Stability and Change in Religious Attitudes:

Evidence from an Adult and an Adolescent Sample

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Abstract

The present study examined continuity and change in the religious attitudes measured by the Post-Critical Belief Scale (PCBS) using longitudinal adult (N = 475) and adolescent (N = 613) data. Analyses indicated measurement and structural stability in both samples and small- to medium-sized mean-level changes in, respectively, the adult and adolescent sample. Differential stability was moderate among adolescents and high among adults. Findings offer evidence for the usefulness of the PCBS in longitudinal research. Moreover, results indicate that, with increasing age, a shift from more narrow-minded or literal religious attitudes towards more open-minded or symbolic attitudes occurs. Finally, consistent with the assumption that religious attitudes are deep-rooted aspects of the individual, religious attitudes seemed more likely to change during adolescence than during adulthood.

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Although recent research (Dezutter, Soenens, & Hutsebaut, 2006) pointed to the importance of religious attitudes for personality and psychosocial functioning, little is known about the stability and change of religious attitudes during the life course. In contrast to personality and identity development (Donnellan, Conger, & Burzette, 2007), the development of religious attitudes seems underinvestigated. Longitudinal studies on the development of religious attitudes are scarce and suffer from several limitations such as single item measures of religion (Argue, Johnson, & White, 1999) and short time lags (Lewis, Cruise, Mc Guckin, & Francis, 2006). In an initial attempt to remedy this, this study examined continuity and change in religious attitudes, using longitudinal data on adolescents and adults.

Measuring Religious Attitudes

Based on the model of Wulff (1997), Fontaine, Duriez, Luyten, and Hutsebaut (2003) developed the Post-Critical Belief Scale (PCBS). This instrument gauges religious attitudes in a secularized context and, hence, is suitable for use in a mixed population of believers and nonbelievers. Wulff's model distinguishes between a dimension referring to belief versus disbelief (Inclusion versus Exclusion of Transcendence) and a dimension referring to the processing of religious contents (Literal versus Symbolic). Crossing high and low scores on these dimensions results in four religious attitudes: Literal Inclusion, Literal Exclusion, Symbolic Inclusion, and Symbolic Exclusion. Literal Inclusion is characterized by a literal processing of religious contents and openness for transcendence and is typical of individuals defining themselves as religious and interpreting religious contents in a rather closed-minded way. Literal Exclusion is also characterized by a literal approach. However, this approach results in the exclusion of transcendence. This attitude is typical of individuals who cannot believe in the scientific improvable reality of religion. Symbolic Inclusion defines a religious attitude characterized by a more symbolic, open, and tolerant way of processing religious contents in which it is assumed that several interpretations of religious contents are possible. Symbolic Exclusion is a stance of disbelief that

is also characterized by a symbolic approach. Individuals with this attitude focus on the relativity of the belief system and the equality of all philosophical systems and therefore refrain from adhering to one belief system. For them, religiosity is only one way among many others to give meaning to life.

Fontaine et al. (2003) recently demonstrated that the PCBS adequately captures these four religious attitudes, and subsequent studies have shown that, when disentangling the Exclusion versus Inclusion of Transcendence dimension from the Literal versus Symbolic dimension, theoretically meaningful relations can be found between the religous attitudes and a number of adjustment and personality variables (for an overview, see Duriez, Dezutter, Neyrinck, & Hutsebaut, 2007).

Stability and Change

To date, no information is available regarding the temporal stability of the aforementioned religious attitudes. Because several researchers emphasized the necessity to implement a longitudinal perspective in research on religious attitudes (Koenig, McCullough, & Larson, 2001), the present study attempted to provide initial insight in possible changes occurring over the life span. More specifically, in a sample of adolescents and adults, we focused on four types of stability and change: Measurement stability, structural stability, differential stability, and absolute stability. Measurement stability, which is a prerequisite for the sound use of a scale in longitudinal research, implies that items represent the same latent construct across time and requires over-time equivalence of the factor loadings. Structural stability refers to the degree of over-time continuity in the correlations among constructs. Differential stability or rank-order stability assesses the degree to which individuals maintain their relative position on certain constructs over time. Finally, absolute stability assesses whether average levels increase, decrease, or remain stable over time.

