

# The Assessment of Spirituality and Religious Sentiments (ASPIRES) Examining a Spiritual Transcendence Nomological Net in Polish Context

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The Assessment of Spirituality and Religious Sentiments (ASPIRES) scale assesses religiousness and spirituality (R/S) as universal psychological constructs. The current study presents replication of spirituality assessment as proposed by the ASPIRES model and examination of relationships among religiousness, spirituality, agency, communion and materialism in the Polish cultural context. Using multiple samples and methods (total  $N = 1,797$ ), the factor structure, reliability, cross-observer convergence, metric equivalence, and incremental validity of the ASPIRES scales over personality were examined. The results confirmed the psychometric, interpretive, and predictive utility of the ASPIRES in non-Western, culturally homogenous cultural context. Moreover, the pattern of correlations among religiosity, spirituality, agency, communion, and materialism indicated distinctiveness between religiosity and spirituality. The value of a universal measure of R/S constructs for the psychology of religion was discussed.

*Keywords:* ASPIRES, cross-cultural generalizability, spirituality, religiousness, incremental validity

The assessment of religious and spiritual (R/S) constructs is a well-developed and diverse area, as there are hundreds of instruments designed to capture a wide array of R/S variables (Hill, 2013; Hill & Hood, 1999; Hill & Pargament, 2003). Kapuscinski and Masters (2010) noted some serious empirical issues in the assessment of spirituality, including the lack of developed psychological models for understanding R/S constructs, lack of normative data, no validated observer rating versions, and the infrequent use of multivariate empirical models that examine both the incremental validity of scales over established psychological constructs and the potential causal role such variables play in affecting psycho-

logical systems. Also, Hill (2013) indicated a lack of sufficient cultural variables in many questionnaires, further limiting the generalizability of many scales. In order to address methodological, conceptual and empirical issues, the Assessment of Spirituality and Religious Sentiments (ASPIRES; Piedmont, 2010) scale was developed. The purpose of this report was to examine the utility of the instrument in a Polish sample and to establish construct validity by examining its relationships to agency, communion, and materialism.

## Overview of the ASPIRES

The goal for developing the ASPIRES was to create a universal psychological measure of the numinous (the numinous represents a descriptive term for the domain of R/S functioning including elements of transcendence, spirituality, religiousness, and prayers we say, the rituals we perform, mysticism, etc.). This instrument would need to be embedded within current psychological models, evidence incremental predictive validity over established psychological constructs, be nondenominational, be useful in predicting psychosocial phenomena, and help us understand R/S constructs as universal motivational phenomena (see Piedmont, 1999, 2010, 2012 for more details on the development of the ASPIRES scales).

To meet these goals, five empirical criteria were used in the scale development. First, it was important to demonstrate that numinous constructs were independent of existing personality dimensions as defined by the five-factor model (FFM). If the numinous may be, to be of scientific interest it would need to represent a unique psychological reality that is nonreduc-

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This article was published Online First June 27, 2019.

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This research project was financed by Research Grant 2017/01/X/HS6/01320 issued by the National Science Center in Poland. The order of authors' names reflects their contribution to the paper. Among the first two authors with equal contribution, alphabetical order was used. Ralph L. Piedmont is the developer and publisher of the Assessment of Spirituality and Religious Sentiments (ASPIRES) scale. He receives royalties from the sale of this instrument.

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personality qualities. Second, the obtained numinous dimension should have comparable generality as the existing five domains of the FFM and be sufficiently broad to encompass multiple facets. Third, the scale should demonstrate cross-observer validity, indicating that the constructs have consensual validity and sufficient importance to find expression in overt behavior. Fourth, the scales should demonstrate incremental validity over the FFM in predicting important outcomes. Finally, the scales should demonstrate cross-faith, cross-cultural generalizability. By grounding the constructs within a robust empirical model of personality, the resulting scales would present themselves as empirically and conceptually useful constructs. By demonstrating their unique relatedness to both psychosocial and spiritual/religious criteria, the scales would provide an empirical operationalization of what the numinous is, and what it is not (Piedmont & Wilkins, 2013).

There are two putative dimensions of the numinous assessed by the ASPIRES: Spiritual Transcendence (ST) and Religious Sentiments (RS). ST represents an operant motivational construct reflecting an individual's efforts to create a broad sense of personal meaning for his or her life. There are three correlated facet scales to ST: Prayer Fulfillment (PF), the ability to create a personal space that enables one to feel a positive connection to some larger reality; Universality (UN), the belief in a larger meaning and purpose to life; and Connectedness (CN), feelings of belonging and responsibility to a larger human reality that cuts across generations and groups (Piedmont, 2010, 2012).

The RS component is composed of two domains: Religious Involvement (RI), which reflects how actively involved a person is in performing various religious rituals and activities (e.g., frequency of attending religious services) and Religious Crisis (RC), which examines whether a person may be experiencing problems or conflicts with the God of their understanding and/or faith community. Both domains examine the value an individual attaches to his or her involvement in specific, ritual-oriented, religious activities (Piedmont, 2012). Motivational in nature, the RS component represents a sentiment: a learned set of tendencies that develop our social traditions and educational experiences. There is evidence that the ST and RS domains are different and are mediated by different psychological systems (Piedmont, Ciarrocchi, Dy-Liacco, & Williams, 2009). Research has also shown the predictive incremental validity of these scales (e.g., Bartlett, Piedmont, Bilderback, Matsumoto, & Bathon, 2003; Golden, Piedmont, Ciarrocchi, & Rodgeron, 2004), including the predictive importance of RC for psychopathology (Piedmont et al., 2007).

