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The Effect of Religious Participation on Aggression Over One's Lifetime and Across Generations

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During the past decade, there has been a burgeoning interest in the role of religiosity in family functioning and child and adolescent adjustment (e.g., Bridges & Moore, 2002; Mahoney, Pargament, Swank, & Tarakeshwar, 2001) and as a resource for adults coping with stress (Pargament, 1997, 2007). The focus of this chapter is on the role of religiosity across the life span in predicting adulthood aggressiveness. We use data from a 40-year prospective longitudinal study to examine (1) the extent to which parental religiosity when a child is 8 years old is related to the child's religiosity at ages 19, 30, and 48, and the grandchild's religiosity; and (2) the extent to which grandparental, parental, and child religiosity act as long-term protective factors against aggressive behavior in childhood, youth, and adulthood.

THE IMPORTANCE OF RELIGIOSITY

According to the Gallup Consulting Organization (2008), 93% of Americans 18 years of age and older reported that they believe in God or a universal spirit; 54% reported that religion is “very important” in their lives, and another 26% reported that religion is “fairly important” in their lives; 61% said that they are a member of a church or synagogue, and 38% said that they had attended religious services in the past 7 days; and 57% agreed that religion can answer all or most of today’s problems. In a nationally representative sample of eighth through twelfth graders, Wallace, Forman, Caldwell, and Willis (2003) found that 60% of adolescents reported that religion is an important part of their lives, and 50% said they attend religious services regularly. While comparable statistics are difficult to obtain for other countries, the available statistics for other Western countries are not that different. For example, 88% of Italians say they belong to a church, and about 30% say they attend regularly. According to the 1996 World Values Survey (1996), only about 36% of Europeans said they never (or practically never). Thus, while the current study focuses entirely on the United States, where most of the data relating religiosity to behavior have been obtained, cautious generalizations to the rest of the world are possible.

In extensive reviews of the literature on the role of religion in child and adolescent adjustment, Bridges and Moore (2002) and Mahoney et al. (2001) reported that high levels of parent and child religiosity (most often measured by parental or self-reports of frequency of church attendance, frequency of prayer, and importance of religion to one’s life) were linked to lower levels of delinquency, behavior problems, and substance use and to higher levels of adolescent responsibility. Relatedly, Chapter 14 in this volume shows that forgiving is related to religion. While history has shown that religious devotion can promote terrorism and aggression in some cases (e.g., Chapter 10 in this volume), the majority of empirical research to date seems to indicate that religious participation is related to more positive outcomes in youth.

EMPIRICAL STUDIES OF THE RELATION BETWEEN RELIGIOSITY AND AGGRESSION AND DELINQUENCY

Johnson, De Li, Larson, and McCullough (2000) reviewed 40 studies published from 1985 to 1997 on the relation between religiosity and delinquency. A total of 30 of the 40 studies showed a negative relation between religiosity and delinquency. Only five studies had a longitudinal design.

Several studies have assessed the relation between parental religiosity and child aggression and delinquency, and most have shown negative correlations between parental church attendance and risk for aggression, delinquency, or criminality of their children (Ellis & Pettersson, 1996; Pettersson, 1991). Bartkowski, Xu, and Levin (2008) used data from the nationally representative Early Childhood Longitudinal Study-K sample (over 20,000 kindergarten and first graders in 1998–1999). Parental religiosity was measured by frequency of church attendance, religious homogeneity (similarity between parents in terms of frequency of church

attendance), and frequency of discussions of religion with the child. Higher levels of each parent's frequency of attendance and religious homogeneity were related to most parent- and teacher-rated measures of child development, including higher levels of self-control and lower levels of impulsiveness and externalizing behavior problems. Kim, McCullough, and Cicchetti (2009) examined a sample of maltreated and nonmaltreated children. Among nonmaltreated children, parents' importance of faith was related to lower levels of internalizing and externalizing behaviors in middle childhood, and parental religious influence seemed to be stronger when the child reported lower levels of importance of religion. These effects were not observed for maltreated children; however, in a separate study Kim (2008) found protective effects of religiosity on internalizing symptoms for maltreated females. Finally, using data from our Columbia County Longitudinal Study (CCLS), we found that boys whose parents attended church more frequently when the boys were 8 years old were less at risk for criminality by age 30 than were equally aggressive 8-year-old boys whose parents attended church less frequently (Huesmann, Eron, & Dubow, 2002). This finding held even after controlling for family interaction variables and the child's IQ.

Several recent studies assessed adolescents' self-reports of their own religiosity. Herrenkohl, Hill, Chung, Guo, Abbott, & Hawkins (2003) used data from the Seattle Social Development Study. The participants were children who were high in teacher ratings of aggression at age 10. Lower probability of violence at age 18 was associated with several age 15 variables: attendance at religious services, good family management by parents, and school bonding. Pearce, Jones, Schwab-Stone, and Ruchkin (2003), in a sample of high-risk urban adolescents, found that religiousness assessed by church attendance and self-rated religiousness was associated concurrently with conduct disorder but that "private religiousness" (e.g., prayer, reading religious literature) was associated with decreases over 1 year in conduct disorder. Regnerus and Elder (2003) used data from the National Longitudinal of Adolescent Health to examine whether religiosity would be most important for high-risk youth because religious support "provides functional communities amid dysfunction" (p. 635). The children were in grades 7–12 at time 1 and were assessed 1 year later as well. Under conditions of higher poverty, there was indeed a stronger relation between frequency of church attendance and "staying on track academically," which included a composite of grade point average, getting homework completed, getting along with teachers, not being suspended or expelled, and not skipping school. Fowler, Ahmed, Tompsett, Jozefowicz-Simbeni, and Toro (2008) examined a sample of over 300 low-income African American and Caucasian emerging adults (average age 20 years old). Public religious affiliation (i.e., the value the participants held in their church membership) buffered the relation between exposure to community violence and substance use. Private religiousness (i.e., the extent to which participants indicated that their religious beliefs provided them with personal meaning) buffered the relation between exposure to community violence and deviant behavior and conduct problems, but this finding was limited to African American participants.

