



Personality, identity styles, and religiosity: An integrative study among late and middle adolescents

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Abstract

Past research has shown that the way people deal with religion is related to prejudice. Therefore, it is important to study the determinants of individual differences in adolescent religious attitudes. In the present study, it is proposed that both differences in personality and identity formation might determine these religious attitudes. Recently, Duriez, Soenens, and Beyers (2004, *Journal of Personality*, 72, 877–910) tested an integrative model of the Five Factor Model of personality, Berzonsky's (1990, *Advances in Personal Construct Psychology*, 1, 155–186) identity styles and the religiosity dimensions of Exclusion vs. Inclusion of Transcendence and Literal vs. Symbolic. In this model, it is assumed that the relationships between adolescent personality and adolescent religious attitudes are mediated by the identity styles. The aim was to replicate this model among late adolescents (Sample 1; $N = 332$) and to test whether it extends to middle adolescence (Sample 2; $N = 323$). Whereas most personality factors were weakly and inconsistently related to the religiosity dimensions, Openness to Experience was consistently positively related to Literal vs. Symbolic and negatively to Exclusion vs. Inclusion of Transcendence. Whereas the former relation was mediated by the informational identity style, the latter relation was mediated by the normative identity style in Sample 1 only.

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The main developmental tasks during adolescence involve forming a stable sense of identity (Erikson, 1968). As a part of this process, adolescents need to establish an integrated personal stance on existential issues, including the role of religion in their lives (Markstrom, 1999). Past research has shown that the way people deal with religion is significantly related to socio-political attitudes. For example, it has been shown that a dogmatic, literal way of dealing with religion is positively related to racial and other forms of prejudice (Altemeyer & Hunsberger, 1992; Kirckpatrick, 1993; Hunsberger, 1995; Duriez, 2004a), prejudice dispositions such as right-wing authoritarianism, social dominance and lack of empathy (Wylie & Forest, 1992; Altemeyer & Hunsberger, 1992; Hunsberger, 1995; Duriez & Van Hiel, 2002; Duriez, 2004a, b), cultural conservatism (Kellstedt & Smidt, 1991; Duriez, 2003a), and cognitive–motivational variables such as the need for closure, intolerance of ambiguity and closed-mindedness (Saroglou, 2002a; Duriez, 2003b). Given these findings, it is important to study the determinants of individual differences in how adolescents deal with religion. In the past, both differences in personality and identity formation have been studied in relation to the development of religious attitudes. However, the research on both personality (for an overview, see Saroglou, 2002b) and identity formation (e.g., Markstrom, 1999) has yielded inconsistent results. Recently, however, Duriez, Soenens, and Beyers (2004) have integrated both research traditions by proposing a model in which the relation between personality and religiosity during late adolescence is mediated by the social–cognitive processes involved in identity development. The present aims will be (a) to replicate this model in a new sample of late adolescents, and (b) to test its generalizability to middle adolescence.

An integrative model

Personality and religiosity

Early research into this relation using Eysenck's model of personality (Psychoticism, Extraversion and Neuroticism; Eysenck & Eysenck, 1968) confirmed the hypothesis that religiosity corresponds, at least to some extent, to individual differences in personality traits. Although some authors failed to find a link between religiosity and personality, a series of studies in a variety of denominations and cultures converged on the conclusion that religious people tend to be lower in Psychoticism (Francis, 1992, 1993; Francis & Katz, 1992; Lewis & Joseph, 1994; Lewis & Maltby, 1995; Maltby, 1999). Regarding the other dimensions (Extraversion and Neuroticism), no such convergence was reached.

More recently, Costa and McCrae (1978, 1992) presented the Five Factor Model of personality (FFM; Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness to Experience), which can be regarded as an extension of Eysenck's model, with Agreeableness and Conscientiousness providing a two-dimensional view of low Psychoticism (McCrae, 1996a; Digman, 1997) and Openness to Experience constituting a new element (Costa & McCrae, 1995). Although some studies resulted in positive relations between religiosity and both Agreeableness and Conscientiousness (Kosek, 1999, 2000; Taylor & McDonald, 1999), these relations are typically low (Saroglou, 2002b), and sometimes even absent (Saucier & Goldberg, 1998; Streyffeller & McNally, 1998; Saucier, 2000). Regarding the other factors, no clear relation with religiosity emerged (Saroglou, 2002b). Nevertheless, McCrae (1999) has urged attention to

Openness to Experience in order to understand religiosity. Individuals high in Openness to Experience can be characterized by an active motivation to seek out the unfamiliar, which goes hand in hand with tolerance of ambiguity and open-mindedness, and which leads those high in Openness to Experience to endorse liberal socio-political values (McCrae, 1996b). Hence, Openness to Experience is considered highly relevant towards social attitudes and ideologies (Riemann, Grubich, Hempel, Mergl, & Richter, 1993; McCrae, 1994, 1996b; Trapnell, 1994; McCrae & Costa, 1997; Van Hiel, Kossowska, & Mervielde, 2000). The importance of Openness to Experience towards religiosity was supported by Streyffeler and McNally (1998), who found liberal and fundamentalist Protestants to differ with respect to this factor only, and by Saucier (2000), who found Openness to Experience to negatively relate to alphaism (a social attitude dimension comprised of, among other things, conventional religion).

