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Vassilis Saroglou¹

Abstract

Individual differences in religiousness can be partly explained as a cultural adaptation of two basic personality traits, Agreeableness and Conscientiousness. This argument is supported by a meta-analysis of 71 samples ($N = 21,715$) from 19 countries and a review of the literature on personality and religion. Beyond variations in effect magnitude as a function of moderators, the main personality characteristics of religiousness (Agreeableness and Conscientiousness) are consistent across different religious dimensions, contexts (gender, age, cohort, and country), and personality measures, models, and levels, and they seem to predict religiousness rather than be influenced by it. The copresence of Agreeableness and Conscientiousness sheds light on other explanations of religiousness, its distinctiveness from related constructs, its implications for other domains, and its adaptive functions.

Keywords

individual differences, personality structure, attitudes

Why are some people more religious than others, some very religious, and some not at all? Predictors of religiousness, conversion, and deconversion include contextual and situational factors such as religious socialization (mainly through family; Hood, Hill, & Gorsuch, 2009), negative life events (Paloutzian, Richardson, & Rambo, 1999; Streib, Keller, Csöff, & Silver, 2009), and positive self-transcendent experiences (Saroglou, Buxant, & Tilquin, 2008). However, individual differences, either alone or in interaction with situational factors, may also play a role in interindividual variability in religiousness. Examples are the quality of attachment relationships (Granqvist, Mikulincer, & Shaver, 2010), the need to belong (Krause & Wulff, 2005), the need for uncertainty reduction (Hogg, Adelman, & Blagg, 2010), and the need for self-enhancement (Sedikides & Gebauer, 2010).

The argument of the present article is that basic personality traits, and more precisely the combination of two of the big five personality factors (or traits), are important candidates for explaining individual differences in religiousness. Additional personality factors explain specific forms of religiousness. From a five-factor model (FFM; McCrae & Costa, 2008) perspective, religiousness—like other constructs such as social attitudes, values, and ideologies—is a cultural adaptation of basic personality traits. Within the FFM, these traits are Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. These key personality traits associate with religiousness in a systematic way, are generalizable across contexts and domains of personality,

can be considered predispositions of religiousness, are unique in their influence on religiousness in comparison to other relevant constructs, and have implications for understanding the role and functions of religion in many domains of life.

The article is organized around three parts. The first part consists of a meta-analysis of studies that have examined how religiousness relates to the five personality factors. On the basis of 71 samples from 19 countries, this meta-analysis investigates the main personality traits associated with religiousness. In addition, it investigates whether the relation between personality and religion is contingent on (a) the religious dimensions under consideration (personal religiosity, spirituality, fundamentalism), (b) the characteristics of the sample (age, gender, and country), and (c) the personality measures used.

The second and third parts of the article discuss the robustness, nature, and implications of the relation between religion and the five personality factors by narratively reviewing an additional body of research. In particular, the second part examines the robustness and generalizability of the links between religiousness and these personality traits through

¹Université catholique de Louvain, Louvain-la-Neuve, Belgium

Corresponding Author:

Vassilis Saroglou, Université catholique de Louvain, Department of Psychology, Place du Cardinal Mercier 10, B 1348 Louvain-la-Neuve, Belgium

Email: vassilis.saroglou@uclouvain.be

personality models other than the FFM, measures alternative to self-reports, and personality domains other than self-perceptions. The third and last section discusses three additional issues: (a) causal direction (Does personality have an impact on religiousness or vice versa?), (b) exact status of religiousness within personality (Is religiousness a cultural adaptation, or is it a basic dimension of personality?), and (c) implications of the view of religiousness as a unique combination of personality traits.

A Meta-Analysis of Studies on Religiousness and the FFM

Basic personality traits imply interindividual differences and intraindividual consistency in behavior and across situations and time. On the basis of preliminary evidence from a meta-analytic review of 13 studies (Saroglou, 2002b; also see Piedmont, 2005), I hypothesized that religiousness is linked to each basic personality trait as follows. First, people with prosocial tendencies (Agreeableness) are likely to invest in religious beliefs, feelings, and practices that emphasize social harmony, positive qualities in human relations, and the idea of a protective and loving God. Second, people characterized by orderliness and self-control (Conscientiousness) are likely to invest in religious beliefs, feelings, and practices that emphasize the meaningfulness of life and the world, order in the universe through a sense of transcendence, and disciplined pursuit of valued goals. I assumed that these two patterns are relatively constant across contexts (gender, age, culture, religion, and religious orientation). Third, I also assumed that people's predispositions to actively engage with their social environment (Extraversion) and to unstably respond to stressful situations (Neuroticism) are not key explanations of religiousness, although these traits may relate to specific forms of religiousness (e.g., those involving strong positive or negative emotionality).

Religiousness is used here as a broad term, encompassing different ways of referring to transcendence in one's own life. I made additional hypotheses with regard to the relation between Openness to Experience (whether people tend to embrace or reject novel ideas and experiences) and three religious dimensions: (a) personal (subjective, general) religiosity, (b) spirituality (including faith maturity), and (c) religious fundamentalism. Personal religiosity consists of beliefs and practices that refer to a transcendent being and are legitimized, to some extent, by an established tradition or group. Spirituality is partially related to religiosity. Both constructs refer to transcendence. However, spirituality, in contemporary secular societies, is distinct from religiosity through its emphasis on the individual experience and independence from established religious traditions and beliefs (Zinnbauer & Pargament, 2005). Faith maturity (Fowler, 1981) is classified here under spirituality because it shares with it individuation and reflection in faith (critical reconsideration of beliefs); this faith

may or may not be in connection with a specific religious tradition. By contrast, fundamentalism is characterized by authoritarian and dogmatic religious attitudes, beliefs, and practices (Altemeyer & Hunsberger, 2005).¹ On the basis of preliminary evidence (Saroglou, 2002b), I hypothesized that high Openness to Experience reflects spirituality, whereas low Openness to Experience reflects fundamentalism. I expected Agreeableness and Conscientiousness to positively correlate with all three religious dimensions (religiosity, spirituality, and fundamentalism).

The meta-analysis also examined moderators of the relation between basic personality traits and religiousness. Although these personality traits were assumed to be predispositions of religiousness across contexts, I explored differences in the magnitude of the associations between traits and religiousness as a function of age, gender, and country. Finally, I investigated whether the type of FFM measures used (NEO Personality Inventory–Revised [NEO-PI-R], NEO Five-Factor Inventory [NEO-FFI], adjective scales; Costa & McCrae, 2008; John, Nauman, & Soto, 2008) moderated the religion–personality associations.

Method

Literature searches and inclusion criteria. I searched the literature by (a) inspecting the contents of all psychology of religion journals and yearbooks since 1999 (year of the first publications on this topic), (b) locating sources (through Google Scholar) that cited the key articles by Piedmont (1999a) and Saroglou (2002b),² and (c) searching through the PsycINFO database with the words *relig** or *spiritual** (for religiousness) and *extraver**, *agreeable**, *conscientious**, *neurotic**, *emotional stab**, *openness to experience*, *five-factor-model*, and *big five* (for personality). I included in the meta-analysis studies published or available in English and French and reporting statistical associations between measures of religiousness and measures of the basic personality traits. I also included the 13 studies reviewed in a previous meta-analysis (Saroglou, 2002b) to increase the power of the current meta-analysis and its potential to uncover moderators. In total, I included in the meta-analysis 63 studies (published or available as of March 2009), consisting of 71 samples from 19 countries (total $N = 21,715$). Table 1 provides relevant information.

Variables. I coded for the following sample characteristics: number of participants, percentage of female participants, age and age group, country from which the data originated, predominant religious affiliation, measures of religiousness, and measures of personality. Tables 1 and 2 provide relevant information.

