36	0, 1
Enrolled in or graduated from four-year college, Wave 3	.32	.47	0, 1
Evangelical Protestant	.19	.39	0, 1
Mainline Protestant	.21	.41	0, 1
Black Protestant	.12	.33	0, 1
Catholic	.24	.43	0, 1
Other religion	.11	.31	0, 1
No religion	.12	.33	0, 1
Single, Wave 3	.67	.47	0, 1
Married, Wave 3	.17	.37	0, 1
Cohabiting, Wave 3	.16	.37	0, 1
Parents care about very much	.85	.35	0, 1
No significant friend contact over past week, Wave 3	.08	.27	0, 1
Top 10% CES-D score	.10	.30	0, 1
Never attended religious services	.24	.43	0, 1
Attended religious services less than once a month	.18	.38	0, 1
Attended religious services one to three times a month	.20	.40	0, 1
Attended religious services once a week or more	.38	.49	0, 1
Religion not important at all	.16	.36	0, 1
Religion fairly unimportant	.07	.25	0, 1

	Mean	SD	Range
Religion fairly important	.36	.48	0, 1
Religion very important	.42	.49	0, 1
Lives with family	.43	.49	0, 1
Age (in months)	267.68	21.9	220–336
Intact family	.57	.50	0, 1

Note: Unless other wise noted, all variables are Wave 1 variables.

Table 2

Coefficients from Ordered Logit Regression Models Predicting Religious and Spiritual Outcomes among Young Adults, by Interview Date, Social Location, Personal Resources, Religiosity, and Controls

	Religious salience (N = 13,257)		Spiritual salience (N = 13,286)		Frequency of prayer (N = 13,286)		Guided decision-making (N = 13,188)	
	β	SE	β	SE	β	SE	β	SE
September 12–October 11	.17*	.08	.08	.07	.22**	.07	.01	.07
October 12–November 11	.06	.08	.01	.08	.05	.08	-.08	.08
November 12–December 11	.05	.09	.05	.09	.13	.08	.00	.08
December 12–May 2002	-.09	.07	-.09	.07	-.03	.07	-.03	.07
Female	.25***	.04	.22***	.31	.54***	.04	.16**	.04
Lives in Northeast	-.62***	.08	-.56***	.08	-.67***	.08	-.51***	.08
Lives in Midwest	-.38***	.09	-.29**	.09	-.33***	.08	-.27***	.07
Lives in West	-.28**	.10	-.02	.10	-.19*	.10	-.14	.09
Enrolled in or graduated from two-year college	.04	.07	.19*	.08	.21**	.07	.06	.07
Enrolled in or graduated from four-year college	.21**	.06	.49***	.05	.34***	.06	.32***	.06
Mainline Protestant	-.19*	.08	-.15 ⁺	.09	-.11	.08	-.09	.08
Black Protestant	-.52***	.14	-.47*	.20	-.57***	.16	-.36 ⁺	.19
Catholic	-.33***	.08	-.39***	.09	-.28**	.08	-.27**	.09
Other religion	-.12	.10	-.08	.10	-.25*	.10	.01	.10
No religion	.14	.19	.26	.25	.02	.20	.11	.17
Married	.38***	.07	.34***	.08	.41***	.07	.42***	.07
Cohabiting	-.28***	.07	-.19**	.07	-.21**	.07	-.15*	.07
Parents care about very much	.05	.06	.09	.07	.14*	.06	-.02	.07
No significant friend contact over past week	-.24*	.09	-.27**	.10	-.35***	.10	-.08	.09
Top 10% CES-D score	.11	.08	.25**	.09	.14	.09	.16*	.08
Attended religious services less than once a month	.19 ⁺	.10	.17 ⁺	.04	.19*	.08	.11	.08
Attended religious services one to three times a month	.44***	.08	.44***	.09	.37***	.07	.34***	.08