In line with the theoretical framework of McCrae (1999) and the findings reported above, Duriez et al. (2004) expected Openness to Experience to be of crucial importance to understand religious phenomena. In order to investigate this, Duriez et al. (2004) made use of the Post-Critical Belief Scale to measure religiosity (PCBS; Duriez, Fontaine, & Hutsebaut, 2000). The PCBS provides measures of the two bipolar dimensions of Exclusion vs. Inclusion of Transcendence and Literal vs. Symbolic along which Wulff (1991, 1997) organized all possible approaches to religion (Fontaine, Duriez, Luyten, & Hutsebaut, 2003). The Exclusion vs. Inclusion of Transcendence dimension refers to the distinction between being religious or not, and can be considered a proxy of religious involvement. A high score on this dimension indicates a tendency to believe in a transcendent reality. The Literal vs. Symbolic dimension indicates whether religious contents are interpreted literally (i.e., in a dogmatic, traditional fashion) or symbolically (i.e., in an open and personalized fashion), and can be situated at the level of social cognitions because it refers to the way religious contents are processed, irrespective of whether they are considered meaningful. A high score on this dimension indicates a tendency to deal with religion in a symbolic way. Although Duriez et al. (2004) expected Openness to Experience to be only modestly related to being religious or not (as most of the previous research has shown), and hence to be only modestly related to Exclusion vs. Inclusion of Transcendence, they expected it to be very important to understanding the way in which people process religious contents, and hence to be strongly positively related to the Literal vs. Symbolic dimension. The hypothesized positive relationship between Openness to Experience and Literal vs. Symbolic was confirmed in a sample of late adolescents. Additionally, a positive relation was found between Agreeableness and Literal vs. Symbolic. This finding was in line with McCrae (1999), who argued that, although to a lesser extent, just like Openness to Experience, Agreeableness is relevant to social attitudes and ideologies, and that, as a consequence, a similar pattern of relations with social attitudes and ideologies might be expected. However, Duriez et al. (2004) have shown that, Agreeableness is no longer a determinant of the Literal vs. Symbolic dimension once Openness to Experience is taken into account.

The importance of identity styles

In order to gain insight in the nature of the relation between Openness to Experience and the religiosity dimensions, Duriez et al. (2004) examined whether this relation can be explained by the way late adolescents process identity-relevant information. In this respect, Berzonsky (1990)

proposed three different identity styles: The informational, the normative, and the diffuse/avoidant identity style. Information-oriented individuals deal with identity issues by actively seeking out, processing and utilizing identity-relevant information. In other words, information oriented individuals will try to inform themselves about the consequences of their own choices and actions prior to making autonomous decisions. When confronted with information that is dissonant with their self-conceptions, they will attempt to revise and accommodate their self-perceptions. Instead of making autonomous decisions, normative oriented individuals focus on the normative expectations and prescriptions held up by significant others (e.g., parents or authority figures) and reference groups (e.g., a certain religious tradition). Normative oriented individuals adhere rigidly to their identity structures, into which they assimilate all identity-relevant information. Finally, diffuse/avoidant oriented individuals procrastinate decisions about personal problems and one's identity. According to [Berzonsky \(1990\)](#), this identity style results in a fragmented and loosely integrated identity structure.

Given the assumption that identity development is of major importance during late adolescence, [Duriez et al. \(2004\)](#) hypothesized that the relations between personality traits and differences in the way people process religious contents are mediated by the identity styles late adolescents use. More specifically, they expected Openness to Experience to be the crucial determinant of both an individual's identity style and his way of processing religious issues. In the model presented, it was hypothesized that higher levels of Openness to Experience predict higher scores on the informational identity style and lower scores on the normative and diffuse/avoidant identity styles, and that the association between Openness to Experience and Literal vs. Symbolic is mediated by these identity styles. In addition, it was predicted that the normative identity style directly predicts part of the variance in Exclusion vs. Inclusion of Transcendence, because normative-oriented individuals are expected to rely on and conform to the prescriptions and standards of both significant others and reference groups ([Berzonsky, 1990](#); [Soenens, Duriez, & Goossens, 2005](#)). Given the fact that the Roman Catholic religion can be considered part of the Belgian cultural inheritance ([Billiet & Dobbelaere, 1976](#); [Dobbelaere, 1995](#)), we can expect normative oriented individuals to be sensitive to this, and to show higher Exclusion vs. Inclusion of Transcendence scores. Furthermore, based on previous findings (e.g., [Berzonsky, 1992](#)), the informational and the diffuse/avoidant identity style were expected to be negatively related. The proposed model, which is summarized in [Fig. 1](#), received support in a sample of late adolescents.

