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Cieciuch, Jan ; Davidov, Eldad ; Algesheimer, René

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The Stability and Change of Value Structure and Priorities in Childhood: A
Longitudinal Study

Jan Ciecuch

janciecuch@gmail.com

University Research Priority Program 'Social Networks', University of Zurich, Switzerland
and Cardinal Stefan Wyszyński University in Warsaw, Poland

Eldad Davidov

Institute of Sociology, University of Zurich, Switzerland

René Algesheimer

Department of Business Administration, University of Zurich, Switzerland

Author Note

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Abstract

This longitudinal study explores the stability and change of values in childhood. Children's values were measured in Poland three times (with one-year intervals) using the Picture Based Values Survey (PBVS-C; Döring, Blauensteiner, Aryus, Drögekamp, & Bilsky, 2010), developed to measure values differentiated according to the circular model of Schwartz (1992). 801 children (divided into 5 cohorts aged 7, 8, 9, 10, and 11 years at the first measurement occasion) completed the PBVS-C three times on a yearly basis. Separate analyses were performed for each cohort using the data of the three measurement occasions. Multidimensional scaling revealed that, in children, Schwartz's (1992) circular structure of values is stable and does not change over time. Although priorities of values displayed moderate stability over time, the means changed between the ages of 7 and 11 years. Specifically, latent growth curve modeling revealed changes in children's values hierarchy as indicated by the decrease in the mean level of conservation values and the increase in the mean level of openness to change values. Self-transcendence and self-enhancement also changed in different directions. As indicated by mean levels over time, self-transcendence first increased in importance, slightly decreased, and finally increased again. In contrast, self-enhancement first decreased in importance, then increased, and finally began to decrease again.

Keywords: value structure, value priorities, value development, childhood, latent growth curve model

The Stability and Change of Value Structure and Priorities in Childhood:

A longitudinal study

Value preferences are commonly used in the social sciences to describe both individuals and societies. Psychologists consider individual differences in value preferences as one of the main predictors of various psychological outcomes such as behavior (Bardi & Schwartz, 2003), well-being (Sortheix & Lönnqvist, 2014), and attitudes (Kuntz, Davidov, Schwartz, & Schmidt, 2014) just to mention a few. At the same time, sociologists and cross-cultural psychologists use the term values to describe differences between societies (e.g., Hofstede, 2000) and study the impact of society on people's values through the process of socialization (e.g. Schönplflug, 2008). From a developmental point of view the question which arises is when and how the system of values develops? We address this issue in the current study.

Due to the socio-psychological nature of the concept of values, the shaping of the value system has been considered in the literature from two perspectives. According to the first perspective, values are shaped through the impact of culture on children and the process of socialization (Maccoby, 1992; Schönplflug, 2008). According to the second perspective, values are shaped by genetics, in addition to the environment (Knafo & Spinath, 2011). According to both approaches, value preferences develop in early periods in life, and later they are considered to be relatively stable individual characteristics. However, to the best of our knowledge, the process of value development per se during childhood has never been studied. We address this gap by conducting a longitudinal study on values and their development during childhood.

Schwartz's Theory of Values

Schwartz's (1992, Schwartz et al., 2012) theory of values is currently the most often used in the social sciences because of its integrational potential and the vast empirical support

it has gained. First, we briefly present the theory followed by a discussion of its implications for development.

Schwartz (1992; Schwartz et al., 2012) defines values as trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or group. The crucial assumptions of the theory can be summarized in three main claims. The first claim is that the key principle that differentiates among values is the motivation: values differ in their motivational content, or in other words which motivation they are an expression of. The second claim of Schwartz's (1992; Schwartz et al., 2012) theory is the differentiation between individual value priorities and a universal value structure. Value priorities refer to psychological individual differences: People differ in what they find to be more or less important. Their value priorities are hierarchically ordered from the most to the least important value. However, they shape their individual value hierarchies in accordance with rules of universal relations among the values based on their motivational content. The third claim of the theory is that the structure of value is in the form of a circular continuum. This *circularity* aspect has three implications: (1) adjacent values in the circle share compatible motivations; (2) values become less compatible as the distance between them around the circle increases; and (3) values on opposite sides of the circle express conflicting motivations.

The opposition between competing values can be described on two dimensions. The first dimension contrasts *openness to change* (values that emphasize independence of thought, action, and readiness for change) and *conservation* (values that emphasize order, self-restriction, and resistance to change). The second dimension contrasts *self-transcendence* (values that emphasize concern for the welfare and interests of others) and *self-enhancement* (values that emphasize the pursuit of one's own interests and relative success and dominance over others). The poles of these dimensions are called higher-order values. There are also other possibilities to describe the main oppositions between values (Schwartz et al., 2012). The first contrasts personal focused

values (self-enhancement and openness) with socially focused values (self-transcendence and conservation). The second contrasts self-protection, anxiety avoidance values (self-enhancement and conservation) with growth, anxiety free values (self-transcendence and openness values). Accordingly, openness to change values can be characterized as personal focused and growth values, self-enhancement can be characterized as personal focused and self-protection values, conservation can be characterized as social focused and self-protection values, and self-transcendence can be characterized as social focused and growth values.

The claim that values are arrayed on a continuum implies that the circle can be divided into distinct values in many ways. In the classical version of the theory, Schwartz (1992) distinguishes 10 basic values and four higher-order values, which are presented in Table 1 and Figure 1. In the refined theory, the values circle is divided into 19 more narrowly defined values (Schwartz et al., 2012) that can be grouped into four higher-order values and into various halves of the circle as described above.

