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# CIRCULAR STRUCTURE OF VALUES IN PRESCHOOL CHILDREN[1]

**Abstract**

The presented study is the first attempt to verify Schwartz's circular model of value structure in middle childhood. Previous studies have verified the model in adulthood and adolescence, and most recently – thanks to the method called Picture Based Value Survey by Döring (Döring, Blauensteiner, Aryus, Drogekamp, & Bilsky, 2010) – even in late childhood. However, to date, there has been a lack of adequate testing methods for younger children. To verify the hypothesis of the circular structure of value in middle childhood, we have developed a method called the Values Puppet Interview, inspired by the Berkeley Puppet Interview (Measelle, Ablow, Cowan, & Cowan, 1998). The study was conducted individually with 60 children aged from 4 to 6 years. Multidimensional scaling obtained from the results supported the hypothesis about the circular structure of values and the possibility of dividing the continuum into four higher-order values: self-transcendence, selfenhancement, openness to change and conservation.

**Keywords:** values, structure of values, middle childhood, multidimensional scaling

## 1. Shalom Schwartz's Theory of Values

Shalom Schwartz's theory of values has been present in psychology for a quarter of a century. The first article introducing the theory, written by Schwartz together with Bilsky, was published in 1987 in the *Journal of Personality and Social Psychology*. Initially, Schwartz's model was an attempt to organise values in the Rokeach tradition. Subsequent research, new ways of measuring and analysing, as well as theoretical work on

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the model led to the current situation where the circular value model is used in many fields of psychology: social, personality and intercultural psychology. Values together with personality traits are the most important and quite well described in psychology taxonomies of individual differences. McCrae (2009) compared the model of Big Five personality traits to physics of personality. Cieciuch (2012) in his polemics with McCrae (2009) postulated that in the face of a huge number of empirical reports verifying Schwartz's circular model, the first level of personality in the Costa and McCrae's Big Five Theory should be modified. The Schwartz values describe the basic motivational dimensions that are missing in the static description of personality in terms of traits.

Although the theory is already 25 years old, its heuristic possibilities have not only been exhausted but they have even been strengthened in recent years. A symptom of these possibilities is the publication of the current revision of the theory in the same *Journal of Personality and Social Psychology*, in which the first version of the theory was published (Schwartz et al., 2012). Values are defined by Schwartz as a cognitive representation (usually beliefs) of a motivational, desirable, and trans-situational goal. The key claim of the theory concerns the value structure and can be formulated as follows: Values form a circular continuum. The fact that values form a continuum results in, among other things, the possibility of dividing the circle into numerous wedges, that is, areas of the circle with a common centre. In the literature to date, it has generally been accepted that this continuum divides into 10 values or four higher-order values, describing the pools of the two dimensions that create the circle: self-transcendence *versus* self-enhancement and openness to changes *versus* conservation. Schwartz's model of values with this division into 10 and four wedges is shown in Figure 1, and short descriptions of these values are given in Table 1.


*Figure 1.* Schwartz's circle of values (source: Schwartz, 2006).

Table 1
*Ten values in Schwartz's theory (1992)*

| Higher order value | Value | Characteristics |
|---|---|---|
| Self-transcendence | Universalism | Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature. |
| | Benevolence | Caring for the welfare of the people with whom one is in frequent personal contact. |
| Conservation | Tradition | Respect, commitment, and acceptance of the customs and ideas that one's culture or religion provide. |
| | Conformity | Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms. |
| | Security | Safety, harmony, and stability of society, of relationships, and of the self. |
| Self-enhancement | Power | Social status and prestige, control and dominance over people and resources. |
| | Achievement | Personal success through demonstrating competence in accordance with social standards. |
| | Hedonism | Pleasure, gratification of the senses. |
| Openness to change | Stimulation | Excitement, novelty, and challenge in life. |
| | Self-direction | Independent thought and action – choosing, creating, exploring. |

The revised theory of values (Schwartz et al., 2012) emphasises the thesis about the continuum and shows the possibility of different divisions of the value circle – from the most precise division into 19 types to the most general divisions into half circles. The order of value in the circle is governed by the rules of similarity and conflict. The values placed close to each other are similar in terms of motivation. It is possible to realise them simultaneously, and it is also usually the case that they are treated as important to a similar extent. Values located on opposite sides of the circle are mutually exclusive in a single behaviour and are usually treated as not similarly important.

