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## PRELIMINARY PSYCHOMETRIC CHARACTERISTICS OF THE POLISH VERSION OF THE RELIGIOUS COMMITMENT INVENTORY-10 (RCI-10-PL) BY EVERETT WORTHINGTON AND COLLEAGUES

The article presents the theoretical background and the psychometric properties of the Polish version of the Religious Commitment Inventory-10 (RCI-10-PL). Confirmatory factor analysis (CFA) was conducted on two samples: 273 participants (Sample A) and 308 participants (Sample B). The results of the CFA showed an acceptable fit of empirical data to the one-factor and two-factor theoretical models, the latter model having a slightly better fit. Moreover, we obtained satisfactory values of the reliability coefficient. Cronbach alpha coefficients for the Polish version of the RCI scales ranged from .82 to .95. Test-retest reliability correlations ranged from .90 to .91 for a five-week interval between ratings. We also found positive correlations between specific dimensions of RCI-10-PL and religious attitudes, ethical sensibility, and focus on the achievement of harmony in life, which confirms the external validity of the instrument. The results of the analysis conducted on Polish samples are similar to the results obtained from American samples.

**Keywords:** religiosity; Polish version of the Religious Commitment Inventory-10 (RCI-10-PL); spirituality.

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## INTRODUCTION

In the article we present the Polish psychometric adaptation of the Religious Commitment Inventory-10 (RCI-10) by E. Worthington and colleagues (2003), which is an instrument measuring religious commitment. The scale is a short tool that makes it possible to measure broadly defined religiosity with the main focus on the subjective influence of religious beliefs on everyday activities and on relations with a group defined as a religious community or fellow-believers. The authors' intention was for the tool to be applied also in the study of religious traditions other than Judeo-Christian. The content of the questionnaire's items is highly neutral towards religious doctrines and traditions. They contain only three concepts that have certain meanings within particular religious traditions but are nevertheless acceptable to and individually understood by believers of different religions, as well as the persons considering themselves spiritual rather than religious. These concepts are "religion" (together with the adjective "religious"), "faith," and "religious community." The last important characteristic of the questionnaire is the practical reason why it was developed. It was created to measure the religiosity of clients and patients in the process of psychotherapy due to the significant influence of religious beliefs and tolerance on their relationship with the therapist and on their expectations regarding therapy (Worthington, 1996, 1988). This fact significantly influences the way the instrument is constructed; it concentrates mainly on the effect of religiosity on functioning outside religious situations. It can therefore be assumed that religiosity has a similar influence on the areas of life other than psychotherapy (see Polak, 2012).

Despite the growing number of good quality questionnaires for measuring religiosity (see Grzymała-Moszczyńska, 2004; Jarosz, 2011), there is no instrument that would put aside the beliefs determined by religious traditions or religious experiences, as well as individual or group religious practices. Consequently, the adaptation of the RCI-10, which is based on a wide definition of religiosity, seems worthwhile. Authors agree that these dimensions (beliefs, experiences, practices) constitute the essence of religiosity, cannot be understood without them. As Emmons (2000) points out, the symbols used to subjectively describe religiosity are always constructed within particular religious traditions, and so a religiosity that has no reference to a specific tradition as understood by Wulff (1999) is nonexistent. On the other hand, we are witnessing transformations in the area of modern religion that manifest themselves in the privatization and deinstitutionalization of religion (Streib & Hood, 2013). More and more frequently, people define themselves as spiritual but not religious (Jarosz, 2010;

Krok, 2009), despite the problems with a clear definition of this concept (Skrzypińska, 2014). Such people feel helpless when faced with the task of filling out a questionnaire in which they have to answer questions concerning particular doctrines or religious practices. Alternatively, they give negative answers to such questions.

### **The theoretical background of the scale**

Worthington (1988) agrees that the religious character of each life practice (understood as Greek *praxis*) depends on the meaning that a person attributes to his or her activity within the framework of his or her subjective “construction” of reality (see Huber, 2007). He draws on Markus’s concept of self-schemata. A deeply religious person who uses religious concepts tends to color their perception of the world, their opinion about the world, and their experience of the world with religious contents. Consequently, a considerable part of that person’s everyday practice acquires a religious character. This refers to all aspects of life: free time, family life, political engagement, education, or work. Similarly, in their conception of giving a religious significance Pargament and Mahoney (2005) as well as Park (2005) assume that attributing a religious character to any aspect of reality brings about a transformation in the individual’s behavior and changes the way such behavior is assessed. The concept of “religious glasses” proposed by Huber (2007) may be understood in the same way.

Worthington refers to a wide definition of spirituality and religiosity offered by Hill and colleagues (2000). This definition is a common work of a group of influential American scientists, produced as a result of a dialog between them. It contains three criteria based on which it is possible from a psychological standpoint to classify a given phenomenon as having a spiritual and/or religious character. These are:

A. Feelings, thoughts, experiences, and behaviors that are stem from the pursuit of holiness.

B. Pursuit of goals other than holy ones (such as the sense of identity, belonging, meaning and purpose, as well as health and well-being) in a context that, in the first place, is supposed to promote and facilitate A (pursuit of holiness).

C. Means and methods (e.g., rituals, recommended behaviors) of pursuing holiness that are appreciated and supported by an identifiable group of people.

Should only the first criterion be fulfilled (A), it is spirituality, not religiosity, that we are dealing with. For religiosity to be the case, criteria A or/and B as well as C (Hill et al., 2000, p. 66) have to be fulfilled.

The term “holiness” used in the definition of criterion A is a key concept to the understanding of the essence of religiosity and spirituality. As the authors intended, the concept of holiness refers to the beings recognized by an individual as holy or supernatural, and to the reality or truth recognized as ultimate (in that case, we speak of the Ultimate Reality and Truth). The term overlaps with the semantic scope of „transcendence” as defined by Streib and Hood (2013); it refers to specific objects or events that are outside the everyday, ordinary context and therefore deserve recognition and worship. Holiness encompasses such concepts as God, divinity, the Ultimate Reality, and other aspects of life that have an exceptional and unique status for individuals and groups (Krok, 2009). The term “other than holy,” used in criterion B, points refers to the goals that Allport (Allport & Ross, 1967) described as the goals of externally motivated religiosity. The means and methods mentioned in criterion C refer to religious practices, both individual and group ones, that are supported by particular communities and are legitimized by them.