There are several national validated versions of the scale: Tagalog, a native language of the Philippines (Piedmont, 2007); Korean (Cho, 2004), and the Czech Republic (Rican & Janosova, 2010). An English version of the ASPIRES was used among an Indian sample of Hindus, Muslims, and Christians (Piedmont & Leach, 2002) and a sample of Buddhists and Christians in Sri Lanka (Piedmont, Werdel, & Fernando, 2009). Factor analyses recovered the putative structure of the RS and ST scales. However, previous adaptations focused just on replication of structure and metric invariance of the scale, without broader assessment of predictive values of ST. Less frequently examined has been the cross-observer validity of the instrument. Demonstrating the self-report scores converge significantly with observer-ratings is a crucial piece of validity information for the assessment of personality traits. Such convergence documents that the construct as-

essed by the scale find expression in actual behavior and that these behaviors can be recognized by others as reflecting the underlying assessed construct (e.g., the scale has consensual validity). The manual for the ASPIRES provides strong evidence of consensual validity, with cross-observer coefficients being as high as those found for the FFM personality domains. This study will explicitly examine this aspect of the ASPIRES to determine the extent to which those items measuring the numinous are well understood by Polish individuals.

### Nomological Net of the ST and RS Scales: Agency and Communion

ST is assumed to be basic personality trait, and therefore it should be associated to basic human orientations and motives. Bakan (1966) proposed a distinction between agency, (i.e., focus on achieving goals and task outcomes), and communion, (i.e., focus on social interactions and maintaining relationship). He assumed that these orientations exist both in regular and unmitigated (i.e., pathological) forms (see also Helgeson & Fritz, 1999).

As ST is an expression of transcending self and focuses on feeling a part of community, it is hypothesized to be associated with communion rather than agency. Unmitigated agency is expressed as excessive focus on self-interest, and a potential to violate the interests of others. Unmitigated communion, on the contrary, is associated to fusion of self-identity with group identity and, as a consequence, a lack of interest in protecting one's self-interest (Helgeson & Fritz, 1999). It is of particular interest to examine how spirituality and religiosity are related to agency and communion, both in regular and unmitigated forms. As a basic personality trait, ST should be associated with the regular form of communion. Because some religious traditions stress the value of self-sacrifice (Kettle, 2004), it is possible that higher religiosity could be associated with both regular and unmitigated forms of communion, depending on the faith denomination.

### Nomological Net of the ST and RS Scales: Materialism

Materialism seems to be logically opposite to spirituality (Grouzet et al., 2005; Piedmont, 1999; Piedmont, Wilkins, & Hollwitz, 2013). Numerous studies have noted that human goals related to spirituality/religion are opposite to the goals related to achieving high status, power, and money. Burroughs and Rindfleisch (2002) indicated empirically that materialism is negatively related to collective goals, like religion and family. Furthermore, ST and RI were negatively correlated with materialism (Piedmont et al., 2013; Żemojtel-Piotrowska, Klimaszewska, & Piotrowski, 2010), and activation of spiritual/religious content decreased conspicuous consumption (Stillman, Fincham, Vohs, Lambert, & Phillips, 2012). However, in many earlier studies, religion and spirituality were poorly distinguished from one another. The newest research suggests that spirituality, but not religion, decreases willingness to purchase goods expressing materialism (Żemojtel-Piotrowska & Piotrowski, 2016). Therefore, examining the relationship between the numinous and materialism seems to be important for determining what spirituality is and what it is not psychologically, as well for identifying the differences between religiosity and spirituality. Because the ASPIRES differentiates

between spirituality and religiousness, it is an ideal instrument for differentiating the impact of these numinous constructs.

### Current Study

The main aim of the current study was to test the applicability of the ASPIRES in a European context, specifically, to Polish culture and to extend past work on the ASPIRES by systematically examining the differential relatedness of numinous constructs to important psychosocial outcomes. Poland is a very Christian nation with a homogenous culture (Boguszewski, 2012; Vołenski & Grzymała-Moszczyńska, 1997). The ASPIRES was developed with mostly Christian samples and successfully adapted in many other Christian populations, however the adaptation process was mostly based on the assessment and generalizability of the structure of the ASPIRES. To date, only within United States samples has any evaluation of the full structural model been implemented.

The following four issues were examined in this report: (a) the factor structure of the scale and its comparability to United States normative data, (b) correlations with age and gender, (c) self-other convergence, and (d) the construct and incremental validity of the ASPIRES while controlling for the predictive effects of personality. In addition, we examined how ST and religiosity were related to materialism and the basic human orientations of agency and communion. Specifically, we hypothesized that because ST is a personality dimension, it should evidence a stronger association with agency and communion than RI, which is more of a learned, cognitive expectancy. Such a finding would help to support the contention that RI and ST are moderated by different psychological systems. Further, it was hypothesized that ST would be negatively related to materialism. However, because RI is a learned value that is infused with cultural expectancies and priorities, and that there is evidence that in Poland materialistic values (like fame, image, affluence) are widespread among people (Zawadzka, 2006), we further hypothesized a positive relationship between RS and materialism.

