

Personality and Religion

From Eysenck's Taxonomy to the Five-Factor Model

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The aim of this paper is to explore whether and how the Five-Factor Model (FFM) of personality – also known as the Big Five – may be relevant to psychology of religion. First, we review empirical research which has used Eysenck's taxonomy. Second, after a brief presentation of the FFM, we hypothesize, on the basis of research in the Eysenck framework as well as on the basis of research in psychology of religion generally, how each of the five factors may be related to religiosity. Third, we insist on the necessity of including gender differences when studying the association between personality and religion. Fourth, we discuss the results from an exploratory study on religiosity and the FFM (Saroglou, 1998) and we compare the results of this study with the few studies on Big Five to have used religious variables. Finally, the discussion focuses on the importance of personality taxonomies when studying religiosity and on the usefulness of the FFM for this purpose.

Introduction

The investigation of relationships between personality and religiosity seems somehow neglected within the psychology of religion. Of course, distinct personality variables have interested within the discipline. Most of the studies have been inspired by theories from fields other than personality psychology (see e.g., psychoanalysis and neurotic structure, social psychology and cognitive close – vs. Open-minded structures). However, little interest has been given to personality, psychology and notably to personality taxonomies.

One may therefore be curious about links between personality and religiosity or about links between personality and types of religiosity. In other words, we may wonder together with Beit-Hallahmi and Argyle (1997), “why, under the same circumstances and with the same background characteristics, some people are more religious than others” (p. 163)¹.

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¹ The question of the personality “temperament” of religious people has a supplementary interest for the debate on personality – and possibly genetic? – vs. environmental influences on religiosity. For example, discussing discrepancies between their findings from

Eysenck's taxonomy (Psychoticism, Extraversion and Neuroticism) is the personality taxonomy that has been used almost exclusively in psychology of religion. In a review chapter, Francis (1992b) concluded that the only factor which appears to be related to religion is Psychoticism, whereas findings are inconsistent regarding Neuroticism or Extraversion.

More precisely, religiosity seemed to be associated with low *Psychoticism*. Even if this finding was not consistent in all studies, it was, at least, a systematic finding 1. once the component of impulsiveness moved from Extraversion to Psychoticism, and 2. once a reviewer focuses on studies having used the Francis Attitude Toward Christianity scale. Francis explained such a finding in terms of the tender-mindedness of religiosity: Psychoticism, notably when this construct embraced impulsivity, is fundamental to conditionability and, consequently, to toughmindedness. On the basis of Eysenck's conceptualization, Francis described the high scorer in Psychoticism as "cold, impersonal, hostile, lacking in sympathy, unfriendly, untrustful, odd, unemotional, unhelpful, lacking in insight and strange", and lacking empathy and guilty (p. 153). On the contrary, religion belongs to the domain of tenderminded social attitudes.

Regarding *Extraversion* results were inconclusive, despite the old assumption that religious people tend to be more introverted. According to Francis' review, some studies found positive, some negative and most studies no correlations between Extraversion and religiosity. The later was notably the case once impulsivity moved from Extraversion to Psychoticism. For example, Francis and Pearson (1985) found that the negative correlation between Extraversion and religiosity decreased when they used more recent editions of Eysenck's scale in which Extraversion is purified of the impulsivity items.

Finally, regarding *Neuroticism*, as Francis pointed out two basic and conflicting psychological accounts emerge from the theoretical literature. The first one suggests that religion either fosters, or is an expression of, instability and then predicts a positive correlation between religiosity and this personality dimension. The second account suggests that religion fosters stability and predicts a negative correlation. A review of the relevant literature permitted Francis (1992b) to conclude that the findings are inconsistent, and some posi-

twin and adoption data and previous relative studies, Beer, Arnold, and Loehlin (1998) suggest that "it is possible that the Religious Orthodox scale [MMPI] reflects both a personality component of traditionalism, which may be more genetically influenced, and an orthodox Christian belief or behavior component, which may be more influenced by one's rearing environment" (p. 826). In a previous study (Waller, Kojetin, Bouchard, Lykken, & Tellegen, 1990) by a group of the famous investigation of thousands of twins at the University of Minnesota, findings indicated that individual differences in religious attitudes, interests, and values arise from both genetic and environmental influences, and more specifically, that genetic factors account for approximately 50% of the observed variance on measures used. Hood, Spilka, Hunsberger, and Gorsuch (1996), interpreting such a conclusion, suggested that "genetics may be influencing something intellectual or temperamental that religion taps" (p. 15).

tive association between Neuroticism and religion turned out to be an artifact of gender differences. (Females are both more neurotic and more religious.) One may nevertheless note, on the basis of studies reviewed by Francis, that the composition of the sample as well as the type of religiosity seem to have a certain impact: religiosity in adult churchgoers (Francis, 1991), and intrinsic religiosity (Johnson et al., 1989), tend to be negatively correlated to Neuroticism (i.e., tendency for higher emotional stability) or not related to this dimension (Watson, Morris, Foster, & Hood, 1986), whereas neuroticism tends to be positively correlated with extrinsic-means religiosity and with quest (Johnson et al., 1989; Watson et al., 1986).

Has the profile of religious personality, in terms of Eysenck's taxonomy, remained the same since then (1992)?

Review of recent studies (1992-1998) based on Eysenck's taxonomy

Table 1 presents in detail 25 studies using Eysenck's taxonomy or equivalent constructs and carried out since 1992 (date of the previous review of the relevant literature by Francis, 1992b²).

Table 1: Religiosity and personality in terms of the Eysenck's model (studies: 1992-1998)

<i>Studies</i>	<i>Samples</i>	<i>Religiosity measures</i>	<i>Results</i>	<i>Control of sex</i>
Jones & Francis, 1992	39m Methodist clergy, UK	comparison with general norms	E -	
Francis, 1992b	92m+20f clergy, UK	Francis scale	P-, N-	yes
Francis & Katz, 1992	190f teachers, Israel	Katz's religiosity scale	P -	
Francis, 1993	31m+91f students, UK	Francis scale	P -	no
Francis & Wilcox, 1994	230f adolescents, UK	prayer frequency church attendance	P - P -	
Francis & Joseph, 1994	42m+108f students, Northern Ireland	Francis scale	P -	no
Francis & Kay, 1995	259m+105f Pentecostal ministry candidates, UK	comparison with general norms	P - (m), N -	separated
Lewis & Maltby, 1995	58m+106f adults, USA	Francis scale	P -	separated
Maltby, 1995	92f students, USA &	prayer frequency church attendance	P - P -	
Lewis & Maltby, 1996	100m students, USA	prayer frequency church attendance	P - n.s.	

² The present review does not include studies in 1992 already reviewed in Francis (1992b), or studies of clergy not addressing clergy personality in comparison with general norms or as a function of the intensity of religiosity, but dealing with aspects of their work (e.g., dissatisfaction with ministry; Francis & Rodger, 1994).

