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Personality and Individual Differences 32 (2002) 15–25

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PERSONALITY AND  
INDIVIDUAL DIFFERENCES

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# Religion and the five factors of personality: a meta-analytic review

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Received 27 July 2000; received in revised form 8 November 2000; accepted 30 November 2000

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## Abstract

An impression based on a vote-counting method of reviewing studies on religion and personality is that religiosity is associated only with low Psychoticism (or high Agreeableness and Conscientiousness), while unrelated to the other Eysenck's or Big Five factors. This meta-analytic review of studies on religion and the Five Factor Model revealed that, in addition to Agreeableness and Conscientiousness, religiosity (today?) is related to Extraversion. Interestingly, while Openness is negatively related to religious fundamentalism (weighted mean  $r = -0.14$ ,  $P < 0.01$ ) and, to some extent, intrinsic-general religiosity ( $r = -0.06$ ,  $P < 0.01$ ), it is positively related to measures of open or mature religiosity and spirituality ( $r = 0.22$ ,  $P < 0.0001$ ). The meta-analysis also indicated that extrinsic religiosity is followed by high Neuroticism, whereas open-mature religiosity and spirituality reflect Emotional Stability. Finally, overall, the effect sizes were small. © 2001 Elsevier Science Ltd. All rights reserved.

*Keywords:* Religion; Five-factor model; Meta-analysis; Spirituality; Openness

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## 1. Introduction

Research into the psychology of religious personality seems to confirm the hypothesis that religiosity corresponds to some individual differences. A series of studies using Eysenck's three-dimensional model (PEN; Psychoticism, Extraversion, Neuroticism), in a variety of cultures and denominations, converge in that religion relates to low Psychoticism. Very often, researchers working with this model conclude that regarding the other two factors (E, N), findings from different studies are inconsistent or that simply these two factors are unrelated to religion (e.g. Eysenck, 1998; Francis, 1992).

The increased influence of the Five Factor Model (FFM) in personality psychology has only recently been followed by studies applying the FFM to the investigation of religious personality and specific religious behaviors and representations. In these studies, religious people are found to be high in Agreeableness and Conscientiousness (that essentially confirms the religion–low

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Psychoticism relation), but, again, no clear relation exists between religion and the other factors of the FFM. For instance, with regard to the Fifth Factor (Openness to Experience), some claim that religious people should be high on this factor, especially people open to spirituality (McCrae, 1999), whereas others conclude on the basis of empirical evidence that “Openness may have little to contribute to the understanding of the relation of religion and personality” (Taylor & MacDonald, 1999, p. 1254).

Obviously, this general dominant impression regarding the association between religion and the above-mentioned large personality taxonomies is based — implicitly — on the vote-counting method of reviewing the relevant studies and on the categorization of these studies as confirming or not the hypothesis on the exclusive basis of the significance level. This method has been vigorously criticized in the last two decades and is being replaced by quantitative meta-analytic procedures. The former method neglects important information accumulated through studies and, using the criterion of statistical significance, overcontrols the risk of a Type 1 error (acceptation of a false hypothesis): as a consequence, it increases the risk of a Type II error (rejection of a true hypothesis). Note that, instead of simply observing for instance, that results in half of the studies are nonsignificant, a closer examination could reveal that all or most of the effects may be in the predicted direction. In the meta-analysis, instead of quickly concluding that the results are inconsistent, the different effect sizes are combined in order to assess an average effect size that allows an estimation of the magnitude of the overall association or effect, as well as confidence intervals; the significance level is secondary. Consequently, meta-analysis is a means of making sense of a number of accumulated studies and may be considered as really informative rather than isolated studies. It forestalls scientific pessimism and implies that scientific progress is possible. In addition, meta-analytic statistical procedures allow the discovery of moderating variables and may then generate new hypotheses for research (for introduction and discussion on meta-analysis and statistical procedures, see Hedges & Olkin, 1985; Rosenthal, 1991, 1995; Schmidt, 1996).