	Religious salience (N = 13,257)		Spiritual salience (N = 13,256)		Frequency of prayer (N = 13,286)		Guided decision-making (N = 13,188)	
	β	SE	β	SE	β	SE	β	SE
Attended religious services once a week or more	.71***	.08	.68***	.08	.58***	.08	.71***	.08
Religion fairly unimportant	.48*	.19	.46*	.23	.31	.19	.21	.16
Religion fairly important	1.10***	.18	.89***	.24	.81***	.18	.66***	.14
Religion very important	2.15***	.19	1.86***	.23	1.50***	.18	1.42***	.16
Black	.99***	.15	.89***	.22	1.10***	.16	.85***	.19
Hispanic	.32***	.09	.28***	.07	.21*	.10	.13+	.08
Asian	.02	.14	-.19	.12	-.20	.15	.06	.11
Lives with family	-.02	.05	-.05	.05	.00	.05	.03	.05
Age (in months)	.00	.00	.00	.00	.00	.00	.00***	.00
Intact family	.12*	.06	-.03	.05	-.10 ⁺	.05	.03	.05
-2 log-likelihood	28,712.10		28,867.23		48,174.77		35,308.24	

+ p < .10

* p < .05

** p < .01

*** p < .001

Notes: Reference categories are pre-September 11, lives in the South, did not go to or did not finish college, evangelical Protestant, single, never attended religious services, religion not important at all, and White.

Table 3
Marginal Effects of Interview Date on Religious and Spiritual Outcomes, Conditioned on Social Location

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
Men								
September 12–October 11	.24*	.12	.16	.10	.25*	.11	-.07	.11
October 12–November 11	.07	.11	.08	.13	.06	.12	-.20 ⁺	.11
November 12–December 11	.11	.12	.11	.12	.15	.11	-.04	.11
December 12–May 2002	-.04	.10	-.04	.10	-.01	.10	-.06	.09
Women								
September 12–October 11	.11	.10	.01	.10	.19*	.09	.09	.02
October 12–November 11	.06	.11	-.05	.10	.04	.09	.02	.09
November 12–December 11	.00	.12	.01	.11	.11	.11	.03	.09
December 12–May 2002	-.13	.09	-.14	.08	-.04	.07	-.01	.08
White								
September 12–October 11	.19*	.09	.10	.09	.24**	.08	.03	.09
October 12–November 11	.05	.09	.02	.09	.02	.09	-.09	.10
November 12–December 11	.05	.10	.08	.10	.14	.09	.03	.10
December 12–May 2002	-.04	.10	-.03	.07	.04	.07	-.03	.07
Black								
September 12–October 11	.20	.18	-.01	.21	.12	.16	.10	.19
October 12–November 11	.11	.22	.02	.20	.10	.16	-.02	.17
November 12–December 11	.01	.24	-.11	.26	-.07	.23	-.17	.22
December 12–May 2002	-.20	.19	-.42*	.19	-.29 ⁺	.16	-.06	.18
Hispanic								
September 12–October 11	.09	.23	.07	.26	.32 ⁺	.19	-.20	.18
October 12–November 11	.17	.21	.05	.23	.11	.23	-.10	.18
November 12–December 11	.23	.26	.16	.25	.33	.21	-.00	.20
December 12–May 2002	-.22	.15	-.06	.16	-.13	.18	-.05	.14
Asian								
September 12–October 11	-.22	.30	-.15	.32	-.31	.25	-.05	.27