The variable describing the tendency of a person to judge the world based on religious values is referred to by Worthington as religious commitment. Following Koenig (Koenig, McCullough, & Larson, 2001), he defines religious commitment as referring to the degree to which a particular person is involved in their religion; thus defined, religious commitment is gradable. According to Worthington, a particular individual’s religious commitment may be estimated based on the level of identification with religious values, beliefs, and motivated religiously practices in everyday life.

Believing the previous psychological operationalizations of the concept of religious commitment to be inadequate, Worthington relies on the five-factor model of religious commitment constructed in the 1960s by Stark and Glock. They distinguished five core dimensions of religious commitment: the ideological dimension (accepting the set of beliefs of a given religion as one’s own), religious practices (acts of worship and piety – these are rituals and religious devotions), religious experience (the feeling of contact with the supernatural sphere), the intellectual dimension (knowledge of the basic dogmas of one’s faith, rituals, holy books, and traditions), and the dimension of consequences (the results of convictions, practices, experiences, and religious knowledge in everyday life) (Stark & Glock, 1970, as cited in Piwowski, 1996). Despite the fact that the variable measured by Worthington’s RCI-10 questionnaire bears the same name (religious commitment), the content of the scale includes only one of the five dimensions (of this commitment) – namely, the consequential dimension, ignoring the dimensions of knowledge, experience, beliefs, and religious practices

i.e., (the intellectual, ideological, experiential, and ritual dimensions). An example statement of the scale is: "Religious beliefs influence all my dealings in life." Moreover, what Worthington considers to be an important aspect of religious consequences is activities associated with reflection and gaining knowledge on faith and religiosity ("I spend time trying to grow in understanding of my faith") and the activity associated with the religious community ("I enjoy working in the activities of my religious organization"). This means the concept of religious commitment has a different meaning and scope from Stark and Glock's concept. This stems from the purposes for which the RCI-10 scale was developed; the purpose was to determine the practical consequences of religious commitment in psychotherapy and counseling, as well as to create an ecumenical and meta-denominational scales.

This kind of perspective, however, results in definitional problems because, as Stark and Glock say, full clarity as to the extent to which the factors are an integral part of religious commitment and to what extent they are its result is missing (Stark & Glock, 1970, as cited in Piwowarski, 1996, p. 158). The consequences of religiosity are therefore not a dimension of religiosity as such, and this argument has often been raised by critics. Although this argument may be deemed sound, this dimension remains particularly important both for Christian theology and for all other religious traditions ("You shall know them by their fruits"), and the consequences of religiosity are an important touchstone of the quality and authenticity of religiosity itself. What they refer to is a person's relation to other people and the world, rather than his or her relationship to God, transcendence, or the supernatural world (Billiet, 2002).

Nonetheless, it has to be remembered that the consequential dimension cannot be examined and understood separately from the remaining dimensions of religiosity. Attitudes and behaviors in secular areas can be considered as consequences of religiosity as long as they are based on the conviction that they stem from religious views, imperatives, and prohibitions. The RCI-10 scale fulfills this requirement because its items always contain a reference to faith, religion, and the community, even though they leave a large degree of freedom in the interpretation of these concepts. On the other hand, a person who does not follow the rules of his or her faith but does meet the conditions stated in some or all the other dimensions will still deserve to be called a religious person. Still, not fulfilling the criteria of the consequential dimension remains an interesting question worth studying (see Wulff, 1999). It is worth noting that in the Dimensions of Religious Commitment questionnaire by Stark and Glock the consequential dimension is described by items concerning acceptance for religious

criteria of choice in marriage, customs, business, and politics, but it also contains an item about applying religious convictions (criteria sanctioned by God) in everyday choices (Billiet, 2002). It should be noted that in one of the best known tools for examining the centrality of religiosity – i.e., Huber's C-15, adapted into Polish by Zarzycka (2011), which also refers to the concept of Stark and Glock – the consequential dimension was ignored as debatable.

How does religiosity shape people's behavior in everyday practice? This happens through the assessment of life decisions and activities from the perspective of the adopted religious values. Worthington (1988) accepts the view, taken from Milton Rokeach's theory of the value system, that the person who evaluates the world and their behavior through religious schemas (norms) integrates their religion with their lifemore strongly. The values play regulatory and modifying functions for the individual's activities with regard to things, ideas, and people by creating incentive tensions (motives, drive reinforcement) as well as by organizing and structuring experience. The values create a hierarchical system, which Rokeach (1967) defines as a stable organization of convictions regarding the preferred ways of behavior or final states of existence along the continuum of relative importance (Brzozowski, 1989). Thus, religious commitment will mean a high position of religious values in the system of values and their high impact on everyday practice. It should be mentioned that, in Poland, it was Golan (1992) who investigated the links between religious commitment and a person's functioning from the perspective of personality shaping.

## **POLISH ADAPTATION OF THE SCALE**

### **The original version of the scale**

The RCI-10 is a 10-item version of the original 20-item Religious Values Scale (RVS) for measuring religious commitment. The RVS was created as a tool for measuring religious values in counseling and was published in the *Journal of Counseling Psychology* in 1988 (see Worthington et al., 1996). However, of the whole questionnaire, only the scale measuring religious commitment – the central concept in Worthington's theory – turned out to have adequate psychometric properties. It was a 20-item scale; it was then reduced to 17 items and one factor (McCulloch, Worthington, Maxie, & Rachal, 1997), and next, in the final version, to 10 items while retaining the two-factor structure. We translated this version of the scale into Polish.

When constructing the scale, Worthington assumed that individuals strongly committed to religion will behave far in entirely different ways in social situations than people with average or weak religious commitment. This thesis referred to therapy, but it can be assumed to apply in other areas of life as well. Study reports from countries with a more diverse culture seem to confirm it. A large number of reports refer in particular to the relations between religiosity and psychological health, religion and physical health, as well as religion and other variables that are part of quality life understood in general terms. The RCI scale is used mainly in the area of research on the efficiency of counseling and therapy in the context of the client's/patient's religious convictions and practices versus the counselor's/therapist's system of religious values, as well as clients' and patients' religious expectations with regard to the therapy and therapist (e.g., Wade, Meyer, Goldman, & Post, 2008). The scale has also been used in research on the tendency to develop addictions (e.g., Sauer-Zavala, Burris, & Carlson, 2014), social prejudices (Harris, Cook, & Kashubeck-West, 2008), suicidal inclinations (Foo, Alwi, Ismail, Ibrahim, & Osman, 2014), and consumption patterns (Cleveland, Laroche, & Hallab, 2013), as well as in the psychology of gender differences (McCullough, Carter, DeWall, & Corrales, 2012). Both positive and negative consequences of religiosity on everyday practice have been reported.