Effect sizes and statistical analyses. I used correlation coefficients as each study's effect sizes, following transformation into Fisher's z scores. (I first transformed the few F and t test statistics into r s.) When a study provided multiple results, with more than one indicator of religiosity or spirituality, I aggregated the effect sizes. As in Saroglou (2002b), I computed the weighted and unweighted mean effect sizes (separately

Table 1. Studies Included in the Meta-Analysis

| Study | Country | Sample | N | Religious Measure | FFM Measure |
|---|--------------------------|-------------------|-----|---|--------------------|
| Adamovová (2006) | Slovakia | Adults | 161 | R. fundamentalism ^a | NEO-PI-R |
| Adamovová and Stríženec (2004) | Slovakia | Students | 115 | Spirituality (COS, EPD) ^b | NEO-PI-R |
| Aguilar-Vafaie and Moghanloo (2008) | Iran | Students | 359 | Muslim beliefs and practice ^c | NEO-PI-R |
| Barron, Struckman-Johnson, Quevillon, and Banka (2008) | USA | Students | 243 | Conservative religion ^a | NEO-PI-R: O |
| Billard, Greer, Merrick, Sneek, and Scheers (2005) | USA | Catholic nuns | 377 | Nuns vs. norms ^c | NEO-FFI |
| Braam, Mooi, Jonker, van Tilburg, and Deeg (2008) | Netherlands | Religious adults | 53 | Prayer ^c | NEO-PI-R-short |
| Chen (1996) ^d | Taiwan | Students | 534 | Faith maturity ^b | NEO-PI-R |
| Chen, Fok, Bond, and Matsumoto (2006) | Hong Kong | Students | 117 | Religiosity as social axiom ^c | NEO-FFI |
| Ciarrocchi and Deneke (2004) | USA | Adults | 471 | Religious practice ^c | BARS |
| Ciarrocchi, Dy-Liacco, and Deneke (2008) | USA | Adults | 196 | Religious + practice (MMRS) ^c | BARS |
| | | | | Daily spiritual experiences (MMRS) ^b | |
| Ciarrocchi, Piedmont, and Williams (2002) | USA | Students | 986 | Faith maturity ^b | BARS or NEO-FFI |
| Costa, Busch, Zonderman, and McCrae (1986) | USA | Adults | 141 | MMPI-Orthodoxy ^c , MMPI-R. fundamentalism ^a | NEO-PI |
| Cramer, Griffin, and Powers (2008) | USA | Students | 135 | Spiritual life integration ^c | NEO-PI-R |
| Duriez and Soenens (2006) | Belgium | Students | 332 | Inclusion of Transcendence (PCBS) ^c | NEO-FFI |
| | | Adolescents | 323 | Inclusion of Transcendence (PCBS) ^c | NEO-FFI |
| Duriez, Soenens, and Beyers (2004) | Belgium | Students | 335 | Inclusion of Transcendence (PCBS) ^c | NEO-FFI |
| Dy-Liacco, Piedmont, Murray-Swank, Rodgeron, and Sherman (2009) | Philippines | Adults | 640 | Faith maturity ^b | BARS |
| Froehlich, Fialkowski, Scheers, Wilcox, and Lawrence (2006) | USA | Catholic clergy | 251 | Spiritual maturity ^b | NEO-FFI |
| Galea, Ciarrocchi, Piedmont, and Wicks (2007) | Malta | Students | 312 | Religious practice ^c | BARS |
| | | | | Spirituality (STS) ^b | |
| Geary, Ciarrocchi, and Scheers (2004) | USA | Adults | 195 | Faith maturity ^b | NEO-FFI |
| Ghorbani, Watson, and Mirhasani (2007) | Iran | Students | 251 | Intrinsic religiosity ^c | Goldberg (1999): O |
| Heaven and Ciarrocchi (2007) | Australia | Adolescents | 563 | Religiousness ^c | Conscientiousness |
| Henningsgaard and Arnau (2008) | USA | Students + family | 310 | Intrinsic religiosity ^c | BFI |
| | | | | Spiritual meaning ^b | |
| Kosek (1999) | Poland | Adolescents | 104 | Intrinsic religiosity ^c | Adjective List |
| Koutsos, Wertheim, and Kornblum (2008) | Australia and N. Zealand | Adults | 128 | Spirituality ^b | BFI: A and N |
| Krauss, Streib, Keller, and Silver (2006) | USA | Young adults | 297 | R. fundamentalism ^a | Goldberg (1999) |
| | Germany | | 200 | | |
| | Romania | | 235 | | |
| Landis et al. (2009) | USA | Students | 188 | ASPIRES ^b | NEO-PI-R |
| Leak and Fish (1999) | USA | Students | 162 | Religious maturity ^b | Adjective list |
| Leak, Loucks, and Bowlin (1999) | USA | Students | 93 | Faith development ^b | NEO-PI |

(continued)

Table 1. (continued)

| Study | Country | Sample | N | Religious Measure | FFM Measure |
|--|---------|----------------------|-------|--|---------------------------------------|
| Lee, Ogunfowora, and Ashton (2005) | Canada | Students | 200 | Religiosity ^c | Goldberg (1999) |
| McCullough and Laurenceau (2005) | USA | Gifted adults | 1,119 | Religiosity ^c | Items classified into FFM (adulthood) |
| McCullough and Willoughby (2009) | USA | Students | 257 | Religiosity ^c | BFI |
| MacDonald (2000) | Canada | Students | 595 | Self-transcendence ^b | NEO-PI-R |
| Mendonca, Oakes, Ciarrocchi, Sneek, and Gillespie (2007) | India | Seminarians and nuns | 321 | Religiousness ^c , Spirituality (COS, EPD) ^b | IPIP |
| Murray, Ciarrocchi, and Murray-Swank (2007) | USA | Students | 176 | Positive relation w. God ^c | Goldberg (1999) |
| | | | | Faith maturity ^b | |
| | | | | Rel. practice (MMRS) ^c | |
| | | | | Daily spiritual experiences (MMSRS) ^b | |
| Paunonen (1998) | UK | Students | 96 | Religiosity ^c | NEO-FFI |
| | | Students | 92 | | |
| Paunonen and Ashton (2001) | Canada | Students | 141 | Religiosity ^c | NEO-PI-R |
| Paunonen, Haddock, Forsterling, and Keinonen (2003) | Canada | Students | 170 | Religiousness ^c | NEO-FFI |
| | UK | | 92 | | |
| | Germany | | 101 | | |
| | Finland | | 105 | | |
| Piedmont (1996) ^d | USA | Students | 492 | Intrinsic religiosity ^c | Adjective List |
| Piedmont (1999a) | USA | Students | 342 | Prayer ^c , STS: Universality and Connectedness ^b | NEO-PI-R |
| Piedmont (2001) | USA | Students | 319 | Religious practice ^c | NEO-PI-R |
| | | | | STS: Universality and Connectedness ^b | |
| Piedmont, Mapa, and Williams (2006) | USA | Students | 452 | Religiosity (MMRS) ^c | Adjective Check List |
| Piedmont and Nelson (2001) | USA | Students | 1,752 | Faith maturity ^b | BARS |
| Roccas, Sagiv, Schwartz, and Knafo (2002) | Israel | Students | 246 | Religiosity ^c | NEO-PI-R |
| Rowatt and Kirkpatrick (2002) | USA | Students + adults | 250 | Secure attachment to God ^c | Saucier (1994) |
| Rowatt and Schmitt (2003) | USA | Students | 161 | Intrinsic religiosity ^c | BFI(1998) |
| Saroglou (2001) | Belgium | Students | 295 | Religiosity ^c | Adjective List |
| | | | 177 | Spirituality ^b | |
| | | | 204 | R. fundamentalism ^a | |
| Saroglou and Dupuis (2006) | Belgium | Adult converts | 105 | Interest/investment on Buddhism ^c | NEO-PI-R: A |
| Saroglou and Fiasse (2003) | Belgium | Young adults | 122 | Religiosity ^c | NEO-PI-R |
| | | | | Spirituality ^b | |
| Saroglou and Muñoz-García (2008) | Spain | Students | 256 | Religiosity ^c | NEO-PI-R |
| | | | | Spirituality ^b | |
| Saucier (2000) | USA | Students | 303 | Conservative religion ^a | Saucier (1994) + O |
| Saucier and Goldberg (1998) | USA | Adults | 694 | Religiosity ^c | NEO-PI-R |
| Saucier and Skrzypiska (2006) | USA | Adults | 375 | Traditional religion ^c | NEO-PI-R |
| | | | | Subjective spirituality ^b | |
| Simpson, Newman, and Fuqua (2007) | USA | Religious adults | 190 | Intrinsic religiosity ^c | NEO-FFI |
| Streyffeler and McNally (1998) | USA | Adults | 141 | Liberal Protestants ^b | NEO-FFI |
| | | | 110 | Fundament. Protest. ^a | |
| Taylor and MacDonald (1999) | Canada | Students | 368 | Intrinsic religiosity ^c | NEO-PI-R |
| Tkach and Lyubomirsky (2006) | USA | Students | 500 | Religion as coping ^c | BFI |