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
October 12–November 11	-.22	.33	-.19	.26	-.03	.35	-.03	.30
November 12–December 11	.14	.40	.13	.34	-.10	.37	.35	.27
December 12–May 2002	-.07	.28	.02	.25	-.06	.27	-.01	.25
Lives in South								
September 12–October 11	.15	.13	.06	.12	.23*	.10	.03	.12
October 12–November 11	-.07	.11	-.03	.11	.10	.10	-.11	.12
November 12–December 11	.14	.11	.06	.11	.10	.11	.02	.10
December 12–May 2002	-.20*	.10	-.19*	.09	-.10	.08	-.01	.09
Lives in Northeast								
September 12–October 11	-.05	.13	-.08	.17	.05	.15	-.18	.17
October 12–November 11	-.28⁺	.16	-.14	.19	-.29	.23	-.02	.19
November 12–December 11	-.01	.18	.18	.24	-.01	.15	-.03	.20
December 12–May 2002	-.03	.12	.34*	.14	.08	.16	.01	.20
Lives in Midwest								
September 12–October 11	.21	.16	-.02	.21	.28*	.14	-.03	.12
October 12–November 11	.17	.20	.07	.20	.04	.17	-.16	.15
November 12–December 11	-.10	.23	-.18	.23	.14	.18	-.17	.19
December 12–May 2002	-.08	.18	.05	.19	-.09	.17	-.23	.14
Lives in West								
September 12–October 11	.33⁺	.18	.21	.19	.25	.17	.21	.20
October 12–November 11	.38*	.16	.14	.21	.16	.16	.06	.13
November 12–December 11	.30*	.14	.22	.16	.29⁺	.17	.31*	.15
December 12–May 2002	.13	.13	.23	.17	.19	.14	.24	.15
Did not go to or finish college								
September 12–October 11	.13	.10	-.02	.10	.11	.10	-.05	.11
October 12–November 11	.08	.11	-.03	.12	.01	.11	-.13	.11
November 12–December 11	-.05	.14	-.06	.14	.12	.13	-.12	.12
December 12–May 2002	-.17⁺	.10	-.18	.10	-.09	.10	-.06	.09
Enrolled in or graduated from two-year college								

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
September 12–October 11	.26	.17	.18	.17	.35*	.15	.10	.17
October 12–November 11	.04	.17	.06	.18	.27	.17	-.03	.20
November 12–December 11	.05	.22	.29	.20	.14	.20	.17	.20
December 12–May 2002	.10	.15	.11	.13	.05	.14	.00	.15
Enrolled in or graduated from four-year college								
September 12–October 11	.16	.14	.17	.12	.29*	.12	.06	.13
October 12–November 11	.02	.16	.03	.14	-.01	.14	-.04	.13
November 12–December 11	.21	.15	.11	.15	.11	.12	.12	.16
December 12–May 2002	-.04	.10	-.05	.10	.02	.10	-.01	.11
Evangelical Protestant								
September 12–October 11	-.10	.17	-.13	.16	.24+	.14	-.03	.18
October 12–November 11	-.25	.16	-.20	.16	.14	.14	-.22	.16
November 12–December 11	-.47*	.22	-.35	.23	.12	.20	-.21	.21
December 12–May 2002	-.57***	.16	-.33*	.15	-.17	.13	-.31*	.14
Mainline Protestant								
September 12–October 11	.15	.20	.09	.16	.28	.17	.16	.15
October 12–November 11	.24	.18	.25+	.14	.22	.16	.15	.15
November 12–December 11	.24	.17	.12	.15	.32+	.18	.15	.16
December 12–May 2002	.28	.18	.22+	.13	.27+	.16	.28+	.16
Black Protestant								
September 12–October 11	.12	.22	-.11	.21	.12	.17	.07	.23
October 12–November 11	.00	.25	-.01	.21	.03	.17	.05	.15
November 12–December 11	-.23	.26	-.23	.24	-.03	.21	-.33	.22
December 12–May 2002	-.25	.23	-.46*	.20	-.03	.21	-.07	.18
Catholic								
September 12–October 11	.31*	.13	.16	.11	.26*	.10	-.07	.13
October 12–November 11	.04	.15	-.14	.15	-.00	.13	-.07	.14
November 12–December 11	.25+	.14	.20	.16	.13	.12	.07	.15

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
December 12–May 2002	-.05	.12	-.16	.12	.12	.12	-.03	.11
Other religion								
September 12–October 11	.11	.25	-.04	.22	.05	.27	-.29	.24
October 12–November 11	-.00	.26	-.15	.25	-.39 ⁺	.21	-.57 [*]	.22
November 12–December 11	-.19	.25	-.08	.24	-.22	.22	-.07	.23
December 12–May 2002	-.38	.23	-.28	.20	-.56 ^{**}	.17	-.20	.21
No religion								
September 12–October 11	.39	.27	.42 ⁺	.22	.15	.25	.19	.27
October 12–November 11	.36	.25	.31	.26	.01	.23	-.05	.24
November 12–December 11	.59 [*]	.26	.59 [*]	.25	.20	.23	.27	.24
December 12–May 2002	.34	.22	.38 ⁺	.20	.17	.20	.06	.19