THEORETICAL EXPLANATIONS FOR WHY PARENTAL AND CHILD RELIGIOSITY SHOULD PROTECT AGAINST AGGRESSION AND DELINQUENCY

Researchers have reviewed theoretical explanations for potentially positive effects of parental and child religiosity on family functioning and child and adolescent outcomes (e.g., Bridges & Moore, 2002; Mahoney et al., 2001; McCullough & Willoughby, 2009; Smith, 2003). We organize these explanations into three categories. The first explanation is that religion is a marker for other structural characteristics in the home, such as good parenting. Bridges and Moore and Mahoney et al. noted that religion may directly affect parenting by imbuing child rearing with a moral and spiritual significance leading the parent to see the child as a “holy gift from God” who requires special attention and care or by offering specific child-rearing guidance. The authors also noted indirect effects of religion on parenting; that is, religiosity may enhance the stability and quality of, and satisfaction with, the marital relationship, as well as parental mental health, which in turn can promote positive parenting. Mahoney et al. reviewed 94 studies on the effects of religion on marital and family functioning and found broad support for these direct and indirect effects of parents’ religiosity. For example, Gunnoe, Hetherington, and Reiss (1999) found that parents’ religiosity (how religion is manifested in their interactions with others) predicted higher levels of observed authoritative parenting (a warm, supportive environment coupled with high age-appropriate demands), which in turn predicted adolescents’ and parents’ reports of the adolescents’ social responsibility (perseverance, self control, obedience to parents and teachers). Across several studies, the correlations between parental religiosity and child outcomes persist even after controlling for variables thought to influence both parent religiosity and child outcomes (e.g., socioeconomic status, the child’s cognitive ability).

Parents also impart their religious beliefs and behaviors to their children; in turn, as reviewed earlier, the child’s religiosity is related to lower levels of aggression and delinquency. Kirkpatrick and Shaver (1990) suggested that the child’s developing religious beliefs and practices are influenced by those of their parents, and this transmission is affected by the quality of the parent–child relationship. If the child is securely attached to the parent, the child is more likely to adopt the parent’s beliefs (see Chapter 2 in this volume). Gunnoe and Moore (2002), using data from the National Longitudinal Survey of Youth, found that for late adolescents and early adults (ages 17–22), frequency of their church attendance and importance of religion were predicted by earlier parental religious influences such as attending church as a child, maternal importance of religion, and attending religious school. These findings held even after controlling for family socioeconomic status and the child’s cognitive ability. Across studies, Flor and Knapp (2001) reported correlations in the .50 range between parent and offspring religiosity.

A second theoretical explanation for religion’s potentially positive effects on child development is that the religious establishment provides support to help parents with problem children successfully deal with the problems. This explanation

stems from social control theory (Hirschi & Stark, 1969) and also is consistent with research and theory on social capital (e.g., Coleman, 1988) and social support (e.g., Dubow & Ullman, 1989). Smith (2003) suggested that the religious community is a form of social capital that can support parental values and can provide cross-generational relationships for the child and “network closure” (dense networks of individuals who know the child and the child’s parents, so they can provide information to the parents about any negative child behaviors). Similarly, religious communities of peers and religious leaders also can provide formal as well as informal social support to parents and children; for example, parents might seek guidance from clergy on handling child problems, whereas children might rely on peer networks through their religious institutions for advice or more nondirective forms of support.

A third theoretical explanation of religion’s positive effects on child development is that religious exposure builds strong internal self-regulating standards in a child, such as normative beliefs opposing aggression or faith that this is God’s plan and “things will get better” (e.g., Smith, 2003). McCullough and Willoughby (2009) reviewed studies published through July 2008 to test key propositions relevant to the relation between religion and self control. Across studies, there were small but significant correlations between religiosity and personality traits indicative of self-control (e.g., agreeableness, conscientiousness) and self-control mediated the relation between religiosity and substance use in one study (Desmond et al., 2008, cited in McCullough & Willoughby, 2009). In a series of five experiments, Koole (2007) showed that prayer had a salutary effect on affect regulation: praying for a person in need was shown to promote a more positive mood. The promotion of positive affect is hypothesized to be protective against aggression and antisocial behavior. Still, despite the important experimental evidence that has been obtained, examining the development through childhood of internalized standards that promote prosocial behavior and reduce the likelihood of antisocial behavior as the function of exposure to religious practices and institutions requires a longitudinal design.

THE COLUMBIA COUNTY LONGITUDINAL STUDY

In the remainder of this chapter we examine the relation between religiosity and aggression with data from the 40-year Columbia County Longitudinal Study. The CCLS is a prospective study of 856 8-year-olds who were in the third grade in Columbia County, New York, in 1960, when they and their parents were first interviewed. The children were subsequently reinterviewed at ages 19, 30, and 48. We examine the continuity of religiosity from youth to adulthood and across three generations, how this religiosity relates to concurrent and future aggression within and across generations, and how religiosity might modify the expected trajectory of aggression from childhood to adulthood and across generations.

Methods

The Columbia County Longitudinal Study was initiated in 1960 by Eron, Walder, and Lefkowitz (1971), when the original sample of 856 children, all of the third

AU: It seems unclear that the study was initiated in 1960 by a study written in 1971. Please revise if necessary.

graders in Columbia County, New York, were first assessed at Wave 1 of what has now become a 40-year, four-wave longitudinal study. Subsets of the sample were reassessed 10 years later in 1970 when the participants were 19; 11 years after that in 1981 when the participants were 30; and 19 years after that in 2000 when the participants were 48 on average. This project has generated a large amount of data concerning how aggression develops from childhood into adulthood (see Eron, Huesmann, & Zelli, 1991; Eron et al., 1971; Huesmann, Dubow, & Boxer, 2009; Huesmann, Eron, Lefkowitz, & Walder, 1984) as well as how childhood and adolescent aggression negatively affect adulthood success (e.g., Dubow, Boxer, & Huesmann, 2009; Dubow, Huesmann, Boxer, Pulkkinen, & Kokko, 2006).