Although it can be argued that it is too early to carry out a meta-analysis of studies on religion and the FFM, we think that such an analysis might be useful. A more accurate knowledge of findings to date may be obtained, as well as a less pessimistic perception — if it is the case — of the “inconsistencies” in studies, an estimation of whether it is worth continuing in that area, and the points to focus on in further investigations. The aim of the present study is, therefore, to provide a meta-analytic review of studies that have investigated how people’s religiosity is associated with their personality in terms of the FFM.

## 2. Method

### 2.1. Data collection

Studies on the Big Five and religion (or studies on the Big Five and other domains that included religious variables) have only recently been published. We included here published studies with which we were already familiar, as well as studies found through PSYCLIT, using the syntax *relig\** and (*big five or agreeableness or conscientiousness or neuroticism or openness or extraversion*). Of these studies (published up to May 2000) we have retained those investigating how people’s religion/religiosity is associated with their personality, in terms of the FFM (two other studies investigated people’s

representation of Jesus and Mary in terms of the FFM; Piedmont, 1999b). We did not include a study on different coping variables (including religion) and the FFM (David & Suls, 1999) because of insufficient information about the variable “religion”. We were not able to include a study on religious coping styles and the FFM (Striznec & Ruisel, 1998) because of our inaccessibility to its source and a study on autophotographic essays and the FFM (Dollinger & Clancy, 1993) because today the data (including a religious variable) are not available (Dollinger, 5 July 2000, personal communication). Finally, studies on religion and personality usually find at least one or two correlations. Consequently, there is no reason to suspect the existence of many unpublished studies with no significant results. (Such a possibility could contribute to overestimating the effect size based on only published studies, although many meta-analysts minimize the importance of this possibility). In conclusion, the following studies were included in the present meta-analysis: Chen, 1996; Costa, Buch, Zonderman and McCrae, 1986; Kosek, 1999; Leak and Fish, 1999; Leak, Loucks, and Bowlin, 1999; MacDonald, 2000; Piedmont, 1996, 1999a; Rodgerson and Piedmont, 1998; Saroglou, 2001b; Saucier and Goldberg, 1998; Streyffeler and McNally, 1998; Taylor and MacDonald, 1999.

## 2.2. *Categorization of data per type of religiosity*

The data collected included studies that used a variety of religion measures, and this was quite often the case with the same sample. However, an imperative principle for meta-analytic review is to not include multiple data from the same samples. In order to avoid “mixing apples and oranges” and to base, at the same time, the meta-analysis on independent samples, we decided to conduct four distinct meta-analyses by classifying the religious measures into four categories: (1) religiosity (intrinsic and general); (2) open and mature religiosity and spirituality; (3) religious fundamentalism; and (4) extrinsic religiosity. In addition, such a strategy might provide different personality profiles associated with these different religious dimensions.

The first group (data from eight independent samples) included studies measuring intrinsic religiosity, general religiosity, prayer and orthodoxy (Table 1). Measures of general (private) religiosity seem to correspond to intrinsic religiosity (e.g. Maltby, Talley, Cooper & Leslie, 1995). In one study providing data with multiple measures on the same sample (intrinsic religion, religious involvement and religious affiliation; Taylor & MacDonald, 1999), we selected the first measure. In another study (Saucier & Goldberg, 1998) offering two sets of correlations between religion and the FFM, using both the NEO-PI-R and the NEO-FFI, we selected results with the first FFM measure because the NEO-PI-R was used in most of the studies included in our review. From Piedmont’s (1999a) study we retained results obtained with “Prayer Fulfillment”, one of the three subscales of this author’s *Transcendence scale*, because prayer seems to reflect intrinsic religiosity (Maltby et al., 1995; in addition, this subscale presented the highest correlations with traditional religious variables in Piedmont’s study). Finally, from MacDonald’s (2000) study, we coded results with the subscale “religiousness” of the author’s *Expressions of Spirituality Inventory* (ESI; this subscale had a correlation of 0.79 with Intrinsic religiosity).

