

Religious Values and the Development of Trait Hope and Self-Esteem in Adolescents

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Many studies have noted significant relationships between religious sentiment and psychological adjustment, but few have been able to comment on the direction of influence. We assessed the relationships between religious values, self-esteem, and trait hope when participants were in grades 11 and 12. The variables showed moderate levels of rank-order stability. Structural equation modeling revealed that religious values in grade 11 did not predict improvements in self-esteem in grade 12, but they did predict improvements in hope. In contrast, hope did not lead to increase in religious values. These results held after controlling for personality (Big Five factors and Eysenck's psychoticism factor). Results are discussed with reference to the beneficial effects of religious values in adolescence.

Keywords: *religious values, religiosity, hope, self-esteem, adolescence, personality.*

INTRODUCTION

In what must be one of the earliest treatises on the psychological basis of religious belief, and the place and role of such beliefs in personality structure, Allport (1950:161) claimed that religious sentiment forms an integral part of one's personality and one's sense of personal identity. Indeed, he suggested that for some individuals, religious sentiment is central to one's existence, arising "at the core" of one's life and providing "marked integration upon personality." He regarded religious sentiment as part of one's motivational system that helps provide meaning to one's experiences.

Allport's (1950) views find an echo in much contemporary psychological research. For example, Emmons (2005a) and Emmons, Barrett, and Schnitker (2008) have argued that "spiritual striving" provides meaning to one's life because of its strong empowering and motivational functions. According to Ozer and Benet-Martinez (2006), religious beliefs form a core component of one's personal identity, while others have described religious sentiment as indispensable to one's "psychological reality" (Spilka, Hood, and Gorsuch 1985:2). Silberman regarded religious sentiment as a meaning system that operates "as a lens through which reality is perceived and interpreted" (2005a:645). Indeed, among youth, religious sentiment may play an important role in aiding the development of moral outcomes and act as a protective factor against a range of undesirable behaviors such as delinquency, drug use, and sexual behavior (King and Furrow 2004; see also Hood, Hill, and Spilka 2009). A recent meta-analysis showed strong relationships between religious sentiment and constructive behaviors (Cheung and Yeung 2011).

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RELIGIOUS SENTIMENT DURING THE ADOLESCENT YEARS

The adolescent years are a major transition point for the individual (Smetana, Campione-Barr, and Metzger 2006; Steinberg and Morris 2001). This period is filled not only with enormous promise and new opportunities, but also with many challenges. Adolescents forge their identities across a number of domains (e.g., sexual and academic, to mention two) and their levels of success in each domain will help determine the trajectory of their development (Frable 1997). Another important domain is the spiritual and religious sphere and the extent to which teenagers are shaped by their sense of religious sentiment may have a significant effect on developing personality (Allport 1950). Indeed, Roberts and DelVecchio (2000) have highlighted the extent to which personality during the adolescent years is plastic and thus susceptible to the influence of social-environmental factors.

Fowler (1981) proposed a stage theory of the development of faith, suggesting that in the later adolescent years, religious sentiment is increasingly influenced by peers and the media. During this time, faith increasingly needs to fit with a more complex experience of the world and will form the basis of one's personal identity and value system. Likewise, Ozorak (1996) described the adolescent years as a period of readjustment of faith and religious sentiment.

Considerable research has been conducted into the development of religiosity during the teenage years (for a review see, for example, Hood, Hill, and Spilka 2009). For instance, research has examined the role that parents play in shaping religious sentiment, the role that peers play in religious sentiment, and the extent to which religiosity is shaped by level of education and gender. Although some studies have assessed the links between religiosity and personality, very few have been longitudinal in nature (but see Heaven and Ciarrochi 2007; McCullough, Tsang, and Brion 2003; Wink et al. 2007). Our study will focus on the developmental links between religious values, self-esteem, and trait hope.

RELIGIOSITY AND PERSONALITY

A review of contemporary personality research on the psychology of religiosity suggests at least two strands of enquiry. The first is concerned with associations with the major personality dimensions as manifest in Eysenck's Big Three description (Eysenck and Eysenck 1985) and in the Five-Factor model (e.g., Norman 1963). With respect to the former, most studies indicate that religiosity is best predicted by low scores on the psychoticism (P) dimension (e.g., Francis and Katz 1992; Heaven and Ciarrochi 2007; Hills et al. 2004; Maltby and Day 2001), although this is dependent on whether one is assessing intrinsic, extrinsic, or quest religiosity (Francis 2010). For example, P is negatively related to both extrinsic (utilitarian or self-serving religion) and intrinsic forms of religiosity in which faith acts as a guiding force in one's life (see Francis 2010). However, P was not characteristic of quest forms of religion, that is, religiosity characterized by a sense of "complexity, doubt, tentativeness, and honesty in facing existential questions" (Francis 2010:795).

At least two meta-analyses have been conducted into the associations between the Big Five personality dimensions and religiosity. For instance, in an analysis of 63 papers ($N = 21,715$), Saroglou (2010) concluded that the strongest relationships with higher religiosity were with conscientiousness (C) and agreeableness (A), holding across a number of different religious groups (see also Saroglou 2002). He also found that extraversion (E) and openness to experience (O) were positively related to reflective forms of religiosity. Thus, those higher on E and O were more likely to think critically about their religious beliefs and about religious dogma. Not surprisingly, those higher on O were also less inclined to religious fundamentalism, that is characterized by "authoritarian and dogmatic religious attitudes" (Saroglou 2010:109). Emotional stability was found to be a feature of religiosity among adults.