The circular arrangement of values is empirically supported by many studies worldwide (for a review see Schwartz, 2006; Schwartz et al., 2012). The model posits the universality of the circular structure but not the hierarchy of value priorities, treating the latter as a matter of individual differences. However, many cross-cultural studies have found that there is also a widespread consensus on value priorities. These results have led Schwartz (2014) to develop the concept of the *latent culture*. The value structure and the value hierarchy are derivative of the latent culture, which is external to the individual but influences individuals through various institutions and can be treated as “programmers of the mind” (Schwartz, 2014, p. 6). The latent culture is similar across countries because it is rooted in basic requirements of human existence: needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare requirements of groups (Schwartz, 1992, 2006).

Developmental Implications of Schwartz's Theory of Values

Although the theory was developed to describe values of adults, all the claims presented above have far-reaching implications for the understanding of value development.

The motivational meaning of values. Defining values in cognitive terms (Rokeach, 1973) would lead to the conclusion that forming a value system is possible based on some cognitive abilities (such as formal operations, e.g., Piaget, 1960), that enable thinking in abstract terms of trans-situational goals. These abilities begin to develop in adolescence. Indeed, shaping a value system was usually described in the Eriksonian tradition of research literature (Erikson, 1968; Berzonsky, Cieciuch, Duriez, & Soenens, 2011) as one of the developmental tasks during adolescence that is connected with identity formation. Defining values in motivational terms (according to the first claim of the theory mentioned above) enables research on values also in childhood. Children do not possess the cognitive abilities to formulate the trans-situational goals in abstract terms, however they possess motivational tendencies that are the basis for shaping value systems in cognitive terms in subsequent developmental periods.

Structure and priorities of values – stability and change. The second claim of Schwartz's theory discussed above about the differentiation between value structure and value priorities allows for a new perspective of research on value development: Development of value priorities is based on the rules of the value structure. One can draw an analogy between the system of values and the system of language. Children's use of language is determined by the system of language that is external to the individual child. Analogously, the structure of values is external to the individual child, probably universal, and precedes shaping value hierarchies.

Several studies have identified the circular structure of values in childhood. The first attempts were made using the value questionnaire developed for adults. For example, in 10- to

12-year-old children, Bilsky, Niemann, Schmitz, and Rose (2005) found a highly differentiated structure of values similar to that predicted by the circular model of values. However, children find the questionnaire quite difficult to complete because it contains many abstract phrases and is cognitively complex. Taking these problems into account, Döring et al. (2010) developed a new measure to assess children's values: the Picture Based Value Survey (PBVS-C), which is tailored to children's cognitive development. This new method gave a fresh impetus to studies on children's values (Cieciuch, Harasimczuk, & Döring, 2013; Döring et al., 2015) and revealed that, similar to adults, even 7- to 12-year-old children organize their values in a circle. However, to date, the development of value priorities based on the rules of values structure has not been studied.

As indicated earlier, values among adults are usually considered in the literature to be relatively stable (Rokeach, 1973; Schwartz, 1992; Schwartz et al., 2012). With value stability researchers refer to the common notion that assumes that the rank order of individuals remains unchanged over time: With the passage of time, individuals scoring high or low on particular values do not change their relative position to other individuals (Finkel, 1995). However, relative stability does not preclude the possibility of value change, and this idea has recently attracted increasing scholarly attention (Bardi, Lee, Hofmann-Towfigh, & Soutar, 2009; Maio, Pakizeh, Cheung, & Ress, 2009). Even when individuals display relative stability in their value priorities compared to other individuals, the mean level they attribute to particular values may still increase or decrease (Biesanz, West, & Kwok, 2003; Roberts & DeIVecchio, 2000).

It is noteworthy that the terms of stability and change are usually referred to value priorities. Based on the differentiation between value structure and priorities proposed by Schwartz (1992) one can argue that (1) the individual mean value priorities can change over time while the structure of values remains preserved, and (2) the structure of values

determines the patterns of change in value priorities: When neighboring values increase in importance, opposing values are expected to decrease in importance (Bardi et al., 2009; Maio et al., 2009).

To date, however, most studies on stability and change have been conducted on adult populations only (Bardi et al., 2009; Schwartz, 2006). Considerably fewer studies have focused on adolescents (Benish-Weisman & McDonald, 2015; Wray-Lake, Flanagan, Benavides, Shubert, & 2014; Vecchione, Döring, & Bardi, this issue) and, to the best of our knowledge, there is no longitudinal study on the stability of value structure and change of value priorities in childhood.

Differentiating between values. The theory posits that the circular continuum of values can be divided in many ways: into more narrowly defined values or less broadly defined values. Although according to the theory, the division depends on the research goals and the precision of the measurement (Cieciuch, Schwartz, & Vecchione, 2013), one can argue that the increasing ability to differentiate between more narrowly defined values is, in principle, a developmental process. Since the germinal work of Werner (1957), the process of differentiation is considered one of the most basic processes of development in many domains. In the value domain one can expect that only the main basic dimensions organize the structure at earlier stages of development of the value structure, whereas at later stages, individuals are then capable of differentiating between more and more values.

In fact, studies originating from countries such as Bulgaria, Germany, Italy, New Zealand, Poland, and the United States have reported that fewer than 10 values could be identified among children, whereas the four higher-order values could almost always be differentiated (Cieciuch, 2013, Cieciuch et al., 2013, Döring et al., 2015).

Aim of the Study

In the present study, we aimed to examine the development of the value system during childhood. Taking into account the considerations presented above, we formulated the following hypotheses:

Stability of the circular value structure. We expected that the values structure would be organized according to the theoretical circular model of values and would not change over time. First, based on results of previous studies on the value structure (Cieciuch, 2013; Cieciuch et al., 2013, Döring et al., 2015) we expected to find the circular arrangement of four higher-order values among children in the order predicted by the theory and presented in Figure 1. Second, we expected that the structure of values identified in the first measurement occasion remain stable over time. In other words, the order of values around the circle was expected to remain rather similar over time.