In the present study, first, we hypothesized that the structure of religious attitudes would remain stable throughout adolescence and adulthood. As such, we expected correlations among the attitudes to be invariant over time (i.e., we expected a high degree of structural stability in both samples). Second, we expected that the relative ordering of individuals on a given religious attitude is generally

maintained over time (i.e., we expected moderate to high differential stability). However, in line with previous research showing that adolescence is a time of identity exploration and experimentation (Caspi, Roberts, & Shiner, 2005; Wright, 1982), we assumed that adolescents would be more likely to shift religious attitude, and, hence, display lower differential stability compared to adults. Finally, as for absolute stability, previous studies have suggested that maturational processes influence religious attitudes. Archer (1982) showed that, whereas younger adolescents typically adhere to religious contents in a strict, non-reflective fashion, older adolescents tend to reflect more about their belief, and hence, tend to deal with religious contents in a more symbolic way. Similarly, Ingersoll-Dayton, Krause, and Morgan (2002) argued that, during the life course, people move away from the rather narrow vision on religion they had when they were young towards greater openness to other religious beliefs. In line with this, personality research indicated that Openness to Experience – which was found to relate to the Literal versus Symbolic dimension (Duriez, Soenens, & Beyers, 2004) – increases across the life span (Robins, Fraley, Roberts, & Trzesniewski, 2001). Therefore, we expected religious attitudes to shift from literal to symbolic (i.e, we expected scores on symbolic attitudes to increase and scores on literal attitudes to decrease with age). Because adolescents find themselves in a period of experimentation, we expected more (rapid) change to occur in the adolescent sample than in the adult sample. Given the limited time lag within each sample, we expected this to be most visible when comparing the adolescent and adult sample.

<div align="center">Method</div>

Participants

The adolescent sample was collected in the Dutch-speaking part of Belgium. The first data wave was collected in the Fall of 2004 (Time 1) and consisted of 874 high-school students following an academic track (Mean age = 15; 51% male). The second wave was collected one year later (Time 2) and consisted of 700 students (Mean age = 16; 51% male). Approximately 613 participants (47% male) filled out the Post-Critical Belief Scale twice. A logistic regression analysis tested if sample attrition

(drop-out = 0; retention = 1) was predicted by age, gender, and the religious attitudes at Time 1. Retention was only predicted by being younger (odds ratio = 0.50, $p < .01$). Students participating in both waves did not differ on the religious attitudes from those who dropped-out. The adult sample was collected by asking adolescents to hand over a questionnaire to their parents. The first wave consisted of 1062 adults (Mean age = 44.03; 46.8% male) and the second wave consisted of 795 adults (Mean age = 43.97; 46.8% male). A total of 475 participants (46.4% male) filled out the Post-Critical Belief Scale twice. A logistic regression analysis indicated that adults participating in both waves did not differ from adults who dropped-out.

Measures

Participants completed the 18-item PCBS (Duriez, Soenens, & Hutsebaut, 2005), measuring Literal Inclusion (5 items, e.g., "I think that Bible stories should be taken literally, as they are written"), Literal Exclusion (5 items, e.g., "In the end, faith is nothing more than a safety net for human fears"), Symbolic Inclusion (4 items, e.g., "The Bible holds a deeper truth which can only be revealed by personal reflection"), and Symbolic Exclusion (4 items, e.g., "There is no absolute meaning in life, only giving directions, which is different for every one of us"). Items were scored on a 7-point Likert scale. Cronbach alphas in the adolescent sample were .72, .75, .81, and .69 at Time 1, and .77, .74, .82 and .71 at Time 2, respectively. In the adult sample, Cronbach alphas were .76, .78, .83, and .67 at Time 1 and .77, .82, .77 and .71 at Time 2, respectively.