Therefore, our research aims were threefold: (a) to replicate the ASPIRES' measurement model in a culturally homogenous, highly religious, posttransitional and moderately affluent, non-Western European society; (b) to provide further evidence of the distinctiveness between RS and ST by examining their relationship with basic human orientation (agency and communion) and materialism; and (c) to demonstrate the cross-cultural relevance of the ASPIRES to a general Polish adult sample, underscoring the universal nature of the numinous constructs contained in this measure.

## Method

### Participants

Participants were aggregated from four different studies creating a total sample of 1,797 individuals (693 men and 1,089 women, 15 did not indicate a gender), ranging in age from 15 to 73 years of age ( $M = 27.61$ ). Psychometric analyses of the ASPIRES is based on the aggregation of item responses obtained from all samples. The samples are outlined individually.

**General adult/student sample.** This sample consisted of 1,704 students and nonstudent adults (664 men and 1,025 women, 15 did not indicate a gender) recruited either through courses or via

an online survey. Students were from undergraduate or graduate courses at the University of Gdańsk, whereas the adults represented a sample of convenience. One thousand three hundred thirty-six (78%) participants were Catholic, 60 from other Christian tradition, 43 from other religious tradition, 159 atheists or agnostics. 106 participants did not answer question about their denomination. One subgroup of 157 students from the general adult/student sample (15 men, 137 women, 5 unknown) completed the ASPIRES along with the Religious Orientations Scale, Materialism Scale, and Agency and Communion Scale. A second subgroup of 200 adults from the general adult/student sample (93 men and 107 women) completed the ASPIRES along with the NEO Five-Factor Inventory (NEO-FFI) and measures of purpose in life, life satisfaction, materialism, positive and negative affect, agency and communion, and several attitudinal scales. Third, the biggest subgroup did not completed scales other than ASPIRES.

**Peer rater sample.** The 93 participants (29 men and 64 women) were students at the University of Gdańsk. They were asked to obtain two individuals who knew them well to also rate them on the ASPIRES. They obtained 184 raters who knew them on average for 13.33 years ( $SD = 8.80$ , range 6 months to 43 years). Of the raters, 47.3% were close family members, 37% were close friends, 14.7% were partners, and the remaining 1.1% were identified as other acquaintances.

### Measures

**ASPIRES.** Developed by Piedmont (2010), this 35-item scale contains two domains: RS and ST. The RS domain assesses two scales: RI which contains nine items that assess the extent to which an individual is involved in practicing the rituals and activities associated with their denomination (e.g., "How often do you pray?"). Answers range from *Never* to *Several Times a Week* or *Quite Often*; and RC which contains four items that assess the extent to which an individual feels distress in their relationship to God (e.g., "I feel that God is punishing me"). Answers range from 1 (*strongly disagree*) to 5 (*strongly agree*) on a Likert-type scale. The manual noted alpha reliabilities of .89 for RI scores and .78 for RC scores (Piedmont, 2010).

The ST scale contains 23 items which respondents respond to on a 5-point Likert-type scale ranging from *Strongly Agree* to *Strongly Disagree*. Items are balanced to control for acquiescence effects. The ST scale measures three correlated facets: PF, the ability to create a personal space that enables one to feel a positive connection to some larger reality; UN, the belief in a larger meaning and purpose to life; and CN, feelings of belonging and responsibility to a larger human reality that cuts across generations and groups. The reliabilities of original version items were, respectively, .95, .86, .60, and .93 for PF, UN, CN, and the Total ST score (Cronbach's alpha; Piedmont, 2010). Cronbach's alphas for all the ASPIRES scales in current study are reported in the Table 1.

**Affective Balance Scale.** This scale (Bradburn, 1969; Polish version; Czapinski, 1998) serves as a measure of experiencing positive and negative emotions. It consists of 10 items, five related to positive emotions, and five to negative emotions. Respondents are asked how often they experienced each particular emotion during the past year. Responses were given on a 1 (*never*) to 5 (*very often*) Likert-type scale. In the current research internal

Table 1  
 Polish ASPIRES Descriptive Statistics Compared to United States (US) Normative Data

ASPIRES scale	Polish sample ( <i>N</i> = 1,704) <sup>a</sup>			US normative data ( <i>N</i> = 2,989)		<i>T</i> score <sup>b</sup>
	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	
Prayer Fulfillment	29.54	8.67	.91	34.43	10.17	45.19
Universality	22.21	4.75	.75	24.39	5.87	46.29
Connectedness	19.36	4.05	.63	21.09	4.04	45.72
Total ST score	71.12	14.08	.89	79.35	17.17	45.21
Religious Involvement	-2.06	4.82	.76	.01	6.2	46.67
Religious Crisis	9.02	2.86	.66	7.23	2.9	56.17

*Note.* ASPIRES = Assessment of Spirituality and Religious Sentiments Scale; ST = Spiritual Transcendence.  
<sup>a</sup> Raw scores not adjusted for age or gender. <sup>b</sup> *T* scores based on overall normative information provided by Piedmont (2010) having an *M* = 50 and *SD* = 10.

consistency was  $\alpha = .80$  for the Positive Emotions scale items and  $\alpha = .79$  for the Negative Emotions scale items; the correlation between the scales was  $r = -.39, p < .001$ .

**Materialism Scale.** This scale (Zawadzka, 2006) serves as a measure of materialism, defined as a willingness to possess many goods and experiencing satisfaction with possessing them. Scale answers range from 1 (*I absolutely agree*) to 5 (*I absolutely disagree*), and one item is reversed scored. The current study employed the five-item short version. Scores have been shown to possess adequate validity and reliability (Zawadzka, 2006). In the current study, scale reliability was  $\alpha = .74$ .