Increasing stability of value preferences over time. We expected that value preferences in childhood would be relatively stable over time. The personality traits can serve as a kind of reference point for research on stability of noncognitive individual differences, because they are well established in the literature and were also found to be relatively stable during the life span (Biesanz et al., 2003). Roberts and DelVecchio (2000) reviewed published longitudinal studies on personality traits and reported that the estimated population correlation of traits measured in longitudinal designs was about .43 for children aged 6 to 12 years. Thus, because values are considered to be relatively stable in adulthood (Schwartz, 1992, 2006) and shaped during earlier periods of life, we expected (1) that the level of stability of value preferences is similar to that of personality traits found in previous studies among children and (2) that the stability of value preferences in childhood increases with age.

Patterns of development of value preferences. Previous studies which were conducted utilizing the PBVS-C in five countries (Bulgaria, Germany, Italy, Poland, and the United States; Cieciuch, 2013; Cieciuch et al., 2013; Döring et al., 2015) found that self-

transcendence was the most important value among children and self-enhancement was the least important. Conservation and openness to change were in between with some cross-cultural differences (in Bulgaria, Germany, Italy, and the United States, openness to change was more important than conservation, while in Poland the opposite was the case). These findings are consistent with findings about the strong similarities of adults' value hierarchies in many different countries (Schwartz & Bardi, 2001), that ultimately led Schwartz (2014) to develop the construct of latent culture. Thus, we expect to find a similar value hierarchy in children in the current research.

Schwartz (2006) reported some findings on change of value priorities in adulthood. Specifically, the priority of conservation and self-transcendence values increases with age, whereas openness to change and self-enhancement (values opposed to conservation and self-transcendence) tend to decrease in importance as one becomes older (Schwartz, 2006). Thus the (1) form of the observed value priorities' change was in concordance with the circular value structure and the (2) content of the change was determined by the developmental processes occurring in adulthood (for a discussion see Schwartz, 2006).

We expected similar regularities in the development of children's value preferences. In other words, we first expected that the change of value priorities is in concordance with the circular model of values. That means that an increase in a particular (higher-order) value is associated with a decrease in the opposing higher-order value. Regarding the substantive change of value priorities we formulated the following expectations: (1) As a result of cognitive development and the early beginning of identity exploration in early age (Harter, 1999; Leary & Tangney, 2003; Schwartz, Luyckx, & Vignoles, 2011), one could expect an increase in the importance of openness values and a decrease in the importance of conservation values over time. (2) Changes on the dimension self-transcendence versus self-enhancement values are more difficult to predict, because there are two factors that could

enhance the change in opposing directions. On the one hand, the impact of culture through the socialization process aims to increase the preference for self-transcendence at the expense of self-enhancement values. On the other hand, previous studies suggest that during late childhood individuals are more focused on the self. According to Erikson (1968), children, during this life period, are under pressure to show their abilities and compare them to those of their peers. Additionally, during their school years children struggle with the psychosocial crisis of industry versus inferiority in terms of Erikson's (1968) theory. A desired solution of the crisis is a sense of being productive and successful. School experience, during which teachers increasingly evaluate the quality of work rather than only the effort put into work leads to the increasing self-awareness of their own abilities and distinguishing ability from effort (see also Nicholls & Miller, 1984; Altermatt, Pomerantz, Ruble, Frey, & Grenlich, 2002). Thus, at present, we did not formulate any specific expectations regarding the substantive change of self-enhancement and self-transcendence values in late childhood beyond the hypothesis of change symmetry originating from the circular structure of values.

Method

Measure: The Picture Based Value Survey for Children (PBVS-C; Döring et al., 2010)

To measure children's values, we used the PBVS-C questionnaire developed by Döring et al. (2010). The PBVS-C is a self-reported, picture-based measure consisting of 20 pictorial items that are indicators for 10 values (i.e., each value is measured by two pictures). The pictures concretize abstract values thus enabling children to understand them. In each picture, which is accompanied by a brief caption, a character performs a value-relevant action (exemplary items are presented in Figure 2). The pictures are printed on removable stickers. Children place the items according to the importance that they ascribe to each one. There are five levels of graded alternatives on the response sheet ranging from *very important* to *not at all important* in the predefined Q-sort format (Döring et al., 2010).

The use of pictures to measure value indicators was developed to tap into each of the 10 basic human values. So far, however, the instrument has been most often used to obtain measures of the four higher-order values in the research on value priorities. Thus, each value score is computed as the mean of children's responses to the two pictures measuring it, and the four higher-order values are computed as the mean of responses to the pictures measuring the two or three basic values comprising the higher-order value: self-transcendence (benevolence and universalism), self-enhancement (power and achievement), conservation (security, conformity, and tradition), and openness to change (self-direction, stimulation, and hedonism). According to Schwartz's value theory, hedonism belongs to both openness to change and self-enhancement values, however, in most cases it is closer to openness to change (Schwartz, 1992, 2006; see also previous research using the PBVS-C: Cieciuch et al., 2013, 2014; Döring et al., 2010, 2015). Therefore we included hedonism with openness to change values.

Participants and Procedure

801 children (49.7% girls) aged 7 to 11 years participated at the first measurement occasion in 2010. The data were collected in primary schools three times, with one-year intervals between the measurements (i.e., in 2010, 2011, and 2012) during the spring. The school year in Poland goes from September to June. Children begin school at the age of 6 in the so called "zero-class". Since the first measurement took place during the spring, the children were (approximately) seven years old. This is the youngest age that was included in our samples.

Table 2 presents the sample size at each measurement occasion, grouped by respondents' age at the first measurement occasion. For example, participants in the youngest cohort were 7 years old at the first measurement occasion, 8 years old at the second, and 9

years old at the third measurement occasion whereas children in the oldest cohort were 11, 12, and 13 years at the first, second, and third measurement occasion, respectively.