In accordance with the authors' intentions, RCI-10 can be treated as a one-dimensional tool or as one that consists of two dimensions corresponding to Intrapersonal and Interpersonal Religiosity scales. To some degree, both these scales correspond to the two dimensions of religiosity distinguished by Allport (Allport & Ross, 1967): internally motivated (*intrinsic*) religiosity and externally motivated (*extrinsic*) religiosity. Despite the dominant reception of both dimensions as opposing ones, with "intrinsic religiosity" having a positive value and "extrinsic" one having a negative value, Worthington and colleagues do not evaluate the proposed dimensions of religious commitment. They see them as components of the same phenomenon: religious commitment. In the American study the mean for the whole scale is  $M = 23.6$  ( $SD = 18.8$ ).

Intrapersonal religious commitment ( $M = 9.0$ ,  $SD = 4.5$ ), or Factor 1 (eigenvalue = 6.20), consists of six items, which explain 62 per cent of the common variance of the tool. This kind of commitment is defined by the authors as cognitive, but in accordance with Worthington's theory it means that a religiously committed person perceives and values their everyday activities in terms of their own faith (religious evaluation). Moreover, this scale contains commitment components such as gaining new information, reflection, and understanding the nature of one's faith more and more deeply, as well as community activities and

work for the community. The construction of this scale is therefore rooted in the accepted definition of religiosity and in Milton Rokeach's theory of values. As a result, it reflects the aspect of religiosity that seems to be decisive to the influence of religiosity on everyday practice (Pargament & Mahoney, 2005).

Interpersonal Religious Commitment ( $M = 14.7$ ;  $SD = 7.1$ ), or Factor 2 (eigenvalue = 1.01), consists of four items, which explain 10.1 per cent of the tool's variance. This commitment has a social character and the items concern attitudes towards religious community that the subject (a person) feels he or she belongs to. The community is understood here widely, as a group of persons with whom the tested person has a feeling of unity due to sharing common attitudes, interests, and aims. In this sense, it does not have to be a parish, a congregation, or an institutional denominational community: it can also be an informal group maintaining only remote contact or meeting occasionally.

In Worthington's study (Worthington et al., 2003) conducted on groups of Christians, these scales correlated with the declared frequency of engaging in religious practices (attending mass or services in the church) at the level of .70 for the whole RCI scale, .60 for Intrapersonal Religious Commitment, and .73 for Interpersonal Religious Commitment. Intrapersonal Religious Commitment also correlated with the Intensity of Spiritual Life more strongly than Interpersonal Religious Commitment. Both these scales are strongly correlated with self-rated religious commitment, but the correlation is stronger in the case of the Intrapersonal scale than in the case of the Interpersonal scale.

### **The Polish version of the scale**

Assuming the cultural universality of the definition of religious commitment as described by Worthington et al. (2003), we chose the translation method, taking into account Brzezinski's (2006) and Zawadzki's (2004) suggestions on the necessity of keeping the equivalence of the tests and the context of cultural adaptation. The translation of the scale took place in stages. In the first stage two psychologists with fluent English, an English translator, and a student of both psychology and the English language translated the items from English into Polish. The proposed translations of particular items were mostly convergent and sounded similar. Then, out of four translations, we chose the one that sounded best in the Polish language and was the most unambiguous. The next step was back-translation, performed in order to verify the correctness of the original translation of the scale into Polish. This procedure confirmed the consistency of the translations with the original items, which enabled the use of the questionnaire in



further studies. Item 1 of the questionnaire (“I often read books and magazines about my faith”) raised controversy due to the fact that, according to the translators, in the original version it only refers to printed sources. It was assumed that the intention of the question was to determine if the subjects gain new information about their faith, regardless of the source. We feared that the tested individuals would understand it literally and would not consider a social networking service such as You Tube or television programs. Thus, the final version of the statement reads: “I often read texts or watch programs associated with my faith.” The instruction was not modified and remained as follows: “Read each of the statements below. Use the scale provided to mark the degree to which a given statement describes you.”

A 5-point Likert scale was used in the questionnaire, just like in the original version. Only the descriptions of the scale were modified. They are as follows: 1 – *the statement is utterly inaccurate*, 2 – *the statement is rather inaccurate*, 3 – *the statement is both accurate and inaccurate*, 4 – *the statement is rather accurate*, 5 – *the statement is totally accurate* (in the original version: circle the response that best describes how true each statement is for you 1 – *not at all true of me*, 2 – *some what true of me*, 3 – *moderately true of me*, 4 – *mostly true of me*, 5 – *totally true of me*).

### Factorial validity

In order analyze factorial validity, we tested 581 persons including 82 full-time, evening, and part-time students of the University of Silesia and the Silesian University of Technology (undergraduate and graduate students) and 499 working people of different trades and professions (e.g., banking, mining, or civil service), including a large group of teachers (156 people). The group of students consisted of 45 women (55%) and 37 men (45%). In the group of employees there were 200 women (58%) and 143 men (42%). In the group of teachers, women dominated (136 people, 87%). The mean age of the participants was: 22.26 years in the group of students ( $SD = 1.51$ , range from 20 to 30), 33.96 years in the group of employees ( $SD = 11.05$ ; 18-62 years), and 34.41 years in the group of teachers ( $SD = 7.97$ ; 24-56 years). In the whole sample, 322 people (56%) had higher education, 239 (41%) had secondary education, and 20 (3%) had vocational education. The study was conducted in Upper Silesia in 2013 by the authors of the present article during lectures or trainings. As the RCI questionnaire is the same for all participants (with the same set of ten items), we decided

to combine the results of the samples described above. The data gathered by means of Statistica 10.0 package was divided randomly into two samples: A ( $N = 273$ ) and B ( $N = 308$ ). In the group of employees, except for teachers, the participants had a possibility of defining themselves as practicing, not practicing believers, or nonbelievers, according to their subjective feeling (and in accordance with the way the participants understood these categories – the way the measurement was performed did not pose any problems with defining oneself in these terms). Participation in the study was voluntary and anonymous.