<i>Studies</i>	<i>Samples</i>	<i>Religiosity measures</i>	<i>Results</i>	<i>Control of sex</i>
Maltby et al., 1995	145m+179f adults, USA	Francis scale prayer frequency church attendance	P - P - E +	sepa- rated
White et al., 1995	78m+105f adults, USA	Francis scale	P -	no
Carter et al., 1996	29m+32f religious engaged adults, USA	Francis scale	P -	yes
Francis, 1996	395m+409f adult churchgoers, UK	prayer frequency	n.s.	yes
Francis & Thomas, 1996	222m clergy, UK	mystical orientation	E +	
Francis & Thomas, 1997		charismatic experience	E+, N -	
Francis & Wilcox, 1996	236f adolescents, UK	prayer frequency church attendance	P - P -	
Gillings & Joseph, 1996	58m+48f adults, UK	Francis scale	P -	no
Smith, 1996	93m+98f pupils 11-15 years, UK	prayer frequency church attendance	P - P -	yes
Dunne et al., 1997	4993m+f adult churchgoers, Australia	time 1 (church attend.) time 2 (8 yrs. follow-up)	P -, N - N+, who stopped	sepa- rated
Francis, 1997b	1128m+f students, UK	prayer frequency church attendance	P - P -	yes
Maltby, 1997	92m+124f adults, Ireland	Francis scale prayer frequency church attendance	P - P - P -	sepa- rated
Francis & Bolger, 1997	50 retired civil servants, UK	prayer frequency church attendance	P - P -	
Francis & Jones, 1997	243m+125f religious engaged adults, UK	index of charismatic experience (5-items)	E +, N -	no
Robbins et al., 1997	373m+560f Anglican parochial clergy, UK	comparison with general norms	P -, N - (m, n.s.)	sepa- rated
Wilde & Joseph, 1997	31m+19f Moslem students in UK	Moslem Attitude towards Religio scale	P -	yes
Hutchinson et al., 1998	101m+148f students, USA	Relig. Orientation scale Catholic, Protestant vs. non religious	(N, n.s.) N +	no sepa- rated

Note: Francis scale = Francis Attitude Toward Christianity scale; Rel. fundamentalism = Religious Fundamentalism scale (Altemeyer & Hunsbergef, 1992); Orthodoxy = subscale of Post-Critical belief Questionnaire (see Hutsebaut, 1996); + or - = positive or negatively association (in terms either of correlations or mean differences or factor analysis); m = male; f = female.

Psychoticism

As results from Table 1, religiosity is systematically associated in the general population with low Psychoticism (in the study by Hutchinson et al., 1998, Eysenck's Psychoticism was not measured). This finding is consistent among men and women, within samples of adults as well of adolescents, in

samples from the U.K., Ireland, Northern Ireland, U.S.A., Israel, Australia, and in samples of different religious denominations (Anglican, Protestant, Jews and Moslems). In most of the studies, religiosity was measured by the Francis Attitude Toward Christianity scale, but many studies also used frequency of prayer and frequency of church attendance as religion measures. Regarding the later measure, in only two (Lewis & Maltby 1996; Maltby, Tallely, Cooper, & Leslie, 1995) of the nine studies using this measure did frequency of church attendance fail to correlate with low Psychoticism, and findings by Maltby's et al. (1995) indicated that implicit but not explicit religiosity was a predictor of low Psychoticism. In only two of the five studies on personality of religious ministers in comparison with general norms did Psychoticism fail to be relevant. Psychoticism was also unrelated to charismatic-mystical experience in clergy and in religiously engaged people.

Extraversion

In hardly any study of the general population or of religiously engaged people was Extraversion found characteristic of religiosity: the only exception was the study by Maltby et al. (1995), and this only with frequency of prayer, but not with other religiosity measures. With regard to clergy male clergy reported lower Extraversion in comparison with general norms in only one of the four studies. However, mystical-charismatic experience in male clergy (Francis & Thomas, 1996, 1997) and in religious engaged people (Francis & Jones, 1997) was correlated with high Extraversion.

Neuroticism

Overall, Neuroticism is not found to relate to religiosity. However, when significant results were obtained (seven studies), in all but one of the cases religiosity was associated with lower Neuroticism. Clergy (in four of the five studies), as well as religious people in comparison with non-religious, and people with higher charismatic experience, were reported to be more emotionally stable. A study by Dunne, Martin Pangan, and Heath (1997) revealed an interesting phenomenon: church attenders were more emotionally stable, and those who after 8 years, in a follow-up study, reported that they had stopped going to church, were found to be higher in Neuroticism.

In conclusion:

- religiosity is clearly associated with low Psychoticism;
- in religious engaged people, reported mystical-charismatic experience is related to high Extraversion;
- some evidence exists that clergy, charismatic religious people and, in some cases, religious people in general are more emotionally stable;
- personality in clergy does not have a clear pattern: sometimes religious ministers seem more introverted and not lower in Psychoticism than the general population. (A debate based on inconsistent findings exists about

whether or not male clergy are characterized by a tendency to feminization, and/or whether the inverse may be characteristic of female clergy [see Francis & Kay, 1995, see also Saroglou, 1997b, for the monastic context]).

*Is the five-factor model relevant for the religious personality?
Some characteristics of ffm*

Introduction

The Five-Factor Model (otherwise the Big Five) is a well established taxonomy of personality factors with wide acceptance among personality psychologists. This model is more than a short list of broad individual difference variables: it is a highly structured taxonomy (Goldberg, 1993a). Not only has the model presented a stable factor structure, but it has also demonstrated a cross-cultural validity (McCrae, Costa, delPilar, Rolland, & Parker, 1998). Hereditary influences to personality factors of this model even permitted the hypothesis of biological roots of these factors (see McCrae et al., 1998).

Many studies have demonstrated substantial links of each of the five factors with other personality variables (for review, see, e.g., Graziano & Eisenberg, 1997; Hogan & Ones, 1997; McCrae & Costa, 1997; Watson & Clark, 1997). The FFM also proved to be related to psychological well-being (e.g., McCrae & Costa, 1991) and current research focuses on applications of the model in various domains, such as health and clinical psychology (e.g., Smith & Williams, 1992; see Butcher & Rouse, 1996, for criticisms) and developmental psychology (Kohnstamm, Halverson, Mervielde, & Havill, 1998). Recently, some evidence suggested that the FFM is also useful to describe longitudinal variation in states (Borkenau & Ostendorf, 1998).

In spite of its wide acceptance, the Big Five has been subject to criticism. Among the critics, three elements seem to be prominent. First, the model is a-theoretical and descriptive rather than explanatory. The five factors have been obtained inductively, in other words not postulated but discovered; the model offers no insight into the psychological principles and processes that create a personality. However, it may be objected that the advantage of the model is that it organizes phenomena to be explained by theory and that the inductive approach is not a weakness (see Ostendorf & Angleitner, 1994; Ozer & Reise, 1994). Second, by focusing on broad superordinate categories, much detail useful for both description and prediction is lost (see Wiggins, 1992). One may however retort that this is the price to pay for any well-structured personality taxonomy. Furthermore, as Briggs (1992) argued, the choice of a measure depends on the goal of the researcher in a specific study. Third, in some studies, factor analyses revealed a six-factor or even a seven-factor structure, but this is less important in comparison with another limitation. The five factors of the NEO-PI-R – which is the most representative inventory in the framework of the FFM – have shown a good construct va-

lidity. Therefore, the NEO-PI-R factors are represented by six facets per factor. Unfortunately, little is known about the differential validity of the facets belonging to each factor (Briggs, 1992). This criticism is accepted by the NEO-PI-R creators (Costa & McCrae, 1998) who specify that no claim is made that the six facets identified for each domain of the NEO-PI-R constitute the only, or the best possible, set of facets constructs.