The dropout was not systematic and was mainly caused by pupils' absence from school on the particular day of research, thus we treated the dropout as missing at random. Eighty percent of the participants at the first measurement occasion ($N = 801$, second column on Table 2) took part at the second measurement occasion ($n = 641$, third column on Table 2), and 82% of the participants at the first measurement occasion took part at the third measurement occasion ($n = 660$, fourth column on Table 2). Finally, 500 participants at the third measurement occasion took part also at the first and second measurements (fifth column in Table 2), and $n = 160$ pupils participated at the first but not at the second measurement. Missing values were treated using the full information maximum likelihood (FIML; Schafer & Graham, 2002) procedure.

The data were collected in the classes by research assistants (i.e., university student volunteers) who were well acquainted with the instructions. Before the data collection, assistants participated in a special research seminar in which the value theory, childhood development, and the survey used for the study were discussed. Children whose parents permitted them to participate in the study completed the PBVS-C during school hours. Research assistants first introduced the survey to the children, asked them to think about what is important for them in life, and explained what to do with the provided materials. First, each picture was presented on a large poster and the caption was read aloud by the assistant. Afterwards, each child completed the task independently and had to indicate how important the content of the picture was for him or her in life. Children who had reading difficulties, especially among younger age groups, were helped by assistants to read the caption. However, assistants did not help them to decide how important the content of the pictures

were for them. Data were collected in both urban and rural areas in central and eastern Poland.

Analysis

Hypotheses about the circular structure of values and the stability of the structure were tested using multidimensional scaling (MDS; Borg & Groenen, 2005). MDS presents relationships among variables by displaying them as a configuration of points in space. Distances between the points reflect the similarities and dissimilarities between the variables. In our MDS analysis we introduced the 10 values measured at each of three occasions (i.e., 10 values times 3 measurement occasions = 30 variables in total, where each value was a mean of the responses to the two pictures measuring it). We accounted for the ordinal categorical character of the data and compared solutions with various initial configurations. The results were very similar and we decided to present the Simplex initial configuration (Borg & Groenen, 2005). We hypothesized that the theorized circular arrangement of values could be found in a two-dimensional MDS. More specifically, we expected that the three measurements of a given value over time would be located close to each other, and that values belonging to the same higher-order value would also be closely located in the order predicted by the theory (i.e., with neighboring and opposing values). In other words, we expected that the structure of values would not change over time. Such structure stability does not imply that children provide similar responses over time or that they display similar value preferences at different measurement occasions. A similar structure implies that either there were no changes in value preferences or, if there were any, that they occurred according to the circular value structure: preference for neighboring values change in the same direction and preference for opposite values change in the opposite direction.

Hypotheses about the stability of value preferences were tested using test-retest correlations, because in our study we refer to stability as the amount of change in the relative

rank order of individuals over time (Finkel, 1995; Hochman & Davidov, 2014). In other words, whereas the level of individual values may change over time, values may still be regarded as stable if the relative position among individuals remains unchanged (Finkel, 1995). Technically speaking, it examines whether individuals scoring high or low on a measured attribute remain high or low relative to other individuals. It can be calculated as the correlation between a pair of measurement occasions. Change at the rank order level implies, for example, that individuals scoring high on a certain attribute relative to other individuals decrease their relative position on the rank order (Roberts & DelVecchio, 2000). A correlation of 1 implies perfect stability in the rank order whereas a correlation of -1 implies a perfect reverse in the relative order of individuals. We follow this tradition and report these correlations as an indicator of longitudinal value stability among the children in our sample.

Hypotheses about increasing stability of value preferences with increasing age were tested by examining the correlation between age (five cohorts from 7 to 11 years) and stability coefficients that were calculated as correlation coefficients between value scores measured on (a) the first and the second occasion and (b) the first and the third occasion.

To test the hypothesis about the developmental patterns of change in value priorities, we analyzed latent growth curve models (LGC, Byrne, 2010). Researchers distinguish between two types of change: on the group level and on the individual level (Biesanz et al., 2003). The first type is a mean-level change and describes the change in the importance of a value for a group of people. The second refers to the variability of individuals around this mean change. If this variability is low, it implies that individuals change similarly over time. If the variability around the mean change is high, it suggests that the change pattern differs among individuals (Bardi et al. 2009; Biesanz et al., 2003).

LGC models provide information about increase or decrease of individual preferences or other attributes by estimating an underlying trajectory over time for each individual (Bollen

& Curran, 2006; Davidov, Thörner, Schmidt, Gosen, & Wolf, 2011; Duncan, Duncan, & Strycker, 2006). The main idea behind this model is that individual growth for a given concept is a function of (1) a latent intercept which stands for the average initial level of the construct, (2) a latent slope which stands for the average change rate per time unit plus (3) a random error (Bollen & Curran, 2006; Schlüter, Davidov, & Schmidt, 2007). Thus, as indicated above, the mean-level change is reflected in the mean of the slope parameter which reports the change at the group level. This parameter provides an estimate for the direction and strength of the longitudinal change for the group. However, it does not indicate whether and to what extent individuals differ in this change pattern. The variability of change across individuals is reflected in the variance of the slope parameter.

We ran separate LGC models for each higher-order value and for each age cohort (i.e., for the samples beginning the study at the ages of 7, 8, 9, 10, and 11). As a point of departure we tested a linear model. If the model of linear change (increase or decrease) over three measurement occasions did not fit the data, we modified the model accordingly to correspond with the empirical pattern of change by allowing the change to be nonlinear. Figure 3 presents, as an example, an LGC model with a linear effect of conservation for the group of children who were 9 years old on the first measurement occasion. We tested both linear and quadratic effects and evaluated the models based on recommendations provided in the literature. The following fit indices support that the model fits the data well: (1) chi-square (χ^2) is not significant (Jöreskog, 1969); (2) the root means square error of approximation (RMSEA) is less than .08 (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004); (3) the comparative fit index (CFI) is greater than .90 (Hu & Bentler, 1999; Marsh et al., 2004).