The second group of data (10 independent samples; Table 1) included studies using measures of spirituality, open religiosity (quest, comparison between liberal Protestants and general population), and mature religion and faith (including a collaborative religious coping style). For three studies (MacDonald, 2000; Piedmont, 1996, 1999a) providing two sets of correlations with two

Table 1  
Studies reviewed

Studies	Number of participants	Country	Type of sample	FFM measures	Religion measures
Costa et al. (1986)	141 (131 <sup>a</sup> )	USA	Adults	NEO-PI	MMPI-Orthodoxy <sup>b</sup> MMPI-RF <sup>c</sup>
Chen (1996 <sup>d</sup> )	534	Taiwan	Students	NEO-PI-R	Faith maturity <sup>e</sup>
Piedmont (1996 <sup>d</sup> )	492	USA	Students	Adj. list	Intrinsic <sup>b</sup> Mysticism <sup>e</sup> Extrinsic <sup>f</sup>
Rodgerson and Piedmont (1998 <sup>d</sup> )	251	USA	Clergy	NEO-FFI	Collaborative coping <sup>e</sup>
Saucier and Goldberg (1998)	694	USA	Adults	NEO-PI-R	Religiosity <sup>b</sup>
Streyffeler and McNally (1998)	141	USA	Adults	NEO-FFI	Liberal Protestants <sup>e</sup> Fundamental Protestants <sup>c</sup> (vs. general population)
Kosek (1999)	104	Poland	Adolescents	Adj. list	Intrinsic <sup>b</sup> Quest <sup>e</sup> Extrinsic <sup>f</sup>
Leak and Fish (1999)	162	USA	Students	Adj. list	Religious maturity <sup>e</sup>
Leak et al. (1999)	93	USA	Students	NEO-PI, S	Faith development <sup>e</sup>
Piedmont (1999a)	342	USA	Students	NEO-PI-R	Prayer <sup>b</sup> Spirituality (two factors) <sup>e</sup>
Taylor and MacDonald (1999)	368	Canada	Students	NEO-PI-R	Intrinsic <sup>b</sup> Extrinsic <sup>f</sup>
MacDonald (2000)	595	Canada	Students	NEO-PI-R	Religiosity <sup>b</sup> Spirituality (two factors) <sup>e</sup>
Saroglou (2001b)	295 177 204	Belgium	Students	Adj. list	Religiosity <sup>b</sup> Spirit. Index <sup>e</sup> RF scale <sup>c</sup>

<sup>a</sup> *N* for Agreeableness and Conscientiousness.

<sup>b</sup> Measures categorized as intrinsic-general religiosity.

<sup>c</sup> Measures of religious fundamentalism.

<sup>d</sup> Studies with results cited in Piedmont (1999b).

<sup>e</sup> Measures categorized as open-mature religiosity and spirituality.

<sup>f</sup> Extrinsic religious orientation scale.

subscales, we coded as effect sizes the average correlations (in most cases they were very similar). Although we are aware of the theoretical distinction between religion and spirituality, empirically, two spirituality scales developed recently were found moderately or strongly correlated with religion (MacDonald, 2000; Piedmont, 1999a). From the latter study we coded here as effect sizes the average correlations obtained with the other (than “prayer fulfillment”) two subscales of the Transcendence Scale (i.e. self-reported “universality” and “connectedness”). For the MacDonald’s study, we did the same with the two following subscales of the ESI, “cognitive orientation towards spirituality” and “experiential-phenomenological dimension of spirituality” (we did not retain results with the subscales “existential well-being” and “paranormal beliefs” as referring to constructs theoretically independent from religion). Finally, mysticism seemed more appropriate in this second group, as a construct theoretically close to spirituality and open religiosity.

As also detailed in Table 1, studies on religious fundamentalism (three samples) and extrinsic religiosity (three samples) used either the same measure (extrinsic religious orientation), or different measures (RF scale, known-group, MMPI-RF scale). They constituted the third and fourth religious types taken into consideration for meta-analysis. The number of these studies was extremely small and the results of the meta-analyses should be considered as suggestive rather than definitive. However, there is no limit to the number of studies to be included in a meta-analysis (Rosenthal, 1995), and we decided to do so, especially because the total number of participants included could not be neglected.