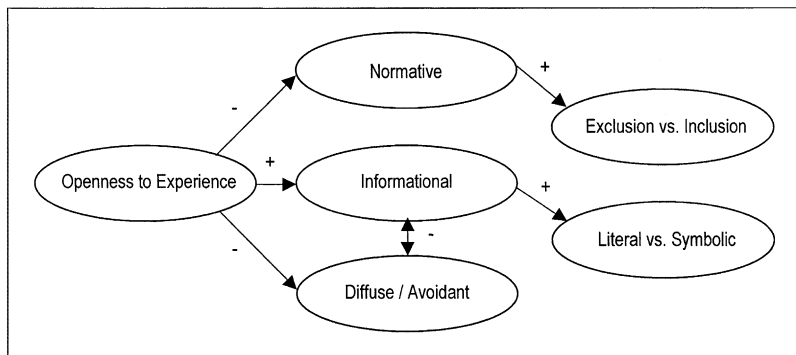


Fig. 1. Hypothetical model of relations between Openness to Experience, identity styles and religiosity dimensions.

Aims of the present study

The first aim is to replicate the proposed model (see Fig. 1). Although there were clear theoretical predictions underlying this model, the more detailed construction could have been partly data-driven. Hence, it might have been obtained to some extent by ‘capitalizing on chance’ (Jöreskog, 1993). To exclude this possibility, this model will be tested strictly confirmatory in a new sample of late adolescents. The second aim is to test its generalizability in a group of middle adolescents. In this way, we can check whether the underlying theory can be generalized to this specific age period.

Method

Participants

Two samples were gathered in Belgium. For this purpose, 171 second-year undergraduate students were asked (1) to complete our questionnaire and to hand one questionnaire to a university student of the same age but of the opposite gender, and (2) to distribute our questionnaire to a boy and a girl from the 10th grade. This took place in the context of a developmental psychology course. Although data gathering was not mandatory, it was made clear to the undergraduates that, in return, they would receive extensive feedback on all steps of the research process. Only three undergraduates refused to collect data. No students reported that the university student they initially contacted refused to participate and only four undergraduates reported that the secondary school student they initially contacted refused to participate and that they had to look for someone else. This resulted in two samples. Sample 1 ($N = 336$) consisted of university students. The mean age was 20 years ($s.d. = 1.43$) and 50% of the participants were male. Sample 2 ($N = 336$) consisted of pupils from a secondary school. The mean age was 16 years ($s.d. = 0.92$) and 50% of the participants were male. All participants had Belgian nationality and belonged to the Flemish-speaking part of the country. In Belgium, Roman Catholicism is the dominant religion, and although only about 10% of the Belgians attend church services regularly, about 90% are baptized Roman Catholics. So all participants were either Roman Catholics or had a fair knowledge of Roman Catholic doctrines and customs. Participants having more than three missing values on the NEO-FFI, the Identity Style Inventory or the Post-Critical Belief Scale were excluded from the analyses. In total, 4 participants needed to be removed from Sample 1 and 13 from Sample 2 (making $N = 332$ and 323, respectively). For subjects that were not removed, missing values were estimated with the EM-algorithm (see Schafer & Graham, 2002).

Measures

Personality

Participants completed the authorized Dutch/Flemish version of the NEO-FFI (60 items; Hoekstra, Ormel, & De Fruyt, 1996). The NEO-FFI contains the subscales Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience (12 items each). The

Table 1
Descriptive statistics of the manifest variables

Variable	Mean	S.D.	Minimum	Maximum
Sample 1				
Extraversion	3.62	0.53	2.00	4.92
Agreeableness	3.61	0.44	1.75	4.75
Conscientiousness	3.40	0.50	1.83	4.67
Neuroticism	2.86	0.67	1.08	4.50
Openness	3.44	0.53	2.00	4.72
Informational	3.20	0.53	2.00	4.90
Normative	2.92	0.44	1.60	4.50
Diffuse/Avoidant	2.58	0.50	1.30	4.30
Exclusion vs. Inclusion	0.00	1.00	−2.23	4.70
Literal vs. Symbolic	0.00	1.00	−2.90	2.42
Sample 2				
Extraversion	3.75	0.53	2.00	4.92
Agreeableness	3.48	0.44	1.67	4.83
Conscientiousness	3.28	0.51	1.50	4.67
Neuroticism	2.86	0.66	1.16	4.83
Openness	3.12	0.52	1.73	4.73
Informational	2.89	0.45	1.50	3.90
Normative	2.96	0.43	1.70	4.70
Diffuse/Avoidant	2.84	0.54	1.40	4.60
Exclusion vs. Inclusion	0.00	1.00	−2.51	3.72
Literal vs. Symbolic	0.00	1.00	−2.64	2.85

items were scored on a 5-point Likert scale. Estimates of internal consistency (Cronbach alpha's) were .82 and .79 for Extraversion, .72 and .67 for Agreeableness, .78 and .75 for Conscientiousness, .87 and .84 for Neuroticism, and .70 and .67 for Openness to Experience in Samples 1 and 2, respectively. Scores for each of these scales were obtained by averaging the scores on the item belonging to these scales. Descriptive statistics of all of these scales can be found in Table 1.