(continued)

Table 1. (continued)

| Study | Country | Sample | N | Religious Measure | FFM Measure |
|--|-----------|--------------------------|-----|---|-------------------|
| Van Cappellen and Saroglou (2009) | Belgium | Adults (Web) | 109 | Religiosity ^c STS: Universality and Connectedness ^b | TIPI |
| Walker and Gorsuch (2002) | USA | Students | 180 | Receiving God's forgiveness ^c | Goldberg (1999) |
| Walsh, Ciarrocchi, Piedmont, and Haskins (2007) | USA | Pathological gamblers | 100 | Religious practices ^c STS: Universality and Connectedness ^b | NEO-PI-R |
| Weeden, Cohen, and Kenrick (2008) | USA | Students | 902 | Church attendance ^c | BFI-10 |
| Wilson and Boden (2008) | Australia | Students | 104 | Religiousness ^c | NEO-PI |
| Wink, Ciciolla, Dillon, and Tracy (2007) | USA | Old adults | 209 | Religiosity ^c Spirituality ^b | CQ short: C, A, O |

Note: ASPIRES = Assessment of Spirituality and Religious Sentiments; BARS = Bipolar Adjective Rating Scale; BFI = Big Five Inventory; COS = Cognitive Orientation Towards Spirituality; CQ = California Q-Sort; EPD = Experiential/Phenomenological Dimension of Spirituality; FFM = Five Factor Model; IPIP = International Personality Item Pool; MMPI = Minnesota Multiphasic Personality Inventory; MMRS = Multidimensional Measure of Religiousness/Spirituality; NEO-PI-R = NEO Personality Inventory—Revised; NEO-FFI = NEO Five Factor Inventory; PCBS = Post-Critical Belief Scale; STS = Spiritual Transcendence Scale; TIPI = Ten-Item Personality Inventory.

a. Measures of fundamentalism.

b. Measures of spirituality and faith maturity.

c. Measures of religiosity.

d. Study with results cited in Piedmont (1999b).

Table 2. Sample Characteristics

| | Total | Religiosity | | Spirituality | | Fundamentalism | | |
|-----------------------------------|--------|-------------|-------|--------------|-------|----------------|-------|-------|
| k: samples | 71 | 49 | | 28 | | 9 | | |
| N | 21,715 | 15,246 | | 9,220 | | 1,894 | | |
| Sample size (M, SD) | 319.3 | 267.9 | 311.1 | 211.6 | 329.3 | 324.6 | 210.4 | 66.4 |
| Gender (percentage female; M, SD) | 61.24 | 11.38 | 62.34 | 13.05 | 63.0 | 10.3 | 51.39 | 15.06 |
| Age groups | | | | | | | | |
| Adolescent samples | 3 | | 3 | | 0 | | 0 | |
| Young adult samples | 46 | | 31 | | 17 | | 6 | |
| Adult samples | 15 | | 8 | | 8 | | 3 | |
| Older adults samples | 3 | | 3 | | 1 | | 0 | |
| Mixed samples | 4 | | 4 | | 2 | | 0 | |
| Number of countries | 19 | | 15 | | 10 | | 5 | |
| U.S. samples | 36 | | 23 | | 17 | | 5 | |
| Canadian samples | 7 | | 6 | | 0 | | 0 | |
| EU samples | 20 | | 16 | | 7 | | 4 | |
| Other countries | 8 | | 7 | | 5 | | 0 | |

for each of the three religious dimensions and each of the five personality factors), 95% confidence intervals, and homogeneity statistics. As I expected that the main personality correlates would be constant across contexts and that the variability between the effect sizes in the different samples could be explained by the moderators, I adopted a fixed-effects model. I removed four outliers out of the almost 400 effect sizes recorded. Given the particularly high *N*s, and thus the risk for a Type I error, I considered only mean effect sizes $\geq .10$ and significant moderating effects ($p < .05$). For gender, I computed a weighted regression analysis. For the other moderators, I computed the analogue to the analysis of

variance, partitioning the between and within set of studies variance (Lipsey & Wilson, 2001).

File-drawer problem. To address the file-drawer problem, I plotted the samples' effect sizes for Agreeableness and Conscientiousness against the corresponding sample size (Sterne, Becker, & Egger, 2005). I used the trim and fill method (Duval, 2005; Duval & Tweedie, 2000) for these two hypothesized correlates of religiosity.

Results.

Mean effect sizes. The meta-analytic statistics, separately for each religious dimension and each personality factor, are

Table 3. Meta-Analysis of the Correlations Between Religiousness and the Five Personality Factors

| | E | A | C | N | O |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|
| Religiosity | | | | | |
| Weighted mean | .07 | .19 | .16 | -.04 | -.04 |
| Unweighted mean | .06 | .20 | .16 | -.04 | -.02 |
| 95% CI | .05, .09 | .17, .21 | .14, .18 | -.05, -.02 | -.05, -.02 |
| Q | <i>120.49</i> | <i>124.03</i> | <i>63.89</i> | <i>188.69</i> | <i>168.00</i> |
| k | 45 | 47 | 46 | 45 | 46 |
| n | 14,118 | 14,432 | 14,773 | 14,118 | 13,459 |
| Spirituality/mature faith | | | | | |
| Weighted mean | .14 | .21 | .14 | -.07 | .18 |
| Unweighted mean | .15 | .22 | .13 | -.08 | .23 |
| 95% CI | .12, .16 | .19, .23 | .12, .16 | -.09, -.05 | .16, .20 |
| Q | <i>66.25</i> | <i>60.38</i> | <i>125.30</i> | <i>120.11</i> | <i>190.88</i> |
| k | 25 | 27 | 27 | 27 | 27 |
| n | 8,686 | 8,888 | 9,011 | 8,930 | 9,011 |
| Religious fundamentalism | | | | | |
| Weighted mean | .00 | .13 | .12 | -.05 | -.21 |
| Unweighted mean | .01 | .13 | .12 | -.05 | -.22 |
| 95% CI | -.05, .05 | .08, .17 | .07, .17 | -.09, .00 | -.26, -.17 |
| Q | <i>16.51</i> | <i>7.33</i> | <i>4.74</i> | <i>11.31</i> | <i>24.55</i> |
| k | 8 | 8 | 8 | 7 | 9 |
| n | 1,651 | 1,651 | 1,490 | 1,651 | 1,894 |