### 2.3. *Quality of studies*

Although there is convincing evidence that, in the typical meta-analysis, there is no strong relation between the quality of the study and the average size of the effect obtained (Rosenthal, 1991), in some meta-analytic reviews, studies are coded for their quality. We had no reason to exclude studies from our meta-analysis on the basis of their quality. They all used simple, correlational, designs. Most of the studies used the same questionnaire to measure personality (NEO-PI-R). Studies that used other measures of the FFM and/or did not use well-known measures of religion or religion measures with published psychometric qualities did not provide results contrary to the general pattern and there were no outliers in their effect sizes.

### 2.4. *Statistical analyses*

#### 2.4.1. *Combining effect sizes*

Given that, in almost all studies, results were presented in terms of  $r$  (Pearson product moment correlation), we selected  $r$  as the estimator of effect sizes in each study. When results were presented in terms of  $t$ -tests based on mean differences, we calculated effect size as  $d = \frac{x_1 - x_2}{\frac{S.D._1 + S.D._2}{2}}$ , and we converted  $d$  to  $r = d / \sqrt{d^2 + 4}$ . As a meta-analytic statistic, we used for each of the 20 meta-analyses (four religious categories  $\times$  five factors) the unweighted mean (average) effect size, and, mainly, the weighted mean effect size,  $r' = \Sigma(N_j - 3) r'_j / \Sigma(N_j - 3)$ , where Fisher's transformations of  $r$ s to  $r'$ s were averaged and weighted by the number of participants per study ( $N$ ): the final weighted  $r'$  was reconverted back to  $r$ . The weighted mean effect size is an important statistic for meta-analysis, as it allows each study to contribute to the overall effect size proportionally to the size of its own sample.

#### 2.4.2. *Confidence intervals*

The confidence intervals (CI) at the 95% level of confidence for the weighted mean effect size were also calculated [ $r' \pm 1.96 / \sqrt{(N - 3k)}$ ] and then transformed back from  $r'$  to  $r$ . The range of the effect sizes (minimum and maximum) in the different studies was also coded for each meta-analysis.

#### 2.4.3. *Significant testing*

Although our main purpose was to investigate the magnitude of the association between each religious dimension and the five factors, meta-analytic procedures also allow one to test for significance. Because of the large total number of participants for every religious category we

accepted a more conservative level ( $=0.01$ ) than a 0.05 level of  $P$ . To perform the combined significance test, we applied the Stouffer's method where the statistic  $\Sigma z_j/(k = \text{number of studies})$  is distributed as  $z$  and compared with critical values in the standard normal table. (There is no need to weight the average  $z$ , because the  $z$ s from the different studies have already weighted the size of the samples; Cooper & Hedges, 1994).

#### 2.4.4. Moderating variables?

It has not been possible to include moderating variables in the meta-analyses. Gender and characteristics of the population could be moderators, but, given the small number of studies, this would not constitute valid information. In addition, only two studies (Saroglou, 2001b; Taylor & MacDonald, 1999) provided results separately for men and women.

#### 2.4.5. Heterogeneity

For the heterogeneity test we used the formula  $\chi^2_{(k-1)} = \Sigma((N_j - 3) \times (r'_j - r')^2)$ . Analysis of the heterogeneity of the effect sizes from the different studies has a practical aim, i.e. to look out for moderators. In most meta-analyses, homogeneity is rejected. In fact, large-size samples (like ours) considerably increase heterogeneity. As it may be seen in Table 2, in most cases homogeneity was rejected. Because of the small number of the studies reviewed here we were not able to investigate for possible moderators. In fact, we had already taken into account the, possibly, most important moderator (type of religiosity) by conducting distinct meta-analyses for each type. Moreover, inspection of the 20 distributions of the effect sizes revealed only two cases of outliers.

### 3. Results

For each type of religiosity and, within each type, for each personality factor, Table 2 details the weighted and unweighted mean effect sizes, the CI of the weighted  $r$ , the range (minimum and maximum) of the effect sizes observed in the different studies, the number of independent samples (and, consecutively, independent effect sizes), the total population, the  $z$  values of significance, and the results of the heterogeneity tests. The CI are informative in that, if they do not contain zero, they provide evidence of statistical significance.