Results

To avoid small correlations from being flagged as significant, correlations at the .01 level were considered significant.

Measurement Stability

A stepwise approach was used to test for measurement stability using Lisrel 8.53 (Jöreskog & Sörbom, 1993). First, a baseline model without longitudinal invariance assumptions was estimated. Second, the factor loadings of the same indicator variables were constrained to be equal across time.

To evaluate model fit, we inspected the Satorra-Bentler (1994) Scaled chi-square (SBS-χ^2) instead of the regular chi-square because the former corrects for data non-normality. To further evaluate model fit, the Comparative Fit Index (CFI) and the Root Mean Squared Error of Approximation (RMSEA) were selected. According to Hu and Bentler (1999), combined cut-off values close to .95 for CFI and .06 for RMSEA indicate good model fit. The model without constraints showed acceptable fit to the data in the adolescent (SBS-χ^2(548) = 1130.79; RMSEA = .04; CFI = .96) and the adult sample (SBS-χ^2(548) = 928.89; RMSEA = .04; CFI = .98). Setting factor loadings equivalent over time resulted in a significant loss of fit neither in the adolescent ($\Delta\chi^2$(18) = 23.77; p =.16) nor in the adult sample ($\Delta\chi^2$(18) = =17.99, p = .46). In sum, the criteria for measurement invariance were met.

Structural Stability

Table 1 presents the correlations between the religious attitudes at each measurement wave in both samples. At both waves, Symbolic Inclusion and Literal Exclusion related negatively. Literal Inclusion and Symbolic Exclusion related negatively, except for an unexpected positive correlation among adolescents in the first wave. To test the structural stability of these relations, we specified a single-indicator latent variable model with one latent variable associated with each scale score. First, we estimated paths among all latent variables and between each latent variable and its indicator, leading to a fully saturated model. Second, we re-estimated the model after setting the correlations between the distinct religious attitudes equal at each measurement wave. For the adults, this did not result in a significant loss in model fit ($\Delta\chi^2$(5)= 3.40, p = .62). For the adolescents, this did not result in a significant loss in model fit after freeing the correlation between Literal Inclusion and Symbolic Exclusion ($\Delta\chi^2$(4) = 4.00, p = .41). In sum, correlations among the religious attitudes were relatively stable across time.

Differential Stability

In the adolescent sample, stability coefficients were moderate, ranging between .45 and .66 (all ps < .001; see Table 1). In the adult sample, stability coefficients were rather high, ranging between .74 and .81 (all ps < .001; see Table 1).

Absolute Stability

Absolute stability or mean-level changes were evaluated using repeated measures analysis of variance. Table 2 provides means, *F*-values, and eta squared (ή²). In the adolescent sample, Literal Inclusion showed a decrease while Symbolic Inclusion and Literal Exclusion showed an increase. In the adult sample, an increase in Symbolic Exclusion was observed. Effect sizes were somewhat larger in the adolescent than in the adult sample. In addition, we compared the mean scores of adults and adolescents within each wave (see Table 2). Both at Times 1 and 2, the adolescent mean score was lower for Symbolic Inclusion (t (1086) = -18.80, p < .001; t (1086) = -16.09, p < .001) and Symbolic Exclusion (t (1086) = -13.93, p < .001; t (1086) = -15.16, p < .001). In contrast, the adolescent mean score was higher for Literal Exclusion at both times (t (1086) = 4.63, p < .001; t (1086) = 12.63, p < .001). For Literal Inclusion, adolescents scored lower at Time 2 (t (1086) = -3.71, p < .001).