The structure of values of Poles has been empirically verified by Cieciuch and Zaleski (2011), who are the authors of the Polish adaptation of the Portrait Value Questionnaire (PVQ) of Schwartz (Schwartz et al., 2001) and of Cieciuch and Schwartz (2012), who have made their research in Poland a bridge between the classic and revised version of Schwartz's theory of values (Schwartz et al., 2012). Figure 2 shows the structure of the values of Poles obtained by Cieciuch and Schwartz (2012) in multidimensional scaling (MDS).

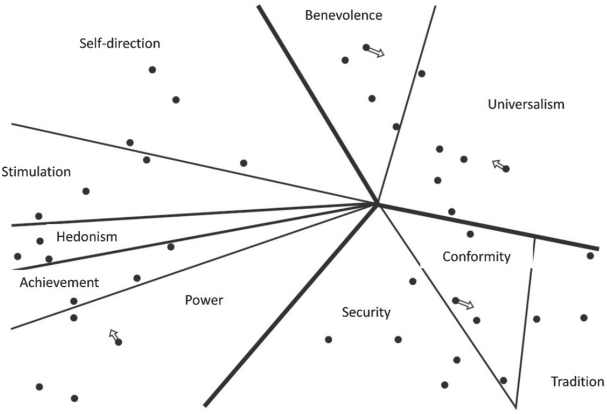


*Figure 2.* Multidimensional scaling of the Polish sample ($N$ = 10,439; age 10–94); Stress-1 = .13; Method: PVQ (source: Cieciuch & Schwartz, 2012).

As can be seen in Figure 2, divisions into 10 types and four higher-order values are possible. Only a few items are located in wedges not dedicated to the respective value, and these have always been adjacent wedges (these items are marked with an arrow in the direction of their respective wedge). One item of achievement is located in the area dedicated for power, one item of tradition is located in the area of conformity, one item of benevolence is located in the area of universalism, and one item of values is located in the area of benevolence. The research by Cieciuch and Schwartz (2012) is another verification of the circular model, and at the same time, it proves that the model describes the structure of values of Poles well, which is an important finding for the purpose of this research, which aims to find the structure of values of Polish children during middle childhood.

## 2. Value Structure Development

One of the new areas in which Schwartz's theory of values has been used in recent years is developmental psychology. The universalism of the model led to the question about its development in ontogenesis. Cieciuch, Harasimczuk, and Döring (2010, p. 36) write: Despite the considerable amount of data that is still being updated, there is very little insight into the developmental origin of the value structure. The validity of seeking it out is based on the assumption that values are defined as cognitive representations of motivation (Schwartz, 1992, 2006). In the Rokeach tradition (1973), the emphasis was placed on the cognitive aspect, so meaningful considerations about values were only possible at the stage of development when the adolescents acquired the appropriate reasoning skills, usually associated with Piaget's formal operations. However, if the emphasis is put on motivation (with values are cognitive representation), then it becomes reasonable to seek these motivational values also in children. Moreover, based on Schwartz's theory, we are not only interested in the hierarchy of value preferences, but also in the emerging value structure that is only becoming the basis for shaping value preferences. The structure is understood here as: firstly, the number

of distinguishable value types and secondly, the arrangement of differentiated types according to the principles of similarities and opposites on the value circle. However, the developmental aspects of Schwartz's theory are still accompanied by more questions than empirical answers.

To make the empirical search for answers to these questions possible, a method of measuring the values in childhood was necessary. The method was developed by Döring and her co-workers (2010). She created a pictorial tool for measuring value preferences in late childhood – Picture Based Value Survey (PBVS-C), while the Polish version of the survey was prepared by the author together with Cieciuch and Harasimczuk (Cieciuch, Harasimczuk, & Döring, 2010, 2012). The child is presented with 20 images, which are indicators of 10 value types (each value type is represented by two images). The illustrations show the values present in everyday behaviour. After an appropriate introduction to the test, it is the child's task to choose the two images that they consider the most important, then the two images that are least important for them, then the four most and least important ones from the rest, and stick them on a special answer sheet. Based on analyses of MDS, Cieciuch, Harasimczuk, and Döring (2010, 2012) showed that the structure of values in late childhood takes on a circular shape with several types of values that can be distinguished – usually four higher-order values and the possibility of a more accurate division increasing with age. Thus, value measurement with PBVS-C is valid, taking into account the criterion of validity used in the value measurement with PVQ (Cieciuch, Döring, & Harasimczuk, 2012). Figure 3 shows the results of MDS in the youngest group they studied – children aged 7–9 years.