**NEO-FFI.** The NEO-FFI (Costa & McCrae, 1992; Polish version; Zawadzki, Strelau, Szczepaniak, & Śliwińska, 1998) has been translated into and validated in Polish samples (Zawadzki et al., 1998). The NEO-FFI contains 60 items that assess the five basic dimensions of personality: Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C). Each scale contains 12 items, and items are differentially reflected to control for acquiescence effects. Participants answer on 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Reliability estimates for scores in a Polish sample were satisfactory and the factor structure equivalent to the original scale (Zawadzki et al., 1998). In the current study, alpha reliabilities for scores were: *N* = .86, *E* = .75, *O* = .63, *A* = .76, *C* = .85 (Cronbach's alpha).

**Religious Orientations Scale.** The Religious Orientation Scale (Allport & Ross, 1967; Polish version; Socha, 1999) is based on a three-factor model of personal religion (i.e., intrinsic, extrinsic, and quest). Intrinsic orientation is defined as using religion as a meaning-endowing framework for which all life is understood (Allport & Ross, 1967). Extrinsic orientation is defined as one's use of religion for self-serving, utilitarian purposes. The quest dimension is defined as an honest, questioning approach to religion. It consists of 32 items scored on a scale ranged from 1 (*disagree*) to 5 (*agree*). In the current research internal consistency was  $\alpha = .59$  for extrinsic scale scores,  $\alpha = .85$  for intrinsic scale scores, and  $\alpha = .69$  for quest scale scores.

**Satisfaction With Life Scale.** This five-item scale serves as a measure of global life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985; Polish version; Juczyński, 2001). Items are answered on the scale ranging from 1 (*I strongly disagree*) to 7 (*I strongly agree*). Reliability of scale scores was high,  $\alpha = .87$

(Pavot & Diener, 1993). The validity of scale scores have been demonstrated in numerous studies (Pavot & Diener, 1993).

**The Purpose in Life Scale (PLS).** This 20-item scale (Crumbaugh, 1968; Polish version by Płużek, unpublished translation; Szałański & Nowak, 1995) measures a person's "will to meaning" as construed by Victor Frankl (1966). Responses are given on a 7-point Likert-type scale, the poles of which vary according to the question. Guttman (1996) reviewed the research literature on this scale, which provides basic validity data, and documents the scale's ability to capture the degree to which an individual has developed a personal sense of meaning in life. Alpha reliability of the PLS scores in this sample was .93.

**Agency-Communion Scale.** This 30-item scale (Wojciszke & Szlendak, 2010) provides positive descriptions of human traits. Fifteen items relate to communion (e.g., helpful, friendly) and 15 items relate to agency (e.g., ambitious, effective). Participants indicate the extent to which each trait characterizes them on a 1 (*completely not*) to 7 (*absolutely yes*) Likert-type scale. Alpha reliabilities for scores in the current study were .90 for communion and .89 for agency.

**Unmitigated Agency/Communion Scale.** This scale serves as a measure of two attitudes toward interpersonal relations and self-actions: unhindered communion and unhindered agency (Wojciszke & Szlendak, 2010). Unhindered communion is manifested in resigning from individual goals and fusion with own group, without respecting one's own individuality. Unhindered agency is manifested in pursuit to one's own goals without respecting others and social restrictions (Helgeson & Fritz, 1999). The scale consists of 22 items, answered on a Likert-type scale ranging from 1 (*definitely no*) to 7 (*definitely yes*). In the current study the reliability of unmitigated agency items was  $\alpha = .72$  and unmitigated communion items was  $\alpha = .86$ .

**Moral attitudes.** Moral attitudes were examined by asking questions about important ethical concerns, such as attitudes toward abortion, capital punishment, euthanasia, and homosexuals adopting children. Individuals rated their support for each of these issues on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

## Procedure

**Translation process.** A multistep process was implemented for translating the ASPIRES into Polish. Initially, two independent

translators prepared the Polish version of the scale. The aim was to keep the original meaning of items rather than an accurate “word-by-word” translation. Then two other persons not familiar with original ASPIRES version, translated the Polish version back to English. The back-translation was reviewed by the author of the ASPIRES and items that were not clear or did not satisfactorily capture the constructs being assessed were identified and new translations were made. This process was repeated until the author of the ASPIRES deemed the version satisfactory.

**Validation process.** Student samples were recruited at Gdańsk University and Social Sciences and Humanities Warsaw School. Participants were told that the study examined the relations between spirituality, religiosity and other psychological variables. Materials were completed in groups of 15 to 50. Participants received class credit for their participation.

The general sample of adult Poles was recruited by online survey with support of a professional research agency (GG Opinion Detector supported by ARIADNA research panel). Participants received compensation—points in loyalty program which could be exchanged for small material rewards.

The peer-rating sample was recruited from among students at Gdańsk University (psychology, philology, and political sciences). Students were asked to collect data from family members, friends, or partners who have known them at least for 2 years. The order of presentation of scales in all samples was done randomly to control for any potential order effects.