In the first step, we performed a confirmatory factor analysis to find out if empirical data supported the tested model (Konarski, 2009). Fit estimation was based on the values of root mean square error of approximation (RMSEA), comparative fit index (CFI), standardized root mean square residual (SRMR), and normed fit index (NFI) (Konarski, 2009; Schermelleh-Engel, Moosbrugger, & Müller, 2003). The values of these indices are given in the form of ranges that indicate the degree of adjustment, or goodness of fit. The values of RMSEA and SRMR should be lower than .08, whereas CFI and NFI should exceed .90. The range of good fit is  $CFI > .97$  and  $NFI > .95$ , whereas acceptable fit is  $CFI > .95$  (or .90) and  $NFI > .90$ . The value  $\chi^2/df$  – i.e., the proportion of  $\chi^2$  to the degrees of freedom that should range from 2 to 3 (acceptable fit) or from 0 to 2 (good fit) (Schermelleh-Engel et al., 2003, p. 52).

In the first analysis, we used Sample A data. We verified the fit of two models: the one-factor model and the two-factor model (see Worthington et al., 2003). The models were tested with the matrix of covariance of the 10 items. In the case of the two-factor model, the latent variables were correlated. The results of this analysis are presented in Table 1.

Table 1

*The Results of the Confirmatory Factor Analysis: A Comparison of the Fit of Alternative RCI-10-PL Factor Models. Sample A ( $N = 273$ )*

Model	$\chi^2(df)$	$\chi^2/df$	RMSEA	CFI	NFI	SRMR	$\Delta\chi^2$
1	226.58*(35)	6.47	.14	.96	.96	.042	–
2	190.34*(34)	5.59	.13	.97	.96	.041	36.26*
3	178.10*(34)	5.24	.12	.97	.97	.039	48.48*

*Note.*  $\Delta\chi^2$  = a one-factor model – the model in a given row; 1 – one-factor model, 2 – two-factor model 1 (see Worthington et al., 2003), 3 – two-factor model 2 (item 1 is shifted), \*  $p < .001$ .

As the results in the table show, both the one-factor model and the two-factor model (marked as 1 and 2) are fitted similarly, but the  $\chi^2(\Delta\chi^2)$  difference is statistically significant, and it should be stated that the two-factor model is characterized by a slightly better fit than the one-factor model. During the work on the original instrument more significant differences between these solutions were obtained (see Wortington et al., 2003). Still, considering the value of  $\Delta\chi^2$ , it can be assumed that the RCI may consist of two scales. We obtained relatively the best fit for the two-factor model where item 1 (“I often read books and magazines about my faith”; in the Polish version: “I often read texts or watch programs associated with my faith”) was moved to the Interpersonal Religiosity component (two-factor model 2).

Further analyses were thus performed for both one- and two-factor models. In the second stage we analyzed the fit of these models (in the case of two-factor models, we tested the model with correlated latent variables) to the data obtained for sample B. The fit assessment was based on the same indices as in the case of sample A. The following values of fit indices were obtained:

(1)  $\chi^2(df) = 202.15(35)$ ;  $\chi^2/df = 6.31$ ; RMSEA = .13; CFI = .98; SRMR = .031; NFI = .97 for the one-factor model;

(2)  $\chi^2(df) = 137.14(34)$ ;  $\chi^2/df = 4.03$ ; RMSEA = .099; CFI = .98; SRMR = .029; NFI = .98 for two-factor model 1;

(3)  $\chi^2(df) = 132.72(34)$ ;  $\chi^2/df = 3.90$ ; RMSEA = .097; CFI = .98; SRMR = .025; NFI = .98 for two-factor model 2.

The measurements in Polish samples thus indicate acceptable fit. Even though the value of the root mean square error of approximation (RMSEA) is higher than the permitted value (i.e., .08) and outside the range of acceptable or satisfactory fit (similarly  $\chi^2/df > 3$ ), the other indicators are within the range of acceptable fit. In this sample, the fit obtained for the two-factor model was similar to that obtained in American samples ( $\chi^2(df) = 111.90(34)$ ; CFI = .97, NFI = .96). Table 2 shows completely standardized factor loadings (lambda – X, Completely Standardized Solution). All the covariates turned out to be statistically significant at  $p < .001$ . It is worth noting that the fit of the two-factor models is very similar and the factor loading for item 1 is even identical.

Table 2

*The Model of Confirmatory Factor Analysis. The Factor Loadings (the Completely Standardized Solution X-lambda) of the 10 Items for Sample B*

No. <sup>1</sup>	Item content	LX	LX (A)	LX (B)	LX (A)	LX (B)
		M1	M21I	M21II	M22I	M22II
5	My religious beliefs lie behind my whole approach to life.	.81	.82	–	.83	–
3	I spend time trying to grow in understanding of my faith.	.89	.90	–	.90	–
8	It is important to me to spend periods of time in private religious thought and reflection.	.92	.92	–	.92	–
7	Religious beliefs influence all my dealings in life.	.88	.89	–	.89	–
4	Religion is especially important to me because it answers many questions about the meaning of life.	.89	.89	–	.89	–
1	I often read books and magazines about my faith. (I often read texts or watch programs associated with my faith)	.78	.77	–	–	.79
9	I enjoy working in the activities of my religious organization.	.82	–	.85	–	.85
6	I enjoy spending time with others of my religious affiliation.	.62	–	.63	–	.63
10	I keep well informed about my local religious group and have some influence in its decisions.	.88	–	.94	–	.93
2	I make financial contributions to my religious organization.	.79	–	.80	–	.80

*Note.* LX – completely standardized X-lambda factor loadings: for the first A factor (intrapersonal religiosity); for the second B factor (Interpersonal Religiosity); M1 – one-factor model; M21I – Intrapersonal Religiosity – two-factor model 1 (see Worthington et al., 2003); M21II – Interpersonal Religiosity – two-factor model 1 (see Worthington et al., 2003); M22I – Intrapersonal Religiosity – two-factor model 2 (without item 1); M22II – Interpersonal Religiosity – two-factor model 2 (with item 1).

This is why, eventually, we decided to accept the same solution as the original one – namely, a two-factor model with item 1 assigned to the Intrapersonal Religiosity factor. This will facilitate comparisons between the Polish and American samples.