Identity styles

Participants completed a Flemish version of the Identity Style Inventory (ISI; Berzonsky, 1992). The ISI contains the subscales informational identity style (10 items, e.g., “I’ve spent a great deal of time thinking seriously about what I should do with my life”), normative identity style (10 items, e.g., “I prefer to deal with situations where I can rely on social norms and standards”), and diffuse/avoidant identity style (10 items, e.g., “I’m not really thinking about my future now; it’s still a long way off”). The translation was done according to the guidelines of the International Test Commission (Hambleton, 1994), using the translation back-translation procedure (Brislin, 1980). Differences between the back translated and the original version were minimal. A committee of bilingual research assistants decided on the final version (Van de Vijver & Leung, 1997). The items were scored on a 5-point Likert scale. Cronbach Alpha's were .71 and .60 for the

information style scale, .55 and .52 for the normative style scale, and .67 and .66 for the diffuse/avoidant style scale, in Sample 1 and 2, respectively. Scores for each of these scales were obtained by averaging the scores on the item belonging to these scales. Descriptive statistics of the scales can be found in [Table 1](#).

Religiosity

Participants completed the Post-Critical Belief Scale (PCBS, [Duriez et al., 2000](#); 33 items). The PCBS contains items measuring Literal Inclusion of Transcendence (e.g., “Only a priest can answer important religious questions”), Literal Exclusion of Transcendence (e.g., “In the end, faith is nothing more than a safety net for human fears”), Symbolic Exclusion of Transcendence (e.g., “There is no absolute meaning in life, only giving directions, which is different for every one of us”) and Symbolic Inclusion of Transcendence (e.g., “The Bible holds a deeper truth which can only be revealed by personal reflection”). The items were scored on a 7-point Likert scale. As in [Fontaine et al. \(2003\)](#), a level of acquiescence estimation was subtracted from the raw scores. A Principal Component Analysis (PCA) was then performed on the corrected scores. A scree test indicated a two-componential solution. However, because PCA allows freedom of rotation, structures obtained in different samples cannot be compared directly. Therefore, they were subjected to orthogonal Procrustes rotations ([McCrae, Zonderman, Costa, & Bond, 1996](#); [Schonemann, 1966](#)) towards the average structure reported by [Fontaine et al. \(2003\)](#). In both samples, Tucker’s Phi indices exceeded .90, suggesting good congruence ([Bentler & Bonett, 1980](#); [Van de Vijver & Leung, 1997](#)). The two components could be interpreted as Exclusion vs. Inclusion of Transcendence and Literal vs. Symbolic respectively. Estimates of internal consistency (theta; [Armor, 1974](#)) were .90 and .82 for Exclusion vs. Inclusion of Transcendence in Samples 1 and 2, respectively, and .88 and .85 for Literal vs. Symbolic in Samples 1 and 2, respectively. A high score on Exclusion vs. Inclusion of Transcendence indicates a tendency to include transcendence. A high Literal vs. Symbolic score indicates a tendency to deal with religion in a symbolic way. Descriptive statistics can be found in [Table 1](#).

Results

Confirmatory factor analyses

To adjust for measurement error, structural equation modeling with latent variables ([Bollen, 1989](#)) was performed using Lisrel 8.54 ([Jöreskog & Sörbom, 1996](#)). In all analyses, the maximum likelihood estimation method was used. Structural equation modeling requires multiple indicators for each latent construct. Instead of using separate items as indicators, in each sample, we created three parcels of items for each construct and used these as indicators of the latent constructs. For the Post-Critical Belief Scale, parceling consisted of dividing the items in groups of 11 items and carrying out a PCA on each of these groups to derive the dimensions of Exclusion vs. Inclusion of Transcendence and Literal vs. Symbolic, following the procedure described above. For all three 11-item groups, a scree test indicated a two-componential solution, which was then subjected to orthogonal Procrustes rotations towards the average structure as reported by [Fontaine et al. \(2003\)](#). In all three 11-item groups, Tucker’s Phi indices exceeded .90 for both components,

suggesting good congruence. In all three 11-item groups, the two resulting components could be interpreted Exclusion vs. Inclusion of Transcendence and Literal vs. Symbolic respectively. The three Exclusion vs. Inclusion of Transcendence components were then used as indicators of Exclusion vs. Inclusion of Transcendence, and the three Literal vs. Symbolic components were used as indicators of Literal vs. Symbolic. The covariance matrices among the parcels that were used as input can be obtained from the authors on request. To evaluate model fit, the Comparative Fit Index (CFI; Bentler, 1990) the Standardized Root Mean Squared Residual (SRMR; Bentler, 1995) and the chi-square (χ^2) were selected. According to Hu and Bentler (1999), a cut-off value close to .95 for CFI, or close to .90 according to Bentler (1990), in combination with a cut-off value close to .09 for SRMR indicate good model fit. In addition, a chi-square to degree of freedom ratio (χ^2/df) close to 3.0 indicates good model fit (Kline, 1998). Estimation of the measurement models by means of confirmatory factor analysis indicated that our models approached the criteria for adequate fit in both Samples 1 and 2 (CFI = .89 and .89; SRMR = .07 and .06; $\chi^2(357) = 794.24$ and 724.26 ; $\chi^2/df = 2.22$ and 2.03). All parcels had a high standardized factor loading on their corresponding latent factor. The measurement models are displayed in Appendix.