Results

Stability of the Circular Value Structure

The MDS results of all values measured in all three occasions are presented in Figure 4. The Stress1 of .15 obtained in an MDS with 30 variables indicated a good fit to the data (Borg & Groenen, 2005; Spence & Ogilvie, 1973). The MDS demonstrated that all the measurements of a given value were located very close to each other and that it is possible to distinguish between the higher-order values with one exception: Tradition, although distinct from other values, was placed in the same wedge together with benevolence and closer to the center of the circle (rather than closer to conformity and security values). Thus tradition seems to share the motivational meaning with self-transcendence rather than with conservation values. Nevertheless, it is worth noting that it is possible not only to divide the circle into four higher-order values but also into the 10 basic human values. All 10 values could be clearly distinguished from their neighboring values with only one exception: The first measurement of power was located next to the measurements of achievement rather than next to the other measurements of power. In other words, the importance of power on the first occasion of measurement was more similar to the importance of achievement than to its later measurements. The order of values around the circle was as predicted by the theory, with three exceptions: already mentioned above, benevolence and tradition located in one wedge, security and conformity located in one wedge (both of them belong to the higher-order value of conservation), and the replacement between achievement and power (both of which belong to the higher-order value self-enhancement).

Increasing Stability of Value Preferences

Correlations between value scores that were measured on three occasions are presented in Table 3. Inspection of the correlations presented in Table 3 leads to the following three conclusions. First, all correlations between measurements of the same values were significant, except for openness for 8- and 9-year-old children and correlations in the group of 7-year-old children. For the youngest children in our sample, preferences were generally less

stable compared to those of older children. Additionally, for the 7-year-old children we found that self-enhancement was the most stable value.

Second, in most cases, within the same occasion of measurement, the correlation between measurements of the same value was the highest (in 39 cases, the correlation was the highest, in seven cases the correlation was significant but not the highest, and in two cases, the correlation was not significant). The means of the correlations between two measurement occasions separated by a one-year interval (i.e., the means of the correlations between the first and the second measurement occasions and between the second and the third measurement occasions across all age groups) were the following: conservation = .42, self-transcendence = .37, openness = .37, and self-enhancement = .49. The means of the correlations of the same values across measurement occasions separated by a two-year interval (i.e., between the first and the third measurement occasions) were the following: conservation = .31, self-transcendence = .29, openness = .19, and self-enhancement = .39). In other words, although no higher-order value displayed perfect temporal stability, we found that despite the young age of the respondents, their value preferences exhibited a moderate stability similar to that reported for personality traits in previous studies.

Third, for older children, the temporal correlations among the same values were usually highest. This implied that the temporal stability of values tended to be higher the older the children were. The means of the temporal correlations between values measured at the first and second measurement occasions (one-year interval) were the following: .18 for children aged 7, .28 for children aged 8, .33 for children aged 9, .39 for children aged 10, and .41 for children aged 11 at the first occasion of measurement. The means of the temporal correlations between values measured at the first and third measurement occasions (two years interval) were the following: .13 for children aged 7, .24 for children aged 8, .22 for children aged 9, .29 for children aged 10, and .31 for children aged 11 at the first measurement

occasion. Thus the correlation of age with the average stability between the first and the second occasion was .97. The correlation of age with the average stability between the first and the third occasion was .92.

Patterns of Development of Value Preferences

Table 4 presents the means and standard deviations of value preferences for all age groups and measurement occasions. Thus, it provides a first descriptive overview of the levels of value preferences over time and across age groups. Table 5 presents model fit coefficients and the means and variances of the slopes and intercepts of each model. Table 4 and Figure 5 also present the means of value priorities for children who were 7 years old at the first measurement occasion to display the trend. Table 5 does not report the results of the LGC for this age group because the sample was very small ($n = 65$), and the LGC model could not be estimated properly. All models across all age groups fit the data well with the exception of self-transcendence for the group of 9-year-old children. In this case a quadratic trend fits the data better.

We were able to uncover the following consistent observations: 1) Over two years, conservation tended to decrease in importance for children aged 9, 10, and 11 at the first measurement occasion. 2) Over two years, openness to change significantly increased in importance for all children. 3) Self-transcendence for 9-year-old children initially remained on the same level and then decreased in importance. For 10-year-old children, self-transcendence decreased in importance over time. 4) Self-enhancement decreased in importance for 8-year-old children and increased in importance for 9- and 10-year-old children. For 7-year-old children, the hierarchy of value priorities was as follows: The most important value was self-transcendence, followed by conservation and then openness. The least important value was self-enhancement.

The observed pattern led not only to change in the importance of values expressed in terms of means but also to change in their rankings. At the age of approximately 11 years, the second most important value was openness, which became more important than conservation. Openness continued to increase in importance and became approximately as important as self-transcendence for 12-year-old children, the oldest group studied here. Figure 5 contains a graphical presentation of the trends as observed and described above based on the raw scores. To provide an example of how to interpret Figure 5: Conservation (depicted by a solid line) for children who were 9 years old at the first measurement occasion decreased in importance at the second (when the children were 10 years old) and third measurement occasion (when the children were 11 years old). The trend was significant, therefore the line is in boldface type.

Inspection of the slope variance presented in Table 5 leads to the conclusion that there was also interindividual variability in change. The group of 9-year-old children was the most heterogeneous one. The slope variance was significant for this age group and for all values. Similar variability in the change pattern was found also for self-enhancement values among 8-year-old children and for openness among 10-year-old children.

The LGC approach enables the introduction of other variables in a theory-driven way that could explain the variance of change, depicted in LGC as a latent variable. We introduced gender to the model, and analyses revealed that longitudinal change patterns were similar for both boys and girls.