As expected, *religiosity* was correlated mainly with Agreeableness and Conscientiousness. In addition, it was weakly correlated with Extraversion, and there was a very small but significant effect size regarding Openness: the negative correlation in the population has a 95% chance of falling between  $-0.02$  and  $-0.09$ . As the heterogeneity tests suggested, the association of religiosity with Conscientiousness was stable across studies. We also observed that Piedmont's (1996) study combined very low effect sizes, compared to the other studies, with a considerable weight ( $n = 494$ , i.e. 16.23% of the total population). If we leave out this study, the correlations of religiosity with A, C, and E become stronger (Table 2).

*Open, mature religiosity and spirituality*, too, were correlated significantly with A, C, and E. Interestingly, in comparison with religiosity, the effect size of E was greater, while the effect sizes of A and C were lower. However, clearly in contrast to religiosity, the effect size of Openness was positive and of interesting magnitude (0.22). Moreover, this religious type was correlated negatively with N. According to the heterogeneity tests, the associations with E and N were stable

Table 2  
Meta-analyses of personality correlates of religion<sup>a</sup>

Five factors	Weighted r	Un-weighted r	CI 95%	Range	N	z	P <	Heterogeneity
<i>Religiosity (k = 8)</i>								
E	<b>0.10 (0.13)</b>	0.07	0.07/0.13	−0.04/0.27	3031	4.79	0.0001	26.89***
A	<b>0.20 (0.22)</b>	0.21	0.17/0.24	0.06/0.41	3021	10.77	0.0001	28.20***
C	<b>0.17 (0.18)</b>	0.18	0.13/0.20	0.08/0.27	3021	9.18	0.0001	8.04
N	−0.00 (−0.03)	0.02	−0.03/0.04	−0.12/0.12	3031	−0.61	n.s.	15.59*
O	−0.06 (−0.05)	0.04	−0.09/−0.02	−0.21/0.08	3031	−2.47	0.01	29.77***
<i>Open, mature religion and spirituality (k = 10)</i>								
E	<b>0.15 (0.16)</b>	0.15	0.12/0.19	0.00/0.29	2891	7.75	0.0001	16.53
A	<b>0.15 (0.18)</b>	0.16	0.11/0.18	−0.01/0.26	2891	7.26	0.0001	18.15*
C	<b>0.14 (0.16)</b>	0.13	0.11/0.18	−0.04/0.34	2891	7.00	0.0001	23.98**
N	−0.09 (−0.10)	−0.11	−0.12/−0.05	−0.26/0.02	2891	−5.74	0.0001	150.17
O	<b>0.22 (0.22)</b>	0.24	0.18/0.25	0.04/0.52	2891	11.35	0.0001	50.71***
<i>Religious Fundamentalism (k = 3)</i>								
E	0.09	0.09	−0.00/0.18	0.06/0.12	443	1.91	0.05	0.28
A	<b>0.13</b>	0.15	0.04/0.22	0.04/0.22	433	2.92	0.01	2.99
C	0.09	0.08	−0.00/0.18	0.07/0.10	433	1.83	0.05	0.05
N	−0.12	−0.13	−0.22/−0.03	−0.20/0.01	443	−2.82	0.01	3.52
O	−0.14	−0.16	−0.23/−0.05	−0.31/−0.06	443	−3.13	0.01	3.27
<i>Extrinsic religion (k = 3)</i>								
E	0.02	0.07	−0.04/0.08	−0.04/0.21	955	1.17	n.s.	5.54
A	−0.02	0.01	−0.09/0.04	−0.07/0.10	955	−0.31	n.s.	2.79
C	−0.04	0.06	−0.10/0.03	−0.09/0.12	955	−1.67	n.s.	4.13
N	<b>0.11</b>	0.12	0.05/0.17	0.11/0.13	955	3.39	0.01	0.04
O	−0.09	−0.04	−0.15/−0.03	−0.18/0.14	955	−2.06	0.05	8.49*

<sup>a</sup> k, number of independent samples; N, total number of participants; CI, Confidence Intervals. Values in **bold** characters indicate effect sizes with power >0.90, for intrinsic-general religiosity, openness-mature religiosity and spirituality, and extrinsic religiosity, and effect sizes with power >0.60, for fundamentalism (two-tailed). Values in parentheses indicate effect sizes when Piedmont's (1996) study was dropped. n.s., not significant.

across studies. Overall, between the three subcategories (studies on spirituality, open, and mature religiosity), there seemed to be no important differences on their associations with the five factors: significant effect sizes and similar ranges could be found in all three of them and for all the factors. Finally, if Piedmont's (1996) study is left out — its effect size regarding Agreeableness was an outlier — the associations of religiosity with A, C, and E become stronger.