AU: Dubow, Boxer, & Huesmann is 2008 in ref list; please reconcile.

Participants and Procedures When the study began in 1960, the sample of 856 children was drawn from all of the public and private schools in Columbia County, New York. Over 90% of the original sample was Caucasian; 51% were male, and 49% were female. In this first wave, 85% of the participants' mothers and 71% of their fathers also were interviewed. The participants came from a broad range of socioeconomic backgrounds (mean [M] = 5.01, standard deviation [SD] = 2.23 on a 10-point scale of father's occupational status derived by Eron et al., 1971, based on seven-point scale from Warner, Meeker, & Eells, 1960; this mean reflects jobs such as craftsmen, foremen, and skilled tradesmen) and displayed a wide range of intelligence (mean IQ of 104, SD = 14).

In 1970, 427 participants (211 boys, 216 girls) were reinterviewed for Wave 2. They had a modal age of 19 years and had completed 12.6 years of education on average. In 1981, there was a third wave of interviews, but we will not be using data from that wave in this chapter as religiosity was not assessed.

In 1999–2002, 523 of the participants (268 males, 255 females; 61% of the original sample) were reinterviewed for Wave 4. Their mean age was 48.46 years old (SD = .77); their average education level was between some college and a college degree; their average occupational attainment was middle-class status (the average occupational prestige code using Stevens & Hoisington's [1987] prestige scores reflected jobs such as sales, bookkeepers, secretaries); and 69% of the original participants were living with their spouses. Their average verbal achievement score on the WRAT was 99.15 (SD = 13.72). During this same wave, we interviewed 536 offspring of our original subjects. They were the offspring of 325 different subjects. To keep the sample independent for this study we selected the oldest offspring when more than one was interviewed. This gave us a sample of 349 independent children, youth, and young adults who were children of our original subjects and grandchildren of the parents we interviewed in 1960. This sample was 51% female and 49% male. The ages of the offspring ranged from 8 to 33 with a mean age of 21.75.

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Interviews Data collection procedures for the first three waves of the study have been reported elsewhere (e.g., Eron et al., 1971; Huesmann et al., 1984, 2002; Lefkowitz, Eron, Walder, & Huesmann, 1977;). At age 8, two main sources of data were used: classroom-based peer nominations and extensive individual parent

interviews. At age 19, participants were administered a variety of self-report measures, as well as peer nominations, in individual interviews at a field office. At age 48, interviews were conducted by computer in a field office and by mail or telephone for participants who could not come to the office. The offspring of the subjects were interviewed using the same procedures as for the subjects in Wave 4 except that phone and mail interviews were not conducted with any who were younger than 13.

Attrition Information Of the 39% who were not interviewed at age 48, 37 were confirmed dead, 112 had disappeared and could not be found despite intense efforts, 40 could not be interviewed because of distance and scheduling difficulties, and 144 refused. A comparison of means on age 8 scores revealed that, compared with participants who were reinterviewed at age 48, participants who were not reinterviewed had higher levels of aggression, $t(854) = 4.06, p < .001$ ($M_{\text{difference}} = .13, SE_{\text{difference}} = .03$), lower levels of popularity, $t(854) = 4.19, p < .001$ ($M_{\text{difference}} = 4.45, SE_{\text{difference}} = 1.06$), lower peer compliance, $t(854) = 3.86, p < .001$ ($M_{\text{difference}} = 3.40, SE_{\text{difference}} = .88$), and lower IQ at age 8 $t(852) = 5.69, p < .001$ ($M_{\text{difference}} = 5.70, SE_{\text{difference}} = 1.00$). However, analyses of the 1960 data from the 39% who dropped out also revealed that there was no substantial restriction of range on any 1960 variable due to the attrition.

Measures

Specific Aggression Measures for All Waves *Peer-nominated aggression* was assessed at ages 8 and 19 using a peer-nomination procedure developed by Eron et al. (1971), who defined aggression as “an act whose goal response is injury to another object” (p. 30). Their 10 peer-nominated aggression items cover physical (e.g., “Who pushes and shoves other children?”), verbal (e.g., “Who says mean things?”), acquisitive (e.g., “Who takes other children’s things without asking?”), and indirect (e.g., “Who makes up stories and lies to get other children into trouble?”) aggressive acts. The score ($\alpha = .90$) represents the proportion of times the child was nominated by classmates on the 10 items out of the times the child could have been nominated. At age 8 this was the number of children in the classroom. At age 19, because participants already had left high school, the proportion for a participant was computed based on the number of other participants who said they know that participant “well enough to answer some questions about them.”

Self-reports on peer-nomination questions were obtained for the children who were interviewed in Wave 4 as their wide geographic distribution make obtaining peer nominations impossible. For the younger offspring the same questions were used as had been used for the subjects when they were 8 years old; for the older offspring we used the questions that had been used with the 19-year-olds.

Severe physical aggression was assessed for the subject at ages 19, 30, and 48 and for the child of the subject in Wave 4 through self-reports of how often in the last year they engaged in each of four behaviors: (1) choked someone; (2) slapped or kicked someone; (3) punched or beaten someone; (4) knifed or shot at someone or

threatened to do it (1 = never to 4 = a lot). Scores were log-transformed for analysis due to skewness) ($\alpha = .66$).

Aggressive personality was measured at ages 19, 30, and 48 and among children of the subjects who were 13 or older in Wave 4 by taking the sum of scales 4, 9, and F from the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway & McKinley, 1940). In earlier studies by our group (e.g., Huesmann et al., 1984; Huesmann, Lefkowitz, & Eron, 1978), the summed T-scores of these three scales reflected a reliable and valid measure of antisocial-aggressive behavior ($\alpha = .78$).