Note: E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness to Experience; CI = confidence interval (lower/upper); Q = homogeneity statistic. Mean effect sizes are bold when $\geq .10$. Numbers are in italics when Q statistics are significant.

detailed in Table 3. As hypothesized, all three religious dimensions (religiosity, spirituality, and fundamentalism) were positively associated with Agreeableness and Conscientiousness. Religiosity was unrelated to the other three factors. In addition, spirituality was positively related to Openness and Extraversion, whereas fundamentalism was negatively related to Openness.³

File-drawer problem. Figure 1 shows the funnel plots of the effect sizes for Agreeableness and Conscientiousness and for the 71 samples as a function of the corresponding sample size. These plots did not show asymmetry, which implies no publication bias. When focusing on the associations of religiosity with Agreeableness and Conscientiousness, the trim and fill method suggested seven and four studies, respectively, that should be trimmed off. The interim mean effect sizes were $r(13, 232) = .18$ and $r(13, 854) = .15$. When filling the meta-analysis with the fictitious studies that mirrored the trimmed-off studies, the estimated population effect sizes were, respectively, $r = .17$ and $r = .145$. The 95% confidence intervals of the mean effect sizes included the after trim and fill mean effect sizes (and vice versa). Therefore, publication bias does not seem to present a problem.

Homogeneity. As detailed in Table 3, the homogeneity statistic was significant in most cases, which suggests heterogeneity in the effect sizes. Therefore, I tested the possible role of the hypothesized moderators, with the objective of examining both the differences in the magnitude of the effects and the generalizability of the main personality correlates of religion across contexts.

Gender. A metaregression of gender (percentage of female participants by sample) on the effect sizes of the associations between religiosity and personality did not indicate a gender effect (Table 4). The same was true for spirituality and fundamentalism.

Age. The sample mean age was not provided in several studies, and student samples constituted a large majority. Thus, I divided the samples into three groups: adolescents, students and young adults (ages 18–29), and adults (ages 30–55). I did not include in the analysis three additional adult samples (age older than 60) because in two of them all participants were religious. As detailed in Table 4, Agreeableness and Conscientiousness were related to religiosity across the three age groups. When I computed within-group and between-group homogeneity statistics, age group turned out to be a moderator of the magnitude of the effects. The between-group heterogeneity was significant for Extraversion, Agreeableness, and Openness to Experience, $Q_B(2) = 11.37, 14.22, \text{ and } 10.81$, respectively. These factors were more strongly associated with religiosity (positively for Extraversion and Agreeableness, negatively for Openness to Experience) among adults than among young adults. Moreover, within-group heterogeneity remained significant among young adults but not among adolescents (for all factors) and adults for Extraversion, Agreeableness, and Conscientiousness, $Q_{adults}(7) = 10.78, 6.78, \text{ and } 6.65$, respectively.

Similar comparisons for spirituality (two groups: young adults $k = 17, N = 6,386$; adults $k = 8, N = 2,215$) showed that the transition from youth to adulthood is responsible for the

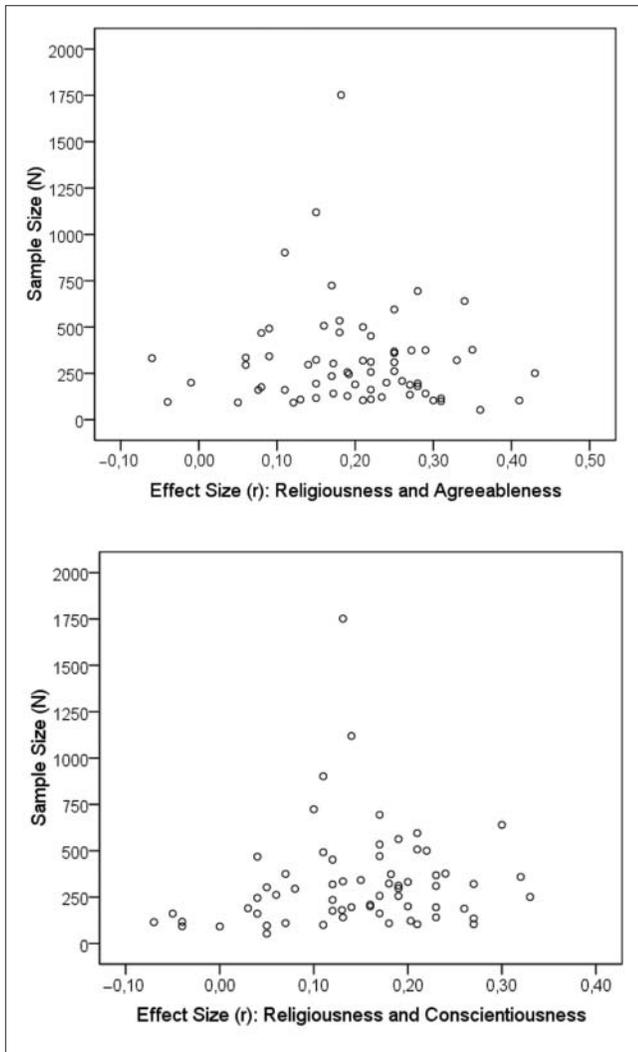


Figure 1. Funnel plots of effect size (Pearson's r) of each sample against its sample size, distinctly for the associations of religiosity with Agreeableness (upper figure) and Conscientiousness (lower figure)

Note: Number of samples = 71. All samples with results on religiosity ($k = 49$), and additional samples with results on spirituality ($k = 15$) and fundamentalism ($k = 7$), are included.

heterogeneity relative to Extraversion, Agreeableness, Conscientiousness, and Neuroticism, $Q_B(1) = 28.05, 16.26, 9.55,$ and 44 , respectively. Indeed, the associations between spirituality and these personality factors were stronger among adults ($r = .24, .29, .20,$ and $-.19$, respectively) than young adults ($r = .11, .19, .12,$ and $-.02$, respectively). Within each age group, heterogeneity remained significant, with the exceptions of Agreeableness for young adults, $Q_{\text{young adults}}(16) = 10.56$, and Extraversion for adults, $Q_{\text{young adults}}(7) = 10.14$. I did not compute similar analyses for fundamentalism because the samples comprised mostly young adults.

Country and religious tradition. I computed mean effect sizes of the relations between religiosity and the five factors separately for (a) U.S. samples, (b) EU samples, (c) Canadian

samples, and (d) other country samples (the last group is heterogeneous, as it includes samples from Australia, Hong Kong, Iran, and Israel). I excluded two studies with participants belonging to minority religions (Catholics in India, Buddhists in Belgium; Mendonca, Oakes, Ciarrocchi, Sneek, & Gillespie, 2007; Saroglou & Dupuis, 2006) to preserve correspondence between participants' religious affiliation and the country's dominant religious tradition. This means that all the samples in Groups a, b, and c were predominantly Christian. As detailed in Table 4, in all four groups, religiosity was positively related to Agreeableness and Conscientiousness. Note also that the unweighted mean effect sizes (used to avoid the overinfluence of one study with a large sample size) for the small set of three non-Christian samples from Hong Kong, Iran, and Israel provided similar results for Agreeableness (mean $r = .20$) and Conscientiousness (.11). (The other mean r s were .11, $-.02$, and $-.10$, respectively, for Extraversion, Neuroticism, and Openness to Experience.)