*Religious fundamentalism*, contrary to open-mature religion and spirituality, was negatively correlated with O. The mean *r* was clearly stronger (−0.14) in comparison to the effect size of O, also negative, in religiosity (−0.06). Surprisingly, there was also a significant negative association with Neuroticism and a positive one with Agreeableness. Finally, *extrinsic religiosity* was clearly unrelated to the three factors that seemed to be typical of religion (A, C, and, to some extent, E). Interestingly, there was a significant positive *r* (0.11) with Neuroticism.

Finally, regarding the magnitude of mean effect sizes, a general result is that all the significant *r*s were small. This did not seem to be the result of mixing dissimilar studies to the same category. Inspection of the range of all the effect sizes from the different samples indicated that the small mean *r*s were rarely far from the upper level of the distributions. In addition, from a total of 120 effect sizes (five factors  $\times$  8 + 10 + 3 + 3 samples), correlations were moderate ( $> 0.30$ ) in only six cases.

#### 4. Discussion

The present meta-analytic review of recent studies on religion and the FFM of personality demonstrated that *Agreeableness* and *Conscientiousness* are the factors most related to religiosity (although the effect sizes were small). This finding is in line with a series of studies using Eysenck's three-dimensional taxonomy (Eysenck, 1998; Francis, 1992), where religion is systematically related to low Psychoticism (a factor normally including both A and C). In addition, we found that these relations are typical of intrinsic-general religiosity but also of open-mature religiosity and spirituality.

However, contrary to the idea (based implicitly on a vote-counting method of reviewing studies, exclusively with reference to statistically significant results) that religion is unrelated to the other factors (E and N in Eysenck's model and in the FFM, plus O in the FFM; e.g. Eysenck, 1998; Francis, 1992; Taylor & MacDonald, 1999), our meta-analytic review, combining effect sizes and weighting for sample sizes of the different studies, demonstrated that religion is related to the other factors; the relationship, however, depends clearly on the religious dimension measured.

First, intrinsic-general religiosity, and more strongly, open-mature religiosity and spirituality, were associated with *Extraversion*. A possible hypothesis is that, today, expressions of religiosity present a more extraverted form than in the past. Note, too, that, contrary to older conceptualizations emphasizing extraverts as unreflective, reckless, impulsive, and unreliable, contemporary scholars view extraverts as gregarious, socially ascendant as well as adapted and effective individuals (Watson & Clark, 1997). We may expect some of the NEO-PI-R facets of extraversion to be clearly related to religion (warmth, gregariousness, and positive emotions).

Second, people with open and mature religiosity as well as people open to spirituality seem to be high in *Emotional Stability*. On the contrary, extrinsic religiosity is associated with Neuroticism. The first finding is consistent with studies within Eysenck's model: using a vote-counting method, Saroglou and Jaspard (1998) found that when results from recent studies (since 1992) are significant, in seven out of eight studies, religiosity was related to low Neuroticism. As for the second finding, similar associations were also observed in recent studies using Eysenck's model (Maltby, 1999a, b). However, the fact that the Extrinsic scale is not associated with the other, "typical" of religion, factors (A, C and somehow E), may be considered as contributing to the question of whether this scale is measuring a "religious" orientation.