There have been only a few longitudinal studies examining the predictive power of the major personality dimensions on later religiosity. Using data from the Terman longitudinal study, "religiousness" was assessed by four items, namely, respondents' interest in religion, how much they liked reading the Bible, their belief that it is desirable to give children religious instruction, and their participation in religious activities. C was found to predict higher religiousness 19 years later (McCullough, Tsang, and Brion 2003). Wink and colleagues conducted a landmark cross-lagged panel study spanning 60 years; they defined religiousness with respect to "church-centered religious beliefs and practices" and spiritual seeking with respect to "nonchurch-centered religious beliefs and practices" (2007:1058). Conscientiousness assessed during adolescence predicted higher adult religiousness with the reverse relationship being nonsignificant. Agreeableness during adolescence was not relevant for males' levels of religiousness but, amongst females, significant bidirectional influences were observed (Wink et al. 2007). Finally, O during adolescence predicted higher spiritual seeking during adulthood with the reverse relationship being nonsignificant.

In summary, there have been a limited number of longitudinal studies into the relationships between religious sentiment and personality. Only one adult study (Wink et al. 2007) employed a cross-lagged design spanning 60 years, whereas there have been no cross-lagged studies with adolescent samples. Our study will be the first cross-lagged study conducted during the adolescent years.

In addition to studies of the major personality dimensions, another strand of enquiry is embedded within the positive psychology approach (e.g., Joseph, Linley, and Maltby 2006; Pargament and Mahoney 2002). These studies are concerned with the extent to which religiosity is linked to well-being and positive functioning. In this study, we focus on trait hope and self-esteem.

Trait hope is critical for individual well-being; it has been described as an indicator of positive thinking and important in shaping academic and psychological outcomes in adolescents (e.g., Ciarrochi, Heaven, and Davies 2007; Valle, Huebner, and Suldo 2006). It has also been conceptualized "as a goal-directed cognitive process" (Snyder, Sigmon, and Feldman 2002:235) that is assumed to help one adjust to adversity (Cheavens 2000; Snyder 2000). It encompasses the ability to generate and implement plans for the future and is unlike optimism, which, although focused on the future, lacks goal striving (Bailey et al. 2007).

In a cross-sectional study, faith maturity (the degree to which "a sense of closeness to God translates into altruistic commitments": Ciarrochi, Dy-Liacco, and Deneke 2008:123) was found to relate to trait hope, optimism, and pessimism (negative) in adults, after controlling for the Big Five factors. Among adolescent girls, but not among boys, religious values were positively associated with trait hope and self-esteem, once preceding changes in C and P had been accounted for (Heaven and Ciarrochi 2007). In perhaps the only experimental study of its kind, it was demonstrated that individuals primed with transcendental emotions, that is, stimuli producing wonder, respect, and feelings of ecstasy, reported higher levels of spirituality (Saroglou, Buxant, and Tilquin 2008).

Like trait hope, self-esteem is important for building resilience and provides the individual with an ability to cope more effectively with life's problems (Basic Behavioral Science Task Force 1996). Whereas poor self-esteem is usually associated with poor outcomes such as anxiety and depression (Dumont and Provost 1999), higher self-esteem tends to be strongly related to various indices of adjustment including, for example, subjective well-being (DeNeve and Cooper 1998), occupational success (Elliott 1996), positive peer approval (Paulhus 1998), and active coping strategies (Dumont and Provost 1999). Thus, individuals high in self-esteem have resources that provide protection from stressors (Deater-Deckard, Ivy, and Smith 2006).

As far as we have been able to establish, there are no longitudinal studies of self-esteem and religious sentiment in adolescent samples. In a review of the literature, Donahue and Benson (1995) found the links between religiousness and self-esteem to be equivocal. Thus, whereas

Francis and Jackson (2003) found no significant relationship between self-esteem and attitudes to Christianity, Williams, Francis, and Robbins (2006) found low self-esteem among adolescents to be significantly associated with rejection of Christianity. In a small cross-sectional study, Blaine and Crocker (1995) reported significant associations between religious belief salience and personal self-esteem among black, but not among white, respondents. Maltby, Lewis, and Day (1999) found high self-esteem to be associated with personal prayer and negatively related to extrinsic forms of religion and church attendance. Heaven and Ciarrochi (2007) found no significant relationships between self-esteem and religious values after taking prior changes in levels of psychoticism and conscientiousness into account.

THE PRESENT STUDY

Ours is the first cross-lagged panel design on religious values, trait hope, and self-esteem, but given the dearth of longitudinal research to date, it is not clear whether religious values are likely to be an antecedent to trait hope and self-esteem, a consequence, or both. According to Schwartz (1994:20), values pertain to “desirable end states or modes of conduct” that direct one’s behavior; they are stable and linked to frames of reference (Feather 1992; Rokeach 1973). Values provide a powerful and overarching framework within which one’s ideological and belief system as well as one’s behavioral repertoire is located (Braithwaite 1997) and, as such, are distinguishable from personality traits that describe an individual’s habitual characteristic behavior (Allport 1961) or classes of behavior (Wiggins 1997).

Whereas previous correlational research has shown an association between religiosity, self-esteem, and hope (Ciarrochi, Dy-Liacco, and Deneke 2008; Maltby, Lewis, and Day 1999), we explored the possibility that religious values would predict the development of hope and self-esteem, rather than the reverse (e.g., hope predicting the development of religious values). There are a number of reasons for this expectation: first, Emmons (2005b) has argued that religion influences the generation and intensity of emotions (including fear, love, and hope) as well as their appropriateness and inappropriateness. Such emotions are important as motivators of behaviors.

Second, hope is often built into the “salvation religions,” which promise human fulfilment on completion (Ciarrochi, Dy-Liacco, and Deneke 2008:120). Thus, for instance, Christianity makes an explicit link between hope and faith with faith allegedly resulting in fulfilment. Indeed, Silberman (2005b:531) has gone further and suggested that “religion provides answers that offer hope” and, in so doing, has the power to shape our behaviors. Hood, Hill, and Spilka (2009) have suggested that those with positive images of God (and presumably with higher levels of religious values) are likely to believe that they are loved by God, which may lead to higher levels of hope and self-esteem. Thus, we hypothesize that religious values will play a significant role in determining later characteristic patterns of behavior, including levels of trait hope and self-esteem.