## Results

### Descriptive Statistics

Table 1 presents the descriptive statistics for the general adult/student sample for all of the ASPIRES scales. Raw scores were standardized into *T* scores with a mean of 50 and *SD* = 10 based on normative United States data (Piedmont, 2010). Scores on all scales, except RC, were in the average range (*T* scores between 45 and 55). On the RC scale, scores were in the high range, suggesting this Polish sample endorsed higher levels of religious struggles than found in United States data. Overall, these data suggest that the Polish sample evidenced similar mean levels as found in United States data. All alpha reliabilities for scores were acceptable. Of note was the alpha for CN items ( $\alpha = .63$ ); while seemingly low, it was consistent with both other United States samples and with its normative value ( $\alpha = .60$ ; Piedmont, 2010).

A one-way multivariate analysis of variance, using gender as the grouping variable and raw scores on the five ASPIRES scales as the outcome variables (overall *ST* scores were examined separately using a one-way analysis of variance), found a significant gender effect, Wilk's  $\lambda = .972$ , multivariate  $F(5, 1683) = 9.70$ ,  $p < .001$ . Table 2 presents the univariate findings. Women tended to score higher than men on all scales except RI and RC, where they scored lower than men. Age was found to correlate with only CN and RI, with older individuals scoring higher on RI and younger subjects scoring higher on CN. These findings support the need to norm scores within these dimensions.

### Structural Validity and Comparability

**Confirmatory factor analyses.** In order to determine whether the normative structure of the ASPIRES scales could be recovered in this Polish sample, two confirmatory analyses were performed; one for the RS items and the other for the ST items. For the first analysis, the RS items were subjected to a principal components analysis and two factors were extracted. These factors were then subjected to an orthogonal procrustean rotation (Schönemann, 1966), using normative data presented by Piedmont (2010) as the target. Congruence coefficients were obtained and evaluated against normative values (see Piedmont, Werdel, et al., 2009).

As can be seen in Table 3, both factors were recovered (congruence coefficients of .93 and .90 for RI and RC, respectively) and closely replicated United States normative values. The overall fit coefficient of .93 indicated that excellent fit. Overall, Polish respondents appear to understand and interpret these scales in a manner that is similar to the United States normative group.

A similar analysis was conducted for the ST items, where three factors were extracted and subjected to an orthogonal procrustean rotation. As shown in Table 4, all three dimensions were recovered, indicating significant convergence with United States normative values. Thus, users can be confident that the ST scale items were interpreted and understood in a manner very similar to normative values. An inspection of the item congruence coefficients indicated that only 10 of the 23 items were significantly replicated. The CN scale items were the least well recovered, indicating that these items may have somewhat different meanings in this sample. Nonetheless, the overall congruence coefficient of .85 suggests that users can have confidence that the facet scales of the ST domain can be reliably recovered.

Table 2  
Gender Differences on ASPIRES Scales and Correlations With Age

ASPIRES Scale	Men ( <i>N</i> = 664)		Women ( <i>N</i> = 1,025)		<i>F</i>	<i>r</i> <sub>age</sub>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Prayer Fulfillment	28.89	8.64	30.50	8.59	14.20***	.04
Universality	22.29	4.60	23.47	4.30	28.76***	.02
Connectedness	19.50	3.64	20.57	3.74	33.98***	-.12***
Total Transcendence	70.67	13.41	74.54	13.66	33.13***	-.01
Religious Involvement	-2.28	4.81	-1.57	4.47	9.53***	.09***
Religious Crisis	9.21	2.89	8.82	2.77	8.00**	.04

Note. ASPIRES = Assessment of Spirituality and Religious Sentiments Scale.  
\*\*  $p < .01$ . \*\*\*  $p < .001$ , two-tailed.

Table 3  
Principal Components Analysis Using an Orthogonal Procrustes Rotation of the Polish Religious Sentiments Items

Religious Sentiments item	Component		Item congruence
	1	2	
Frequency read Bible	<b>.61</b>	-.17	.91
Frequency read religious literature	<b>.51</b>	-.18	.92
Frequency prayer	<b>.79</b>	-.03	1.00***
Frequency attend services	<b>.37</b>	<b>.41</b>	.71
Relationship with God	<b>.86</b>	-.12	1.00***
Union with God	<b>.83</b>	-.12	.99**
Importance of religious beliefs	<b>.82</b>	-.11	.99**
Interest in religion	-.01	.27	-.20
God is punishing me	.08	<b>.78</b>	1.00***
God abandoned me	-.15	<b>.78</b>	.99**
Isolated from faith group	.11	<b>.64</b>	1.00***
No involvement with God	-.56	<b>.37</b>	.94
Factor congruence	.93***	.90***	.93***

Note.  $N = 1,704$ . All loadings  $> .35$  are in bold.  
\*\*  $p < .01$ . \*\*\*  $p < .001$ .

### Cross-Observer Convergence

Table 5 presents descriptive statistics for the observer form of the ASPIRES. Mean scores were comparable to those obtained with the self-report version. Alpha reliabilities were all high and similar to those found normatively. Scores on each scale, except CN [ $r(89) = .18, ns$ ], correlated significantly between the two observers. The two observer ratings were averaged and composited as a new variable which was then correlated with self-ratings. There were substantial, significant convergent correlations between self and observer ratings across all the scales of the ASPIRES, indicating that what individuals said about their own numinous qualities agreed with what knowledgeable informants observed. These values were larger than those found in the United States normative sample (Piedmont, 2010).