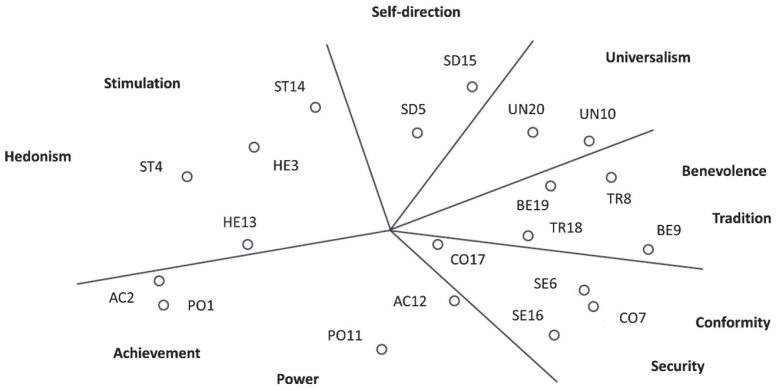


*Figure 3.* Multidimensional scaling of the children sample ($N$ = 207, age: 9–7); Stress-l = .20; Method: PBVS-C (source: Cieciuch, Harasimczuk, et al., 2010).

It turned out that the following values were possible to differentiate: (1) self-enhancement (achievements and power), (2) self-direction (as a separate type), (3) stimulation and hedonism combined, (4) universalism, (5) benevolence combined with tradition and (6) the remaining values of conservation (conformity and security).

## 3. Current Study

The results obtained with the PBVS-C in Poland (Cieciuch, Harasimczuk, et al., 2010, 2012) and in Germany (Döring et al., 2010) raise the question – can the circular value structure be reproduced in even younger children? Only two years ago, the question about the structure of children's values seemed to have no chance of being empirically answered. Thanks to Döring's method such an answer has become possible. However, when this method allowed the question about the value structure of school children to be answered, the question about the value structure in an even earlier developmental period naturally arose. The problem, of course, is the method again. The PBVS-C, although adapted to the cognitive development of school children, is not suitable for testing pre-school children (middle childhood) who are still in the preoperative period or only at the threshold of the specific operations stage.

Searching for self-descriptive data of such young children is possible and has already been undertaken in other areas. Measelle, Ablow, Cowan, and Cowan (1998) used a puppet interview (Berkely Puppet Interview) to study the self-perception of children aged 4–7 years. Their method has also proved to be useful in examining the personality traits of children aged 5–7 years (Measelle, John, Ablow, Cowan, & Cowan, 2005). In the Berkeley Puppet Interview, a child is presented with two puppets, each saying something about itself. A child has to point out the puppet that behaves more similar to him or her. Measelle, John, Ablow, Covan, and Covan (2005) recorded the children's answers and the experts assessed the degree of certainty of the child answering. This construction of the method allowed for a Likert scale measurement. In our research, we used the idea of testing with puppets, but we simplified the procedure. We have created a set of items corresponding to the four higher-order values in the Schwartz circle model, and the child's task is to indicate a puppet that they consider the most similar to them. The presented research is the first attempt to find the structure of value in pre-school children (middle childhood).

The results obtained so far with PBVS-C have led us to the following hypothesis: The values of children in the pre-school period will take on a circular structure, in which it is possible to distinguish four higher order values, constituting two dimensions. Therefore, we expected that in MDS: (1) The value items can be divided into four groups: self-transcendence, self-enhancement, conservation and openness to change; (2) These groups take the form of wedges that have a common centre; (3) The order of the wedges follows the circular model, that is: self-transcendence, openness to change, self-enhancement and conservation. The hypothesis would be rejected if the obtained results were not in compliance with any of the three conditions above. An example of failure to meet the first condition would be a solution in which the items that are assumed indicators of a given higher-order value have been not grouped close together in such a way that four areas can be separated. An example of not fulfilling the second condition would be such an arrangement of items, in which the groups would not form wedges that connect at one point (if, e.g., lines dividing areas were parallel). An example of not meeting the third condition could be the location of the value of self-transcendence next to the value of self-enhancement.