Participants

Participants were grade 11 high school students who were also assessed one year later in grade 12. They were drawn from five secondary schools in a Catholic Diocese of New South Wales (NSW), Australia. Three schools are located in the Sydney metropolitan area, whereas two are not, thereby ensuring a fairly diverse sample with respect to socioeconomic status. The schools in question are not totally private and receive some of their funding from the government. Thus, the schools charge modest fees. Not all students in our schools are Catholic and over the last decade, the number of students attending Catholic, other religious, and fully private schools in Australia has increased at a significantly faster rate than students in public schools that are fully funded by the government (Australian Bureau of Statistics [ABS] 2011).

A total of 19.8 percent of our respondents were exposed to a language other than English in the home, whereas nationally the figure is 15.8 percent (ABS 2006). Of our sample, 22 percent reported living in nonintact families, whereas the national figure at the time was 29 percent (ABS 2005). The spread of some occupations of the fathers of our participants closely resembled national distributions (ABS 2004): for example, professionals, 20.4 percent (16.5 percent nationally); associated professionals, 15.1 percent (12.7 percent); intermediate production and transport, 11.2 percent (13.4 percent); tradespersons, 34.3 percent (21 percent); managers, 4.8 percent (9.7 percent); laborers, 3.3 percent (10.8 percent); advanced clerical, 1.2 percent (.9 percent); intermediate clerical, 5.5 percent (8.8 percent); and elementary clerical, 4.3 percent (6.1 percent). Given the slightly larger than expected numbers of participants from homes described as professional, semiprofessional, and small business tradespeople, the sample can be classified as middle class.

There were 640 total participants (306 male; 333 female; 1 missing) who participated in at least one wave of data. And 565 provided data in grade 11, 468 completed grade 12, and 393 completed both years. The mean age of the sample in grade 11 was 16.16 years ($SD = .48$). The attrition at the end of grade 11 may be explained by the exit of students who decided not to complete the final-year academic stream and to transfer out of school to technical college training (or other absences on the day of testing). There are a number of ways to deal with missing data, but expectation/maximization (EM) procedures utilize all the data instead of excluding data, and seems to result in the least biased estimates (Allison 2002; Howell 2008). Estimation was made using the full information maximum likelihood method (FIML). This method tends to produce unbiased estimates and is more efficient than other methods (Enders and Bandalos 2001; Howell 2008). We also conducted the SEM analysis using only those participants who completed time 1 and time 2 surveys, to examine the replicability of the findings.

Materials

Participants completed a number of self-report scales in grades 11 and 12. The following are of interest to this report.

Grade 11

1. *Big Five personality dimensions* (Goldberg et al. 2006). We used the International Personality Item Pool (IPIP-50) to assess the major five personality dimensions, namely, extraversion (E), openness-intellect (O), neuroticism (N), conscientiousness (C), and agreeableness (A). Each dimension was assessed with 10 items. This measure has strong convergent validity with the well-known NEO Inventory (Gow et al. 2005). Responses were provided on a five-point Likert scale from 1 (very inaccurate description of me) to 5 (very accurate). The 10-item scales had Cronbach's alphas ranging from .77 (A) to .85 (E).
2. *Psychoticism* (Corulla 1990; Eysenck, Eysenck, and Barrett 1985). We assessed psychoticism (P) because of its known positive links to antisocial behaviors (e.g., Eysenck and Eysenck 1985) and its strong negative associations with religiosity (e.g., Francis 2010). We used Corulla's (1990) revision of the original scale produced by Eysenck and Eysenck (1985). This version of the P scale comprises 12 items using a forced-choice response format (yes/no) and on this occasion produced a Cronbach's coefficient alpha of .73.

Grades 11 and 12

1. *Trait hope measure* (Snyder et al. 1997; Snyder, Rand, and Sigmon 2002). Participants completed the Children's Hope Scale, a six-item scale that measures the agency (three items) and pathways (three items) aspects of hope. Sample items are "I think the things I

have done in the past will help me in the future” (agency), and “When I have a problem, I can come up with lots of ways to solve it” (pathways). The measure has demonstrated reliability and concurrent validity (Snyder, Rand, and Sigmon 2002) and has been found to predict positive effect and higher school grades (Ciarrochi, Heaven, and Davies 2007; Valle, Huebner, and Suldo 2006). Responses were indicated on a six-point Likert scale ranging from 1 (none of the time) to 6 (all of the time). Responses were summed to form a total hope score (minimum = 6; maximum = 36). Coefficient alphas for the total scale exceeded .85, and the alphas for the pathways and agency subscales were at .80 or greater.

2. *Self-esteem scale* (Rosenberg 1979). This well-known measure of global self-worth has excellent reliability and validity and provides a good indication of general rather than specific views of the self (see Baumeister et al. 2003). Participants were asked to indicate their agreement with statements about the self. High scores indicate high self-esteem.
3. *Religious values* (Braithwaite and Law 1985). This three-item measure, adapted for Australian respondents, is taken from a general values survey based on Rokeach's (1973) theorizing about values. Braithwaite and Law define values as “constructs that transcend specific situations and that are personally and socially preferable” (1985:250). The religious values items included in this study assess an individual's religious sentiment by asking participants to indicate the extent to which they adhere to three guiding principles in their life. These are “Being saved from your sins and at peace with God”; “Being at one with God or the universe” (goal values); and “Following your religious faith conscientiously” (mode value). Previous research with this scale has yielded high internal consistency coefficients (>.90) and has been shown to correlate significantly positively with conscientiousness, self-esteem, and trait hope, and significantly negatively with Eysenck's conceptualization of psychoticism (Heaven and Ciarrochi 2007). Responses were indicated on a scale ranging from 1 (I reject this as a guiding principle) to 7 (I accept this as of the greatest importance). Responses were summed to create a total religious values scale (minimum = 7; maximum = 21). Coefficient alphas for this scale were >.90.