Brief description of the five factors

The factor of *Agreeableness* involves characteristics such as altruism, caring, and emotional support vs. hostility, indifference to others, self-centeredness, spitefulness, and jealousy (Digman, 1990). The NEO-PI-R facets of Agreeableness are trust, altruism, straightforwardness, compliance, modesty, and tender-mindedness. As Graziano and Eisenberg (1997) observe, promising lines of research have emerged linking Agreeableness to motivational processes and affect. These authors refer to Wiggins (1991), who has suggested that "individual differences in Agreeableness might be a part of a motivational system in which people strive for intimacy, union and solidarity with the groups to which they belong (or seek to belong)" (Graziano & Eisenberg, 1997, p. 816).

The construct of *Extraversion* is similar to Eysenck's Extraversion (Digman, 1990). It involves an interest in social interaction but also an active, zestful, and venturesome approach to life and to interpersonal relations (Digman, 1997). NEO-PI-R facets of Extraversion are warmth, assertiveness, excitement-seeking, gregariousness, activity, and positive emotions. In a similar conceptualization, Extraversion is expressed by dominance and sociability (see Watson & Clark, 1997). As Watson and Clark (1997) remark, views of Extraversion have evolved. Whereas older conceptualizations emphasized that extraverts were unreflective, reckless, impulsive, and unreliable, more contemporary scholars view extraverts as gregarious, socially ascendant as well as adapted and effective individuals.

Conscientiousness reflects orderliness, order, methodicalness, but also achievement. The NEO-PI-R construct is composed by the facets of competence, order, dutifulness, achievement striving, self-discipline, and deliberation. This dimension implies self-control, impulse control, desirability, social conformity (see Hogan & Ones, 1997, for review) and it has been found to relate to several extra-personality variables such as high job performance (Barrick & Mount, 1993; Barrick, Mount, & Strauss, 1993) or choice of study major. (For example, among Dutch speaking Belgian students, psychology as well as philosophy, languages and history students scored the lowest in Conscientiousness, whereas students in engineering, law and economics scored the highest on this factor; De Fruyt & Mervielde, 1996).

Emotional Stability (vs. Neuroticism) corresponds to the Neuroticism dimension in the Eysenck model. The facets corresponding to this factor, as measured by NEO-PI-R, are anxiety, depression, impulsiveness, angry hostility, self-consciousness, and vulnerability.

Finally, *Openness/Intellect* is the least clear factor. In the lexical tradition, the Fifth Factor is labeled "Intellect", a factor well associated, as noted by McCrae and Costa (1997), to adjectives such as intelligent, perceptive, knowledgeable, and analytical. The NEO-PI-R tradition prefers the labels of Openness and Openness to Experience. Intelligence is also associated to Openness, but the later is a broader factor including not only a cognitive ability, but a deep need to enlarge experience (McCrae & Costa, 1997). This factor reflects a close-minded personality and lack of dogmatism, but it also embraces the need for experience (McCrae, 1994, and McCrae & Costa, 1997, for review). Consequently, it also reflects liberal social attitudes (McCrae, 1996). Fantasy, as well as openness to aesthetics, to actions, to ideas and openness to values, are the six facets defining this factor on the NEO-PI-R.

Relations between Eysenck's taxonomy and the FFM

Another advantage of the Big Five is its ability to assimilate other representations of personality as they are embedded in multiscale inventories (the 16PF, the Eysenck Personality Questionnaire, the California Psychological Inventory, and the Edwards Personal Schedule).

Regarding Eysenck's taxonomy of three personality dimensions, Extraversion and Neuroticism, as mentioned above, are equivalent to the FFM corresponding dimensions. Furthermore, Psychoticism is considered a blend of Agreeableness and Conscientiousness, and this assumption has received strong empirical evidence³.

Measure used in our study and NEO-PI-R

The NEO-PI-R (Costa & McCrae, 1992), as noticed above, provides a faithful representation of the five-factor model (Briggs, 1992) and it is the commonly used inventory in the FFM framework. In an explanatory study we carried out (Saroglou, 1998) the results of which will be discussed below, we used a French measure of the FF (Vandenplas-Holper, de Maere, & Piérart, 1995), which is an adjective-based measure (to be distinguished from the phrase-based measures of the FFM). The clear five-factor structure of this measure was established from samples of more than two thousand French-speaking people and every factor is defined by five bipolar, adjective-based scales. An inspection of theoretical links between this measure and the NEO-PI-R lead us to the conclusion that the measure of Vandenplas-Holper et al. is a faithful representation of the five factors. One should remember, however, that this French measure did not aim to represent the facets defining

³ A debate exists as to whether these two FFM dimensions are factors of the same order as Eysenck's Psychoticism. Eysenck (1992) has suggested that the two former factors are not "basic", but that they are located on a lower level of abstraction. Goldberg and Rosolack (1994) questioned the rationale of Eysenck's assumption, and found that Psychoticism is a blend of two orthogonal factors (Agreeableness and Conscientiousness).

every factor of the NEO-PI-R, too. Briefly, in the French measure used in our study Conscientiousness and Emotional Stability reflect overall corresponding FFM factors. Extraversion includes items of two constructs: extraversion and dominance. Agreeableness is composed by the items of altruism and warmth, and this was confirmed in our factor analysis. (Warmth in the NEO-PI-R is a facet of the Extraversion factor, whereas in the lexical model it belongs to the Agreeableness factor; Goldberg, 1993b.) Finally, Openness/Intellect seems both theoretically and empirically – on the basis of factor analysis in our sample – split into two components: creativity-intelligence and open-mindedness.

Hypotheses on relationship between religiosity and the FFM

Curiously, psychology of religion has not been interested in the FFM and how the later is related to religion⁴ We tried to provide hypotheses on how religiosity might be related to each of the five factors, and this on the basis of past theoretical and empirical evidence on religious personality, and on traits and dimensions related to each of the five factors.

Agreeableness

Previous research, reviewed above, demonstrated a constant link of religiosity with low Psychoticism. Being strongly related to Psychoticism (see, e.g., facets of “tender-mindedness” and “altruism” in NEO-PI Agreeableness), Agreeableness should be found to be related to religiosity. One can also recall the well-established associations between self-report (but not real) helping behavior and religious Involvement in general as well as intrinsic religiosity (see Batson, Schoenrade, & Ventis, 1993, for review)⁵. Furthermore, in more recent studies using samples from different denominations (Jews, Protestant, Catholic, and Orthodox; Total N = 3524), religiosity was found

⁴ A symposium on the APA meeting in 1997 was dedicated to religion, and Big Five, but in a different perspective. The aim was to investigate whether religiosity may be another, sixth dimension of personality. We have to recognize that we do not subscribe to tentatives which postulate that religion is a universal human dimension, and this for the simple reason that this assumption is denied by empirical evidence.