For the analyses, we first converted the aggression measures obtained in each wave (peer nomination, self-report of peer-nomination questions, self-report of serious physical aggression, MMPI F + 4 + 9) to standardized z-scores. At each age, where more than one aggression measure exists (i.e., ages 19 and 30), we computed a measurement model for combining the measures. Then a composite measure of aggression was computed as the weighted mean of the one to three aggression scores available for the subject during that wave or for the subject's child during Wave 4. Because these composite scores are standardized within each wave of data, they provide a standard scale on which individuals' locations can be compared across waves independently of total sample shifts in aggressiveness or differences in measures obtained.

Religiosity In Wave 4, the subjects and their offspring both indicated *their frequency of religious service attendance* on a nine-point scale ("How often do you attend religious services?", rated as 1 = never, 2 = less than once a year, 3 = 1–2 times a year, 4 = several times a year, 5 = about once a month, 6 = 2–3 times a month, 7 = nearly every week, 8 = every week, and 9 = several times a week). Additionally, both the subjects and their offspring reported on their religious preference; their spirituality ("To what extent do you consider yourself a spiritual or religious person?", rated as 1 = not spiritual or religious at all, 2 = slightly spiritual or religious, 3 = moderately spiritual or religious, 4 = very spiritual or religious); and their frequency of praying ("How often do you pray privately in places other than a church, mosque, or synagogue?" rated as 1 = never, 2 = less than once a month, 3 = once a month, 4 = a few times a month, 5 = once a week, 6 = a few times a week, 7 = once a day, 8 = more than once a day).

In Wave 1, the parents of the subjects were also asked their *frequency of religious service attendance* (response scale: 0 = never, 1 = a few times a year, 2 = about once a month, 3 = a few times a month, 4 = once a week, 5 = more than once a week). They were also asked their religion preference, but they were not asked any questions about spirituality or praying.

Similarly in Wave 2, the 19-year-old subjects themselves were asked to report on their *frequency of religious service attendance* using the same procedure and scale as used with the parents in Wave 1.

Other Outcomes and Covariates In Wave 4, we also assessed the *normative beliefs about aggression* of both the subjects and their offspring (Huesmann & Guerra, 1997). The normative belief scale is a 20-item scale that asks the

respondent about his or her approval of aggression, such as, “Suppose a man says something bad to another man, John. Do you think it is OK for John to hit him?” (4 = perfectly OK, 3 = sort of OK, 2 = sort of wrong, 1 = really wrong). The normative beliefs scale score is the mean of all the responses and has been shown to be a highly reliable assessment of approval of aggression by the respondent (Huesmann & Guerra).

In Wave 1, *parents’ educational level* (Eron et al., 1971) reflects the parents’ self-reported levels of educational attainment (1 = under 7 years to 7 = graduate or professional training). The family score was computed as the mean of the mother’s and father’s educational level.

Finally, in Wave 1 we also obtained the subject’s *IQ score*. The child’s IQ was assessed with the California Short-Form Test of Mental Maturity (Sullivan, Clark, & Tiegs, 1957). Kuder–Richardson reliability coefficients range from .87 to .89 across grades; the total score correlates approximately .75 with other IQ measures.

Results

Religions of Participants In Figure 19.1, the distribution of self-reported religious affiliations is shown for the participants in the study when they were 8 years old (as reported by their parents) and when they were 48 years old (as self-reported). In Figure 19.2, their church (or synagogue or mosque) attendance is graphed for the same two times. The sample was predominately Christian–Protestant and Christian–Catholic in 1960 with a small sample of Jewish and other (including “no”) affiliations. By 2000, the sample was still predominately Protestant or Catholic, but a much larger proportion reported “other” or “no” affiliation. Also, by 2000 when the subjects were 48 years old, on average they attended religious services much less than their parents had attended them 40 years earlier.

Religiosity The three measures of religiosity that were assessed in Wave 4 among the 48-year-old subjects and among their offspring (average age = 21.75) were highly correlated as shown in Table 19.1. A factor analysis of the three

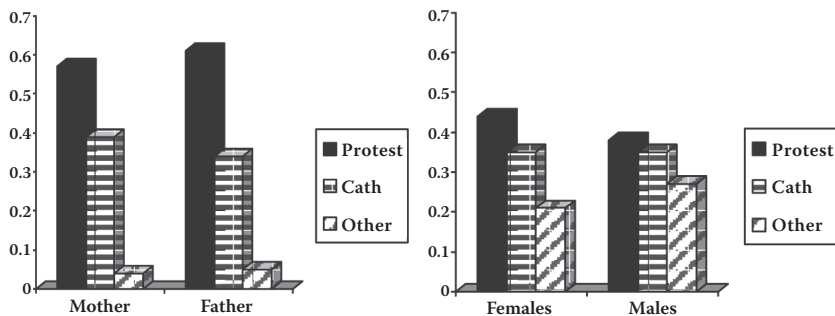


Figure 19.1 The religions of the parents of the subjects when the subjects were Age 8 and the religions of the subjects themselves 40 years later at age 48.

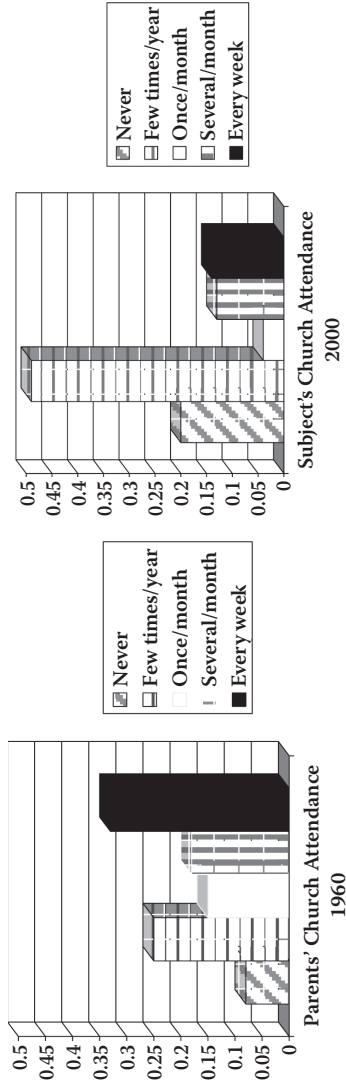


Figure 19.2 The church attendance of the parents of the subjects when the subjects were Age 8 and the church attendance of the subjects themselves 40 years later at age 48.