### Construct Validity

**Convergent validity.** A subgroup of 157 students from the general adult/student sample (15 men, 137 women, 5 unknown) completed the ASPIRES along with the Religious Orientations Scale, Materialism Scale, and Agency and Communion Scale (Table 6 displays zero-order correlations). The ASPIRES scales correlated significantly, and in the expected directions, with these related measures. Overall ST scores correlated with intrinsic religious orientation,  $r(155) = .62, p < .001$ , and correlated more modestly with extrinsic religious orientation [ $r(155) = .26, p < .001$ ], and quest [ $r(155) = .19, p < .05$ ]. ST was negatively related to materialism [ $r(155) = -.19, p < .05$ ]. As expected, RC evidenced the reverse pattern of association as the ST scale. The ASPIRES scales evidence convergence with other emic and etic measures of the numinous and related attitudes. Moreover, the pattern of correlations between religiosity, spirituality, materialism, and communion (both regular and unmitigated) indicated distinctiveness between them. Associations with agency did not fit expectation. Specifically, ST correlated significantly stronger with communion [ $r(155) = .30, p < .01$ ],  $t(154) = 3.84, p < .01$ , two-tailed; and unmitigated communion [ $r(155) = .46, p < .001$ ],

$t(154) = 6.15, p < .01$  than RI [ $r(155) = .04, p > .05$  for communion,  $r(155) = .09, p > .05$  for unmitigated communion]. No significant difference in association between these two variables was noted on agency, either regular or unmitigated. The patterns of associations between ST and RI were also significantly different on materialism,  $t(154) = -7.89, p < .01$ . All facets of spirituality correlated positively to communion, and were unrelated to agency (with the exception of PF, which was positively correlated to agency). RI was unrelated both to agency and communion, whereas RC was positively related to both unmitigated forms of human orientations, pointing to its pathological character. These findings supported the assumption that whereas RS and ST were strongly related (correlations between ST and RI and RC were .62 and  $-.16$ , respectively, all  $ps < .05$ ), they seemed to reflect different psychological dynamics and should not be aggregated. In addition, the positive correlation between RC and unmitigated Agency indicated its pathological character, as assumed by the ASPIRES model (Piedmont et al., 2007).

**Incremental validity.** A subgroup of 200 adults from the general adult/student sample (93 men and 107 women) completed the ASPIRES along with the NEO-FFI and measures of purpose in life, life satisfaction, materialism, positive and negative affect, agency and communion, and several attitudinal scales. In order to examine whether or not the ASPIRES scales provided unique, incremental predictive variance over personality in explaining these affective and psychosocial constructs, a series of hierarchical multiple regression analyses were conducted. On Step 1, the FFM personality dimensions were entered as a block. On Step 2, using

Table 4  
Principal Components Analysis Using an Orthogonal Procrustes Rotation of the Spiritual Transcendence (ST) Items

ST item	Component			Item congruence
	1	2	3	
PF1	<b>.71</b>	.30	-.36	.87
PF2	<b>.62</b>	<b>.42</b>	-.28	.95*
PF3	<b>.78</b>	-.06	.00	1.00***
PF4	<b>.78</b>	.01	.14	1.00***
PF5	<b>.54</b>	.32	-.33	.86
PF6	<b>.81</b>	.07	.08	.99**
PF7	<b>.80</b>	.02	.06	1.00***
PF8	<b>.51</b>	.32	-.32	.77
PF9	<b>.74</b>	.13	.10	.99**
PF10	<b>.67</b>	.17	.16	.99**
UN1	.34	<b>.47</b>	-.18	.96*
UN2	.27	.18	<b>.45</b>	.36
UN3	.23	.27	<b>.42</b>	.57
UN4	-.08	<b>.58</b>	-.11	.92
UN5	.23	<b>.60</b>	-.02	.98*
UN6	<b>.40</b>	.04	.34	.22
UN7	<b>.49</b>	.12	<b>.41</b>	.45
CN1	-.18	<b>.56</b>	-.17	-.80
CN2	.03	.16	<b>.69</b>	.88
CN3	-.01	.26	<b>.73</b>	.95*
CN4	-.15	<b>.58</b>	.21	.76
CN5	-.02	.23	<b>.50</b>	.92
CN6	-.21	<b>.53</b>	.06	.86
Factor congruence	.96***	.71***	.68***	.85***

Note.  $N = 1,704$ . All loadings  $> .35$  are in bold. PF = Prayer Fulfillment; UN = Universality; CN = Connectedness.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 5  
Descriptive Statistics, Reliability Estimates for Observer Ratings, and  
Cross-Observer Convergence

ASPIRES scale	Observer form (N = 184)			Between observer <i>r</i> (N = 91)	Self-other <i>r</i> (N = 93)
	<i>M</i>	<i>SD</i>	$\alpha$		
Prayer Fulfillment	30.83	9.41	.93	.62***	.78***
Universality	23.28	4.47	.78	.37***	.58***
Connectedness	21.11	3.45	.50	.18	.52***
Total Transcendence	75.22	14.30	.90	.48***	.75***
Religious Involvement	-.44	2.20	.87	.63***	.86***
Religious Crisis	8.71	2.90	.70	.47***	.63***

Note. ASPIRES = Assessment of Spirituality and Religious Sentiments Scale.  
\*\*  $p < .01$ . \*\*\*  $p < .001$ .