Correlational analyses

Correlations among the latent factors are displayed in Table 2. Due to the large sample size, the analyses attained high power. To preclude that small effects were flagged as significant, an alpha-level of .01 was used. Results show that there is little consistency in the way the five personality factors relate to the Exclusion vs. Inclusion of Transcendence dimension. Whereas this dimension was unrelated to all of these personality factors in the study of Duriez et al. (2004), this dimension related significantly negatively to Openness to Experience in both Samples 1 and 2. In addition, this dimension related significantly positively to Conscientiousness and Neuroticism in Sample 1. In line with the results of Duriez et al. (2004), in both samples, the Literal vs. Symbolic dimension was significantly positively related to Openness to Experience, and to a lesser extent also to Agreeableness. In Sample 1, a slightly significant positive relation with Conscientiousness also appeared. In addition, these analyses revealed relatively stable relations between the identity styles and the religiosity dimensions. In line with Duriez et al. (2004), Exclusion vs. Inclusion of Transcendence related significantly positively to the normative identity style (except in Sample 2) and Literal vs. Symbolic related significantly positively to the informational identity style and significantly negatively to the diffuse/avoidant identity style. Finally, in line with Duriez et al. (2004), Openness to Experience was positively related to the informational identity style, and negatively to both the normative identity style (except in Sample 2) and the diffuse/avoidant identity style. Although not of primary interest for the present study, some other relations between the identity styles and the personality factors were found as well (see Table 2).

Structural equation modeling

The proposed model (see Fig. 1) states that Openness to Experience is directly predictive of the way identity-relevant information is processed. The informational identity style would then predict the way religious phenomena are interpreted (Literal vs. Symbolic), and the normative

Table 2

Correlations between the latent variables (standard deviations can be found on the diagonal)

Sample 1	01	02	03	04	05	06	07	08	09	10
01 Extraversion	1.00									
02 Agreeableness	.37**	1.00								
03 Conscientiousness	.33**	.28**	1.00							
04 Neuroticism	-.46**	-.12	-.20	1.00						
05 Openness	.07	.19	-.08	.06	1.00					
06 Informational	.08	-.02	.07	.04	.75**	1.00				
07 Normative	.04	-.06	.50**	.04	-.39**	-.15	1.00			
08 Diffuse/Avoidant	-.22**	-.33**	-.53**	-.07	-.48**	-.47**	-.09	1.00		
09 Exclusion vs. Inclusion	.03	-.06	.20*	.18*	-.19**	.04	.34**	-.02	1.00	
10 Literal vs. Symbolic	.15	.36**	.19*	-.01	.46**	.43**	.06	-.31**	.03	1.00
Sample 2										
01 Extraversion	1.00									
02 Agreeableness	.47**	1.00								
03 Conscientiousness	.25**	.51**	1.00							
04 Neuroticism	-.52**	-.18	-.22*	1.00						
05 Openness	.02	.17	.06	.09	1.00					
06 Informational	-.09	-.02	.19	.12	.62**	1.00				
07 Normative	.11	.14	.59**	-.12	-.01	.34**	1.00			
08 Diffuse/Avoidant	.14	-.16	-.38**	-.04	-.39**	-.42**	.05	1.00		
09 Exclusion vs. Inclusion	-.06	.15	.18	.05	-.19*	.08	.05	-.10	1.00	
10 Literal vs. Symbolic	.10	.22*	.11	-.05	.39**	.40**	-.04	-.24**	.08	1.00

* $p < .01$.

** $p < .001$.

identity style would predict Exclusion vs. Inclusion of Transcendence. Finally, the model allows an error covariance between the informational and the diffuse/avoidant identity style, because these are known to relate negatively. In other words, the proposed model is a full mediation model (Baron & Kenny, 1986; Holmbeck, 1997) in which the direct paths from Openness to Experience to the religiosity dimensions are expected to turn out non-significant when the identity styles are inserted. In both samples, this model approached the criteria for adequate fit ($CFI = .91$ and $.91$; $SRMR = .07$ and $.07$; $\chi^2(125) = 319.36$ and 269.01 ; $\chi^2/df = 2.55$ and 2.15). The models are displayed in Fig. 2. Note that, in Sample 2, the paths to and from the normative identity style were not significant.