## 4. Method

### 4.1 Measurement Instrument

To measure the values, we used the Values Puppet Interview. The interview consists of 23 items. Each item consists of a pair of statements. One of them is uttered by a puppet with a red ribbon (called Dyzio) and the other by a puppet with a green ribbon (called Zyzio). Except for the colour of the ribbons, the puppets are no different. Each time, one statement is an indicator of a given value of a higher order, and the other statement is an indicator of a value lying on the opposite side of the circle. The puppets utter statements alternately in such a way that each of the puppets utters the same number of statements related to one pole of a given dimension (e.g., self-enhancement), as to the second (in this example – self-transcendence). After conducting the analyses, we removed one item from each set of indicators of higher values due to the wrong location in MDS, which was an indicator of unfortunate wording or simply poor validity of the item. Table 2 includes the items on which the analyses presented below are carried out.

Table 2
*Items of Values Puppet Interview*

| | Dyzio | Zyzio |
|---|---|---|
| OC1 | I prefer to wear clothes I choose myself | I prefer to wear whatever my mummy or daddy choose for me |
| OC2 | I run alone around the park while we are on a walk | I'd rather hold someone by the hand when we're on a walk |
| OC3 | I like to draw something new that I imagine on my own | I like to draw pictures similar to those that are already there |
| OC4 | I like playing new games even if they are a bit dangerous | I prefer not to play games in which something bad can happen to me |
| OC5 | I'm going to grandma or auntie because she might give me a gift | I'm going to grandma or auntie just for a visit |
| CON1 | I like to play at playgrounds I know | I like to play at playgrounds I haven't been to yet |
| CON2 | I like listening to stories about how things used to be | I prefer when somebody tells strange stories that I haven't heard yet |
| CON3 | I don't swing high if someone older won't let me | I like swinging high because it's very cool |
| CON4 | I like it when someone picks a TV cartoon for me | I like to pick a TV cartoon to watch on my own |
| pray | I like to pray before bedtime | I don't like praying in the evening |
| SE1 | I want to be able to do something better than other kids. | I prefer to help other kids so they can do something as well as I can. |
| SE2 | I want to get most sweets, the most of all kids | I am satisfied when all kids get the same amount of sweets |
| SE3 | When we play that we are on a ship I always want to be captain | When we play that we are on a ship I want to take turns to be captain |
| SE4 | When I see a flower I like in the meadow or the lawn I pick it up | I don't pick flowers up unnecessarily, so I don't destroy nature |

| | | |
|---|---|---|
| ST1 | I am eager to share my toys with other kids | I don't like when others play with my toys, as they are only mine |
| ST2 | When I race with other kids and my friend falls I help him to stand up | When I race with other kids and my friend falls I still run so I can be first to the finish |
| ST3 | I like it when my kindergarten teacher praises the drawings of all the kids | I like it when my kindergarten teacher praises my drawings only |
| ST4 | When someone laughs at my weaker friends – I defend them | When someone laughs at my weaker friends I don't defend them, but I am glad they are not laughing at me |
| ST5 | When I grow up I want to help poor and needy people | When I grow up I want to be the boss of a big company and manage it |

The presentation of two-statement items, written between Dyzio and Zyzio, was preceded by instructions explaining to the child what the task was. The measurement specificity of the Puppet Values Interview can be seen by comparing it with other Schwartz's value measurements – PVQ and PBVS-C. Schwartz's PVQ (Cieciuch & Zaleski, 2011) allows for the measurement of each type of value separately. MDS analyses show that the opposing values are indeed located on opposite sides of the circle. In Döring's Picture Based Value Survey (Cieciuch, Harasimczuk, et al., 2010), each of the values is also represented by its own proper pictures, although the measurement is ipsative. This means that the child can only choose the two most important pictures, two least important ones, four rather important and four rather unimportant. Consequently, for example, indicating two pictures as very important means that it is not possible to indicate others as very important, as only two images can be indicated as very important. This interdependence of choice, already present in the PBVS-C, was increased in the Values Puppet Interview. With one decision, a child: (1) chooses one pole of the dimension and (2) rejects the other (e.g., by choosing the values of self-transcendence, they also reject the values of self-enhancement). It is worth noting, however, that this relationship only applies to two poles of one dimension in one item only. A decision taken within one item does not force a specific decision in another item. Additionally, choices within one dimension (self-transcendence *versus* self-enhancement) are completely independent of choices within the other dimension (openness to experiences *versus* conservation).

The following arguments prompted us to opt for the interview construction discussed above (presenting a child with two statements, describing two poles of a given dimension of higher order value, to choose from). First, the choice of one of the two opposite statements is easier for the child due to the level of cognitive development. Second, since it would be difficult to find a behaviour that would be value-neutral, represented by one of the statements (in each pair), we consistently decided to develop items in which the statements express two opposing values. The reasons behind this decision are based on the results of numerous empirical studies, verifying the circular model and showing that the values in MDS are indeed distributed on the theoretically predicted opposite sides of the circle (Bilsky, Janik, & Schwartz, 2011; Cieciuch, Harasimczuk, et al., 2010, 2012; Cieciuch & Schwartz, 2012).