Discussion

The present research examined continuity and change in the religious attitudes measured in the PCBS using longitudinal data on adults and adolescents. The question whether the PCBS can be used in longitudinal research was assessed by examining its measurement and structural stability. In both samples, the criteria for measurement invariance were met and the intercorrelations among the religious attitudes remained stable over time, reflecting a high level of structural stability. In addition, two extra types of stability versus change were assessed to investigate predictions made from a developmental perspective. More specifically, differential stability was examined to check whether religious attitudes are deep-rooted aspects of the individual, and absolute stability was examined to test the hypothesis that people would shy away from literal beliefs towards more symbolic forms of belief as they age. The moderate to high rank-order stability in both samples confirmed the hypothesis that religious attitudes are core aspects of the individual. The finding that rank-order stability increased with age was in line with findings in personality research showing increasing stability in personality with increasing age. In addition, analyses of mean-level-changes partially confirmed the hypothesis that, with increasing age, a

shift from a more literal religious attitude towards a more symbolic attitude would occur. The expected mean-level changes were more pronounced when comparing the adolescent with the adult sample than when making over-time comparisons within each sample. This might be due to the relatively short time lag between the measurement moments. Finally, effect sizes showed that change was more prominent among adolescents than among adults, which is in accordance with the concept of adolescence as a developmental stage of exploration and experimentation (Wright, 1982).

Limitations

The present study shows a number of limitations. First, it consisted of only two data waves. Although two-wave longitudinal studies can provide information about the amount of change across a given period of time, they do not allow charting precise change trajectories. As such, the use of multiple data waves is recommended in studies on change and stability (Willett, Singer, & Martin, 1998). Second, when comparing the adolescent and adult samples, we were not able to distinguish between cohort and developmental effects. The observed differences in mean-level scores between both samples might reflect cohort effects and not so much developmental effects. Longitudinal studies following adolescents well into adulthood are necessary to investigate genuine developmental change. Finally, all participants were from a Western secularized country with a Catholic history. Future research should investigate whether our results generalize to countries with different religious features. Despite these limitations, the present study provides valuable information regarding measurement and structural stability of the attitudes measured in the PCBS, suggesting that this scale can be used in longitudinal studies aimed at investigating attitudinal change across the life span.

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Table 1   *Correlations between Religious Attitudes at Time 1 (T1) and Time 2 (T2) in the Adolescent*

Sample (Above Diagonal) and the Adult Sample (Below Diagonal)

	1	2	3	4	5	6	7	8
1. T1 Literal Inclusion	-	.54**	-.06	.14**	.63**	.30**	-.12*	-.16**
2. T1 Symbolic Inclusion	.22**	-	-.28**	.59**	.22**	.66**	-.36**	.25**
3. T1 Literal Exclusion	.02	-.63**	-	.36**	-.15**	-.36**	.49**	-.05
4. T1 Symbolic Exclusion	-.38**	.49**	.02	-	-.19**	.28**	.04	.45**
5. T2 Literal Inclusion	.79**	.18**	-.06	-.30**	-	.42**	-.07	-.16**
6. T2 Symbolic Inclusion	.20**	.81**	-.54**	.41**	.33**	-	-.36**	.50**
7. T2 Literal Exclusion	-.11	-.57**	.74**	-.11*	-.09	-.63**	-	.39**
8. T2 Symbolic Exclusion	-.34**	.43**	-.05	.79**	-.36**	.44**	-.02	-

Note. * $p < .01$. ** $p < .001$.

Table 2   *Mean-level Change in Religious Attitudes over Time*

Adolescent sample	Time 1	Time 2	*F*	*Eta²*
Literal Inclusion	2.52	2.25	59.04**	.09
Symbolic Inclusion	2.40	2.61	39.59**	.06
Literal Exclusion	2.99	3.31	64.93**	.10
Symbolic Exclusion	3.78	3.81	0.54	.00
Adult sample	Time 1	Time 2	*F*	
Literal Inclusion	2.40	2.40	0.00	.00
Symbolic Inclusion	3.37	3.40	0.66	.00
Literal Exclusion	2.47	2.38	3.95	.02
Symbolic Exclusion	4.51	4.66	19.00**	.08

Note. Coëfficients are factorscores. * $p < .01$, ** $p < .001$.