Discussion

Values are considered key factors to explain behavior, attitudes, identity, well-being, or other psychological outcomes. However, it remains unclear how values are structured and how they develop in earlier life periods. In the current cross-sequential study, we aimed to answer questions about the stability and developmental pattern of value structure and

priorities in childhood. We built our research and expectations on the foundation of Schwartz's (1992, Schwartz et al., 2012) theory of values.

Consistent with our expectations, the circular value structure was also found in children. It was possible to divide the circle into four higher-order values per the theory's postulation and additionally into 10 values albeit with some exceptions: (1) achievement and power were replaced; (2) security and conformity although distinguishable were located in one wedge; and (3) benevolence and tradition, although belonging to different higher-order values, were distinguished but located in the same wedge, implying that they expressed a similar motivation among children. This latter result is partially in line with the refined version of the value theory (Schwartz et al., 2012). According to this version of the theory, one facet of tradition, that is, humility, is located on the border between self-transcendence and conservation.

A large distance between values in MDS analyses was interpreted by Schwartz (2006) as an indication for some missing values that may fit into this empty space. The relative large distance between self-enhancement and conservation values found in the MDS in our study suggests that it may be possible to introduce some additional values in this empty space. Indeed, since a similar empty space was also found among adults, Schwartz and colleagues (2012) introduced a new value into this space, face, which shares motivation of both conservation and self-enhancement values. The PBVS-C is based on the classic 10-value version of the Schwartz's theory and does not measure this new value. In further research with children one could consider introducing some new values based on the refined theory of Schwartz et al. (2012).

The MDS analyses demonstrated that the value structure is quite stable and does not change over time. Thus, it seems that during childhood the value structure is already quite well developed and stabilized. To find the moment in life when the structure of values is yet

not organized researchers would probably need to study even younger children. Some theoretical explanations about the observed development of the structure are presented in the final section.

We found that value preferences are relatively stable over two years in all age groups except for the youngest group studied, which consisted of children who were 7 years of age at the first occasion of measurement. Given that this group of children was also the smallest (only $n = 65$ at the first measurement occasion), we consider the results for this group as inconclusive. The stability of value priorities among children were similar to the stability of personality traits. Roberts and DelVecchio (2000) reported that the mean stability of traits for children aged 6 to 12 years was .43, while the mean stability of value priorities in our research was .41 with a one-year interval and somewhat lower (.30) for a two-year interval between the measurements. Moreover, we found that the stability of children's value preference hierarchies increase with increasing age.

Changes in value priorities followed the implications of the circular model and were not accidental but rather systematic: Preferences of opposite higher-order values changed in opposite directions. Our empirical test revealed that conservation values decreased in importance whereas openness values increased in importance over two years in almost all age groups. The increasing importance of openness even led to changes in the value hierarchy. For children aged 7 to 10 years at the first measurement occasion, openness was located at the third position in the hierarchy, after conservation (located at the second position) and self-transcendence (the most important value). However, the increase in importance of openness and the decrease in importance of conservation led to a replacement in value preferences for children aged 11, when openness became more important than conservation. This trend is connected to children's cognitive development and entry into adolescence, a period which is

characterized in terms of identity exploration (Harter, 1999; Leary & Tangney, 2003; Schwartz et al., 2011).

We also discovered symmetry in the patterns of change in self-transcendence and self-enhancement values. This picture, although more complex, was still clear. Two breaking points related to the development of preferences for these values were observed. The first was at approximately 9 years of age, when self-transcendence began to lose importance while self-enhancement gained in importance. This trend could be observed until approximately the age of 12, when the trend seemed to discontinue. Using a different measure, other studies (Cieciuch, 2013) have shown that for adolescents, self-enhancement is located at the lowest position in the hierarchy of importance and self-transcendence at the highest position. This suggests that the trend of decreasing importance of self-transcendence and increasing importance of self-enhancement in late childhood does not continue in a way which influences their ranking, and self-transcendence values tend to remain more important than self-enhancement values. Below we provide possible explanations for the developmental patterns observed for the different values.

Toward a Model of Value Development

The development of values was not discussed by Schwartz, however, his theory provides a convenient framework for such a model. Summarizing the theoretical considerations and empirical results of our research we propose a preliminary outline of the model of value development, based on Schwartz's (1992, Schwartz et al., 2012) theory of values. It consists of the four following assumptions.

1. The motivational basis of values. The claim of motivational content of values enables the research on values in childhood. Although children may not yet possess cognitive representations of values, it is nevertheless possible to look for the motivations that can be

treated as the basis and as a precursor of adult values (Döring et al., 2015), which are usually conscious and cognitively available in adulthood.

Two motivational dimensions in the Schwartz (1992; Schwartz et al., 2012) value theory, (1) personal focused versus social focused values and (2) growth versus protection values, correspond with two basic personality metatraits. Metatraits are described as higher-order factors of the Big Five personality traits. The first one has been called alpha or socialization by Digman (1997) and labeled stability by DeYoung, Peterson and Higgins (2002). Digman (1997) called the second metatrait beta or self-actualization whereas DeYoung and colleagues (2002) named it plasticity. As shown by Strus and colleagues (2014), the metatraits provide a broad platform for the integration of many psychological constructs, including Schwartz's values. The dimension of personal focused versus social focused values corresponds with the alpha metatrait (stability). The dimension of growth versus protection values corresponds with the beta metatrait (plasticity). These two basic metatraits may be the personality basis for motivational tendencies that in turn develop into basic dimensions of values. Alpha and beta personality metatraits were already identified in 4-year-children by observing their behavior (Wang, Chen, Petrill, & Deater-Deckard, 2013). It may be reasonable to also expand value research and its developmental pattern among such young children by using different methods.