Focusing on the three groups of studies with a predominantly Christian tradition, religiosity reflected lower Openness in the EU than the U.S. samples, $Q_B(2) = 13.94$. Religiosity also had stronger associations with Agreeableness and (low) Neuroticism in the U.S. than in the EU samples, $Q_B(2) = 12.14$ and 22.25 . Within each of these geographical groups, the effect sizes were often homogeneous: This was the case for Conscientiousness in the United States, $Q_{\text{US}}(22) = 22.74$, and in the European Union, $Q_{\text{EU}}(12) = 10.42$, and for Extraversion and Openness to Experience in the European Union, $Q_{\text{EU}}(12) = 15.72$ and 20.98 , and Canada, $Q_{\text{Canada}}(4) = 8.21$ and 3.48 .

Personality measures. In the reviewed studies, the five personality factors were measured with various self-reported instruments. An important number of studies used either (a) the NEO-PI-R or (b) the NEO-FFI, with 240 and 60 items, respectively (Costa & McCrae, 1992). The remaining studies used (c) various shorter measures, mostly adjective lists (John et al., 2008). The associations of religiosity with Agreeableness and Conscientiousness were constant in studies that used (a) the NEO-PI-R, (b) the NEO-FFI, and (c) other, shorter measures. However, these associations were weaker in studies that used the NEO-FFI (Table 4). The type of personality measure used moderated the magnitude of the effects: The between-group heterogeneity was significant for Extraversion, Agreeableness, Neuroticism, and Openness to Experience, $Q_B(2) = 10.88, 19.65, 38.08,$ and 29.45 , respectively. Within each of the three groups of studies, there was still heterogeneity, but this was no longer true for Conscientiousness in regard to all measures (Q s varying from 15.22 to 24.68) and for Agreeableness in regard to studies based on the NEO-PI-R, $Q_{\text{NEO-PI-R}}(17) = 18.71$.

Discussion. This meta-analysis relied on 71 samples drawn from 19 countries, thus extending a prior meta-analytic review that included 13 studies from five countries (Saroglou, 2002b). The current meta-analysis clarified past findings, provided new information, and tested moderators. I summarize the findings below.

Table 4. Moderators of the Relation Between the Five Personality Factors and Religiosity

| | E | A | C | N | O | k | n |
|--------------------------------------|------------|------------|------------|------------|-------------|----|--------|
| Gender (percentage female; β) | .02 | .01 | -.17 | -.23 | .08 | 45 | 14,038 |
| Age groups | | | | | | | |
| Adolescents | -.05 | .22 | .20 | .01 | -.13 | 3 | 990 |
| CI | -.11, .02 | .16, .28 | .13, .26 | -.06, .07 | -.20, -.07 | | |
| Young adults (20s) | .06 | .17 | .16 | -.02 | -.03 | 31 | 9,433 |
| CI | .04, .08 | .15, .19 | .14, .18 | -.04, -.00 | -.05, -.01 | | |
| Adults (30s–50s) | .12 | .25 | .14 | -.01 | -.09 | 8 | 2,281 |
| CI | .08, .16 | .21, .29 | .10, .19 | -.05, .03 | -.13, -.05 | | |
| Personality measures | | | | | | | |
| NEO-PI-R | .11 | .23 | .18 | -.00 | -.08 | 18 | 4,962 |
| CI | .08, .13 | .21, .26 | .15, .21 | -.03, .03 | -.11, -.05 | | |
| NEO-FFI | .03 | .12 | .13 | .02 | -.09 | 9 | 2,330 |
| CI | -.01, .07 | .08, .16 | .09, .17 | -.02, .06 | -.13, -.04 | | |
| Other | .06 | .19 | .16 | -.01 | -.01 | 21 | 6,648 |
| CI | .04, .08 | .17, .22 | .14, .18 | -.03, .01 | -.03, .01 | | |
| Cultural areas | | | | | | | |
| United States | .07 | .20 | .15 | -.07 | -.03 | 23 | 8,472 |
| CI | .05, .09 | .18, .22 | .13, .17 | -.09, -.05 | -.05, -.01 | | |
| European Union | .03 | .13 | .17 | .03 | -.10 | 13 | 2,936 |
| CI | -.01, .07 | .09, .17 | .13, .20 | -.00, .07 | -.14, -.07 | | |
| Canada | .06 | .20 | .16 | .03 | -.02 | 5 | 1,757 |
| CI | .01, .11 | .15, .25 | .11, .21 | -.02, .07 | -.06, .03 | | |
| Other countries | .14 | .23 | .21 | -.06 | -.02 | 6 | 1,640 |
| CI | .09, .19 | .18, .28 | .16, .26 | -.11, -.01 | -.07, .03 | | |

Note: E = Extraversion; A = Agreeableness; C = Conscientiousness; N = Neuroticism; O = Openness to Experience; CI = confidence interval (lower/upper); NEO-PI-R = NEO Personality Inventory-Revised; NEO-FFI = NEO Five-Factor Inventory. Except for gender, the table presents the weighted mean effect sizes distinctly by subgroups of studies. These are bold when $\geq .10$. For gender, numbers in italics are standardized betas from meta-regressions.

Agreeableness and Conscientiousness were reliable correlates of religion across most samples, different dimensions of religiousness (religiosity, spirituality, and fundamentalism), different measures of the five personality factors, and different cultural environments (United States, Europe, Canada, other parts of the world, non-Christian samples). These findings were not affected by publication bias, were not moderated by gender, and generalized across adolescents, young adults, and adults. However, the relation between religiousness and the two personality factors (Agreeableness and Conscientiousness) was stronger among adults than among young adults. One explanation is that this finding reflects the stronger effects of genetic influences on both personality and religiousness at the end of young adulthood, when the impact of shared environmental influences diminishes (Koenig, McGue, Krueger, & Bouchard, 2005). The evidence that the findings apply to non-Christian samples is in line with previous studies showing that religious Jews, Christians, and Muslims share the same value hierarchies by preferring values (tradition, conformity, benevolence) related to Agreeableness and Conscientiousness and by giving low importance to values (hedonism, stimulation) negatively related to these personality traits (for a meta-analysis, see Saroglou, Delpierre, & Dernelle, 2004). Moreover, the positive associations of religiousness with Agreeableness and Conscientiousness, found here at the individual level, are paralleled by similar associations at the country level

between the (country or state) mean level of religiousness and mean levels of Agreeableness and Conscientiousness (Leung & Bond, 2004; Rentfrow, Gosling, & Potter, 2008).

Additional, and more context-specific, results were evident with respect to the other three factors (Extraversion, Neuroticism, and Openness to Experience). Extraversion, a trait more socially valued today than in the past (Watson & Clark, 1997) and, more importantly, Openness to Experience predicted modern and reflective forms of religiousness such as spirituality. On the other hand, low Openness to Experience emerged as a personality trait associated with strong forms of religiousness such as fundamentalism and, to some extent, with older rather than younger adults' religiousness. It also characterized, to some extent, religiosity in Europe. This may be related to the fact that, in many cases, European citizens live in countries with strong mono-religious traditions. Europe also differed from the United States in that religiosity did not reflect low Neuroticism, what may be explained by the more guilt-inducing Catholicism predominant in Europe (Sheldon, 2006). Moreover, positive emotionality (high Extraversion, low Neuroticism) was stronger in adult religious samples relative to younger such samples. Adult religiousness may reflect higher emotional stability: Indeed, conversely, religious doubt reflects less stress and instability in adulthood than in earlier stages of life (Galek, Krause, Ellison, Kudler, & Flannelly, 2007).

Finally, tests within groups often revealed homogeneity of the main effects. This was true for Agreeableness and Conscientiousness in (a) adolescents, (b) adults, and (c) studies using the NEO-PI-R and for Conscientiousness in (d) the United States, (e) the European Union, and (f) studies using various measures. However, the results also suggested the presence of random heterogeneity.