TABLE 19.1 Correlations Between Different Components of Religiosity in 2000 at Age 48 (Below Diagonal) and at Age 12 to 30 (Average Age 19; Above the Diagonal)

	Subject's Self-Reported Religious Participation	Subject's Self-Reported Frequency of Prayer	Subject's Self-Reported Spirituality
Subject's self-reported religious participation		.48 ^{****} (N = 303)	.56 ^{****} (N = 204)
Subject's self-reported frequency of prayer	.52 ^{****} (N = 481)		.67 ^{****} (N = 204)
Subject's self-reported spirituality	.46 ^{****} (N = 479)	.65 ^{****} (N = 480)	

* $p < .10$.
 ** $p < .05$.
 *** $p < .01$.
 **** $p < .001$.

AU: All asterisks must be cited in the table; please either remove some of these notes or make sure all of them are cited.

measures showed that one factor could explain 69 to 71% of the variance in the scales in both cases. Furthermore, all three scales had loadings of .77 to .88 in both cases. Consequently, any one of the measures could be used to represent religiosity adequately. As only the measure of religious participation was collected in Waves 1 and 2 as well as in Wave 4 on the subjects and on their children, we decided to use that measure for all analyses.

Continuity of Religious Participation The correlations over 40 years between the subject's parent's religious participation when the subject was 8 years old, the subject's own religious participation at age 19 and at age 48, and the subject's child's religious participation when the subject was 48 are shown in Table 19.2. Religious participation clearly displays continuity within and across generations. Most notably, perhaps, the subject's child's religious participation correlates .52 ($p < .001$) with the subject's concurrent religious participation at age 48, correlates .28 ($p < .001$) with the subject's religious participation 30 years earlier, and correlates .21 ($p < .001$) with the grandparent's religious participation 40 years earlier. Of course, these later correlations represent only modest effect sizes, and there is substantial variability in the trajectories of religious participation over the life course and across generations. When we partitioned religious participation into upper, middle, and lower tertiles (called High, Medium, and Low Participation), we found that in only about 44% of the cases was the level of participation the same within generations at ages 19 and 48; in only about 20% of the cases was the level of religious participation the same for the grandparent when the subject was 8, 19, and 48; and in only about 10% of the cases was the level of participation exactly the same for the grandparent, the subject at age 8 and 48, and for the subject's child when the subject was 48. Additionally, in general the participation rates declined over the 40 years from 1960 to 2000, as was shown in Figure 19.2.

TABLE 19.2 Correlations of Religiosity Over Three Generations and 48 Years

	Subject's Parents' Religious Participation When Subject Is Age 8	Subject's Religious Participation at Age 19	Subject's Religious Participation at Age 48	Subject's Child's Religious Participation When Subject Is Age 48
Subject's parents' religious participation when subject is age 8				
Subject's religious participation at age 19	.36**** (N = 374)			
Subject's religious participation at age 48	.17*** (N = 401)	.31**** (N = 305)		
Subject's child's religious participation when subject is age 48	.21**** (N = 274)	.28**** (N = 196)	.52**** (N = 294)	

* $p < .10$.
 ** $p < .05$.
 *** $p < .01$.
 **** $p < .001$.

AU: see query on Table 19.1 notes and please also revise in Table 19.2. Please fix throughout remaining tables as well where applicable.

The Relation of Religious Participation to Aggression Over Time and Generations

In Table 19.3, the correlations are shown between the religious participation of the subject's parents, the subject, and the subject's child and the concurrent and subsequent aggressive behavior and beliefs of the subject and the subject's child. The correlations at each age between a person's own religious participation and his or her own aggressive behavior are negative and significant. Higher religious participation is related to lower concurrent aggression. The effect sizes are not large but are significant: $-.20$ at age 19 and $-.13$ at age 48. Additionally, the grandparents' religious participation assessed in 1960 not only correlates significantly negatively ($-.09, p < .05$) with their child's concurrent aggression at age 8 but also correlates significantly negatively with their grandchild's aggression and aggressive beliefs 40 years later ($-.15, p < .01$; $-.13, p < .05$). This is true even though the grandparent's religious participation does not correlate significantly with the subject's (their own child's) aggression at age 19 or 48, and the subject's religious participation at age 48 does not correlate significantly with the grandchild's concurrent aggressiveness. All in all, this table of negative correlations provides evidence that not only is a person's aggressiveness negatively related to their concurrent religious participation, but it is also related negatively to higher levels of religious participation within the family system.