2. The cultural context of values. According to Schwartz (2014), the societal value system is a core part of the latent culture that is external to the individual and shapes the context in which people live. The societal culture affects the individual systems of values. Especially in childhood the effect takes place in the form of socialization (Schönpflug, 2008). The general framework of the process of socialization and the development of value priorities may be explained in terms of social development theory of Vygotsky (1978).

3. The development of values as a trade-off between basic motivations and the latent culture. Individual value preferences are shaped in the process of socialization on the basis of the individual motivational tendencies. Thus, the trade-off between the latent culture and basic motivational tendencies does not necessarily mean that they operate in opposite directions. After all, societal values (the core element of the latent culture) are rooted in the basic needs of people and groups (Schwartz, 1992, 2006, Schwartz et al., 2012).

Both the latent culture and basic motivations are more stable than a system of value preferences which is a product of their interaction. Although the latent culture is quite stable, it is possible that the exposure to the latent culture can change (e.g., by changing school or the place of living, or by a change in the significant others in the environment). It is also worth considering the possibility that the latent culture itself can change, too. It may happen in some specific historical circumstances such as, for example, during an economic crisis or after significant political changes. On the other hand, also the basic motivational tendencies may change over time (e.g., because of developmental processes partially based on biological processes or due to interactions with the environment).

Wang et al. (2013) studied the effects of the genes and the environment on personality development and concluded that the strongest determinant of changes in the personality metatrait beta (plasticity) was genetic, whereas the strongest determinant of changes in the personality metatrait alpha (stability) was environmental. Thus, one could hypothesize that alpha and the corresponding value dimension personal versus social focused values may be more strongly promoted during the socialization process. Beta and the corresponding value dimension of growth versus self-protection values may be more strongly determined by biological characteristics. It is worth noting that each higher-order value consists of elements of both the cultural alpha and personal beta. Although the process of trade-off between the

latent culture and basic motivation is continuous throughout the whole life, the hierarchies of value priorities become more and more stable as children age.

4. The role of psychosocial development of other domains. The trade-off between the latent culture and basic motivations takes place in a context of psychosocial development of other domains like personality, social, and cognitive development. All these processes can influence the development of both value structure and priorities. We argue that the development of the circular structure occurs in two processes: (1) in the formation of a two-dimensional structure and (2) in the differentiation among values located on the circle.

The dimensions of values are rooted both in latent culture and basic motivations, although the first dimension is more associated with the latent culture, with the second one being more associated with basic motivations. Thus, one can assume that whether the structure obtained in empirical research is one- or two-dimensional heavily depends on the measurement method used. If the method is self-reported and engages culturally or socially expected responses (as is the case of PBVS-C), the probability increases that the cultural dimension is more clear (as was the case for our results). However, if the method would be based on observation of behavior and ratings performed by other informants, the second dimension (i.e., basic motivations) could emerge as more dominant.

The process of differentiation between more narrowly defined and neighboring values is in concordance with the differentiation principle proposed by Werner (1957). With age, children increase their cognitive, social, and personal abilities, and this trend allows them to differentiate between values that were earlier undistinguished such as, for example, power and achievement.

Developmental trends of value priorities formally follow the implications of the circular structure of values. However, some developmental processes can also determine the substantive change in value priorities. An example from our results is the increasing

importance of openness to change supplemented by the decreasing importance of conservation, when children enter the time of identity formation and exploration (Leary & Tangney, 2003).

Future Directions

The results obtained in the current study on the development of value preferences and structure in childhood are based on a limited sample drawn in one country. Future research will profit from analyzing larger samples of children in other cultural settings to test whether the conclusions drawn in this study may be comparable to those in other settings. Our empirical results and theoretical considerations provide a first step in elaborating a model for value development during childhood. Our proposal for the model presented above for now has a status of a set of hypotheses that need to be verified empirically. According to the view of value development as a trade-off between the latent culture and motivational tendencies, further empirical research will profit from controlling for both motivational tendencies and cultural settings to precisely disentangle the effects as well as the use of other methods to corroborate the initial findings reported here.

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Table 1

Ten Values Grouped According to the Four Higher-Order Values Differentiated in Schwartz's (1992) Theory

Value	Description
Self-transcendence:	
Universalism (UN)	Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature
Benevolence (BE)	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact
Conservation:	
Tradition (TR)	Respect, commitment, and acceptance of the customs and ideas that traditional culture or religion provide
Conformity (CO)	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms
Security (SE)	Safety, harmony, and stability of society, of relationships, and of self
Self-enhancement:	
Power (PO)	Social status and prestige, control, or dominance over people and resources
Achievement (AC)	Personal success through demonstrating competence according to social standards
Openness to change:	
Hedonism (HE)	Pleasure and sensuous gratification for oneself
Stimulation (ST)	Excitement, novelty, and challenge in life
Self-direction (SD)	Independent thought and action—choosing, creating, and exploring

Note. Value names, abbreviations, and descriptions adopted from Schwartz, 1992.