### 4.2 Respondents and the Procedure

The study involved 60 children aged 4 to 6 years ($M = 5.6$, $SD = 0.66$). Girls accounted for 53% of the study group. The research was conducted in two pre-schools – Catholic and public. In both pre-schools, parents agreed to their children participating in the study. The research was conducted individually and always by a pair of researchers (co-authors of this article). The study was preceded by a play with children and the Dyzio and Zyzio puppets. Then the children went individually to a separate room or a quiet place in a larger room, where one of the researchers acted as Dyzio and Zyzio, while the other noted the children's answers. All of the items are presented in Table 2.

Before the presentation of the diagnostic questions, the instructors explained the rules to the child, saying: "Look, there are two teddy bears here. They are similar to each other, but a little different. This one has a red bow and this one has a green bow. These teddy bears are siblings, but they like different things. Listen to what they say. Teddy bear A (red): I like winter more because you can play in the snow then. Teddy bear B (green): I like summer more because you can play in the sand then. You see? They like different things. Which of the bears is more similar to you? Show me." The researchers made sure that the child understood what he or she should do. If there were any doubts about that, it was further explained using another example. During the examination, attention was paid to whether the child showed similarity to a teddy bear regardless of previous indications. If a child had chosen one puppet and indicated it constantly, regardless of what it said, it was not classified for further analysis.

## 5. Results

We analysed the collected data using MDS (Borg & Groenenen, 2005), which is often used in the study of values of both adults (Schwartz, 1992, 2006; Cieciuch & Schwartz, 2012) and children (Döring et al., 2010; Cieciuch, Harasimczuk, et al., 2010, 2012; Cieciuch, Döring, et al., 2012). The items are entered in the MDS analysis and the program generates a graphical representation of the relationship between them. Items are represented as points and are distributed in such a way that the distances between them depend on the correlation – the higher the correlation, the closer the points are to each other. The programme performing MDS finds a specific configuration of the distance between the variables and then checks how well it reproduces the relationships observed inside. The Stress-1 index was used as a fit index (Borg & Groenen, 2005).

The set of points generated by the program is then interpreted by the researcher, who draws lines corresponding to those expected or obtained and can be meaningfully interpreted. In the case of the research presented here, we expected that the obtained point structure could be divided into four wedges of a circle, corresponding to four higher-order values. According to the circular model of values, we expected that the wedges lying closer to each other would focus values with a similar motivation base, and the motivational opposing values would be placed in wedges lying on opposite sides of the circle. In other words – conservation and openness are located on opposite sides of the circle, similarly to self-transcendence and self-enhancement. Also, we expected that all the items would be located in their respective wedges.

MDS allows both quantitative and binary data. In the case of data collected utilizing the Values Puppet Interview, this is binary data, but it is associated with a certain difficulty. As discussed and justified in the description of the tool, items describe the bipolar dimension, so the choice of one pole is at the same time a rejection of the other. Two analytical strategies are possible in this situation:

1) It is possible to recode the items that describe one of the poles of a given dimension and consider the items belonging to a given dimension together. In this way, it would be possible to calculate the value preference index on the dimension of, for example, openness-conservation. It is worth adding that the calculation of such an aggregated dimension index was also used in the literature for data collected with the PVQ. This strategy was applied by Berzonsky, Cieciuch, Duriez, and Soenens (2011). From the point of view that is of interest here, such an analysis makes a circular structure test impossible. In such a situation one could expect to divide the points generated in a MDS into two groups only, corresponding to two dimensions.

2) Another method of data analysis is to construct the indicators of each of the four higher-order values. In the following analyses we have applied this strategy. So we considered the statement of the first puppet as diagnostic for a given type of value. Therefore, if the first puppet's statement is an indicator of openness, this item is coded in Table 2 as an item of openness. If the child indicates this puppet as being more similar to themself, it receives a value of one (there is an indication of a given value), and the other puppet receives a value of zero (no indication of a given value).

In the PROXSCAL analysis (SPSS 20) a binary measure was chosen, and among the available options of this measure – the Euclidean distance with the definition of the size 1 as *occur* and 0 as *not occur*. The results of multidimensional scaling are presented in Figure 4. The measure of goodness of fit of Stress-1 is .23, which is an acceptable value (Spence & Ogilvie, 1973).