forward entry, the ASPIRES scales were entered. Partial *F* tests were conducted to determine if the ASPIRES scales added any significant explanatory variance (Table 7). Whereas the FFM personality domains accounted for large amounts of the variance in the criterion variables, the ASPIRES scales did add significant, additional explanatory variance. With regard to materialism, the unique contribution of PF almost equaled the FFM's contribution ( $\Delta R^2 = .10$ , partial  $F(1, 193) = 25.18$ ,  $p < .001$ ). A similar finding was observed with attitude toward capital punishment ( $\Delta R^2 = .05$ , partial  $F(1, 120) = 6.88$ ,  $p < .01$ ). RC was the sole unique contributor to both positive ( $\Delta R^2 = .02$ , partial  $F(1, 193) = 6.07$ ,  $p < .015$ ) and negative ( $\Delta R^2 = .01$ , partial  $F(1, 193) = 4.82$ ,  $p < .05$ ) affect. RI was related to overall life satisfaction ( $\Delta R^2 = .03$ , partial  $F(1, 193) = 7.25$ ,  $p < .008$ ), purpose in life ( $\Delta R^2 = .05$ , partial  $F(1, 193) = 19.90$ ,  $p < .001$ ), attitudes toward abortion ( $\Delta R^2 = .05$ , partial  $F(1, 120) = 6.73$ ,  $p < .01$ ) and attitudes toward euthanasia ( $\Delta R^2 = .08$ , partial  $F(1, 120) = 12.26$ ,  $p < .001$ ). CN was a significant predictor of both communion ( $\Delta R^2 = .05$ , partial  $F(1, 66) = 5.63$ ,  $p < .05$ ) and unmitigated communion ( $\Delta R^2 = .07$ , partial  $F(1, 66) = 8.84$ ,  $p < .01$ ). The ASPIRES scales did evidence significant incremental validity over personality in predicting diverse psychosocial and attitudinal constructs.

### Discussion

The presented data showed that the ASPIRES measurement model was replicated in the Polish cultural context: The factor

structure for the RS scales was clearly recovered as well as much of the factor structure for the ST scales. The CN scale scores demonstrated lower internal consistency reliabilities (as is found in all studies), although this scale did evidence self-other agreement comparable to the other ASPIRES scales and demonstrated incremental validity in predicting communion and attitudes toward euthanasia. In all three instances CN indicated a care for and enmeshment with the larger community. These findings indicate, as with United States data, that CN represents a more complex construct than the other two ST facet scales. The ASPIRES scales correlated in expected ways with other measures of life satisfaction and spirituality/religiousness. Finally, the ASPIRES also demonstrated significant incremental validity in predicting a number of outcomes over and above the dimensions of the FFM.

The observed similarities in factor structure, mean level scores, and external correlates may represent the effect of Christianity, in general, and Catholicism, in particular, on how people discuss and understand their faith and spirituality. These similarities were observed despite many significant differences between Poland and the United States in terms of political culture and values (Norris & Inglehart, 2005). The communist experience negatively influenced life satisfaction and interpersonal trust (Johnson, 2005). As such, research has shown that Poland is more concerned with survival values, whereas the United States is more concerned with self-expression values (Welzel & Inglehart, 2010). The former reflects a cultural focus on maintaining what one has, whereas the latter

Table 6  
Zero-Order Correlations Between the ASPIRES Scales and Various Emic and Etic Measures of  
Numinous Constructs and Social Attitudes

Outcome variable	ASPIRES scales					
	PF	UN	CN	ST	RI	RC
Intrinsic religiosity	.62***	.38***	.30***	.62***	.80***	-.39***
Extrinsic religiosity	.17*	.22**	.26***	.26***	.33***	.09
Quest	.16*	.20**	.05	.19*	.23**	-.10
Materialism	-.24**	-.15*	.05	-.19*	.28***	.22**
Agency	.20*	.11	-.03	.13	.16	.01
Unmitigated agency	.08	-.16	-.20*	-.06	.03	.30**
Communion	.18*	.35***	.26**	.30***	.04	.09
Unmitigated communion	.32***	.45***	.38***	.46***	.09	.18*

Note. *N* = 157. ASPIRES = Assessment of Spirituality and Religious Sentiments Scale; PF = Prayer Fulfillment; UN = Universality; CN = Connectedness; ST = Total Spiritual Transcendence Score; RI = Religious Involvement; RC = Religious Crisis.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ , two-tailed.

Table 7  
*Hierarchical Multiple Regression Analyses Examining the Incremental Predictive Validity of the ASPIRES Scales Over Personality*

Criterion variable	FFM $R^{2a}$	ASPIRES $\Delta R^{2b}$	Scale (beta)
Satisfaction with life	.23***	.03**	RI (.17)
Positive affect	.33***	.02*	RC (-.17)
Negative affect	.45***	.01*	RC (.13)
Purpose in life	.43***	.05***	RI (.23)
Materialism	.13***	.10***	PF (-.33)
Agency	.51***		
Communion	.43***	.05*	CN (.23)
Unhindered agency	.28***	.05*	RC (.25)
Unhindered communion	.37***	.07**	CN (.29)
Attitudes towards abortion <sup>c</sup>	.06	.05**	RI (-.23)
Attitude towards euthanasia <sup>c</sup>	.12***	.12***	RI (-.25), CN (-.21)
Attitude towards capital punishment <sup>c</sup>	.06	.05**	PF (-.24)

*Note.* ASPIRES = Assessment of Spirituality and Religious Sentiments Scale; FFM = five-factor model; CN = Connectedness, PF = Prayer Fulfillment; RI = Religious Involvement; RC = Religious Crisis.