⁵ Studies reviewed by Batson et al. (1993) have shown that intrinsic-end religious people tend to be reported as more helpful, but, in experimental settings, they turned out to be more helpful only in response to direct, low-cost requests and they are not responsive to the expressed needs of the person seeking help. On the contrary, “the quest dimension is not associated with reports of helpfulness or with increased amounts of helpfulness, but it is associated with helping that seems responsive to the expressed needs of the person seeking help” (p. 363). Batson’s et al. conclusion that the helpfulness of intristically religious people is not motivated “by altruistic concern but by self-concern to show oneself to be a good, kind, caring person” (Ibid.), may be easily criticized, at least because of a manichean distinction between altruism and pragmatism.

to be correlated with high scores on value of Benevolence (Schwartz & Huismans, 1995). A similar result was obtained with the Quest scale in a study using an American sample (Burriss & Tarpley, 1998).

Conscientiousness

Conscientiousness, in terms of the Big Five, is found to be defined by, or related to, order, impulse control, responsibility, orderliness, good impression, low flexibility, methodicalness, restraint, and social conformity (see Costa & McCrae, 1998, and Hogan & Ones, 1997, for review). Regarding this profile, religiosity seems to be particularly concerned if not with obsessiveness (see psychoanalytic Freudian considerations on religious ritual), then at least with order, impulse control and orderliness. In a review article, Lewis (1998) concluded that, although more positive religious attitude and greater religious practice are not associated with obsessive symptoms, they are nevertheless associated with higher scores on measures of obsessive personality traits such as orderliness, rigidity, and overemphasis upon hygiene and self-control. Religion is also found to predict high scores on reported value of Conformity, and this with samples of Jews (Israel), Protestants (the Netherlands and Germany), Catholics (Spain and Germany), and Orthodox (Greece) (Schwartz & Huismans, 1995), where as Quest predicted low Conformity in an American sample (Burriss & Tarpley, 1998).

Conscientiousness also includes achievement, although there is a debate on whether achievement is a simple facet of Conscientiousness or whether Conscientiousness may split into two subfactors: orderliness-methodicalness and achievement (Jackson, Paunonen, Fraboni, & Goffin, 1996). Regardless of this discussion, religiosity also seems to predict low achievement. For example, this was the case in all but one (Spanish Catholics) sample in the study by Schwartz and Huismans (1995). In the study by Burriss and Tarpley (1998) "even" their Immanence scale predicted low achievement, although not significantly so. (The intention of this scale is to measure immanence as a dimension of religious orientation that involves motivation to transcend boundaries, awareness and acceptance of experience, and emphasis on the present moment.)

Extraversion

On the basis of findings from studies in the framework of the Eysenck model, no evidence exists for a clear relationship between Extraversion and religiosity. However, at the present time, it is clear that religiosity does not (any longer?) imply introversion. Furthermore, in several studies, Extraversion has been found to be associated with religiosity or charismatic-mystical experience in religiously involved people. In addition, among the facets of NEO-PI-R Extraversion, assertiveness may be relevant to religious personality. In fact, there is substantial evidence that religiosity is associated to higher self-esteem. Religious involvement is related to self-esteem (Ellison, 1993). In

addition, intrinsic religiosity is constantly related to higher self-esteem (Burris, Jackson, Tarpley, & Smith, 1996; Nelson, 1990; Ryan, Rigby, & King, 1993). Findings on relationships between extrinsic religiosity and self-esteem are contradictory, suggesting either positive (Burris et al., 1996), negative (Ryan et al., 1993), or no relationship (Nelson, 1990). Quest orientation – which in the general population also reflects no religious involvement – is either unrelated (Burris et al., 1996), or negatively related (Genia, 1996) to self-esteem. It has also been argued that the need for self-esteem may constitute one of the motivational reasons for religiosity (Hood et al., 1996).

Emotional Stability

In line with past research reviewed above, we may hypothesize that, if some relationship exists between Emotional Stability (vs. neuroticism) and religiosity, the direction of the correlation should be positive. This does not necessarily imply that among the two opposite theories (religion being associated to neuroticism vs. association of religion with Emotional Stability), it is the second one which is somehow confirmed by research. The two theories may be complementary, at least for people with a certain personality profile. It could be that religion attracts (conversion) or retains (traditional believers) people with a neurotic predisposition, because it may offer Emotional Stability by its rituals, ideas, beliefs, optimism, and low impulsiveness.

Openness/Intellect

In the study by Schwartz and Huismans (1995) mentioned previously, religiosity was found to be associated with high scores for the values of Security, Tradition, and Conformity, and this in different religious denominations. As argued by the authors, these three values emphasize attaining and maintaining certainty in life, and the authors conclude that the degree of religiosity reflects, at least in part, the intensity of the individual's need to reduce *uncertainty*. We subscribe to these authors' argument that, "by providing explanations or answers for life's most fundamental existential mysteries, religion may relieve anxiety regarding death, disease, injustice, and the like, and may enable individuals to accept and make peace with their situation in life" (p. 92). In the same study, religiosity was also found to predispose people to score low in values of Self-Direction and Stimulation⁶, values which, according to these authors, emphasize *openness to change*.

Similarly, Burris and Tarpley (1998) found that the three values emphasizing acceptance of uncertainty are negatively correlated with the Quest scale. In addition, Miller and Hoffmann (1995) found that religious people tend to

⁶ Value of Self-Direction is defined as "independent thought and action-choosing, creating, exploring", whereas value of Stimulation is defined as "excitement, novelty, and challenge in life" (Schwartz & Huismans, 1995).

be risk-avoiding, whereas people scoring low on importance of religion in their life scored high in risk preference.

Furthermore, it is a well established fact that religion is associated with conservatism. For example, as results from a large survey in almost all European countries, religiosity among young people tends to relate to more conservative political attitudes (see Campiche, 1997).

Finally, in a series of studies, Hunsberger and colleagues found that religious fundamentalism, as well as Christian orthodoxy, is positively related to authoritarianism, dogmatism, and prejudice, and negatively correlated with the extent of religious doubts and integrative complexity of thought in religious (but not general) issues (Altemeyer & Hunsberger, 1992; Hunsberger, 1996; Hunsberger et al., 1992, 1994, 1996; Pancer et al., 1995; Pratt et al., 1992). It is not clear whether these results reflect a "pure" effect of religious fundamentalism-orthodoxy or whether, at least partially, they reflect an effect of religiosity per se vs. a-religiosity. Most often, samples in the studies mentioned here were representative of a general population of students, and not of a specific religious population, and sometimes data analyses were conducted in samples composed by the high and low scorers on religious fundamentalism (top and bottom quarters of the RF distribution). Nevertheless, in the study by Altemeyer and Hunsberger (1992), religious, in comparison with non-religious people, tended to score higher on authoritarianism as well on prejudice, a finding that suggests that a positive religious attitude in itself has an impact on close-minded related social attitudes. In a study of Israeli society, Rubinstein (1995) found that secular subjects scored the lowest on authoritarianism, followed by the traditional participants, and the orthodox participants⁷.