Procedure

Each year we obtained school, parental, and student consent to administer our questionnaires, which were approved annually by our university's Human Research Ethics Committee and the Schools Authority. Participants were invited to participate in a survey on “Youth issues.” Questionnaires were completed anonymously in class in the presence of one of the authors or a schoolteacher. Questionnaires were completed without discussion. Students were debriefed at the end of each testing session, that is, students were told of the broad general aims of the program of research without providing specific information about the measures used. As part of our agreement with the Schools Authority, students were also provided with general written feedback once a year for the life of the project.

RESULTS

Preliminary Analyses

Table 1 shows the mean scores on the variables for males and females in grades 11 and 12. There were no significant gender differences. It is noteworthy that scores on the religious values measure were widely dispersed, suggesting a range of opinions regarding the importance of religious values as a guiding principle in the lives of these participants. Religious values were slightly more stable (.76) than self-esteem ($r = .66$) or hope ($r = .61$).

Religious values were significantly related to trait hope at both time points, whereas religious values and self-esteem were significantly correlated in grade 11 only ($p < .01$) (Table 1). The

Table 1: Associations between personality, hope, and religious values in grade 11 and grade 12

	1	2	3	4	5	6	7	8	9	10	11	12
Psychoticism 11	–	-.48**	.06	-.11**	.11*	-.34**	-.19**	-.25**	-.14**	-.16**	-.23**	-.22**
Agreeableness 11	–	–	-.05	.25**	.21**	.31**	.24**	.25**	.11*	.11*	.15**	.17**
Neuroticism 11	–	–	–	-.07	-.28**	-.14**	-.42**	-.29**	-.54***	-.40***	-.07	-.06
Openness 11	–	–	–	–	.17**	.24**	.34**	.28**	.07	.09	.00	-.09
Extraversion 11	–	–	–	–	–	.02	.33**	.13**	.29***	.14**	.00	.02
Conscientiousness 11	–	–	–	–	–	–	.39**	.40**	.22**	.24***	.28**	.25**
Hope 11	–	–	–	–	–	–	–	.61**	.59***	.47***	.17**	.12*
Hope 12	–	–	–	–	–	–	–	–	.42***	.60***	.25**	.19**
Self-esteem 11	–	–	–	–	–	–	–	–	–	.66***	.13*	.14**
Self-esteem 12	–	–	–	–	–	–	–	–	–	–	.13**	.09
Religious values 11	–	–	–	–	–	–	–	–	–	–	–	.74**
Religious values 12	–	–	–	–	–	–	–	–	–	–	–	–
Mean	.20	3.86	2.70	3.60	3.57	3.17	4.33	4.35	9.23	8.78	4.34	4.23
SD	.18	.54	.73	.57	.67	.62	.93	.95	2.82	3.04	1.59	1.64

* $p < .05$; ** $p < .01$.

correlations between religious values and hope appeared to be larger for girls compared to boys, but Fisher z -tests revealed no significant differences in the strength of these correlations. We conducted paired sample t -tests and found a significant drop in religious values from time 1 to time 2 ($t = 2.59, p < .05$), but no time-related differences in hope and self-esteem (see the bottom of Table 1 for means).

Structural Equation Modeling

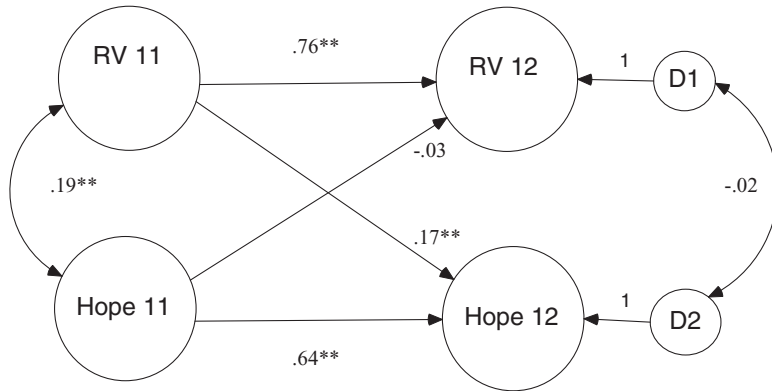
The main analysis utilized structural equation modeling (Arbuckle 2006) to compare the fit of models that vary in complexity. The core model involved grade 11 religious values (RVs) and trait hope (or self-esteem) simultaneously predicting grade 12 RV and hope (or self-esteem). Each latent RV and hope/self-esteem variable had three indicators: the individual items for the RV variable and three equal parcels for the hope and self-esteem variables. In the case of hope, parcels consisted of one item from each of the pathways and agency subscales. To ensure that our conclusions were reliable and independent of the particular parceling method, we replicated the key results on the observed measures of hope and self-esteem (which do not involve parcels; see below).

All models also included correlated disturbances between grade 12 variables and estimates of measurement errors across lags for the same instrument, a relatively common feature of longitudinal data (Kline 1998). We began with a model that estimated only autoregressive effects, that is, from grade 11 to grade 12 RV and hope/self-esteem, respectively. We then compared this model to one that assumed cross-lagged effects. Finally, if there were significant cross-lagged effects, we examined whether these effects held after controlling for the Big Five personality traits and psychoticism (Eysenck and Eysenck 1976) assessed in grade 11.

Structural equation modeling was used to analyze the raw data and estimation was made with the maximum likelihood method. As suggested by Hu and Bentler (1999), several goodness-of-fit measures were used to assess the models. We assumed good model fit if the root mean square error of approximation (RMSEA) was below .06 and the Tucker-Lewis index (TLI) and the comparative fit index (CFI) were greater than .95 (Hu and Bentler 1999; Martens 2005).

Religious values, hope, and self-esteem were significantly skewed. In addition to the parametric analyses described above, we therefore also conducted nonparametric bootstrap analyses using 5,000 samples and the bias-corrected percentile method (Mooney and Duval 1993). We

Figure 1
Grade 11 RVs and hope-predicting grade 12 religious values and hope



$N = 640$; ** $p < .001$.

report the results of the parametric analyses, but do not declare an effect to be significant unless it was significant in both analyses.