This meta-analysis also revealed a complex but clear pattern of relations between religion and *Openness to Experience*. Open and mature religion, as well as spirituality, is associated with high O (with a magnitude of effect size similar to that of A as related to intrinsic-general religiosity). Not surprisingly, religious fundamentalism is associated with low Openness. Interestingly, intrinsic-general religiosity, too, is very weakly, but significantly, related to low O. Similarly, in



one recent study, Saroglou (2001a) found that religiosity in its classic, traditional form (importance of God, religion, prayer, ritual, denomination) and interest in spirituality and religious dimensions that have come to be valued in recent years (e.g. emotionality, quest of meaning, community) are related in opposite ways (positively and negatively, respectively) to the need for closure (Webster & Kruglanski, 1994), especially when the overlap between these two religious dimensions was controlled for.

The limitations of this meta-analysis are related to these of the reviewed studies. Only a few recent studies have investigated religious personality in terms of the FFM; most of the samples were students; most of the studies did not provide separate results for men and women, although gender differences in religion (e.g. Francis, 1997) and personality (e.g. Feingold, 1994; Lippa, 1995) are well known and may be assumed to moderate the links between religion and personality. One, finally, must be cautious: between our four distinct meta-analyses, there is an overlap of participants (although within each meta-analysis the samples were independent).

However, the large total number of participants within each meta-analysis (except for religious fundamentalism) contributes to the validity of the results. Moreover, an overview of the studies indicates that similar patterns of the religion-FFM associations may be found across countries and denominations (USA mainly, but also, Canada, Poland, and Belgium). Nevertheless, additional studies should allow the next meta-analysis to investigate the impact of moderating variables. Some of them may influence the magnitude, if not the presence, of the FF-religion associations. At least four possible moderators, in our opinion, have to be taken into consideration for further research: gender, age, denomination, and general vs. specifically religious populations. Some examples may be intriguing. First, both studies reviewed here that included distinct analyses for men and women (Saroglou, 2001b; Taylor & MacDonald, 1999) indicated important gender differences in magnitude and even in presence of the effect size: the religion-emotional stability relation seems to represent mainly women. Second, does the higher extraversion, as related to open religiosity and spirituality, represent both young and old-aged people? Third, although religion in young people corresponds to greater importance attached to the value of Benevolence among Protestants, Catholics, and Jews, in the USA, the Netherlands, Germany, and Israel, this is not the case for Greek Orthodox people (Burris & Tarpley, 1998; Schwartz & Huisman, 1995) among whom, moreover, Psychoticism seems to be negatively related to religion only in men (Youtica, Joseph & Diduca, 1999). Fourth, all of the studies on religious fundamentalism reviewed here included non-religious participants. Consequently, the impact of the fundamentalist and the pro-religious dimensions may have been confounded.

Finally, all the significant effect sizes obtained in the present meta-analyses were small and inspection of the distributions of the effect sizes in the different studies did not change this perception. However, not only are the effect sizes real but under certain circumstances they may be considered as important. First, note that most of the studies reviewed were based on students' samples and samples of not specifically religious people. One could hypothesize that the religion-personality association is stronger once people with specific religious involvement, attitudes and behaviors are included. Second, although the FFM seems to add information on the psychology of religious personality, in comparison to what we already knew from studies within Eysenck's model, it still remains a taxonomy with very broad factors. Unfortunately, the studies reviewed here (with one exception: Costa et al., 1986) do not provide results on the facet level of the five factors. It is possible that some facets of a given factor may be strongly related to religion

whereas other facets of the same factor not (e.g. Costa et al., 1986; Dollinger & Clancy, 1993). Finally, if we refer to the binomial effect-size display (BESD) statistic that indicates the practical significance of effect size ( $50\% + r / 2$ ), one may find it interesting to know that if he has to select a partner for business or marriage, there is a 60% chance that a religious partner will be non-individualistic, warm and straightforward (A), conscientious and methodical (C), compared to only a 40% probability with a non-religious partner. If, in addition, the religious person is open, we may expect — with the same probability compared to the non-religious partner — that he will also be creative and imaginative (O) in everything to do with work or marriage. Still, the question of trusting the self-reports remains open, but, fortunately, both in research and everyday life, additional strategies of investigation are available.

### Acknowledgements

This article was prepared while the author was visiting Fulbright scholar at the Department of psychology, College of William and Mary. We thank Gregory Feist for his introduction to meta-analysis and Larry Wentis for his helpful comments.

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