With such a profile, one may hypothesize that religiosity should be negatively correlated with the Fifth Factor. In fact, Openness to experience has been found to be negatively correlated with authoritarianism, conventionalism, dogmatism, tough-mindedness, and intolerance of ambiguity, and positively correlated with such traits as flexibility, xenophilia, and experience-seeking (see McCrae, 1996, for review).

*Religious fundamentalism, dogmatism, and orthodoxy:
specific personality profile?*

Some evidence exists in recent studies that *dogmatism* (Rokeach) is related to high Neuroticism (Francis, 1997a, 1998; Sclum 1985, Thalbourne, Dunbar,

⁷ The debate about the weight of religiosity per se, fundamentalism, orthodoxy, and authoritarianism as predictors of prejudice is still open. Kirkpatrick (1993), using multiple regressions, found that it was religious fundamentalism and not religious orthodoxy that predicted prejudice in his religious subgroup. Hunsberger (1995) reports that, by conducting partial correlations, authoritarianism and not religious fundamentalism turned out to be a predictor of prejudice.

& Delin, 1995, as cited in Francis, 1998). Results concerning the association of extraversion with dogmatism are inconsistent, but in recent studies over the last decade, no association has been found between these concepts (see Francis, 1998).

Fundamentalism is associated with optimism. On the basis of the categorization of religious denominations as fundamentalists, moderate or liberals, Sethi and Seligman (1993) found that fundamentalist individuals were more optimistic according to the questionnaire than those from moderate religions, who were in turn more optimistic than liberals. Using NEO-PI, Costa, Busch, Zonderman, and McCrae (1986) found that religious fundamentalism – as measured by MMPI – was related to higher Agreeableness (but not to lower Openness), whereas religious *orthodoxy* – as also measured by MMPI –, in addition to its association with Agreeableness, was related to higher Conscientiousness, as well as to lower openness to values (facet of Openness) and lower impulsivity (facet of Neuroticism). Recently, using NEO-FFI, a study by Streyffeler and McNally (1998) partially confirmed these results: fundamentalists, in comparison with normative groups, were declared agreeable, more emotionally stable, and less open, but also more extraverted. No significant differences in Conscientiousness were obtained.

It would be imprudent to draw conclusions of so few studies. Two points are nevertheless worthy of mention. First, religious fundamentalism and orthodoxy also seem to be associated with – consistently reported – low Psychoticism / high Agreeableness, just as religiosity per se was. Second, dogmatism, which is not necessarily related to religiosity (e.g., Francis, 1997a), but which is related to RF (Hunsberger et al., 1994), seems to be associated with low Emotional Stability, as opposed to religiosity. The religious component of religious fundamentalism may be then considered a “protection” against the negative effects of its associated dogmatic structure? Answering affirmatively would be premature, but the question is legitimate.

Conclusion

On the basis of theoretical and empirical evidence, the Five-Factor Model should be relevant to the investigation of religious personality. More precisely, it may be hypothesized that religiosity

- a) is certainly positively associated with Agreeableness and Conscientiousness;
- b) is at least not negatively correlated with Emotional Stability and with Extraversion; and
- c) is negatively correlated with Openness/Intellect.

*Gender differences and religious-personality**Religiosity and personality*

Overall, women are most frequently found to be more religious than men, and this with different religious variables such as importance of God in life, frequency of prayer, church attendance, positive attitude to religion, religious and mystical experiences (see Francis, 1997c, for a review of explanatory theories). One interesting approach also tends to privilege the gender orientation (femininity vs. masculinity) as a better predictor of religiosity than sex (e.g. Thompson, 1991).

Consequently, gender differences in religiosity may considerably affect relationships between religion and personality or social-attitude variables. For example, Miller and Hoffman (1995) found that religious people tend to be risk-avoiding, as opposed to non-religious people who tend to be risk-taking, but they also investigated the hypothesis that this finding could be an artifact of gender differences: women are both more religious and more risk-avoiding than men. Francis and colleagues, as mentioned earlier, also found that the apparent positive correlation between Neuroticism and religiosity was an artifact of sex differences, because women were both more religious and higher in Neuroticism than men (see Francis, 1992b). Similarly, Saroglou, Jaspard and Bacq (1998) found that negative correlations between religious measures and ability for humor-creation showed a weak increase when gender was partialled out. It is therefore very important in research to test for gender differences in the exploration of relationships between religion and personality or social attitudes variables, and one must deplore that this is not very often the case in psychology of religion.

Religious fundamentalism, authoritarianism and dogmatism

Unfortunately, in most studies, at least in most recent studies, authors do not report gender differences in fundamentalism, especially in studies using the Religious Fundamentalism scale (RF; Altemeyer & Hunsberger, 1992). Only Danso, Hunsberger, and Pratt (1997) reported no gender differences on the RF scale. Regarding authoritarianism, Lippa (1995), reviewing past research, concluded that authoritarianism – as measured by the F Scale and more recently by the Right-Wing Authoritarianism scale (RWA; Altemeyer, 1981; see Altemeyer, 1998) does often not show an overall sex difference. In his own study, however, Lippa (1995) found that men score higher than women in RWA. Regarding dogmatism, past research demonstrated either no gender differences (Kirkpatrick, Sutker, & Sutker, 1970; Mangis, 1995; Schmitz, 1985), or higher scores in men (e.g., Francis, 1997a, 1998; Gonzalez-Tamayo, 1974; Heyman, 1977; see Alter & White, 1966).

Relationships between religion and prejudice

It is not clear from past research whether or not gender moderates relationships between religion and discriminatory attitudes.

In studies by Altemeyer, Hunsberger and colleagues on relationships between, on the one hand, religiosity, religious fundamentalism, dogmatism, and Christian orthodoxy, and, on the other hand, complexity of thought, authoritarianism and prejudice-discriminatory attitudes, mediation of gender has not been investigated or at least reported.

McFarland (1989) reported that many of his results, i.e., correlations between religion and discriminatory attitudes, were modified by gender. Kirkpatrick (1993) nevertheless failed to find a similar effect in his study and, when he recomputed the significance tests reported in McFarland's study, even several of the gender differences reported as significant turned out to be non-significant.

However, this observation by Kirkpatrick is based on results from a subgroup of Christian students extracted from his total sample. (His analysis is focused on this subgroup for comparability with McFarland's study.) Once we look for a gender effect on the total sample in Kirkpatrick's study (his Table 2), it is clear that gender has a mediatory effect: female religiosity was largely related to many discriminatory attitudes, as opposed to religiosity in males, which is unrelated, or occasionally related, to discriminatory attitudes. In the same study, Kirkpatrick also found, based on results from the Christian subgroup, that it is fundamentalism and not Christian orthodoxy or intrinsic religiosity which explains high prejudice in religious people. It might be possible, however, to find a way to integrate these results. First, because women, in general population, are more religious than men, we may consider that religiosity per se is somehow a predictor of high prejudice (in men possibly the least contrasted religious attitudes fail to predict prejudice). This may explain gender differences in correlations between religion and discriminatory attitudes in a general population. Second, when focusing on religiously involved samples, it is not religiosity per se or orthodoxy, but fundamentalism (or even not fundamentalism but authoritarianism), which predicts prejudice, and this prediction concerns men and women equally.