### Reliability

The RCI-10-PL scale reliability assessment was based on calculating Cronbach's  $\alpha$  coefficients – the indicators of internal consistency and the correlation between the results of two measurements performed by applying the test-retest

<sup>1</sup> The order of items is the same as in Worthington and colleagues (2003).

method with an interval of five weeks. To verify the internal consistency, Cronbach's  $\alpha$  coefficients were calculated, as presented in Table 3. To estimate the test-retest stability, we tested 101 individuals aged 19 to 60 ( $M = 37.49$ ,  $SD = 12.73$ ), including 61 (60%) women and 40 men; 43 participants (43 per cent) had secondary education, 41 (41%) had higher education, eight had vocational education, and nine had a bachelor's degree. These people represented different professions and were employed at different organizations of Upper Silesia and the Opole region.

Table 3

*Reliability Soefficients (Cronbach's  $\alpha$ ) of Two RCI Scales for Samples A, B, and C*

Sample	R-intra Intrapersonal Religiosity R-intra	R-inter Interpersonal Religiosity
A	$\alpha = .93$	$\alpha = .85$
B	$\alpha = .95$	$\alpha = .88$
C	$\alpha = .92$	$\alpha = .82$

*Note.* C – Sample in which the test-retest stability of the RCI was measured.

The Cronbach's  $\alpha$  coefficients calculated for the tested samples indicate a high level of reliability of the RCI scales. Reliability is relatively lower for the Interpersonal Religiosity scale. For the whole RCI scale, we obtained the following values:  $\alpha = .95$  for Sample A,  $\alpha = .96$  (B sample) and  $\alpha = .96$  (C sample in which test-retest stability was measured).

The correlation of the initial measurement with the measurement after five weeks was  $r = .93$  for the whole scale,  $r = .91$  for Intrapersonal Religiosity (R-intra), and  $r = .90$  for Interpersonal Religiosity (R-inter). No significant differences were observed between the means obtained in the measurements (test-retest). The mean scores for both measurements were: 28.09 (test) and 27.67 (retest) for the whole scale ( $t = 1.07$ ,  $p > .28$ ,  $t$ -test for dependent samples), 17.61 and 17.44 for R-intra ( $t = 0.63$ ,  $p > .53$ ), and 10.48 and 10.24 for R-inter ( $t = 1.27$ ,  $p > .21$ ). It indicates a high time stability of the RCI scale.

### Intercorrelations

The R-intra and R-inter scales are strongly correlated with each other. In Sample A the correlation was .85, but in Sample B it was .87. In the confirmatory analyses, the correlation between latent variables corresponding to R-intra and R-inter was .93, which shows the semantical proximity of these two constructs.

Table 4 presents the intercorrelations obtained when testing test-retest stability. They are ordered in accordance with Campbell and Fiske's model, as a "multitrait-multimethod matrix" (Brzozowski & Drwal, 1995; Drwal, 1987, 1989) – a matrix of two R-intra and R-inter parameters and two methods (test-retest).

Table 4

*The Analysis of Convergent and Discriminant (Divergent) Validity of the RCI Based on the Intercorrelations of RCI Scales Within the First Measurement (Test) and the Second one (Retest) as Well as Between Measurements*

	<i>M</i>	<i>SD</i>	1. R-intra	2. R-inter	4. R-intra
1. R-intra	17.61	6.84			
2. R-inter	10.48	4.33	.74		
3. R-intra	17.44	6.96	<u>.91</u>	<u>.74</u>	
4. R-inter	10.24	4.20	<u>.69</u>	<u>.90</u>	.75

*Note.* First measurement – 1 and 2; second measurement – 3 and 4.

In accordance with this pattern, the correlations are to fulfill four conditions. Firstly, the convergent validity coefficients (in Table 4 they are underlined with a continuous line) should be high. All of them are equal or higher than .90. The second condition is that the coefficients should be higher than those in the "multitrait-multimethod matrix" that are underlined with a dotted line. This condition is fulfilled for all the scales; for instance, the score on the R-intra scale from the first measurement correlates with the R-intra score from the second measurement more strongly than with the remaining scales. The third condition requires the validity coefficient to be higher than the coefficients in the fields of "the heterotrait-monomethod matrix" (not underlined in Table 4). The fourth condition requires that in all the fields similar conditions occur. As results from Table 4, this condition was fulfilled. This is a sign of RCI validity.

### External validity

To answer the question regarding external validity, we performed an analysis of results for a group of 343 people. It was part of the 499-employee group described above (the teachers did not complete the tools described below). The persons in this sample filled in the Self-Report Questionnaire (SQ) developed by Heszen-Niejodek and Gruszczyńska (2004). The instrument measures spirituality

or, more precisely, harmony – that is, the direction determined by God, the direction determined by other people, and the direction determined by the universe.

1. Religious attitudes (RA) refer to emotions, thoughts and religious experiences, their meaning in everyday life and their influence on moral choices and behaviors, the expressed attitude to God (“faith to God allows me to survive difficult moments in life”). In the present study, this scale had an internal consistency of  $\alpha = .91$ .

2. Ethical sensitivity (ES) means that moral (ethical) values hold a high position in the individual’s cognitive system. A person with such a system takes care to act in accordance with these values and has a tendency to engage in ethical reflection,  $\alpha = .83$  (“I reflect on problems such as euthanasia, death penalty, etc.”).

3. Harmony (H) means the tendency of an individual to search for harmony with the world, inner order, and the consistency of different forms of his or her own activity,  $\alpha = .78$  (“I have a feeling that I am part of the world”).

Table 5

*The Values of Correlation Coefficients Between RCI Religiosity and the Spirituality Dimensions of the Self-Report Questionnaire (N = 343)*

	<i>M</i>	<i>SD</i>	RA	ES	H	R-intra	R-inter	RCI
RA	18.12	7.02						
ES	25.94	4.83	.54***					
H	23.15	4.91	.55***	.53***				
R-intra	16.04	6.76	.89***	.50***	.48***			
R-inter	9.94	4.25	.77***	.43***	.42***	.84***		
RCI	25.98	10.56	.88***	.49***	.47***	.98***	.94***	

Note. \*\*\*  $p < .001$ .