⁺ p < .10

^{*} p < .05

^{**} p < .01

^{***} p < .001

Notes: Marginal effects generated from main effects and interaction effects of models containing the independent variables in Table 2 and interactions between the interview date and the variable in question. Ns are identical to Table 2.

Table 4
Marginal Effects of Interview Date on Religious and Spiritual Outcomes, Conditioned on Personal Resources

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
Single								
September 12–October 11	.20*	.10	.14+	.08	.18*	.08	-.04	.09
October 12–November 11	.01	.09	-.01	.10	.01	.09	-.09	.09
November 12–December 11	.12	.11	.11	.10	.15	.10	.08	.10
December 12–May 2002	-.09	.09	-.08	.08	-.09	.07	.03	.08
Married								
September 12–October 11	.25	.18	.16	.21	.49*	.19	.26	.19
October 12–November 11	.27	.19	.13	.22	.11	.21	.12	.19
November 12–December 11	-.16	.17	-.03	.19	.16	.18	.06	.17
December 12–May 2002	-.09	.16	.03	.15	.10	.16	-.09	.14
Cohabiting								
September 12–October 11	-.07	.18	-.31+	.17	.09	.17	-.00	.21
October 12–November 11	.05	.22	-.04	.18	.11	.19	-.25	.19
November 12–December 11	-.01	.21	-.12	.27	.02	.21	-.37	.22
December 12–May 2002	-.11	.17	-.29+	.16	.10	.16	-.22	.16
Parents care about less than very much								
September 12–October 11	.13	.19	.18	.21	.23	.20	.30	.25
October 12–November 11	.14	.20	-.08	.19	.09	.19	-.08	.17
November 12–December 11	.23	.18	.07	.18	.28	.19	.18	.19
December 12–May 2002	.06	.15	-.04	.14	.01	.15	.25	.16
Parents care about very much								
September 12–October 11	.17*	.08	.06	.08	.21**	.07	-.03	.07
October 12–November 11	.05	.09	.03	.08	.04	.08	-.08	.08
November 12–December 11	.02	.10	.05	.10	.10	.09	-.03	.09
December 12–May 2002	-.11	.08	-.10	.07	-.03	.07	-.08	.07
Significant friend contact over past week								
September 12–October 11	.18*	.08	.14+	.08	.22**	.07	.04	.07

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
October 12–November 11	.06	.08	.06	.08	.05	.08	-.07	.08
November 12–December 11	.08	.09	.08	.08	.12	.08	.02	.08
December 12–May 2002	-.08	.07	-.07	.07	-.01	.06	-.01	.07
No significant friend contact over past week								
September 12–October 11	-.06	.23	-.78**	.24	.19	.32	-.29	.28
October 12–November 11	.05	.25	-.57*	.25	.01	.29	-.19	.27
November 12–December 11	-.25	.37	-.28	.38	.24	.35	-.31	.32
December 12–May 2002	-.21	.22	-.37+	.22	-.30	.26	-.30	.23
Bottom 90% CES-D score								
September 12–October 11	.11	.08	.05	.08	.15*	.07	-.05	.07
October 12–November 11	.04	.08	-.00	.08	-.00	.08	-.14+	.08
November 12–December 11	.03	.10	.02	.09	.07	.08	-.04	.09
December 12–May 2002	-.11	.08	-.12	.07	-.06	.07	-.08	.07
Top 10% CES-D score								
September 12–October 11	.65*	.25	.28	.23	.77***	.21	.52*	.25
October 12–November 11	.21	.25	.10	.22	.43+	.23	.43+	.24
November 12–December 11	.20	.29	.33	.29	.57*	.24	.34	.26
December 12–May 2002	.09	.20	.15	.20	.25	.19	.41*	.20

+ p < .10

* p < .05

** p < .01

*** p < .001

Notes: Marginal effects generated from main effects and interaction effects of models containing the independent variables in Table 2 and interactions between the interview date and the variable in question. Ns are identical to Table 2.