An exploratory study

An exploratory study with a sample of 25 male and 51 female psychology students at the University of Louvain in Belgium was carried out in order to test whether religiosity might be relevant to the five factors. This study was part of a broader study which investigated the impact of religiousness and religious fundamentalism on humor appreciation and the mediator role of personality in this relationship. Methods and results are presented in a specific paper (Saroglou, 1998). We briefly report here results on relationships be-

tween religion and the FFM, present some findings not recorded in the former paper, and focus on discussion of specific questions not included in that paper because of limited Space and divergent aims. Subjects were given the Religious Fundamentalism scale (Altemeyer & Hunsberger, 1992), the Post-Critical Belief Questionnaire (see Hutsebaut 1996, 1997), from which we retained for analysis the subscales of orthodoxy and critical attitude to religion, a Four-Religiosity Profile Questionnaire (four single-item questions on importance of God and importance of religion in the life, on frequency of prayer and on level of religious education). To measure personality we used the Bipolar rating scales based on the FFM (Vandenplas-Holper et al., 1995).

Results and discussion

Gender differences

As expected, women tended to be more religious than men. More precisely, they reported that God was more important in their life and that they prayed more often. No significant differences were observed on importance of religion in life, on critical attitude, or on religious fundamentalism and orthodoxy. Regarding the five factors, men tended to report higher Emotional Stability (a finding consistent with the well-established higher neuroticism in women, in terms of Eysenck's model), and women were found to report higher Agreeableness. Because of gender differences in both fields, personality and religiosity, it seemed imperative to investigate relationships between these two domains separately for men and women.

Distinct correlations for men and Women

Conscientiousness was found to be almost the only personality factor which was associated with male religiosity (significant correlations with frequency of prayer and with orthodoxy). Among women, *Conscientiousness*, too, was related to frequency of prayer, but *Emotional Stability* was the main factor characteristic of female religiosity: it was predicted by importance of God and of religion, frequency of prayer, level of religious education, and religious fundamentalism. In women, too, religiosity (importance of God and of religion, low critical attitude) was positively correlated with *Extraversion*, whereas in men this was the case only for religious fundamentalism. At first sight, no association was found between religion and Agreeableness or Openness contrary to our expectations that religiosity would predict high Agreeableness and low Openness.

Relatedness vs. structured-principled religion?

These findings may be interpreted as consistent with a more general pattern on gender differences in psychology of religion. On the one hand, the fact that *Conscientiousness* was the only personality factor significantly re-

lated to religiosity in *males* may be considered as confirming that male religiosity expresses need for order (notably cognitive structuration of a world considered as chaos). On the other hand, the fact that *female* students were higher than male students on importance of God in their life (but not on importance of religion) and the fact that Emotional Stability was the main factor involved for religion in women may be considered as expressing the importance of the affective and relational dimension emphasized in female religiosity. For example, Vergote (1997) suggests that male religiosity expresses more the awareness of responsibility towards God, whereas female religiosity is rather animated by the presence of a loving being. In their study of children's perception of the Eucharist ritual, Jaspard and Dumoulin (1973) found that boys are attached to rules that govern this ritual as well as to the finality of the ritual, whereas for girls the ritual signifies the presence of the person of Christ and an important relationship of union with Him. In an article dealing with the centrality of "relatedness" regarding women's contribution to the psychology of religion, Reich argues that "women may have contributed more to the understanding of connectedness and close relationships with God than men" (p. 69). It is important to underline that these two orientations, order-autonomy-cognitive structuration vs. affectiveness-relatedness should not be seen as exclusive but as preponderant characteristics of men and women as far as gender has an effect on their religiosity.

Need for control?

Taken together, Emotional Stability and Conscientiousness, as related to religion in this study, may indicate the importance of *need for control* in religion. Religiosity seems associated with order of feelings and emotions as well as with order of actions and ideas. Hood et al., (1996) argue that this need, in addition to the need for meaning and to the need for self-esteem, constitutes the motivational bases for religiosity and for religious attributions. To give examples from an older religious context, we found in two previous works that the importance of self-control and the ideal of self-mastery determined the attitude towards dreams (Saroglou, 1992) and to humor and laughter (Saroglou, 1997a) in the early ascetic Christian literature.

This association of both Conscientiousness and Emotional Stability may also be considered in terms of negative relation between religiosity and *impulsivity*. Impulsivity is known to be negatively related to religiosity: negative correlations between religiosity and Psychoticism in research turn out to be clearer and more systematic, once impulsivity, is moved from Extraversion to Psychoticism in measures based on Eysenck's model of personality (Francis & Pearson, 1985; see Francis, 1992b). In the NEO-PI-R, impulsivity is a facet of Neuroticism, but this facet has also been found to define Conscientiousness (Luengo, Romero, & Gomez-Fraguela, 1998).

Finally, regarding the debate on the two opposing theories of religion as expressing stability or instability, respectively results for the present study

may be regarded as indicating a third hypothesis. This hypothesis suggests a compensation effect of religion: females were more neurotic (consistently with the empirical literature), but their religiosity was mainly related to Emotional Stability.

Religious education vs. present religiosity

The level of religious education reported by participants showed a curious effect in our study. In the total sample, testing for gender, higher previous religious education was positively related only to Emotional Stability ($r = .20$, $p = .10$), and, regarding this factor, the correlation was similar in direction to the one with present religiosity measures. No relationships with other personality factors were found. Furthermore, when also tested for present religiosity (importance of God), Agreeableness turned out to be negatively correlated with religious education. It is difficult to interpret this finding as indicating that religious education predisposes people to be less altruistic or less warm.

Distinct correlations were then conducted for the “non-religious” subgroup (people having reported God as unimportant or almost unimportant in their life) and the “religious” subgroup (people having scored higher than mid-scale on importance of God). In the non-religious subgroup, always controlling for gender, level of religious education turned out to be negatively correlated with Agreeableness, Extraversion, and Openness ($r = -.26$, $-.27$, and $-.26$, respectively; $p = .10$). On the contrary, no relationships between religious education and personality factors were found in the religious subgroup, and the non-significant tendencies of these correlations were in the same positive direction as the correlations between these factors and most of the religiosity measures. On the other hand, when tested for religious education and gender, religiousness measures tended to be positively correlated with Extraversion (r varied from $.23$ to $.25$, $p = .05$, for the four religiosity measures), with Openness to experience ($r = .25$, $.23$, $-.25$, $p = .05$, for frequency of prayer, orthodoxy and critical attitude), and the correlations were positive with Agreeableness, although not significant.

It might be possible, then, that actual religiosity and previous religious education have a weak conflicting effect on these three personality factors, but not on Conscientiousness or Emotional Stability. If this is the case, one could hypothesize that the attitude toward religious affiliation (e.g., apostates, traditional religious, traditional a-religious, converted) may also be responsible for some personality traits.