Mediational analyses

Fig. 2 shows that Openness to Experience relates to Literal vs. Symbolic via the informational identity style in Samples 1 and 2, and to Exclusion vs. Inclusion of Transcendence via the normative identity style in Sample 1. In order to determine whether the identity styles really mediate the relations between Openness to Experience and the religiosity dimensions, four conditions for strict mediation were checked (see Baron & Kenny, 1986). Condition 1: The

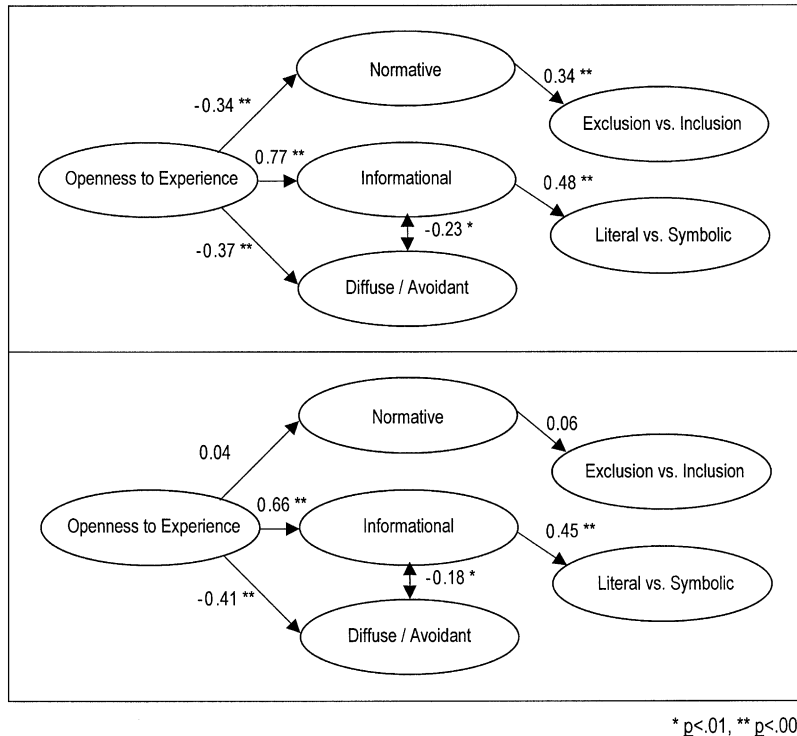


Fig. 2. Integrative model of relations between Openness to Experience, identity styles and religiosity dimensions in Samples 1 and 2, respectively (standardized path coefficients included). * $p < .01$, ** $p < .001$.

independent variable affects the dependent variable. Condition 2: The independent variable affects the mediator. Condition 3: The mediator affects the dependent variable, even after the independent variable is controlled. Condition 4: The effect of the independent on the dependent variable disappears when the mediator is controlled. First, in both samples, correlation analyses indicated a significant bivariate association between Openness to Experience and both religiosity dimensions (Condition 1; see Table 2). Second, the structural equation model shows that the effect of Openness to Experience on the normative identity style was significant in Sample 1 and that the effect of Openness to Experience on the informational identity style was significant in Samples 1 and 2 (Condition 2; see Fig. 2). Third, after correcting for Openness to Experience in the structural equation model, the effect of the normative identity style on Exclusion vs. Inclusion of Transcendence was significant in Sample 1 and the effect of the informational style on Literal vs. Symbolic was significant in Samples 1 and 2 (Condition 3; see Fig. 2). Finally, the structural equation model shows that, in Sample 1, the effect of Openness to Experience on Exclusion vs. Inclusion of Transcendence was non-significant when the normative identity style was inserted, and in both Samples 1 and 2, the effect of Openness to Experience on Literal vs. Symbolic was non-significant when the informational style was inserted. The Lagrange Multiplier Test (Hatcher, 1994) revealed that no path contributed significantly ($p < .01$) to the model fit (see Fig. 2) in addition to the hypothesized paths, and Sobel (1982) tests indicated mediation by the normative

identity style in Sample 1 ($Z = -2.80, p < .01$) and by the informational identity style in both Sample 1 ($Z = 5.62, p < .0001$) and Sample 2 ($Z = 4.33, p < .0001$). Hence, the normative identity style fully mediates the relation between Openness to Experience and Exclusion vs. Inclusion of Transcendence in Sample 1, and the informational identity style fully mediates the relation between Openness to Experience and Literal vs. Symbolic (Condition 4).

Discussion

The first aim of the present study was to strictly confirmatory test a model in which the relation between personality and religiosity during late adolescence is mediated by the social–cognitive processes involved in identity development (see Fig. 1). The second aim was to test whether the underlying theory can be extended to the period of middle adolescence. In the remainder of the section, attention will be paid to the similarities and differences between present and previous results (Duriez et al., 2004). In this respect, we will focus on the relations between religiosity and personality, the relations between religiosity and identity styles, and the integrated model. Finally, some theoretical and practical implications will be discussed, the limitations of the present study will be highlighted, and some suggestions for future research will be made.