It is illustrative to examine these relations over time in terms of how predictive very frequent religious participation is of lower aggression compared with very infrequent religious participation. We partitioned religious participation into approximate thirds where high participation means attending services once a week or more, low participation means attending church never or no more than once a

TABLE 19.3 Correlations of Religious Participation With Aggression Over Three Generations

	Subject's Parents' Religious Participation When Subject Is Age 8	Subject's Religious Participation at Age 19	Subject's Religious Participation at Age 48	Subject's Child's Religious Participation When Subject Is Age 48
Subject's aggression at Age 8	-.09** (N = 706)	-.04 (N = 427)	-.04 (N = 481)	-.05 (N = 325)
Subject's aggression at Age 19	-.04 (N = 373)	-.20**** (N = 426)	-.21**** (N = 305)	-.14** (N = 196)
Subject's aggression at Age 48	-.05 (N = 399)	-.09 (N = 303)	-.13*** (N = 476)	-.16*** (N = 293)
Subject's beliefs approving of aggression at age 48	-.02 (N = 398)	-.11** (N = 304)	-.22**** (N = 476)	-.12** (N = 293)
Subject's child's aggression when subject is age 48	-.15*** (N = 292)	-.17** (N = 215)	-.07 (N = 316)	-.13** (N = 325)
Subject's child's beliefs approving of aggression when subject is age 48	-.13** (N = 275)	-.07 (N = 208)	-.11° (N = 304)	-.19**** (N = 307)

° *p* < .10.
 ** *p* < .05.
 *** *p* < .01.
 **** *p* < .001.

year, and medium participation is everything in between. We then analyzed the mean differences for the high and low groups on the aggression measures at each point in time. The results are shown in Figure 19.3. In every single case, those high in religious participation score lower on aggression and aggressive beliefs than those low in religious participation. However, not all of the relations are significant. Mostly the results are consistent with the correlations in Table 19.3 but show that the correlations reflect large differences between fairly high and fairly low levels of participation rather than small differences across the continuum of participation scores.

Predicting Adult Aggression from Youth Aggression and Religious Participation In a number of prior publications, the continuity of aggression within and across generations in the Columbia County Longitudinal Study has been shown to be substantial (Huesmann et al., 1984, 2009). The analyses so far have shown both that there is continuity of religious participation across time and generations and that religious participation is inversely related to aggressiveness concurrently and over time and generations. Given these results, it makes sense to examine whether religious participation in youth predicts adult aggressiveness when one controls for youth aggression. We created a composite religious participation score for Waves 1 and 2 by taking the mean of the standardized participation scores for each wave (Wave 1 religious participation reported by subject's parent and Wave 2 religious

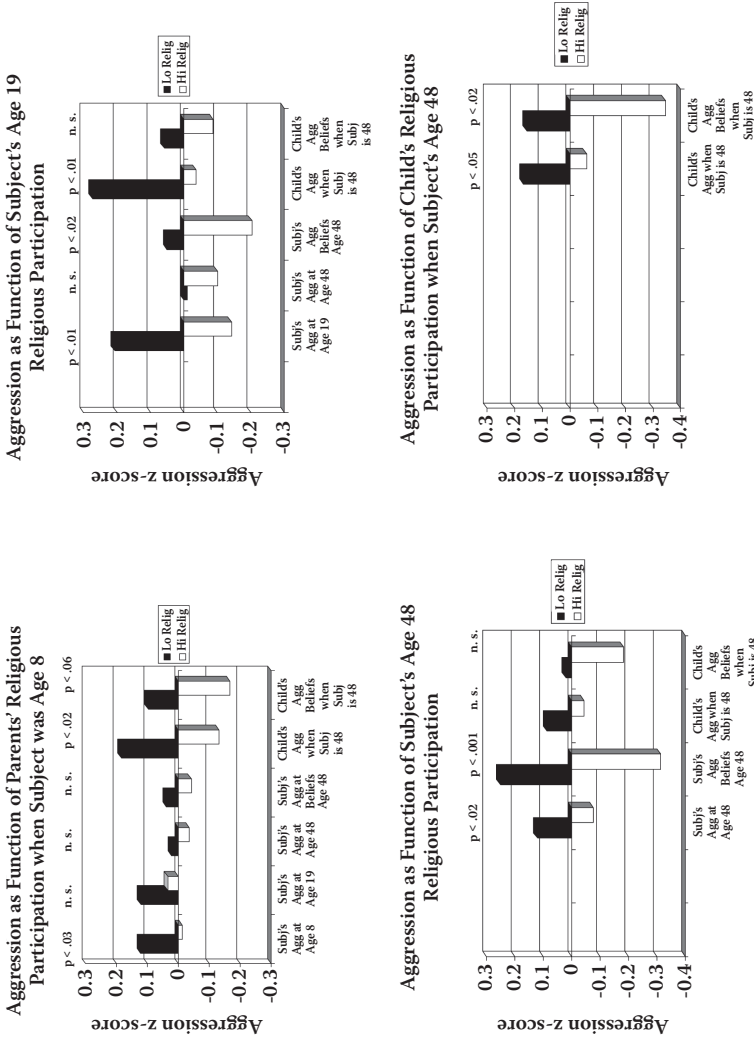


Figure 19.3 Mean aggressive behavior and mean aggressive beliefs for the subject at age 8, 19, and 48 and for the subject's child when the subject is 48 as a function of the frequency of religious participation of the subject, the subject's parents, and the subject's child over the 40 years of the study.

TABLE 19.4 Multiple Regression Predicting Subjects' Aggressive Behavior at Age 48 From Their Aggressive Behavior at Age 8 and 19 and Their Participation in Religious Services at Age 8 and 19 Controlling for Their Gender, Intelligence, and Parents' Educational Level

	Step 1 Standardized Regression Coefficients	Step 2 Standardized Regression Coefficients	Step 3 Standardized Regression Coefficients
Subject's aggression as youth (mean of ages 8 & 19)	.35 ^{*****}	.38 ^{*****}	.38 ^{*****}
Subject's religious participation as youth (mean of ages 8 & 19)	-.04	-.04	-.02
Interaction of subject's youth aggression and youth participation in religious activities		.15 ^{***}	.15 ^{*****}
Subject's gender			-.01
Subject's IQ at age 8			.04
Subject's parent's level of education			-.17 ^{*****}
<i>R</i> ²	.123 ^{*****}	.143 ^{*****}	.169 ^{*****}

* $p < .10$.

** $p < .05$.

*** $p < .01$.

***** $p < .001$.

participation reported by subject). We also created a comparable composite aggression score for Waves 1 and 2 in the same way. We conducted a regression analysis predicting the subject's Wave 4 aggression from these two variables and their interaction (product of their standardized scores). The results are shown in Table 19.4.