Strength of the effect sizes. The findings were reliable and informative, but the mean effect sizes of the relations between personality and religion were modest. However, the five factors do not describe personality exhaustively (Paunonen & Jackson, 2000; Saucier & Goldberg, 1998; also see Lee, Ogunfowora, & Ashton, 2005). Religiousness is positively related to personality traits that are not included in the five factors, such as femininity (Thompson, 1991), conservatism (Lee et al., 2005), and honesty–humility (Lee et al., 2005). In addition, religiousness is negatively related to humorousness (Saroglou, 2004; Saroglou & Jaspard, 2001) as well as sexiness, sensuality, and eroticism (Regnerus, 2007; Weeden, Cohen, & Kenrick, 2008), traits also not included in the five factors. Moreover, my argument is not that religiousness simply reflects personality traits. On the contrary, I argue that religiousness is best predicted by the interaction between personality traits and contextual factors. Personality traits predict an outcome better when they are examined in interaction with social contexts rather than alone (Rhodewalt, 2008). Finally, as reported in this meta-analysis, some FFM measures (e.g., NEO-PI-R) provide stronger associations between religion and personality than do other measures (e.g., NEO-FFI). There is important variability across FFM measures in the narrower traits (facets) included on each broad factor (John et al., 2008), and some facets may be closer to religion than others (see below). The NEO-FFI, as a shorter measure, may not capture all the NEO-PI-R facets. And, importantly for religiousness, the 12 Agreeableness items of the NEO-FFI were selected from a global 18-item scale of the original NEO-PI and not from the 48-item scale of the NEO-PI-R.

The facets versus factors issue. A related issue is that the variance in religiousness explained by personality traits increases substantially when specific facets rather than broad factors are included in the regressions (Paunonen, 1998; Paunonen & Ashton, 2001; Saroglou & Muñoz-García, 2008). In the NEO-PI-R, each personality factor (basic trait) encompasses a broad range of various narrower traits (facets) that, in content, are coherent within the corresponding factor but distinct from one other. Some of the 30 (5 factors \times 6) NEO-PI-R facets, listed below, may thus be closer to religiousness than others.

Only four of the studies reviewed here (total $N = 878$) provide FFM–religiosity correlations at the facet level (Aguilar-Vafaie & Moghanloo, 2008; Costa, Busch, Zonderman, & McCrae, 1986; Saroglou & Fiasse, 2003; Saroglou & Muñoz-García, 2008). For exploratory purposes, I computed the unweighted mean effect size for all of the 30 series of associations. (This statistic prevented one study with a large sample size from overinfluencing the results.) The analysis showed

first that religiosity is positively linked with all facets of Agreeableness (trust, straightforwardness, altruism, compliance, and tender-mindedness: $r = .11, .19, .19, .15,$ and $.19$, respectively) except modesty ($r = .03$) as well as the Agreeableness-related Extraversion facet of warmth ($r = .13$).⁴ Second, religiosity is positively related to all facets of Conscientiousness, including both proactive (competence, achievement striving, and deliberation: $r = .23, .17,$ and $.19$, respectively) and inhibitive (order, dutifulness, and self-discipline: $r = .13, .17,$ and $.17$, respectively) ones, and negatively related to the Neuroticism facet of impulsiveness ($r = -.15$) and the Extraversion facet of excitement seeking ($r = -.17$). These last two facets, together with self-discipline and deliberation from the Conscientiousness factor, compose within the NEO-PI-R the broad trait of impulsivity (Whiteside & Lynam, 2001). Third, religiosity is linked to low openness to values, a facet of the Openness to Experience factor ($r = -.30$). Finally, beyond the above associations, religiosity was unrelated to all remaining NEO-PI-R facets. Religiosity was thus unrelated to the key components of Extraversion (reflecting energy and assertiveness), Neuroticism (e.g., anxiety and depression), and experiential Openness. In sum, this mini meta-analysis indicates that religiosity reflects the broad domains of Agreeableness and Conscientiousness as well as facets of other factors that are close to the content of Agreeableness (Extraversion–warmth) and Conscientiousness (low Neuroticism–impulsiveness, Extraversion–excitement seeking, and Openness to Experience–openness to values). All four of these “extra” facets are peripheral to their respective factors (John et al., 2008).

Limitations. Several weaknesses inherent in the primary studies limit the generalizability of the findings. For example, females and students were overrepresented, whereas non-Christian and non-Western cultures were underrepresented. Moreover, unpublished studies were not included (although there was no evidence of publication bias). Finally, all studies included self-report measures and may thus reflect to some extent self-perception biases.

Nevertheless, the meta-analysis demonstrated the hypothesized relations across different genders, age groups, countries, religious dimensions, religious traditions, and personality instruments. The next section discusses whether these findings generalize to other personality models, are an artifact of social desirability, and are obtained in other domains such as stereotypes, metastereotypes, and ideal personality.

Further Generalizability and Robustness of the Relations Between Religiousness and the Basic Personality Traits

Generalizability Across Personality Models. The emerging personality profile of religiousness from a FFM perspective is consistent with earlier personality models. Low Psychoticism, a factor of Eysenck’s taxonomy that blends

Agreeableness and Conscientiousness (Goldberg & Rosolack, 1992; McCrae & Costa, 2003), is related to religiousness (Francis, 1992, 2009; Lodi-Smith & Roberts, 2007). Extraversion and Neuroticism in Eysenck's model are not generally linked to religiousness. However, high Extraversion is found among people who are members of charismatic religious groups (i.e., those emphasizing ecstatic experiences, inspiration, and gifts from the holy spirit; Francis & Jones, 1997), and guilt and obsessiveness (Neuroticism facets) do also characterize religiousness among Anglican and Catholic participants (Hills, Francis, Argyle, & Jackson, 2004). Similarly, studies using the Myers–Briggs Type Indicator have found that churchgoers are represented by the feeling versus thinking (parallel to Agreeableness), judging versus perceiving (parallel to Conscientiousness), and sensing versus intuitive (parallel to low Openness) types (Francis, 2007). Similar results were obtained in studies that used the Jackson Personality Research Form or the Jackson Personality Inventory (Paunonen, 1998, Study 1; Paunonen & Ashton, 2001).

Note that although almost all of these studies are based on samples with a Christian background, two studies using Eysenck's taxonomy confirm the association between religiousness and low Psychoticism among Jews (Francis & Katz, 1992) and Muslims (Wilde & Joseph, 1997). They thus strengthen the suggestive evidence in the previous section that Agreeableness and Conscientiousness also characterize religiousness in non-Christian contexts. Moreover, judging from these studies and those reported in the current meta-analysis, the main results generalize across cohorts: adolescents, young adults, adults in the 1980s, 1990s, and 2000s, and, as found in one longitudinal study (McCullough, Tsang, & Brion, 2003), adults in the 1940s (their religiosity in adulthood was predicted by high Agreeableness and Conscientiousness as evaluated during their childhood).