We expected that both intrapersonal and interpersonal religiosity would be associated with religious attitudes (RA) and with ethical sensitivity and harmony. We predicted the strongest correlations between religiosity and religious attitudes as well as weaker ones between religiosity and ethical sensitivity (ES) and harmony (H). As shown in Table 4, RCI-10-PL has strong correlations with the Self-Report Questionnaire (SQ) scales. As predicted, the strongest correlation concerns religious attitudes (RA) and intrapersonal religiosity (R-intra) as well as interpersonal religiosity (R-inter). At any rate, the correlation coefficient between RA and R-intra is a little higher than the correlation coefficient between RA

and R-inter. The other coefficients are lower and mean that about 23%, 25% (R-intra), or about 18% (R-inter) of the variability of one variable may be accounted for by its relation to the other variable (Noworol, 1981).

The correlations presented in Table 5 show a high convergent validity of the RCI-10-PL scale, as it correlates strongly with another method measuring a similar phenomenon. High correlations between religious attitudes and internal as well as external religiosity suggest that these variables are identical. The confirmatory factor analysis showed that the constructs of intrapersonal religiosity and religious attitudes are similar (model 3 in Table 6). Nonetheless, relatively the best fit was found in the case of the 5-factor model (even though the fit is far from satisfactory, only two CFI and NFI parameters were within this range), in which the correlated latent variables corresponded with the number of scales in the RCI and Self-Report Questionnaire (R-intra and RA were separated). Thus, it may be stated that these constructs, though similar, in fact represent phenomena that have their own specificity.

Table 6

*The Verification of the Fit of Alternative Models to the Pool of Items of the RCI and the Self-Report Questionnaire*

Model	$\chi^2$	df	$\chi^2/df$	RMSEA	CFI	NFI	SRMR	$\Delta\chi^2$
1.1-factor	3566.10*	405	8.81	.150	.93	.92	.100	–
2.2-factor	3358.21*	404	8.31	.150	.93	.92	.096	207.89*
3.4-factor	1736.08*	399	4.35	.099	.96	.94	.096	1622.13*
4.5-factor	1600.46*	395	4.05	.095	.96	.95	.094	135.62*

*Note.* \*  $p < .01$ ;  $\Delta\chi^2 = \chi^2$  of the given row –  $\chi^2$  of the row below. 1 – one “Spirituality” factor: RCI items and Self-Report Questionnaire items; 2 – two factors: (1) Religiosity (RCI) and (2) Spirituality (Self-Report Questionnaire); 3 – four factors: (1) Interpersonal Religiosity (R-inter); (2) Ethical Sensitivity (ES); (3) Harmony (H), (4) Intrapersonal Religiosity (R-intra and RA); 4 – five factors: 1. Interpersonal Religiosity (R-inter), 2. Ethical Sensitivity (ES), 3. Harmony (H), (4) Intrapersonal Religiosity (R-intra), (5) Religious Attitudes (RA).

Noticeably, the differences in the goodness of fit between models 3 and 4 (see Table 6) are not significant, which means the RA scale may be treated as an extension of the contents of the R-intra scale. The results of confirmatory analyses unequivocally attest to the convergent validity (correlation with RA) and differential validity (lower correlations with WE and H) of the RCI (see Konarski, 2009).

The subjects were instructed as follows: “Imagine that your professional development only depends on you. To what extent would your professional goal be: to help other people achieve goals by supporting them materially and spiritu-



ally”? The subjects could indicate their responses on a 5-point scale (1 – *not at all*, 2 – *a little*, 3 – *moderately*, 4 – *considerably*, and 5 – *very much*). It was expected that the persons with higher religious commitment would agree with such a goal to a greater extent. The analysis of Pearson correlations showed that both RI dimensions are weakly or positively associated with this goal of work. For the R-intra dimension,  $r = .13$ ,  $p < .05$ ; for the R-inter dimension,  $r = .12$ ,  $p < .05$ , and for the RCI:  $r = .13$ ,  $p < .05$ . Bearing in mind that the above question concerned the professional goal (not every religiously committed person will have such a professional goal), these weak correlations could be deemed as a confirmation of the validity of the RCI questionnaire.

The subjects were also supposed to respond to the following statement: “Religiosity should not have influence on the way work is done”; they were supposed to indicate the response on a 5-point agreement scale (1 – *I do not agree at all*, 5 – *I fully agree*). It was predicted that religious persons would not agree with this statement. The analysis of Pearson correlations showed that, indeed, both RI dimensions are moderately and negatively associated with the degree of agreement with this statement. For R-intra,  $r = -.36$ ,  $p < .001$ ; for R-inter,  $r = -.33$ ,  $p < .001$ , and for RCI:  $r = -.36$ ,  $p < .05$ .

In the appraisal of RCI external validity we also took into account the differences between the mean scores for the groups of nonbelievers and practicing persons. A group of 342 employees answered the question about their attitude to religion by describing themselves in terms of the above categories. It was expected that the group of believers and practicing persons would be characterized by a higher intensity of religiosity than others. The ANOVA showed that within each scale there were significant statistical differences between the groups distinguished (see Table 7).

The post-hoc Tukey’s honest significant difference tests showed the significance of these differences between the group of practicing persons and nonbelievers as well as nonpracticing individuals. At the same time, the tests did not show differences between the group of nonpracticing persons and nonbelievers. The observed differences between the mean scores of particular groups are largely consistent with the expectations. Practicing persons and believers are characterized by a stronger religious commitment than nonpracticing persons or nonbelievers. This confirms the validity of the presented questionnaire. On the other hand, the results obtained in three groups described above have an additional value. Namely, high mean scores on all three scales in the group of people who define themselves as nonbelievers attracts attention. In our opinion, this means the questionnaire lets the subjects indicate the level of religiosity as understood

by Hill et al. (2000, p. 66), which fulfills condition A (criterion for spirituality) and, as pursuit of holiness, it may deserve the name of spirituality rather than religiosity. The discussion on this problem exceeds the framework of this article but seems worth continuing (see Streib, 2007).