We sought to examine the extent that the RV variable was an antecedent to changes in hope and self-esteem, a consequence of such changes, or both. For hope, model 1 involved no cross-lagged links and had an adequate fit to the data, $\chi^2 (44) = 83.0$, CFI = .99, TLI = .99, and RMSEA = .029. Model 2 added cross-lagged effects and significantly improved the fit of the model, $\chi^2 (42) = 67.7$, CFI = .99, TLI = .99, RMSEA = .024, $\chi^2 \text{diff} (2) = 15.3$, and $p < .001$. Figure 1 illustrates the results of the path model. The autocorrelations suggest moderate stability of RV and hope across the year. RV and hope were correlated modestly in grade 11. The cross-lagged effect from RV to hope was significant, whereas the effect from hope to RV was not. This indicates that students high in religious values in grade 11 were more likely to have higher hope in grade 12 relative to those low in RV with the same baseline level of hope. We found no significant effects for self-esteem ($\beta < .04$, $ps > .30$).

We examined whether the grade 11 cross-lagged effect for the total hope scale remained significant even after controlling for all the grade 11 measures of personality. Extraversion, agreeableness, openness, conscientiousness, neuroticism, and psychoticism were entered into model 2, and were covaried with each other and grade 11 RV and hope. The link between grade 11 RV and grade 12 hope remained significant in this model ($B = .068$, $SE = .02$, $\beta = .13$, $p = .002$), indicating that global personality factors could not explain the effect. There was an effect of grade 11 openness on grade 12 RV ($B = -.27$, $SE = .11$, $\beta = -.09$, $p = .015$), indicating that higher openness in grade 11 predicted decreasing RV in grade 12. There were no other significant personality effects on the grade 12 variables.

As indicated earlier, estimation in the above analyses was made using the FIML. To examine the reliability of our results, we reran the SEM analysis using only those participants who provided data at time 1 and time 2. We found virtually the same estimates as those reported in the SEM analyses. For example, the cross-lagged link from religious values was still highly significant ($B = .16$, $p < .001$), whereas the cross-lagged link from hope to spirituality did not approach significance ($B = -.02$, $p = .59$).

Finally, we assessed whether the significant relationships between religious values and hope were due to one or more of the three religious values items. We found that each item significantly predicted trait hope in grade 12 when controlling for trait hope in grade 11. The results were “Following your religious faith conscientiously”: $\beta = .12$, $p = .004$; “Being at one with God or the universe”: $\beta = .17$, $p < .001$; “Being saved from your sins and at peace with God”: $\beta = .13$, $p = .001$.

DISCUSSION

The main aim of this study was to examine the extent to which religious values were an antecedent or consequence of hope and self-esteem. Adolescence is a critical period of the life course, a time when young people face a number of diverse challenges as they prepare to leave high school, set goals for the future, and devise strategies to reach their desired objectives. In the senior years of high school, Australian adolescents must make important decisions regarding future education and career options. This is also a time of increased sexual activity and substance misuse and some have even experienced alcohol- or drug-related violence. Chronic diseases such as diabetes are increasing among young people, as is the rate of sexually transmitted diseases (Australian Institute of Health and Welfare 2011). This is the first study of adolescents to directly examine the cross-lagged relationships between religious values, self-esteem, and trait hope. We found support for the hypothesis that religious values were associated with increases in trait hope one year later, rather than the reverse. Additionally, the significant relationship with hope remained even after controlling for scores on the grade 11 Big Five measures and the psychoticism dimension.

These results for hope are in line with those of Ciarrochi, Heaven, and Davies (2008) who, in a cross-sectional study, found that faith maturity was a significant correlate of hope after controlling for the Big Five domains. Our results go further, demonstrating that religious values precede changes in hope across a 12-month period, after controlling for baseline levels of hope and other personality factors. If it is the case that hope is associated with higher resilience (Cheavens 2000) and positive emotional states as claimed by Snyder (2002), then these data suggest that religious values might have an important role to play in promoting those characteristics and could be instrumental in placing young people on a developmental trajectory characterized by psychological well-being.

Although religious values and self-esteem were significantly correlated cross-sectionally in grade 11, we found no evidence that religious values in grade 11 predicted self-esteem in grade 12. This finding seems to be in line with other research that has found no significant predictive associations between religious sentiment and some forms of self-evaluation, particularly emotional stability and neuroticism. Future research should assess the ability of other measures of religiosity to predict self-esteem over time.

We also found evidence that openness to experience predicted decreasing religious values one year later. This at first seems inconsistent with Wink et al. (2007), who found that openness in adolescence predicted spiritual seeking in adulthood. However, the Wink construct of "spiritual seeking" was defined as being "spiritual but not religious" (2007:1055), and as having a spiritual identity that is not constrained by church-centered activities. Our results focused on religious rather than spiritual values as defined by Wink et al. (2007), and thus do not contradict those findings. Our focus was on some quite specific Christian-centered values, such as "Being saved from your sins and at peace with God." Our teenage data suggest that those adolescents higher on openness experienced decreasing adherence to religious values in grade 12. Perhaps, as suggested by Wink et al. (2007), they are more likely to be attracted to various sources of meaning outside the more traditional religious sphere. Thus, it may be that those youth low on O are more likely to find meaning and satisfaction in life within more traditional expressions and interpretations of religiosity, while those higher on O are more likely to explore alternatives to traditional religious sentiment (see also Hood, Hill, and Spilka 2009). Whether this finding will continue to hold once our sample reaches adulthood requires further study.

We did find cross-sectional associations between religiousness and C. However, we found no support for the notion that C leads to increasing religiousness, which is inconsistent with Wink et al.'s (2007:1058) findings on religiousness, as well as the work of McCullough, Tsang, and Brion (2003). One possible explanation is that religiousness in past research was defined as "church-centered religious beliefs and practices" (Wink et al. 2007:1058) or as enjoyment in reading the Bible (McCullough, Tsang, and Brion 2003). It is not surprising that C predicts these

sorts of traditional activities. Moreover, in his meta-analysis, Saroglou (2010) found that the link between C and religiousness was much stronger later in adulthood than in young adulthood. Thus, the relationship between C and religiousness may increase from adolescence to young adulthood. Finally, we found no evidence that A predicted increasing religious values. This contrasts with Wink and colleagues (2007), who found bidirectional relationships among females only, relationships that spanned 60 years, and were germane to church-centered religiosity only. These contrasting results may be due to the different time periods focused on in this study and the Wink et al. (2007) study.