Generalizability Beyond Self-Reports. Previous research has suggested a modest but systematic association between religiousness and social desirability, especially impression management (Sedikides & Gebauer, 2010; Trimble, 1997). However, knowledge of the religious personality does not seem to be an artifact of social desirability. Social desirability is not necessarily viewed today as an exogenous factor affecting information on the "real" personality but rather as overlapping, to some extent, with aspects of the personality (Paulhus & Vazire, 2007). In addition, the links between religiousness and Agreeableness-related constructs (empathy, altruism, low Psychoticism) remain significant even after controlling for social desirability (Lewis, 1999, 2000; Saroglou, Pichon, Trompette, Verschuere, & Dernelle, 2005, Study 4). Moreover, religious people are evaluated as high in Conscientiousness, Agreeableness, and related constructs (altruism, empathy, honesty) by different informants including mothers (Saroglou & Fiasse, 2003), parents and teachers (McCullough et al., 2003), siblings, friends, and colleagues (Saroglou et al.,

2005, Studies 3 and 4), and various observers (Wink, Ciciolla, Dillon, & Tracy, 2007). Spiritual people are also evaluated by others as being high in Openness to Experience (Saroglou & Fiasse, 2003; Wink, Ciciolla, et al., 2007).

More importantly, religious personality affects relevant behaviors. Religious people tend to behave, to some extent, prosocially. This includes volunteering (Ruiter & De Graaf, 2006), helping nonthreatening others (Batson, Anderson, & Collins, 2005), helping acquaintances and relatives (Saroglou et al., 2005), and restrained use of humor that is disrespectful of others or of social norms (hostile, disgust, and disability-related humor; Saroglou, 2004; Saroglou & Anciaux, 2004). Religiousness also predicts Conscientiousness-related behavioral outcomes, such as academic performance (Jeynes, 2004) and work ethic (Ghorpade, Lackritz, & Singh, 2006), and habits expressing self-control, such as low alcohol and substance use and low risk-taking (McCullough & Willoughby, 2009). Finally, there is experimental evidence that religiousness, as a personal disposition, interacts with specific contexts to predict behaviors that are considered expressions of underlying personality traits. Religious participants inhibit the universal capacity for spontaneous humor creation (a construct found to be negatively related to Conscientiousness) after exposure to a religious video clip (Saroglou & Jaspard, 2001) and are more sensitive than nonreligious participants to the effects of religious priming on donating (Malhotra, 2008) and cooperative behavior (Shariff & Norenzayan, 2007, Study 2).

Stereotypes, Metastereotypes, and Ideal Personality.

The personality profile of religious people as being high in Agreeableness and Conscientiousness (and low on impulsivity) constitutes stereotypical and metastereotypical knowledge that is shared, to some extent, by both religious and nonreligious people. For instance, Pichon (2002) provided three groups of participants with the same brief description of the biography of a fictitious target. In one group the target was also described as religious, in another the target was also described as an atheist, and in the third no information about religion was given. Participants were then asked to rate the personality of the target by evaluating behavioral sentences. Participants perceived the religious target as altruistic, modest, tolerant, and low on impulsivity and stimulation. They perceived the atheist target as neurotic and hedonistic.

Saroglou, Yzerbyt, and Kaschten (2009) extended that research from stereotypes to metastereotypes. Participants, who were classified into believers and nonbelievers, evaluated the personality of out-group members—that is, they provided stereotypical perceptions of, respectively, nonbelievers and believers. In addition, they estimated how they thought the out-group members perceived them (metastereotypes). In both groups' metastereotypes, high prosociality and traditionalism or conventionalism as well as low impulsivity and hedonism were associated with belief.

Finally, Agreeableness and Conscientiousness are relevant to religious people not only in terms of their own personality but also in terms of their ideal personality. Christian, Muslim, and Hindu participants perceived God as more agreeable, conscientious, and emotionally stable than the self (Ciarrochi, Piedmont, & Williams, 2002; Leach, Piedmont, & Monteiro, 2001). Similarly, Belgian students evaluated (by using archival files on the beatification process) six Catholic saints who had lived in the late 19th and early 20th centuries as high in Agreeableness and Conscientiousness and low in the Extraversion facet of excitement seeking and the Neuroticism facet of angry hostility (Art & De Fruyt, 2001).

Summary. Agreeableness and Conscientiousness emerged as the major personality characteristics of religiousness. This pattern was observed across informants, genders, ages, cohorts, religions, countries, measures, and levels of personality (descriptions of the self, stereotypes, metastereotypes, and ideal personality). These two personality factors can be seen as universal determinants of individual variability in religiousness. It then becomes critical to consider the nature of the relation between these personality factors and religiousness and the implications of the relation for understanding religion and its role in social life.

Understanding Religiousness as a Cultural Adaptation of Basic Traits

Causal Directions. Does personality determine individual differences in religiousness, or does religiousness influence personality? Four recent longitudinal studies from the United States and Australia indicate that personality has chronological priority and impact on religiousness rather than vice versa. Across these studies, religiousness in late adolescence, adulthood, and late adulthood was predicted by Conscientiousness or low Psychoticism, measured when the participants were children or adolescents (Heaven & Ciarrochi, 2007; McCullough, Enders, Brion, & Jain, 2005; McCullough et al., 2003; Wink, Ciciolla, et al., 2007). In addition, young adults low on Agreeableness showed low religiousness throughout adulthood (McCullough et al., 2005). Also, Agreeableness (in girls) predicted increase of religiousness in late adulthood, and Openness in adolescence predicted spirituality in late adulthood (Wink, Ciciolla, et al., 2007). Moreover, in line with this causal direction from basic personality traits to religiousness rather than the reverse, several studies have suggested that religious conversion has no impact on basic personality traits; it does however change the converts' values, goals, meanings of life, and self-narratives (Paloutzian et al., 1999).

These two strands of evidence favor the notion that religiousness can be understood as a cultural adaptation of the basic personality traits rather than as a basic personality dimension. Contrary to the endogenous basic traits, largely based on genetic and biological influences, adaptations are

concrete and acquired structures that develop as a function of social interactions (McCrae & Costa, 2003). They are culturally conditioned phenomena and include individual differences constructs such as social attitudes and roles, values, interpersonal relations, and the self-concept. Given the importance of religious socialization, especially within the family, for adolescent and adult religiousness (Hood et al., 2009), it is reasonable to assume that people who are high on Agreeableness and Conscientiousness are, remain, or become religious when these personality traits interact with the offer of religion in the environment. Note also that religiousness may be a product not only of the personality \times environment interaction but also of the personality \times environment correlation: For example, there is evidence of between-spouse religious similarity (Blackwell & Lichter, 2004) and assortative mating (Koenig et al., 2005).

It may then be that religious people are agreeable and conscientious because they usually grow up in religious families, which implies that they very likely had (biological) parents who were themselves agreeable and conscientious. It may also be that agreeable and conscientious people who have not been religiously socialized turn to religion more easily than do individuals low in Agreeableness and Conscientiousness when negative life events occur. Moreover, as suggested by McCullough et al. (2003), agreeable and conscientious individuals who have been religiously socialized may not totally abandon religion, even if they no longer believe, because of their concern with minimizing conflict and maintaining harmony with their religious families.⁵

Status of Religiousness Within Personality. When trying to clarify the status of religiousness within the personality domain, it is preferable to place it closer to values, social attitudes, and ideology rather than core personality. As Ashton (2007) observed, religiousness includes beliefs, which are not components of personality traits. Saucier (2000) showed that religiosity and spirituality are located within broad types of social attitudes and ideologies. Leung and Bond (2004) also conceived religiousness as one among other social axioms. As found in previous studies (Roccas, Sagiv, Schwartz, & Knafo, 2002; Saroglou & Muñoz-García, 2008), religiousness is closer to values than to personality traits. The former are primarily cognitive representations of desirable goals and thus have a strong component of motivation and action legitimization, whereas the latter are ways of responding through cognitions, emotions, and actions in everyday life. A contrary argument is that spirituality is a basic personality dimension, potentially a "sixth factor" of personality (Piedmont, 1999a). This argument is mainly based on the independence of spirituality in factorial analyses from the big five. It is thus by itself insufficient: Not everything that is beyond the big five is necessarily a basic, fundamental, and universal personality dimension. However, religiousness should not be totally identified with beliefs, social attitudes, or values. Rather, it seems best to consider it as a sui generis dimension of

individual differences: There are forms of religiousness (e.g., extrinsic religiosity, religious identity, affiliation) where specific beliefs, values, or social attitudes do not constitute key components.