As expected, youth aggressiveness is revealed to be a highly significant predictor of adult aggressiveness 30 to 40 years later ($\beta = .38, p < .001$). The regression also reveals that a youth's level of religious participation 30 to 40 years earlier does not add at all significantly to this prediction even though their religious participation at age 8 and 19 correlated negatively with their concurrent aggression at that time. However, while that early religious participation does not have a direct effect on adult aggression, it does significantly moderate the trajectory of aggression from youth to adulthood as indicated by the highly significant interaction effect of youth participation and youth aggression on adult aggression ($\beta = .147, p < .002$). To understand the meaning of this interaction, we plotted it in Figure 19.4 in two ways—first as a three-dimensional plot showing the surface defined by the complete regression equation and second as a limit plot showing how high and low youth aggression and high and low religious participation in youth (as defined by plus and minus one SD) combine to predict adult aggression.

The results are striking. If one accepts that the direction of effects must be from religious participation to aggression, the results indicate that high religious participation exacerbates the effects of youth aggression on adult aggression. For those lower on youth aggression, high religious participation is predictive of even lower

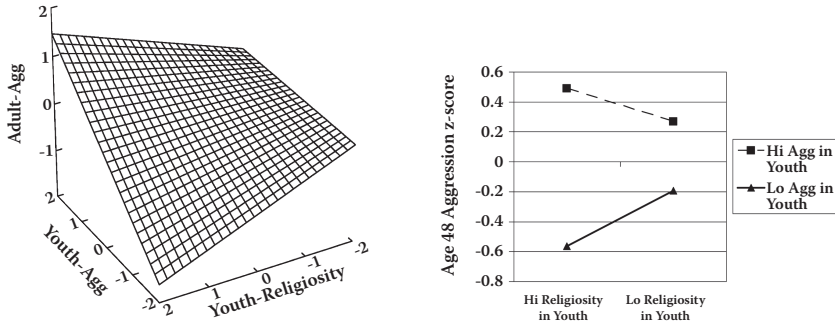


Figure 19.4 The moderating effect of youth religious participation on the relation between youth aggression (Mean of ages 8 and 19) and adult aggression at age 48

adult aggression and lower participation of higher aggression. For those higher on youth aggression, the effect is reversed. High religious participation is predictive of even higher adult aggression and lower participation of lower aggression.

One may wonder if these effects are independent of other participant characteristics. The second column of Table 19.4 shows that they are. The participant’s gender and IQ at age 8 do not change the results at all, and while the parent’s education level is a significant predictor of the subject’s aggression 40 years later its inclusion in the model does not change the moderating effect of religious participation in youth.

A similar regression analysis was conducted to predict the subject’s child’s aggression when the subject was 48 (mean age of child = 21.75). While the subject’s life-long aggression was a highly significant predictor of the subject’s child’s aggression when the subject was 48 ($\beta = .25, p < .001$), the analysis revealed no similar interactive effect of the subject’s lifelong religious participation on cross-generational transmission of aggression and no main effect of the subject’s religious participation on the offspring’s aggression.

Finally, we constructed a longitudinal structural model to represent both the effects of religious participation on aggression and the continuity of aggression and religious participation within and across generations. The final model that best fit the data is shown in Figure 19.5.

Again, we make the assumption in this model that the relation between religious participation and aggression (to the extent any relation exists) is in the causal direction of participation affecting aggression. The model fits quite well (full information maximum likelihood [FIML] solution, $N = 856$, chi-square = 27.8, $df = 23$, $p > .22$, comparative fit index [CFI] = .99, root mean square error of approximation [RMSEA] = .016). The model shows the expected strong continuity of both aggression and religiosity over the life course and across generations with stronger continuity with generation for aggression and across generations. The model also shows significant concurrent direct negative effects of the subject’s religiosity at age 19 to his or her aggression at age 19 and from the parent’s religiosity in 1960 to his or her concurrent aggression at age 8. The effects from subjects’ age 48 religiosity to their age 48 aggression were only marginally significant as were the effects of children’s

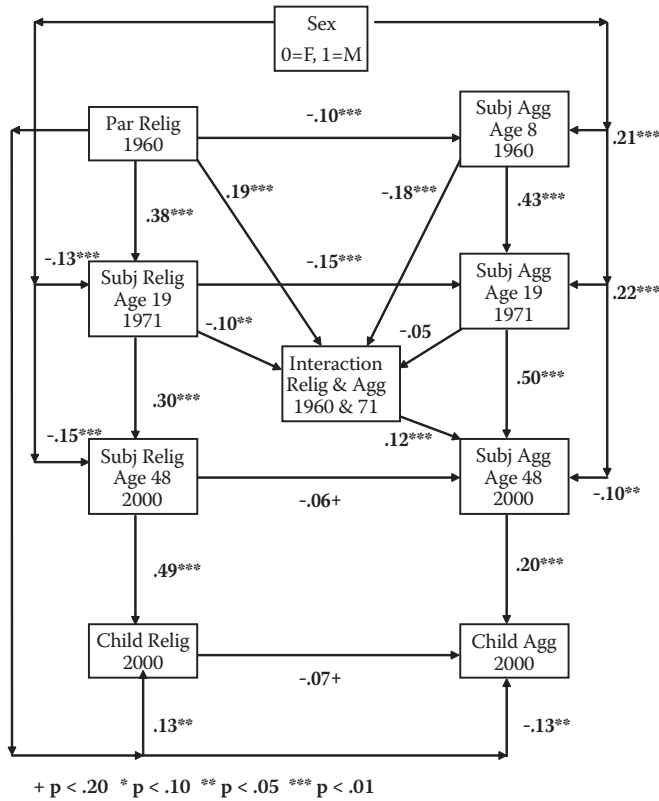


Figure 19.5 Structural model showing direct and indirect effects of religious participation throughout the life course on subsequent aggression in the self and in one’s offspring (full information maximum likelihood [FIML] solution, $N = 856$, chi-square = 27.8, $df = 23$, $p > .22$, comparative fit index [CFI] = .99, root mean square error of approximation [RMSEA] = .016).