Religiosity and personality

First, Duriez et al. (2004) have claimed that the small and inconsistent relations between religiosity and personality (see Saroglou, 2002b) disappear when the way in which religious contents are processed is taken into account. However, the present results do not fully confirm this. The Exclusion vs. Inclusion of Transcendence dimension was negatively related to Openness to Experience in both samples. This is in line with previous research that has shown that the Exclusion vs. Inclusion of Transcendence dimension is positively related to conservatism (Duriez, 2003a), a variable that also relates negatively to Openness to Experience (e.g., McCrae, 1996b; Van Hiel et al., 2000). Moreover, in Sample 1, Exclusion vs. Inclusion of Transcendence was positively related to Conscientiousness and Neuroticism. Second, based on the theories of Wulff (1991, 1997) and McCrae (1999), a positive relation was expected between Literal vs. Symbolic and Openness to Experience. This was clearly confirmed. In addition, a positive relation was found with Agreeableness. This is in line with the theorizing of McCrae (1999), with previous research that has shown that the Literal vs. Symbolic dimension relates to empathy (Duriez, 2004b), and with the findings of Duriez et al. (2004). Somewhat surprisingly, a positive relation with Conscientiousness was also found in Sample 1. However, the absence of this relation in Sample 2 and in the study of Duriez et al. (2004) suggests that this finding should probably be attributed to sample fluctuations.

Religiosity and identity styles

Apart from the relations between religiosity and personality, our findings indicate that the way adolescents process identity-relevant information is related in theoretically predictable ways to the two dimensions of the religiosity domain. First, adolescents who use an informational identity

style tend to interpret religious contents in a personal and symbolic way. This confirms the idea that information-oriented adolescents critically evaluate whether certain religious contents correspond to their personal self-definitions (Berzonsky, 1990). Second, a negative correlation was found between adolescents' use of a diffuse/avoidant identity style and the Literal vs. Symbolic dimension. Based on the theory of Berzonsky (1990), adolescents using a diffuse/avoidant identity style are indeed thought to interpret these religious contents in a literal way because they are likely to avoid questioning difficult and personal issues such as religion. Third, results suggest that late adolescents who use a normative identity style are more religious, at least in a context that is characterized by a strong religious tradition. However, this correlation did not occur among middle adolescents.

An integrated model

Because identity development is thought to be a major developmental task during adolescence, it was hypothesized that the relation between Openness to Experience and the religiosity dimensions would be mediated by the identity styles that adolescents use. The resulting model was found to fit the data. The influence of Openness to Experience on the religiosity dimensions was no longer significant once the identity styles were inserted. More specifically, the informational identity style was found to mediate the relation between Openness to Experience and Literal vs. Symbolic and, at least among late adolescents, the normative identity style mediated the relation between Openness to Experience and Exclusion vs. Inclusion of Transcendence. However, the latter finding did not extend to middle adolescence. Together with the finding that the normative identity style was unrelated to the Exclusion vs. Inclusion of Transcendence dimension among middle adolescents, this suggests that the normative identity style is predictive of the degree to which individuals describe themselves as religious during late but not during middle adolescence. Unfortunately, given the fact that the samples in this study were cross-sectional, it is impossible to distinguish age effects from cohort effects. Hence, it is impossible to discern whether the differences between both samples are due to age or sample differences. However, it can be hypothesized that the formation of a coherent sense of identity, and more specifically, the formation of an ideology (including a personal stance on religious issues) only becomes a major developmental task during late adolescence (Erikson, 1968; Marcia, 1980). Because this task is not yet that urgent during middle adolescence, individual differences in identity development during this age period may be more parsimoniously described by means of a distinction between those who are already actively seeking for a personal ideology (i.e., adolescents with an informational identity style) and those who are not yet concerned with ideological issues (i.e., adolescents with a diffuse/avoidant identity style). The impact of the normative identity style may only become apparent later in adolescence, when social demands emphasize the importance of ideological choices. Under these circumstances, a number of late adolescents who were previously not concerned with religious issues may turn to the norms and prescriptions held by significant others, explaining the relation between the normative identity style and Exclusion vs. Inclusion of Transcendence in late adolescence only. However, it is clear that further research on this issue is needed.

Theoretical and practical implications

The model proposed has important implications for future work on religiosity, both at a theoretical and at a practical level. First, the finding that the relation between personality factors (i.e., Openness to Experience) and religiosity dimensions is mediated by the social–cognitive processes involved in identity development gives more insight in the nature of this relation. It suggests that an individual's personality organizes how identity-relevant information is processed. This processing style, in turn, predicts the way religious information is processed. This well-interpretable pattern of findings is in contrast with the often inconsistent relations found in previous research on personality and religiosity (see Saroglou, 2002b). Second, by stressing the importance of differences in identity development in the prediction of religiosity dimensions, the proposed model has practical implications as well. There is growing evidence that it is possible to direct the identity formation process by means of intervention programs (Archer, 1994; Josselson, 1994; Ferrer et al., 2002). By promoting an informational identity style, adolescents can be expected to learn to deal with religious issues in a more symbolic way. Given the strong positive relations that were found between processing religious contents in a literal way and lack of moral competence (Duriez, 2003c; Duriez & Soenens, in press), racism (Duriez, 2004a), prejudice dispositions such as authoritarianism, social dominance and lack of empathy (Duriez, 2004b; Duriez & Van Hiel, 2002), cultural conservatism (Duriez, 2003a), and cognitive–motivational variables such as intolerance of ambiguity and closed-mindedness (Duriez, 2003b), intervening in the identity formation process by promoting and stimulating an informational identity style may remove the societal problems that are associated with religious literalism.