Implications for Development

Personality change occurs throughout the lifespan (Roberts, Walton, and Viechtbauer 2006), not least during the adolescent years (Roberts and DelVecchio 2000). Personality development is shaped by a number of factors, including role changes (Branje et al. 2007), and biological and cognitive transitions (Donnellan, Trzesniewski, and Robins 2006), as well as family experiences (Heaven and Ciarrochi 2008). This is the first study to directly implicate religious values in personality change in youth and it adds to that body of literature demonstrating that personality, especially during the adolescent and emerging adulthood years, is plastic and subject to some change (Roberts and DelVecchio 2000). Although both the religious values and trait hope measures showed moderate levels of stability across a one year period, it is also clear that their relationship over time is dynamic, with religious values being an antecedent to changes in trait hope, but not self-esteem. Thus, the development of personality traits such as hope can be influenced by particular ideological systems, in this case religious values, at least during the more volatile adolescent years.

The results of this study demonstrate that individual differences in religious values and openness have important implications not only for personality development in young people, but also for the quality and tenor of an individual's developmental trajectory. It has been claimed that religious sentiment helps provide individuals with meaning and a positive behavioral framework within which they live their lives (Emmons 2005a, 2005b; Pargament and Mahoney 2002). Our data indicate that religious values appear to have consequences for adolescents' psychological functioning by facilitating the development of trait hope (Snyder 2000). Our data suggest, moreover, that such benefits of religiosity are not just confined to adults, but are clearly also visible during the teenage years. Although there are many studies into the correlates of religiosity among youth and considerable speculation, as well as some evidence regarding the development of religiosity (see Hood, Hill, and Spilka 2009; Paloutzian and Park 2005), the present study is unique in suggesting the important protective implications of religious values for the developing adolescent.

Limitations, Future Directions, and Conclusion

A limitation of this study is its short duration, namely, just one year. Although it has provided a unique snapshot of the effects of religious values on the developing adolescent, it remains to be seen whether these observed relationships might carry forward several decades into the future. Another possible limitation is the focus on youth attending Catholic schools. Moreover, given the nature of the items used to assess religious values, the present results cannot be extended to members of the Jewish, Islamic, or other faiths. Nonetheless, the results of this study do not contradict or undermine previous published work that has highlighted the positive influence of religiosity on the mental health and psychological adjustment of youth (e.g., Cheung and Yeung 2011; Hood, Hill, and Spilka 2009; King and Furrow 2004; Paloutzian and Park 2005). Nor do these results call into question previous cross-sectional studies conducted predominantly on

Protestant samples (e.g., Saroglou 2010; Wink et al. 2007) or those studies that have focused on variables such as hope and optimism (e.g., Ciarrochi, Dy-Liacco, and Deneke 2008).

The distinguishing feature of the present study is its focus on specific religious values. As mentioned earlier, the psychological literature has tended to use different conceptions and measures of religiosity. Included in this literature, for example, are references to religiousness, religious sentiment, spirituality, faith maturity, quest religion, intrinsic, and extrinsic religion. Thus, it is not clear to what extent the findings of the present study would apply had we used measures of religiosity other than religious values. This is an avenue for future research.

The current study has focused on just one small segment of the developmental trajectory spanning 12 months. As we continue tracking our respondents, future research should evaluate the longer-term implications of religious values on the full range of human endeavor. Continuous measurement of the variables used in this study will shed more light on the long-term benefits and costs of religious values.

REFERENCES

- Allison, Paul D. 2002. *Missing data*. London: Sage Publications.
- Allport, Gordon W. 1950. *The individual and his religion: A psychological interpretation*. New York: Macmillan.
- . 1961. *Pattern and growth in personality*. New York: Holt, Rinehart and Winston.
- Arbuckle, Jeffrey. 2006. *Amos 7.0.0*. Spring House, PA: Amos Development Corporation.
- Australian Bureau of Statistics. 2004. *Schools, Australia* (Document 4221.0). Canberra: Government Printer.
- . 2005. *Yearbook Australia: Population* (Document 1301.0). Canberra: Government Printer.
- . 2006. *Yearbook Australia: Population* (Document 1301.0). Canberra: Government Printer.
- . 2011. *Schools, Australia 2010* (Document 4221.0). Canberra: Government Printer.
- Australian Institute of Health and Welfare. 2011. *Young Australians: Their health and well being* (Catalogue number PHE 140). Canberra: Government Printer.
- Bailey, Thomas C., Winnie Eng, Michael B. Frisch, and C. R. Snyder. 2007. Hope and optimism as related to life satisfaction. *Journal of Positive Psychology* 2(3):168–75.
- Basic Behavioral Science Task Force. 1996. Basic behavioural science research for mental health: Vulnerability and resilience. *American Psychologist* 51(1):22–8.
- Baumeister, Roy F., Jennifer D. Campbell, Joachim I. Krueger, and Kathleen D. Vohs. 2003. Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest* 4(1):1–44.
- Blaine, Bruce and Jennifer Crocker. 1995. Religiousness, race, and psychological well-being: Exploring social psychological mediators. *Personality and Social Psychology Bulletin* 21(10):1031–41.
- Braithwaite, Valerie A. 1997. Harmony and security value orientations in political evaluation. *Personality and Social Psychology Bulletin* 23(4):404–14.
- Braithwaite, Valerie A. and H. G. Law. 1985. Structure of human values: Testing the adequacy of the Rokeach value survey. *Journal of Personality and Social Psychology* 49(1):250–63.
- Branje, Susan J. T., Cornelis F. M. Van Lieshout, and Jan R. M. Gerris. 2007. Big five personality development in adolescence and adulthood. *European Journal of Personality* 21(1):45–62.
- Cheavens, Jennifer S. 2000. Hope and depression: Light through the shadows. In *Handbook of hope: Theory, measures, and applications*, edited by C. R. Snyder, pp. 321–40. San Diego: Academic Press.
- Cheung, Chau-kiu and Jerf Wai-keung Yeung. 2011. Meta-analysis of relationships between religiosity and constructive and destructive behaviors among adolescents. *Children and Youth Services Review* 33(2):376–85.
- Ciarrochi, Joseph W., Gabriel S. Dy-Liacco, and Erin Deneke. 2008. Gods or rituals? Relational faith, spiritual discontent, and religious practices as predictors of hope and optimism. *Journal of Positive Psychology* 3(2):120–36.
- Ciarrochi, Joseph, Patrick C. L. Heaven, and Fiona Davies. 2007. The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: A longitudinal study. *Journal of Research in Personality* 41(6):1161–78.
- Corulla, William J. 1990. A revised version of the psychoticism scale for children. *Personality and Individual Differences* 11(1):65–76.
- Deater-Deckard, Kirby, Linda Ivy, and Jessica Smith. 2006. Resilience in gene-environment transactions. In *Handbook of resilience in children*, edited by Sam Goldstein and Robert B. Brooks, pp. 49–63. New York: Springer.
- DeNeve, Kristina M. and Harris Cooper. 1998. The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin* 124(2):197–229.
- Donahue, Michael J. and Peter L. Benson. 1995. Religion and the well-being of adolescents. *Journal of Social Issues* 51(2):145–60.