religiosity on their own aggression in 2000. However, taken together, the four concurrent paths certainly indicate that religiosity has a dampening main effect on concurrent aggression. Furthermore, the interactive effect of subjects’ religiosity and aggression in their youth on their adult aggression that we had discovered with the regression analysis remained significant and substantial in this model ($\beta = .12$, $p < .008$). Being high on religiosity in youth seems to exacerbate the tendency of low aggressive youth toward low aggression in the future and high aggressive youth toward high aggression in the future. The model explains 24% of the variation in the subject’s age 48 aggression, 12% of the variation in the subject’s age 48 religiosity, 7% of the variation in the subject’s child’s aggression, and 27% of the variation in the child’s religiosity. The standardized total effect sizes of prior family religiosity combined with concurrent self-religiosity on aggression were .078 for age 48 subject aggression and .146 for the subject’s children in Wave 4. Though these are not large effect sizes, they are significant and large enough to be important.

Discussion

Our analysis of these four waves of data spanning three generations and 40 years showed first that religious participation, prayer, and spirituality are highly intercorrelated and can be represented substantially by a single construct. Because of this result and because participation in religious services is the only measure we had in all four waves, we based all our analyses on this measure. Obviously, this is a potential weakness, and our results must be considered in the context that spiritual individuals who never participate in religious services are misclassified in these analyses. Of course, the most likely effect of this omission would be to weaken our effect sizes for religiosity.

We found clear evidence both that participation in religious activities has a main effect on reducing concurrent aggression at any age and in youth has an additional effect of exacerbating the tendencies of low aggressive youth to grow up to be low aggressive adults and of high aggressive youth to grow up to be high aggressive adults. These effects were not due to relations between religiosity and gender, IQ, or the educational level of the family. These effects remained in the context of a longitudinal model that accounted for the substantial continuity of religiosity and aggression both over the life span and across generations.

Although this study demonstrates these effects fairly conclusively, it does not explain why they occur. As we discussed in the introduction, religiosity, and particularly participation in religious activities, has a number of benefits that could explain the main effects of religiosity in reducing aggression in addition to affecting normative beliefs about aggression. The three main theoretical ideas we reviewed were as follows:

1. Parents' religiosity is a marker of more proximal factors that influence child outcomes (e.g., good parenting, the child's developing religiosity).
2. Religious organizations provide social support when problems occur.
3. Religious exposure builds strong internal self-regulating standards in a child, such as normative beliefs opposing aggression.

Relevant to the third explanation, we did show that an adult's and youth's normative beliefs about the appropriateness of aggression were significantly related to their religiosity in the direction that more religiosity predicted lower approval of aggression. However, the direct relation between religiosity and concurrent normative beliefs was modest ($-.19$ to $-.22$ in [Table 19.3](#)). Consequently, while we could not directly test mediation models because scores on normative beliefs were available only in Wave 4 of the study, it is unlikely that the effect sizes of religiosity on normative beliefs are large enough to completely explain the total effects of religiosity on aggression. Similarly, the fact that the relations between religiosity and aggression were not diminished much when we controlled for gender, child IQ, and parental level of education suggests that no association between religiosity and any of these other variables related to aggression can account for the effect by itself as the first explanation might suggest.

Undoubtedly, our most notable result was the finding that high religiosity exacerbates the tendency of high aggressive youth to grow up to be high aggressive adults and low aggressive youth to grow up to be low aggressive youth. This result was not expected and is contrary to our original hypothesis that the social support provided through participating in religious activities might ameliorate the tendency of youth to respond to stressors and social problems with aggression.

We propose that this interactive exacerbating effect most likely reflects a “self-justification” process. Most religious texts can be read in different ways and can equally well provide justification for behaving aggressively or prosocially (see also Chapter 18 in this volume for the possible divisive effects of supernatural beliefs). Christians can focus on “turning the other cheek” when provoked or on obtaining “an eye for an eye.” If one has already been behaving aggressively in one’s youth, participating in religious activities and focusing on texts supporting aggression may make it easier to self-justify one’s aggressiveness by providing consensual validation for the behavior. On the other hand, if one is already behaving less aggressively, one can find consensual validation for those behaviors in religion as well. Thus, while religious participation can promote peaceful behavior among already peaceful youth, it can also increase the risk for violence (and fundamentalist terrorism; see Chapter 10 in this volume) among those youth leaning toward aggression.

Certain cognitive characteristics associated with high religious participation may also contribute to the exacerbating effect of religiosity on early behavioral trends. Research on “cognitive closure” (Kruglanski et al., 2006) suggests that high need for closure individuals “freeze” more strongly on early ideas and norms. If, as seems plausible, families who participate regularly in religious activities have a higher need for cognitive closure, then it would not be surprising that their children tend to continue down the behavioral paths of aggressiveness or nonaggressiveness that are established early in life.

Final determination of the processes through which religious participation influences aggression must await more developmental studies assessing the hypothesized factors involved in the processes. Nevertheless, it seems fair to conclude from this study that the view that religiosity has a straightforward protective effect in reducing the development of aggression is too simplistic. It is true that participating in religious activities has a general protective main effect on concurrent aggression and promotes religious participation later in life and in subsequent generations and that these effects are relatively independent of IQ, educational level, and gender. However, these main effects are limited by the significant tendency of participation in religious activities to turn the developmental trajectory of aggression upward for youth high in aggression and downward for youth low in aggression. Intense religious participation may promote nonaggressive peaceful behavior among youth already tending in that direction, but it also seems to exacerbate the tendencies of aggressive youth to develop into more aggressive young adults. Whether this exacerbating effect is more due to the self-affirming support for behavior that religion can provide or due to the tendency of those needing cognitive closure to participate in religion remains to be investigated.

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