Table 7

*Mean Scores on RCI Scales for Practicing People, Nonpracticing People, and Nonbelievers. The Results of a One-Way Analysis of Variance and Post-Hoc Tests: Tukey's Honest Significant Difference (HSD) Test for Unequal Samples (N = 342)*

Scales: $F$ and $\eta^1$ values		Nonpracticing	Nonbelievers	Practicing
	$N$ :	122	58	162
RCI: $F = 11.85^*$ $\eta^1 = .065$	$M$ :	24.11 <sup>A</sup>	22.19 <sup>A</sup>	28.73 <sup>B</sup>
	$SD$ :	10.76	10.07	9.90
R-intra: $F = 10.86^*$ $\eta^1 = .06$	$M$ :	14.95 <sup>A</sup>	13.4 <sup>A</sup>	17.72 <sup>B</sup>
	$SD$ :	6.85	6.66	6.29
R-inter: $F = 10.97^*$ $\eta^1 = .06$	$M$ :	9.16 <sup>A</sup>	8.55 <sup>A</sup>	11.02 <sup>B</sup>
	$SD$ :	4.37	3.80	4.05

*Note.* <sup>1</sup> The values given in the table are partial  $\eta$  squared values; \*  $p < .001$ . The statistically significant differences were indicated with A and B in superscript; the same letters placed next to mean scores in particular rows indicate the lack of significant difference between these means, whereas different letters indicate statistically significant differences at  $p < .01$ .

## CONCLUSIONS

The results of the study presented above show the RCI is a valuable tool for examining the level of religious commitment understood as a consequential dimension and may be applied beside other tools, such as the Self-Report Questionnaire adapted by Heszen-Niejodek and Gruszczyńska (2004) or Stefan Huber's C-15 Scale adapted by Zarzycka (2011). It also seems that the high degree of doctrinal neutrality of the tool does not confound the measurement and should be considered an asset. It probably makes the method more universal, which perhaps allows for examining the forms of religious faith that are outside the Judeo-Christian tradition or for testing individuals who define themselves as spiritual but not religious. This conjecture still lacks confirmation. This property of the tool, referred to here as neutrality, should be treated with a degree of criticism. During the study it may turn out the subjects understand the word "faith" differently than the researcher does. The validity of the measurement thus becomes questionable.

The confirmatory factor analysis showed that the adapted RCI may, just like the original version, be applied both as one-dimensional or as two-dimensional, the two dimensions being interpersonal and intrapersonal religiosity. Just like in the original version, these dimensions, correlate with each other strongly. The scales that correspond with these dimensions show a high reliability by being characterized by internal consistency and time stability over an interval of five weeks between measurements. The analysis of intercorrelations also showed that the RCI has a satisfactory internal validity. The results are similar to the ones obtained in American samples (Worthington et al., 2003).

RCI results correlate with the scores obtained on the Self-Report Questionnaire, namely: religious attitudes, ethical sensitivity, and the tendency to seek harmony with the world. The scale for measuring religious attitudes may be even treated as an extension of the scale measuring interpersonal religiosity. This also shows a strong connection between the consequential religiosity and religious attitudes. In a religiously committed person, religious experiences and moral values hold a significant place in the cognitive system and, in the patients' opinion, they influence their life decisions. These people are ready to take up occupations that consist in helping others. The persons who define themselves as nonbelievers and those who present themselves as nonpracticing score lower on the RCI. These results confirm the satisfactory theoretical validity of the RCI.

The study results presented here are merely preliminary psychometric characteristics of the RCI. In the future, this method should be compared with the results of C-15 and with scales examining personality and moral attitudes. Also the study sample should be extended to include subjects from other regions of Poland, since the population of Upper Silesia and the Opole region may exhibit specific configurations of the variables measured by the RCI.

## REFERENCES

- Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5(4), 432-443.
- Billiet, J. (2002). *Chapter 9: Proposal for questions on religious identity*. London: University Centre for Comparative Social Surveys.
- Brzeziński, J. (2006). *Metodologia badań psychologicznych [The methodology of psychological research]*. Warsaw, PL: Wydawnictwo Naukowe PWN.
- Brzozowski, P. (1989). Skala Wartości (SW): polska adaptacja Value Survey M. Rokeacha [A Polish adaptation of the Rokeach Value Scale (RVS)]. Warsaw, PL: The Polish Psychological Association.

- Brzozowski, P., & Drwal, R. Ł. (1995). *Kwestionariusz Osobowości Eysencka. Polska adaptacja EPQ-R. Podręcznik [The Eysenck Personality Questionnaire. The Polish version of the EPQ-R: A manual]*. Warsaw, PL: Psychological Test Laboratory of the Polish Psychological Association.
- Carter, E. C., McCullough, M. E., Kim-Spoon, J., Corrales, C., & Blake, A. (2012). Religious people discount the future less. *Evolution and Human Behavior*, 33(3), 224-231.
- Cleveland, M., Laroche, M., & Hallab, R. (2013). Globalization, culture, religion, and values: Comparing consumption patterns of Lebanese Muslims and Christians. *Recent Advances in Globalization, Culture and Marketing Strategy*, 66(8), 958-967.
- Drwal, R. Ł. (1987). Trafność zbieżna i różnicowa czterech inwentarzy agresji [The convergent and discriminant validity of four aggression inventories]. In R. Ł. Drwal (Ed.). *Techniki kwestionariuszowe w diagnostyce psychologicznej [Questionnaire-based techniques in psychological assessment]* (pp. 211-237). Lublin, PL: Maria Curie-Skłodowska University Press.
- Drwal, R. Ł. (1989). Badanie trafności zbieżnej i różnicowej [Assessing convergent and discriminant validity]. In J. Brzeziński, T. Marek, & C. Noworol (Eds.). *Psychologia matematyczna. T. III: Metodologiczne problemy psychometrii [Mathematical psychology. Vol. 3: Methodological problems of psychometry]* (pp. 39-51). Cracow, PL: Jagiellonian University Press.
- Emmons, R. (2000). Is spirituality an intelligence? Motivation, cognition, and the psychology of ultimate concern. *International Journal for the Psychology of Religion*, 10(1), 3-26.
- Foo, X. Y., Alwi, M. N. M., Ismail, S. I. F., Ibrahim, N., & Osman, Z. J. (2014). Religious commitment, attitudes toward suicide, and suicidal behaviors among college students of different ethnic and religious groups in Malaysia. *Journal of Religion and Health*, 53(3), 731-746.
- Golan, Z. (1992). *Osobowość a zaangażowanie religijne [Personality and religious commitment]*. Warsaw, PL: Warsaw Theological Academy Press.
- Grzymała-Moszczyńska, H. (2004). *Religia a kultura. Wybrane zagadnienia z kulturowej psychologii religii [Religion and culture. Selected issues of cultural psychology of religion]*. Cracow, PL: Jagiellonian University Press.
- Harris, J. I., Cook, S. W., & Kashubeck-West, S. (2008). Religious attitudes, internalized homophobia, and identity in gay and lesbian adults. *Journal of Gay & Lesbian Mental Health*, 12(3), 205-225.
- Heszen-Niejodek, I., & Gruszczyńska, E. (2004). Wymiar duchowy człowieka, jego znaczenie w psychologii zdrowia i jego pomiar [The spiritual dimension of the human being, its significance in health psychology, and its measurement]. *Przegląd Psychologiczny*, 47, 15-31.
- Hill, P. C., Pargament, K. I., Hood, R. W., McCullough, M. E., Swyers, J. P., Larson, D. B., & Zinnbauer, B. J. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour*, 30(1), 51.
- Huber, S. (2007). Are religious beliefs relevant in daily life? In H. Streib (Ed.), *Religion inside and outside traditional institutions* (pp. 209-230). Leiden– Boston: Brill.
- Jarosz, M. (2010). Pojęcie duchowości w psychologii [The concept of spirituality in psychology]. *Studia z Psychologii w KUL [Studies in Psychology at KUL]*, 16, 9-22.
- Jarosz, M. (Ed.) (2011). *Psychologiczny pomiar religijności [Psychological measurement of religiosity]*. Lublin, PL: The Scientific Society of the Catholic University of Lublin.
- Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York: Oxford University Press.