<sup>a</sup>  $df = 5,194$ . <sup>b</sup>  $df = 1,193$ . <sup>c</sup> Higher scores indicate more favorable attitude.  $N = 200$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

reflects a focus on being able to express one's views. Even in such different cultural context the ASPIRES seemed to be a useful tool for measuring numinous constructs in this important part of Europe. The current findings were consistent with findings from other former Communist countries (e.g., Rican & Janosova, 2010) and lend additional support to the hypothesis that the dimensions assessed by the ASPIRES represent universal aspects of human psychological functioning.

The current findings provided clear evidence that the ASPIRES contains empirically sustainable definitions for spirituality and religiousness. Because the numinous dimensions of the ASPIRES represent psychological qualities, they are relevant for understanding psychological functioning in all people. The scale can be usefully applied in a variety of cultural contexts, with individuals having all types of spiritual orientations.

The current study extended previous work by linking the numinous with the basic human orientations of Agency and Communion. ST was related both to regular and unmitigated communion, moreover CN predicted both forms of communal orientations over the FFM traits. These results shed light on the motivational quality of spirituality: it was associated with self-transcendence of personal goals and carried with it a focus on other peoples' needs. As unmitigated communion was linked to fusion with group goals and group identity (Helgeson & Fritz, 1999), the correlation of the CN scale with this construct provided additional validity support for this scale, which is defined as representing feelings of enmeshment in a broader community. ST's relationship with materialism was congruent with past works (Piedmont et al., 2013), (i.e., ST was negatively linked to materialism with the exception of CN, which was independent), whereas religiosity was positively related. This was an important finding because it highlights the assumption that different aspects of the numinous may be mediated by different psychological systems. Given that this finding was replicated in Poland, a country with different cultural values than the United States (Welzel & Inglehart, 2010), it demonstrated the potential robustness of this assumption of distinctiveness. One interpretation of these findings was that the negative association between spirituality and materialism was due to spirituality's emphasis on

self-transcending values, whereas the positive association with RI may be due to RI's focus on personal well-being and security. Future research needs to more directly examine the psychological systems that are controlling these motivations. Such work will provide insights into the kinds of goals and reinforcements that are most relevant to these two overlapping, yet distinct, numinous motivations.

### Limitations and Future Studies

Whereas the current study provided cross-cultural validity to the ASPIRES in a Polish context, there are areas in need of further evaluation. The most important issue concerned the CN facet. The English version of this facet has been interpreted as a complex causal indicator (e.g., Bartlett et al., 2003), which explained why scores on the scale consistently demonstrated the lowest levels of reliability. Further, the confirmatory factor analyses showed that it may represent a complex construct in Polish samples as well. It would be useful to examine how these items were being interpreted by respondents and whether the translated items captured the meanings behind the items in a manner similar to the English version. Better understanding this construct may also help to identify the various core qualities reflected in scores in a way that will promote the development of more internally consistent scales.

Although evidencing better psychometric properties than CN, the RC scale also needs to be examined in this culture. The current sample scored much higher than the United States normative sample. Again, research needs to disentangle the extent to which factors such as Poles' experience of their religious faith, response styles, and infelicities in the translation contributed to this higher score. It may also be possible that the values of survival and maintaining what one has that characterizes the Polish people may lead to greater feelings of unworthiness and existential condemnation. Because few measures of spirituality have as much cross-cultural exposure as the ASPIRES, the current data provided support for the instrument as a robust platform for collecting numinous information that can be integrated across cultures. However, the current data also showed that there were areas in need of



further research examining the psychological dynamics being captured by some of the facet scales.

The samples included in this study were volunteers, thus it is not clear how generalizable these findings may be. Future research ought to more systematically sample participants in an effort to ensure the representativeness of the samples.

Finally, while the  $R^2$  values associated with the incremental predictive validity of the ASPIRES' scales were low, it should be kept in mind that these statistics are partial coefficients and represent what each numinous variable has to offer once the predictive effects of the five personality dimensions were removed. Thus, these incremental predictive variances are low because there was little reliable variance left to explain in the criteria. Nunnally and Bernstein (1994) have observed that increases in  $R^2$  are generally very small by the time a third substantive predictor is added to a regression equation. As more predictors are entered, their incremental contributions will be increasingly smaller. Hunsley and Meyer (2003) suggested that an  $R^2$  increase of between .02 and .04 would indicate a reasonable contribution for a variable entered on the third step. Given that the numinous variables in the present study are being added into the regression equations on the sixth and seventh steps, the 3% additional variance represents a quite robust contribution.

### Conclusions

The current study supported the ASPIRES as an empirically robust, cross-culturally generalizable measure of the numinous. The one weakness noted here was the CN scale, which continued, like its English version, to represent a more complex construct than the other two facet scales. Future revisions of the ASPIRES ought to address this scale directly in an effort to more clearly delineate the diverse, underlying dynamics in this scale. Perhaps several new facet scales will be necessary to accomplish this. Better enumerating the psychological quantities being reflected by this scale will facilitate both a better definition of the spiritual domain as well as improve predictive and interpretive validity. Spirituality and religiosity phenotypically have similar behavioral outcomes, but may arrive at these outcomes from very different psychological systems. Better understanding these systems holds a key for developing better numinous-based interventions.

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Received December 16, 2018

Revision received March 16, 2019

Accepted April 22, 2019 ■