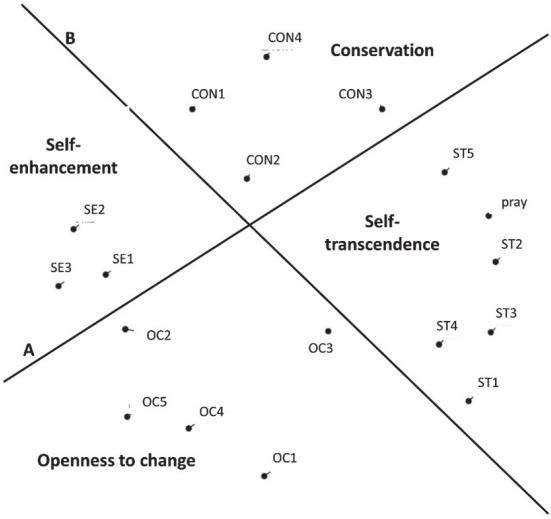


*Figure 4.* Multidimensional scaling of the results of children aged 4–6 years; Stress-1 = .23; Method: Values Puppet Interview.

It turned out, while using the analytical procedure described above, that the 19 items entered into the analysis were arranged in a circular structure, with four distinct higher-order values: self-transcendence, self-enhancement, openness to change and conservation. The only exception is the location of the prayer item – contrary to expectations, it appeared in the area of self-transcendence, not of conservation (in Figure 4 it is described with the abbreviation *pray)*.

## 6. Discussion

The measurement instrument we developed in the current study, suitable for the cognitive development of preschool children, allowed for verification of the value structure in the middle of childhood. It turned out that the value structure of children takes a circular shape already in this period. Four higher-order values are clearly distinguished: self-transcendence, self-enhancement, openness to change and conservation. The arrangement of these values follows the Schwartz circular model.

What is more, using the categories proposed in the modified Schwartz theory of value (Schwartz et al., 2012), two other distinct divisions of the value circle can be proposed. Line A in Figure 4 divides values into those motivated by anxiety (self-transcendence and conservation) and those free from anxiety (self-transcendence and openness). Line B, on the other hand, divides the circle into two halves: self-focused values (self-enhancement and openness) and values focused on the others (self-transcendence and conservation).

It turns out, therefore, that children's choices – however different and perhaps unstable over time – are arranged according to circular structure rules. The different behaviours of a child in everyday life, described by the puppets, representing the realisation of different types of values are chosen as preferred or not preferred according to a specific "universal grammar" of value structure. During this period, values are acquired both through the transmission from parents, peers, preschool, as well as through the influence of broadly understood culture (e.g., the media). However, this shaping takes place in line with the circular model – the values of self-enhancement and self-transcendence do not coexist together, similarly to conservation and openness.

The item concerning prayer deserves special attention. In Schwartz's model, religion is attributed to the value of tradition, that is, conservation (as a higher order value). In many studies, including those conducted in Poland (Cieciuch & Schwartz, 2012), one of the PVQ items on the importance of religion is located in one wedge together with other items of tradition. It seems, however, that assigning all religiousness to tradition is a kind of reduction of the importance of religiousness to only one of its dimensions.

Schwartz's circular model of values is – both in its assumptions and numerous empirical verifications – universal model. This means that it can be a kind of reference system on which the meaning of a given value can be explained. This is how the item on prayer in the presented study reveals the meaning of prayer for children. It turns out that this is not conservation, but self-transcendence. Thus, prayer in the cognitive system of preschool children is more about caring for others, willingness to help, kindness and goodness than obedience and adaptability (i.e., conservation). However, the shift of religion towards conservation is already visible among children in their late childhood, because the religiousness item is located there in the MDS of PBVS-C results (Cieciuch, Harasimczuk, et al., 2010, 2012).

The presented research provokes questions that are worth being answered in subsequent studies. First of all, it would be necessary to carry out an analysis of multi-traits and multi-methods in a group of the oldest preschool children or the youngest school children, using the already verified PBVS-C and Values Puppet Interview. Such an analysis would be a repetition of the research strategy used to verify the theoretical validity of the PBVS-C by Cieciuch, Döring, and Harasimczuk (2013), who examined the oldest school children with the help of PBVS-C and PVQ, and analysed the results of the matrix of multi-traits multi-methods in MDS. Two further directions of research are longitudinal (verifying structure stability) and intercultural (verifying its universality) studies.

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