- Konarski, R. (2009). *Modele równań strukturalnych. Teoria i praktyka [Structural equation models: Theory and practice]*. Warsaw, PL: Wydawnictwo Naukowe PWN.
- Krok, D. (2009). *Religijność a jakość życia w perspektywie mediatorów psychospołecznych [Religiosity and quality of life from the perspective of psychosocial mediators]*. Opole, PL: Opole University Press, Faculty of Theology.
- McCullough, M. E., Carter, E. C., DeWall, C. N., & Corrales, C. M. (2012). Religious cognition down-regulates sexually selected, characteristically male behaviors in men, but not in women. *Evolution and Human Behavior*, 33(5), 562-568.
- McCullough, M. E., Worthington, E. L., Jr., Maxie, J., & Rachal, K. C. (1997). Gender in the context of supportive and challenging religious counseling interventions. *Journal of Counseling Psychology*, 44, 80-88.
- Noworol, Cz. (1981). Nowa geometryczna interpretacja współczynnika korelacji liniowej [A new geometric interpretation of the linear correlation coefficient]. *Przegląd Psychologiczny*, 24(1), 153-165.
- Pargament, K., & Mahoney, A. (2005). Sacred matters: Sanctification as a vital topic for the psychology of religion. *International Journal for the Psychology of Religion*, 15(3), 179-198.
- Park, C. L. (2005). Religion as a meaning-making framework in coping with life stress. *Journal of Social Issues*, 61(4), 707-729.
- Piwowski, W. (1998). *Socjologia religii. Wybór tekstów [The sociology of religion: An anthology of texts]*. Cracow, PL: Zakład Wydawniczy NOMOS 1996.
- Polak, J. (2012). Możliwości uwzględniania religijności i duchowości w praktyce zarządzania w opinii menedżerów [Managers' opinions on the possibilities of taking religiosity and spirituality into account in management practice]. *Czasopismo Psychologiczne*, 18(2), 287-295.
- Rokeach, M. (1967). *Value survey*. Sunnyvale, CA: Halgren Tests.
- Sauer-Zavala, S., Burris, J., & Carlson, C. (2014). Understanding the relationship between religiousness, spirituality, and underage drinking: The role of positive alcohol expectancies. *Journal of Religion and Health*, 53(1), 68-78.
- Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2), 23-74.
- Skrzypińska, K. (2014). The threefold nature of spirituality (TNS) in a psychological cognitive framework. *Archive for the Psychology of Religion*, 36(3), 277-302.
- Stark, R., & Glock, C. Y. (1970). *American piety. The nature of religious commitment*. Berkeley-Los Angeles-London: University of California Press.
- Streib, H. (Ed.) (2007). *Religion inside and outside traditional institutions*. Leiden-Boston: Brill.
- Streib, H., & Hood, R. W., Jr. (2013). Modeling the religious field: Religion, spirituality, mysticism, and related world views. *Implicit Religion*, 16(2), 137-155.
- Wade, N. G., Meyer, J. E., Goldman, D. B., & Post, B. C. (2008). Predicting forgiveness for an interpersonal offense before and after treatment: The role of religious commitment, religious affiliation, and trait forgivingness. *Journal of Psychology and Christianity*, 27(4), 358-367.
- Worthington, E. L., Jr. (1988). Understanding the values of religious clients: A model and its application to counseling. *Journal of Counseling Psychology*, 35(2), 166-174.
- Worthington, E. L., Jr., Kuru, T. A., McCullough, M. E., & Sandage, S. J. (1996). Empirical research on religion and psychotherapeutic processes and outcomes: A 10-year review and research prospectus. *Psychological Bulletin*, 119(3), 448-487.

- Worthington, E. L., Jr., Wade, N. L., Hight, T. L., Ripley, J. S., McCullough, M. E., Berry, J. W., Schmitt, M. M., Berry, J. T., Bursley, K. H., & O'Connor, L. (2003). The Religious Commitment Inventory–10: Development, refinement, and validation of a brief scale for research and counseling. *Journal of Counseling Psychology*, 50(1), 84-96.
- Wulff, D. (1999). *Psychologia religii. Klasyczna i współczesna [The psychology of religion: Classical and modern]*. Warsaw, PL: Wydawnictwa Szkolne i Pedagogiczne.
- Zarzycka, B. (2011). Polska adaptacja skali Centralności Religijności S. Hubera. In M. Jarosz (Ed.), *Psychologiczny pomiar religijności [Psychological measurement of religiosity]* (pp. 231-262). Lublin, PL: The Scientific Society of the Catholic University of Lublin.
- Zawadzki, B. (2004). Diagnoza temperamentu w ujęciu międzykulturowym: paradoks kulturowej adaptacji kwestionariuszy temperamentu [A cross-cultural perspective on temperament assessment: The paradox of temperament questionnaires adaptation]. In G. E. Kwiatkowska (Ed.), *Wybrane zagadnienia psychologii współczesnej [Selected issues of contemporary psychology]* (pp. 27-44). Lublin, PL: Maria Curie-Skłodowska University Press.