In the absence of empirical evidence, an intuitive hypothesis could be that Extraversion (contrary to ancient ideas and early empirical findings supporting affinities between religion and introversion), as well as openness to experience and warmth-generosity, may characterize the religiosity of young people with a liberal religious background and consequent socialization (e.g. Belgian students), while apostates are more sceptical toward these personality

factors: high scores on these factors may be perceived as expressing a kind of unconditional, unrealistic social openness. The weak tendency of religiousness for higher Extraversion may also be considered in the light of recent work in the sociology of religion which underlines changes in expressions and forms in the religious experience of young people (see several chapters in Campiche, 1997). Attraction to collective great gatherings and a preference for externalization and community expressions of religious needs and experience may be associated with (explained by?) a more extraverted contemporary religious personality.

The case of Agreeableness

The lack of confirmation of the hypothesis that Agreeableness should be positively correlated with religiosity – consistent with traditional findings of low Psychoticism and self-reported altruism in religious people – led us to investigate the better facets of this factor. In fact, in our factor analysis of the bipolar scales of the FFM we use in this study, Agreeableness was found to split into two subfactors, clearly reflecting two dimensions: warmth and altruism. As presented in Saroglou (1998), it transpired that, once gender and religious education were partialled out, the altruism component was positively correlated with religious fundamentalism and orthodoxy.

The case of Openness

Unexpectedly too, Openness to experience failed to register as negatively related to religion. However, as presented in Saroglou (1998), Openness, at least as defined by the measures we used in this study, was proved to split into two subfactors, “creativity-intelligence” and openness, a finding not unusual in the empirical literature (e.g., De Fruyt & Meirvielde, 1998, for Dutch-speaking Belgian samples). Interestingly, within our sample, religiosity turned out to be positively correlated with the component of creativity-intelligence, but not with the component of openness.

This finding indicates that, with regard to FFM Openness, religiosity may be related differently for facets reflecting fantasy, creativity, aesthetic sensitivity or inquiring intellect, than for facets reflecting open- vs. closed-minded (cognitive-social) structures such as dogmatism, openness to change, conservatism, etc. For example, Costa et al. (1986) found that orthodoxy was negatively correlated with openness of value, but it was unrelated to the other five facets of Openness (Fantasy, Aesthetics, Feelings, Actions, and Ideas). Another perspective for interpreting our results is to consider Openness to experience as relating, at least in part, to openness to paranormal experience or even to irrational thinking. NEO-PI-Openness has been found to be correlated with beliefs in esoteric and dubious phenomena, such as astrology and the existence of ghost, as well as with perceptual aberration (see McCrae & Costa, 1997), whereas Roig, Bridges, Renner, and Jackson (1998) found that traditional religious beliefs are associated with irrational thinking. Finally,

one has to distinguish between religiosity per se and religious fundamentalism: Streyfeller and McNally (1998) found an opposing pattern between liberals and fundamentalist on their scores for Openness, in comparison with the normative group (see Table 2).

Frequency of prayer

Frequency of prayer turned out to be an important religiosity predictor for personality. Prayer predicted Conscientiousness in both men and women, in both the non-religious and the religious subgroups, and it was associated with Emotional Stability in women. This finding may possibly be interpreted in the light of findings from studies on prayer in Dutch (Janssen, de Hart, & Den Draak, 1990) and Belgian (Verhoeven, 1994) young people. In a chapter by numerous authors – including Janssen – of a recent book edited by Campiche (1997), it is argued, on the basis of these two studies, that prayer in young people is not necessarily religious, in the traditional sense of the term. It seems that prayer for these people is an attempt at introspection, for an increased self-awareness, rather than a primitive-magic way of communicating with God. Prayer permits at least young people to think about their actions and to think about the way they behave. The authors even suggest that contemporary prayer may have replaced the old confession, not as a ritual to evacuate guilt but as a ritual of reordering and “re-adjustment”.

The fact that, in our study, frequency of prayer proved to be a good predictor of religious personality is consistent with findings from other studies, where prayer proved to be a good indicator of implicit, personal religiosity (e.g., Maltby et al., 1995). We have also found (Saroglou, 1998) that frequency of prayer, among other religiosity measures, was the best predictor of low humor appreciation as a function of religiousness.

Social desirability effect?

One could argue that the results obtained here for religious personality were not a function of religiousness, but of social desirability. Facets of the five factors such as altruism, sociability, intelligence, openness, and dominance may be considered as socially desirable traits.

Several recent studies offer some evidence that religiosity is positively associated with social desirability (e.g., Genia, 1996, with religious fundamentalism, extrinsic religiosity, and negatively with Quest; Richards, 1994, with intrinsic religiosity; Watson et al., 1986, with end religiosity). Some association also exists between religiosity and Eysenck's Lie scale, which is usually considered a measure of social desirability, but results are not always consistent and they may be interpreted in different ways (e.g., religious people are less insightful, or more truthful, or more socially conformist; see Francis, 1993). Furthermore, factor analyses of social desirability measures consistently reveal two factors (e.g., Borkenau & Ostendorf, 1989; Paulus, 1984): 1. impression management, a self-presentation consciously tailored to an audience, and

2. self-deceptive positivity, as an honest but overly positive self-presentation or a subtle form of unconscious self-deception. Leak and Fish (1989) found that intrinsic religiosity is related to both impression management and self-deception, and Gillings and Joseph (1996) even found that religiosity, as measured by the Francis Attitude toward Christianity scale, is related to impression management but not to self-deception. However, in a study by Ryan et al. (1993), social desirability was not related to the identification type of religious internalization, and it was negatively related to the introjection type of religious internalization.

We therefore believe in the validity of our results for personality as related to religion for the following reasons. First, Watson et al. (1986) found that, although religiousness was associated with social desirability, the former tended to be unrelated to several other impression management measures (i.e., self-consciousness, social anxiety, fear of negative evaluation, approval motivation, and a fake good scale). Observing that a number of items on the Social Desirability Scale (SDS; Marlowe-Crowne) have religious connotations, the authors conclude that the positive correlations found between end-religiosity and the Social Desirability Scale "may partly reflect the attempt of religious persons to live, however unsuccessfully, according to the normative values of their belief system, and that these values in turn are recorded by the Crowne and Marlowe instrument" (p. 231). In a replication study, Richards (1994) also found that the positive correlation between social desirability and religiosity was obtained only with the Crowne and Marlowe SDS, and not with other impression management measures. In addition, he found, in a post-hoc analysis, that intrinsic religiousness was more strongly associated with SDS items which have religious items than with other SDS items. He therefore concluded that "there is evidence that religious persons who score higher on the SDI and the Lie scales of the EPQ are not bigger liars⁸, but are actually more likely to tell the truth and to present an honest picture of themselves than are persons who obtain low scores on these measures" (p. 22). Recently, Trimble (1997) also points out that, given the religious relevancy of social desirability measures, partialling out this variance is not recommended.

Second, in a validation study (Vandenplas-Holper & Roskam, 1998, July, personal communication), all but one factor of the French measure of the FFM we use in the present study, were found to be unrelated to the SDS.

Third, in a discussion about links between social desirability and personality inventories, Costa and McCrae (1997) criticized the argument that people who endorse many SD items are trying to create a good impression. In fact there are other possible reasons than impression management for endorsing

⁸ It is an indirect answer to Batson's et al. (1993) interpretation of discrepancy between reported prosocial attitudes and real prosocial behaviors of intrinsic and religious involved people.