- Donnellan, M. Brent, Kali H. Trzesniewski, and Richard W. Robins. 2006. Personality and self-esteem development in adolescence. In *Handbook of personality development*, edited by Daniel K. Mroczek and Todd D. Little, pp. 285–309. Mahwah, NJ: Lawrence Erlbaum Associates.
- Dumont, Michelle and Marc A. Provost. 1999. Resilience in adolescence: Protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of Youth and Adolescence* 28(3):343–63.
- Elliott, Marta. 1996. Impact of work, family, and welfare receipt on women's self-esteem in young adulthood. *Social Psychology Quarterly* 59(1):80–95.
- Emmons, Robert A. 2005a. Striving for the sacred: Personal goals, life meaning, and religion. *Journal of Social Issues* 61(4):731–45.
- . 2005b. Emotion and religion. In *Handbook of the psychology of religion and spirituality*, edited by Raymond F. Paloutzian and Crystal L. Park, pp. 235–52. New York: Guilford Press.
- Emmons, Robert A. Justin L. Barrett, and Sarah A. Schnitker. 2008. Personality and the capacity for religious and spiritual experience. In *Handbook of personality: Theory and research*, edited by Oliver P. John, Richard W. Robins, and Lawrence A. Pervin, pp. 634–53. New York: Guilford Press.
- Enders, Craig K. and Deborah L. Bandalos. 2001. The relative performance of full information likelihood estimation for missing data in structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal* 8(3):430–57.
- Eysenck, Hans J. and Michael W. Eysenck. 1985. *Personality and individual differences: A natural science approach*. New York: Plenum.
- Eysenck, Hans J. and Sybil B. G. Eysenck. 1976. *Psychoticism as a dimension of personality*. London: Hodder and Stoughton.
- Eysenck, Sybil B. G., Hans J. Eysenck, and Paul Barrett. 1985. A revised version of the psychoticism scale. *Personality and Individual Differences* 6(1):21–29.
- Feather, Norman T. 1992. Values, valences, expectations, and actions. *Journal of Social Issues* 48(2):109–24.
- Fowler, James W. 1981. *Stages of faith: The psychology of human development and the quest for meaning*. San Francisco: Harper and Row.
- Frable, Deborah E. S. 1997. Gender, racial, ethnic, sexual, and class identities. *Annual Review of Psychology* 48(1):139–62.
- Francis, Leslie J. 2010. Personality and religious orientation: Shifting sands or firm foundations? *Mental Health, Religion and Culture* 13(7/8):793–803.
- Francis, Leslie J. and Chris J. Jackson. 2003. Eysenck's dimensional model of personality and religion: Are religious people more neurotic? *Mental Health, Religion and Culture* 6(1):87–100.
- Francis, Leslie J. and Yaacov J. Katz. 1992. The relationship between personality and religiosity in an Israeli sample. *Journal for the Scientific Study of Religion* 31(2):153–62.
- Goldberg, Lewis R., John A. Johnson, Herbert W. Eber, Robert Hogan, Michael C. Ashton, Robert Cloninger, and Harrison G. Gough. 2006. The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality* 40(1):84–96.
- Gow, Alan J., Martha C. Whiteman, Alison Pattie, and Ian J. Deary. 2005. Goldberg's "IPIP" big-five factor markers: Internal consistency and concurrent validation in Scotland. *Personality and Individual Differences* 39(2):317–29.
- Heaven, Patrick C. L. and Joseph Ciarrochi. 2007. Religious values, personality, and the social and emotional well-being of adolescents. *British Journal of Psychology* 98(4):681–94.
- . 2008. Parental styles, gender, and the development of hope and self-esteem. *European Journal of Personality* 22(8):707–24.
- Hills, Peter, Leslie J. Francis, Michael Argyle, and Chris J. Jackson. 2004. Primary personality trait correlates of religious practice and orientation. *Personality and Individual Differences* 36(1):61–73.
- Hood, Ralph W., Peter C. Hill, and Bernard Spilka. 2009. *The psychology of religion: An empirical approach*, 4th ed. New York: Guilford Press.
- Howell, David C. 2008. The analysis of missing data. In *Handbook of social science methodology*, edited by William Outhwaite and Stephen Turner, pp. 208–24. London: Sage.
- Hu, Li-tze and Peter M. Bentler. 1999. Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6(1):1–55.
- Joseph, Stephen, P. Alex Linley, and John Maltby. 2006. Positive psychology, religion, and spirituality. *Mental Health, Religion and Culture* 9(3):209–12.
- King, Pamela Ebstyn and James L. Furrow. 2004. Religion as a resource for positive youth development: Religion, social capital, and moral outcomes. *Developmental Psychology* 40(5):703–13.
- Kline, Rex B. 1998. *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Maltby, John and Liza Day. 2001. The relationship between spirituality and Eysenck's personality dimensions: A replication among English adults. *Journal of Genetic Psychology* 162(1):119–22.
- Maltby, John, Christopher Alan Lewis, and Liza Day. 1999. Religious orientation and psychological well-being: The role of the frequency of personal prayer. *British Journal of Health Psychology* 4(4):363–78.
- Martens, Matthew P. 2005. The use of structural equation modeling in counseling psychology research. *Counseling Psychologist* 33(3):269–98.