Limitations and suggestions

First, as already mentioned, an important limitation of the present study is that the two samples that were used are cross-sectional. As a consequence, the differences between both samples should be interpreted with caution. Such differences can either be due to age differences or to cohort and sample differences, and there is no way to distinguish between these two possible explanations. Therefore, future research among middle adolescents is needed to investigate whether the differences between late and middle adolescent that were found in this study are due to age differences or to cohort or other sample differences. Second, our study was limited to adolescence. Given the fact that Erikson (1968) has stressed that identity development is a life-long process that extends beyond adolescence into adulthood, future research might also test the proposed model among adults. In this way, the underlying theory might be expanded to encompass later stages in life. In this respect, it should be noted that Whitbourne, Sneed, and Skultety (2002) have recently proposed three ways of adapting one's identity in the context of changing social environments during adulthood, namely identity balance, identity accommodation and identity assimilation. Because these adulthood identity styles are conceptually similar to, respectively, the informational, the diffuse/avoidant and the normative oriented identity style, the questionnaire that was developed by Whitbourne et al. (2002) might provide a tool to study the proposed model in adult samples. Finally, our study was limited to a cultural setting that is, albeit highly secularized, characterized by a Roman Catholic tradition. Future research might test the proposed model in

Table 3

Parcel		01	02	03	04	05	06	07	08	09	10
01a	Extraversion	.86/.77	—	—	—	—	—	—	—	—	—
01b	Extraversion	.72/.73	—	—	—	—	—	—	—	—	—
01c	Extraversion	.78/.80	—	—	—	—	—	—	—	—	—
02a	Agreeableness	—	.68/.63	—	—	—	—	—	—	—	—
02b	Agreeableness	—	.70/.69	—	—	—	—	—	—	—	—
02c	Agreeableness	—	.79/.68	—	—	—	—	—	—	—	—
03a	Conscientiousness	—	—	.70/.71	—	—	—	—	—	—	—
03b	Conscientiousness	—	—	.74/.68	—	—	—	—	—	—	—
03c	Conscientiousness	—	—	.73/.75	—	—	—	—	—	—	—
04a	Neuroticism	—	—	—	.87/.77	—	—	—	—	—	—
04b	Neuroticism	—	—	—	.84/.80	—	—	—	—	—	—
04c	Neuroticism	—	—	—	.74/.80	—	—	—	—	—	—
05a	Openness	—	—	—	—	.78/.72	—	—	—	—	—
05b	Openness	—	—	—	—	.62/.71	—	—	—	—	—
05c	Openness	—	—	—	—	.64/.63	—	—	—	—	—
06a	Informational	—	—	—	—	—	.69/.61	—	—	—	—
06b	Informational	—	—	—	—	—	.66/.64	—	—	—	—
06c	Informational	—	—	—	—	—	.62/.63	—	—	—	—
07a	Normative	—	—	—	—	—	—	.55/.70	—	—	—
07b	Normative	—	—	—	—	—	—	.60/.46	—	—	—
07c	Normative	—	—	—	—	—	—	.59/.35	—	—	—
08a	Diffuse/Avoidant	—	—	—	—	—	—	—	.70/.70	—	—
08b	Diffuse/Avoidant	—	—	—	—	—	—	—	.62/.59	—	—
08c	Diffuse/Avoidant	—	—	—	—	—	—	—	.66/.57	—	—
09a	Exclusion—Inclusion	—	—	—	—	—	—	—	—	.81/.75	—
09b	Exclusion—Inclusion	—	—	—	—	—	—	—	—	.89/.77	—
09c	Exclusion—Inclusion	—	—	—	—	—	—	—	—	.88/.73	—
10a	Literal—Symbolic	—	—	—	—	—	—	—	—	—	.85/.83
10b	Literal—Symbolic	—	—	—	—	—	—	—	—	—	.85/.86
10c	Literal—Symbolic	—	—	—	—	—	—	—	—	—	.83/.80

cultures in which other religious denominations prevail, in order to check whether our model also applies in cultural settings that are characterized by another religious tradition, as well as in a context where no religious denomination at all is dominant, in order to check whether our model also applies in cultural settings that are not characterized by strong religious tradition.

Appendix

Standardized factor loadings of the parcels on their latent variables in Sample 1 and 2, respectively are given in Table 3.

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