SD items – “namely, because the items are reasonably accurate self-descriptions” (p. 89). According to the authors, peer rating seems a better validity strategy, and previous empirical evidence suggests that “correcting” self-reports through the use of SD scales often reduced, rather than enhanced, their validity as assessed by outside criteria.

General vs. religious population?

Regarding studies dealing with the way in which religiosity is related to personality variables and social attitudes, general attention is needed with regard to the composition of the samples. One may suspect that results may be different when the religiosity of the sample is representative of the religiosity of the general population, and when the sample is composed of religiously involved people or by people of specific religious orientation. In our study, in fact, there was some evidence that results mainly (but not exclusively) expressed differences between religious people vs. people not interested in religion. In fact, when we considered only the religious subgroup, controlling for gender, intensity of religiosity or greater religiosity across the different measures used was unrelated to Extraversion, Agreeableness and Openness. Two interesting findings therefore emerged. First, higher frequency of prayer was associated with high Conscientiousness ($r = .36$, $p < .10$), and, at a non-significant level, to Emotional Stability. Second, religious fundamentalism and orthodoxy were related to high Emotional Stability ($r = .36$, $p < .10$), and, at a non-significant level, to Conscientiousness.

Conclusion

In conclusion, higher religiosity (notably in men), as well as lower “a-religiosity”, tended to be typical of people with high Conscientiousness. Female religiosity was clearly associated with high Emotional Stability. In young students representative of the general population, religiosity seemed to be associated with (or to provide?) order, control and stability in emotions, feelings, actions and ideas. In examination of the conflicting effect of previous religious education, present religiosity was followed by a tendency to report high creativity, as well as higher extraversion and altruism. These results may be considered valid, independently of the problematic, and possibly not pertinent, question of effects of social desirability. Note, moreover, that religiosity was not associated with higher open-mindedness or with warmth.

We may summarize by distinguishing between religiosity measures as well as between specific religiosity samples. Religiosity vs. a-religiosity, as well the need for prayer and “strong” orientations such as fundamentalism and orthodoxy among religious people, indicates (need of?, effect on?, personality predisposition for?) high Conscientiousness and Emotional Stability. Religiosity vs. a-religiosity, but not necessarily greater intensity of religiosity, is followed by a tendency to report high extraversion, altruism and creativity. Open-mindedness is unrelated to religion.

It is not to be excluded, however, that with a more varied sample in religious fundamentalism (e.g., “real” high fundamentalists vs. general population or liberal religious) rather than a sample of psychology students, religious fundamentalism might present a different pattern of links with personality (e.g., negative association with Openness).

Review of Studies based on the Five-Factor Model

It seems that there is mounting interest on relationship between religion and personality in terms of the FFM. Table 2 details results from the few studies that have used the FFM. In two of them (Costa et al., 1986; Saucier & Goldberg, 1998), religiosity was only one of the multiple personality variables used.

Table 2: Religiosity and personality in terms of the Five-Factor-Model

<i>Studies</i>	<i>Samples</i>	<i>Religious measures</i>	<i>A</i>	<i>C</i>	<i>E</i>	<i>ES</i>	<i>O</i>
Costa et al., 1986	119m+34f adults, USA	Religious Orthodoxy (MMPI)	+	+			[-] ^a
		Relig. Fundamentalism (MMPI)	+				
Saroglou, 1998	25m+51f students, Belgium	Relig. Fundamentalism (RF)	[+] ^b		+(m)	+(f)	
		Orthodoxy (PCB)	[+] ^b	+(m)		+(f)	
		Critical attitude (PCB)			+(f)		[+] ^c
		importance of God			+(f)	+(f)	[+] ^c
		importance of religion			+(f)	+(f)	[+] ^c
		frequency of prayer		+		+(f)	[+] ^c
Saucier & Goldberg, 1998	4 student samples >1000 self and/or peer ratings, USA	clusters of adjectives	+				-
Streyffeler & McNally, 1998	adult Protestants, USA:	comparison with general norms					
	a) 49m+60f fundamentalists		+		+	+	-
	b) 40m+101f liberals		+		+	+	+

Note: ^a = Openness to Values only.

^b = Subfactor of “altruism” only, controlling for level of religious education.

^c = Subfactor of “creativity-intelligence” only, controlling for level of religious education.

A = Agreeableness; C = Conscientiousness; E = Extraversion; ES = Emotional Stability; O = Openness/Intellect; PCB = Post-Critical Belief Questionnaire (see Hutsebaut, 1996); RF = Religious Fundamentalism scale (Altemeyer & Hunsberger, 1992); m = males; f = females; + = positive association; - = negative association.

As results from Table 2, Agreeableness (similarly to Psychoticism in the Eysenck taxonomy) is the factor found to be associated with religion and/or

religious fundamentalism/orthodoxy in all studies. Religious orthodoxy is, in both studies using this variable, associated with Conscientiousness. No negative relationships exist between religiosity and Extraversion or Emotional Stability. Even as in some studies within Eysenck's taxonomy, in two of the four studies mentioned in Table 2 religiosity tended to be associated with Extraversion and, notably in women, with Emotional Stability. Finally, Openness presents a complex, but perhaps clear, pattern: fundamentalism/orthodoxy are negatively correlated or at least unrelated to Openness – the Fifth Factor as a whole – . In two studies, liberal Christians reported high Openness, while the religiosity of psychology students was associated with only the creativity-intelligence subfactor.

Discussion

Theoretical considerations and empirical evidence from studies using Eysenck's taxonomy, as well as studies in the FFM framework, suggest that the FFM may be particularly relevant for investigation of clear and certain links between personality and religiosity. In a diachronic perspective, religious people in general value order, control in emotions, ideas and actions, and report high concern for others. In a historical perspective, it is possible that the way personality is linked to religiosity reflects the form in which religion is expressed in a specific time and space. A contemporary tendency of religious people to report high extraversion and high openness to experience-fantasy-creativity may constitute one example of this.

The FFM may also be relevant for investigation of different personality profiles in specific religious groups (e.g., fundamentalists or charismatics as well as converts vs. apostates, traditional believers or unbelievers). Different religious orientations (intrinsic, extrinsic, quest, and immanence) may result from different personality predispositions.

The fact that the FFM seems to represent good cross-cultural validity (McCrae et al., 1998) is also encouraging. It is not to be excluded that, irrespective of effects from socio-demographic variables (as well as religious socialization, cultural and religious denomination differences), personality predisposes individuals to remain or to become religious.

Certain precautions must be taken, however, when exploring for links between personality taxonomies and religiosity. First, gender differences may partly affect such links. Second, it is necessary to keep in mind that personality profile, as related to commonly used religiosity measures, may differ if our sample is representative religiosity in the general population or if it is composed of religiously involved people. Finally, although adjective-based measures of the five factors are useful only for rapid broad exploration (see Briggs, 1992), it seems preferable, when exploring religious personality, to use FFM measures which are more discriminating of different facets. Open-

ness/Intellect, for example, may be too broad a factor, and religiosity seems to be associated differently with specific facets of this factor.

To people who may object that personality taxonomies are reductive, one may answer that this is true, but that there are people who prefer order and others who do not like it.

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