Basic Traits and the Nature and Implications of Religiousness. The personality predispositions to religiousness indicate that the explanation of religiousness may be unique in comparison to other close to it individual differences. Moreover, these personality characteristics have many implications for understanding the role of religiousness with respect to other personal and social domains and its adaptive functions for individuals and societies.

The personality profile of religiousness implies the copresence of high Agreeableness and Conscientiousness and the lack of relations with the core components of the other three factors (variability in energy, emotional stability, experiential openness), except for specific religious orientations. I suggest comparing it, for instance, to the personality correlates of two key individual differences that are close to religion: paranormal beliefs and right-wing authoritarianism. Paranormal beliefs share with religiosity the involvement of high intuitive and low analytical thinking, but not the conservative and prosocial values (Aarnio & Lindeman, 2007), and they share with spirituality Openness to Experience but not Agreeableness and Conscientiousness (MacDonald, 2000). Right-wing authoritarianism shares with religious fundamentalism and, to some extent with religiosity per se (Wink, Dillon, & Prettyman, 2007), conventionalism, conformity to social standards, and legitimized aggression (e.g., some forms of prejudice; Altemeyer & Hunsberger, 2005; Hall, Matz, & Wood, 2010). Like religious people, authoritarians are higher than average in Conscientiousness (and also lower in Openness to Experience), but they are not necessarily high in Agreeableness (Sibley & Duckitt, 2008). In sum, the presence of Agreeableness and Conscientiousness may allow religious and spiritual people to escape from the “temptations” of either totalitarianism (the cold rigidity of authoritarians) or attachment to a paranormal that is disconnected from social reality.

The combination of Agreeableness and Conscientiousness in the religious personality also sheds some light on scholarly understanding of the specific way in which religiousness relates to several other psychological dimensions. For instance, religious moral concerns include both universal interpersonal morality (care, reciprocity, empathy) and less universal, more conservative (Haidt & Graham, 2007) intrapersonal morality of purity, duties to oneself, and integrity (reflected, for instance, in sexual purity, not lying, and avoiding immoral thoughts; Cohen & Rozin, 2001; Weeden et al., 2008). Another example is religious altruism, which is not unconditional and unlimited. Concerns for personal and social order and control and the absence of universalism (a value typically related to Openness to Experience) may explain why religious altruism is often limited to targets who are close at hand or do not threaten religious people’s values (Hunsberger

& Jackson, 2005; Saroglou et al., 2004; Saroglou et al., 2005). Religious prosociality is mostly reciprocal and motivated by self-perception and reputational concerns (Batson et al., 2005; Emmons, Barrett, & Schnitker, 2008; Norenzayan & Shariff, 2008). Moreover, religiousness predicts high endorsement of just-world beliefs (Dalbert, Lipkus, Sallay, & Goch, 2001; Furnham & Proctor, 1989), a system of beliefs that combines prosocial concerns (e.g., justice, ultimate well-being) with concerns for order (e.g., justification of the misfortune, legitimation of prejudice). The copresence of Agreeableness and Conscientiousness may also help understand how religiousness functions in marriage and close relationships: The emphasis of religion is on both love and fidelity in these contexts. Other consequences of religiousness, for instance, those related to health, may be understood as resulting from the influence of one or the other personality factor. For instance, Conscientiousness may be partially responsible for some of the effects of religiousness on physical and mental health through the emphasis on healthy lifestyles; the same may be true for Agreeableness through the social support provided by religious peers and the community.

Conclusion: Basic Traits and the Functions of Religion

At the end of this review, it appears that the two main personality correlates of religiousness point to two broad functions of religiousness. One has to do with self-control (McCullough & Willoughby, 2009), the need for order (Saroglou, 2002a), the reduction of uncertainty (Hogg et al., 2010), and organizing one’s life through meaning, goals, and strivings (Park, 2005). All of these are ways of promoting personal stability. The other has to do with the concern for others’ welfare and social harmony. This includes quality in reciprocal relations with others (Graham & Haidt, 2010), rich exchanges in coalitions (Kirkpatrick, 2005), and love and protection in close relationships (Granqvist et al., 2010). These two types of functions should not be considered separately, but as each qualifying—and then limiting—the scope and extent of the other. In addition, Agreeableness and Conscientiousness are considered as moral character traits (Cawley, Martin, & Johnson, 2000; McCrae & John, 1992). They constitute an important part of the personality (self-reported or evaluated by others) of heroes, saints, and moral exemplars in general (Art & de Fruyt, 2001; Matsuba & Walker, 2004; Schlenker, Weigold, & Schlenker, 2008). They may thus indicate an additional function of religion, that is, self-transcendence (Demoulin, Saroglou, & Van Pachterbeke, 2008).

At the same time, the lack of associations of general religiousness with Extraversion and Openness to Experience suggests that religion is not overall concerned with other key functions of human personality (e.g., plasticity and growth). Religiousness thus clearly expresses, as a cultural adaptation of personality traits, a human concern for personal and social

stability and moral self-transcendence but not the human needs for playfulness, personal growth, and social change. Religion does indeed provide moral exemplars, legislators, and healers, but other cultural adaptations (e.g., artistic interests, atheist orientations, contesting ideologies) provide entertainers, creators, rebels, and revolutionaries.⁶ Presumably, human societies need both. This may explain why, throughout history, some people are religious and others are not. Both may have been useful, for complementary reasons, in determining what the world is today.

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Notes

1. Religion as quest (doubting one's own religious beliefs) and extrinsic religiosity (being religious only for self-centered or utilitarian reasons) were not included in the meta-analysis. These two orientations are theoretically relevant. However, the content validity and the cross-cultural or religious validity of extrinsic religiosity scales have been seriously questioned (Cohen, Hall, Koenig, & Meador, 2005). In addition, the administration of religion-as-quest measures to both religious and nonreligious participants has been criticized as inappropriate (Batson, Denton, & Vollemecke, 2008). It may lead to a confound of religious quest with areligiosity.
2. This search revealed no unpublished studies.
3. The decision to include measures of faith maturity in the broader category of spirituality was empirically justified. I conducted separate meta-analyses for studies on spirituality, strictly speaking ($k = 18$), and studies on faith maturity ($k = 10$). These two constructs had positive associations with Extraversion (mean effect sizes of .15 and .14, respectively) and with Openness to Experience (mean effect sizes of .22 and .14, respectively) as well as positive associations with Agreeableness (mean effect sizes of .21 and .22, respectively) and Conscientiousness (mean effect sizes of .10 and .17, respectively). The two constructs, then, differed from both fundamentalism and religiosity.
4. The exception of modesty may have to do with religious people's need to be positively perceived by others and by themselves

(Batson, Anderson, & Collins, 2005; Sedikides & Gebauer, 2010).

5. An intriguing question arises as to what happens to agreeable and conscientious people, in terms of their social attitudes, beliefs, values, and ideologies, if they are not raised in a religious environment. We suspect that these people invest in secular ideologies and organizations, alternative to religion, that promote prosocial goals, social cohesion, and personal competence.
6. Creativity often manifests an opposite pattern to religiosity, that is, creativity is associated with high Openness to Experience and with low Agreeableness and Conscientiousness (Feist, 1998; King, Walker, & Broyles, 1996). Also, middleborns, who are the "rebellious" siblings, are both less conscientious and less religious than firstborns (Saroglou & Fiasse, 2003).

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