Table 5
Marginal Effects of Interview Date on Religious and Spiritual Outcomes, Conditioned on Religiosity

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
Never attended religious services as an adolescent								
September 12–October 11	.36*	.17	.01	.16	.19	.16	-.09	.17
October 12–November 11	.16	.17	.05	.18	-.02	.17	-.09	.16
November 12–December 11	.30+	.16	.24	.19	.09	.15	.07	.17
December 12–May 2002	.14	.15	.13	.14	.07	.12	.03	.13
Attended religious services less than once a month as an adolescent								
September 12–October 11	.11	.18	.01	.19	.29	.17	.13	.19
October 12–November 11	.36+	.20	.22	.19	.14	.19	.05	.18
November 12–December 11	.23	.17	.30	.18	.32+	.17	.10	.18
December 12–May 2002	.20	.14	-.02	.14	.06	.14	.16	.15
Attended religious services one to three times a month as an adolescent								
September 12–October 11	.19	.19	.19	.18	-.02	.17	-.02	.18
October 12–November 11	.06	.18	-.01	.16	-.12	.14	-.09	.15
November 12–December 11	-.08	.18	-.08	.19	.00	.18	-.02	.17
December 12–May 2002	-.09	.14	-.15	.15	-.14	.14	-.20	.12
Attended religious services weekly or more as an adolescent								
September 12–October 11	.08	.12	.09	.11	.32**	.10	.04	.11
October 12–November 11	-.13	.12	-.10	.11	.12	.11	-.12	.11
November 12–December 11	-.11	.14	-.11	.12	.11	.12	-.07	.12
December 12–May 2002	-.37**	.12	-.23*	.10	-.06	.10	-.07	.10
Religion not important at all as an adolescent								
September 12–October 11	.35	.24	.36+	.21	.23	.22	.13	.24
October 12–November 11	.37	.24	.42+	.25	.24	.22	.14	.22
November 12–December 11	.53*	.26	.63**	.23	.23	.21	.24	.22
December 12–May 2002	.43*	.20	.43*	.20	.31+	.18	.17	.18
Religion fairly unimportant as an adolescent								

	Religious salience		Spiritual salience		Frequency of prayer		Guided decision-making	
	β	SE	β	SE	β	SE	β	SE
September 12–October 11	.31	.28	-.37	.32	.54 ⁺	.30	.12	.29
October 12–November 11	-.15	.32	-.43	.28	-.25	.35	-.15	.29
November 12–December 11	.06	.26	.44	.37	.25	.24	.41	.37
December 12–May 2002	.02	.21	-.27	.23	-.05	.25	.24	.25
Religion fairly important as an adolescent								
September 12–October 11	.07	.11	-.02	.13	.14	.11	-.00	.11
October 12–November 11	.22 ⁺	.13	.15	.13	.17	.12	.01	.13
November 12–December 11	.13	.11	.03	.12	.25*	.11	.11	.13
December 12–May 2002	-.06	.10	-.04	.10	-.08	.09	.00	.09
Religion very important as an adolescent								
September 12–October 11	.17	.12	.12	.12	.23*	.11	-.04	.12
October 12–November 11	-.17	.12	-.20 ⁺	.11	-.09	.10	-.24 ⁺	.13
November 12–December 11	-.20	.14	-.20	.12	-.05	.13	-.27*	.12
December 12–May 2002	-.32**	.11	-.30**	.10	-.08	.09	-.18 ⁺	.10

⁺ p < .10

* p < .05

** p < .01

*** p < .001

Notes: Marginal effects generated from main effects and interaction effects of models containing the independent variables in Table 2 and interactions between the interview date and the variable in question. Ns are identical to Table 2.