- McCullough, Michael E., Jo-Ann Tsang, and Sharon Brion. 2003. Personality traits in adolescence as predictors of religiousness in early adulthood: Findings from the Terman longitudinal study. *Personality and Social Psychology Bulletin* 29(8):980–91.
- Mooney, Christopher Z. and Robert D. Duval. 1993. *Bootstrapping: A nonparametric approach to statistical inference*. Newbury Park, CA: Sage.
- Norman, Warren T. 1963. Toward an adequate taxonomy of personality attributes: Replicated factor structure in peer nomination personality ratings. *Journal of Abnormal and Social Psychology* 66(6):574–83.
- Ozer, Daniel J. and Verónica Benet-Martínez. 2006. Personality and the prediction of consequential outcomes. *Annual Review of Psychology* 57(1):401–21.
- Ozorak, Elizabeth Weiss. 1996. The power but not the glory: How women empower themselves through religion. *Journal for the Scientific Study of Religion* 35(1):17–29.
- Paloutzian, Raymond F. and Crystal L. Park (eds.). 2005. *Handbook of the psychology of religion and spirituality*. New York: Guilford Press.
- Pargament, Kenneth I. and Annette Mahoney. 2002. Spirituality: Discovering and conserving the sacred. In *Handbook of positive psychology*, edited by C. R. Snyder and Shane J. Lopez, pp. 646–59. Washington, DC: APA Press.
- Paulhus, Delroy L. 1998. Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology* 74(5):1197–1208.
- Roberts, Brent W. and Wendy F. DelVecchio. 2000. The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin* 126(1):3–25.
- Roberts, Brent W., Kate E. Walton, and Wolfgang Viechtbauer. 2006. Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin* 132(1):1–25.
- Rokeach, Milton. 1973. *The nature of human values*. New York: Free Press.
- Rosenberg, Morris. 1979. *Conceiving the self*. New York: Basic Books.
- Saroglou, Vassilis. 2002. Religion and the five factors of personality: A meta-analytic review. *Personality and Individual Differences* 32(1):15–25.
- . 2010. Religiousness as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review* 14(1):108–25.
- Saroglou, Vassilis, Coralie Buxant, and Jonathan Tilquin. 2008. Positive emotions as leading to religion and spirituality. *Journal of Positive Psychology* 3(3):165–73.
- Schwartz, Shalom H. 1994. Are there universal aspects in the structure and content of human values? *Journal of Social Issues* 50(1):19–45.
- Silberman, Israella. 2005a. Religion as a meaning system: Implications for the new millennium. *Journal of Social Issues* 61(4):641–63.
- . 2005b. Religious violence, terrorism, and peace: A meaning-system analysis. In *Handbook of the psychology of religion and spirituality*, edited by Raymond F. Paloutzian and Crystal L. Park, pp. 529–49. New York: Guilford Press.
- Smetana, Judith G., Nicole Campione-Barr, and Aaron Metzger. 2006. Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology* 57(1):255–84.
- Snyder, C. R. 2000. Hypothesis: There is hope. In *Handbook of hope: Theory, measures, and applications*, edited by C. R. Snyder, pp. 3–21. San Diego: Academic Press.
- . 2002. Hope theory: Rainbows in the mind. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory* 13(4):249–75.
- Snyder, C. R., Betsy Hoza, William E. Pelham, Michael Rapoff, Leanne Ware, Michael Danovsky, Lori Highberger, Howard Rubinstein, and Kandy J. Stahl. 1997. The development and validation of the children's hope scale. *Journal of Pediatric Psychology* 22(3):399–421.
- Snyder, C. R., Kevin L. Rand, and David R. Sigmon. 2002. Hope theory: A member of the positive psychology family. In *Handbook of positive psychology*, edited by C. R. Snyder and Shane J. Lopez, pp. 257–76. New York: Oxford University Press.
- Snyder, C. R., David R. Sigmon, and David B. Feldman. 2002. Hope for the scared and vice versa: Positive goal-directed thinking and religion. *Psychological Inquiry* 13(3):234–38.
- Spiilka, Bernard, Ralph W. Hood, and Richard L. Gorsuch. 1985. *The psychology of religion: An empirical approach*. Englewood Cliffs, NJ: Prentice-Hall.
- Steinberg, Laurence and Amanda Sheffield Morris. 2001. Adolescent development. *Annual Review of Psychology* 52(1):83–110.
- Valle, Michael Francis, E. Scott Huebner, and Shannon M. Suldo. 2006. An analysis of hope as a psychological strength. *Journal of School Psychology* 44(5):393–406.
- Wiggins, Jerry S. 1997. In defense of traits. In *Handbook of personality psychology*, edited by Robert Hogan, John Johnson, and Stephen Briggs, pp. 95–115. San Diego: Academic Press.
- Williams, Emyr, Leslie J. Francis, and Mandy Robbins. 2006. Rejection of Christianity and self-esteem. *North American Journal of Psychology* 8(1):193–95.
- Wink, Paul, Lucia Ciciolla, Michele Dillon, and Allison Tracy. 2007. Religiousness, spiritual seeking, and personality: Findings from a longitudinal study. *Journal of Personality* 75(5):1051–70.