Table 2

Sample Size at Each Occasion of Measurement by Age and Gender

	1st occasion	2nd occasion	3rd occasion	Participants in all 3 occasions
7 years	65 (58% girls)	55 (64% girls)	60 (57% girls)	50 (62% girls)
8 years	165 (38% girls)	124 (42% girls)	141 (43% girls)	100 (39% girls)
9 years	169 (46% girls)	120 (47% girls)	153 (46% girls)	104 (47% girls)
10 years	230 (53% girls)	173 (54% girls)	198 (55% girls)	141 (56% girls)
11 years	172 (49% girls)	169 (49% girls)	108 (55% girls)	105 (53% girls)
Total	801 (48% girls)	641 (50% girls)	660 (50% girls)	500 (49% girls)

Table 3

Correlations between Higher-Order Values Measured at Three Occasions (Correlations between Measurements of the Same Values are Noted in Boldface Type)

	Age	1st measurement occasion				2nd measurement occasion				
		CONS	TRAN	OPEN	ENH	CONS	TRAN	OPEN	ENH	
2nd occa- sion	CONS	7	.09	.39**	-.06	-.24				
		8	.35**	.41**	-.26**	-.37**				
		9	.43**	.21*	-.32**	-.23*				
		10	.55**	.44**	-.53**	-.29**				
		11	.52**	.27**	-.35**	-.40**				
	TRAN	7	.24	.12	-.24	-.04				
		8	.07	.32**	-.09	-.21*				
		9	.16	.29**	-.12	-.28**				
		10	.38**	.39**	-.24**	-.38**				
		11	.31**	.51**	-.21**	-.50**				
	OPEN	7	-.15	-.24	.37**	-.08				
		8	-.17	-.18*	.25**	.06				
		9	-.27**	-.23*	.43**	-.01				
		10	-.47**	-.34**	.56**	.11				
		11	-.36**	-.21*	.41**	.14				
ENH	7	-.13	-.16	-.10	.30*					
	8	-.25**	-.48**	.09	.47**					
	9	-.25**	-.21*	-.07	.48**					
	10	-.33**	-.37**	.11	.46**					
	11	-.43**	-.47**	.15	.63**					
3rd occa- sion	CONS	7	.15	.17	-.01	-.20	.20	-.17	-.07	.05
		8	.35**	.25**	-.25**	-.25**	.50**	.30**	-.34**	-.39**
		9	.26**	.18	-.17	-.19*	.55**	.33**	-.37**	-.40**
		10	.38**	.16*	-.25**	-.20**	.38**	.28**	-.38**	-.16
		11	.42**	.00	-.36**	-.07	.57**	.20	-.51**	-.35*
	TRAN	7	.25	.17	.04	-.33**	.24	.21	.07	-.43**
		8	.17*	.34**	-.07	-.35**	.34**	.42**	-.12	-.53**
		9	.12	.29**	-.07	-.27**	.25*	.59**	-.30**	-.45**
		10	.27**	.32**	-.24**	-.24**	.27**	.36**	-.34**	-.17
		11	.30*	.34**	-.19	-.36**	.43**	.45**	-.42**	-.49**
	OPEN	7	-.01	.06	-.05	.01	-.10	.34*	-.04	-.18
		8	-.27**	-.12	.15	.19*	-.35**	-.20*	.31**	.21*
		9	-.03	-.08	.14	-.05	-.29**	-.24*	.43**	.05
		10	-.31**	-.18*	.38**	.03	-.30**	-.32**	.53**	-.03
		11	-.37**	.24	.34**	-.14	-.42**	-.05	.48**	.11
ENH	7	-.30*	-.31*	.02	.39**	-.25	-.36*	.03	.44**	
	8	-.21*	-.41**	.16	.34**	-.41**	-.43**	.13	.60**	
	9	-.29**	-.29**	.06	.41**	-.33**	-.46**	.10	.59**	
	10	-.26**	-.23**	.05	.36**	-.25**	-.20*	.06	.30**	
	11	-.26	-.44**	.16	.43**	-.48**	-.47**	.36*	.59**	

Note. CONS = conservation; TRAN = self-transcendence; OPEN = openness to change; ENH = self-enhancement. * < .05, ** < .01, *** < .001.

Table 4

Means and Standard Deviations (in Parentheses) of the Higher-Order Values in All Age

Groups at All Measurement Occasions.

	7 years	8 years	9 years	10 years	11 years	12 years	13 years
Conservation	3.09	3.11	3.14				
	(.38)	(.32)	(.39)				
		3.13	3.07	3.09			
		(.42)	(.49)	(.46)			
			3.25	3.13	2.98		
			(.34)	(.39)	(.41)		
			3.18	3.08	2.99		
			(.38)	(.39)	(.44)		
				2.96	2.91	2.92	
				(.45)	(.46)	(.45)	
Self-transcendence	3.41	3.35	3.33				
	(.41)	(.52)	(.48)				
		3.32	3.30	3.26			
		(.52)	(.50)	(.55)			
			3.40	3.42	3.26		
			(.48)	(.56)	(.52)		
			3.42	3.29	3.18		
			(.49)	(.52)	(.57)		
				3.15	3.12	3.25	
				(.56)	(.53)	(.49)	
Openness	2.87	3.02	3.03				
	(.45)	(.38)	(.37)				
		2.85	2.99	3.06			
		(.45)	(.45)	(.47)			
			2.88	2.94	3.13		
			(.38)	(.46)	(.45)		
			2.90	3.04	3.15		
			(.43)	(.44)	(.48)		
				3.16	3.20	3.20	
				(.40)	(.41)	(.43)	
Self-enhancement	2.64	2.45	2.40				
	(.71)	(.61)	(.69)				
		2.72	2.61	2.51			
		(.72)	(.71)	(.68)			
			2.41	2.47	2.57		
			(.58)	(.63)	(.70)		
			2.46	2.54	2.62		
			(.65)	(.65)	(.70)		
				2.66	2.72	2.56	
				(.73)	(.72)	(.72)	

Note. Means of the same age group measured three times at one-year intervals are presented in rows (high scores indicate high importance). Thus, each row refers to a single age cohort group.

Table 5

Model Fit Coefficients and Statistics Obtained in Latent Growth Curve Models for Each Age Group and Each Higher-Order Value

	<u>Model fit coefficients</u>				<u>Means</u>		<u>Variance</u>	
	χ^2	<i>p</i>	CFI	RMSEA	Intercept	Slope	Intercept	Slope
<i>8-year-olds</i>								
Conservation	.191	.662	1.00	.000	3.125***	-.023	.077*	.026
Openness	.321	.571	1.00	.000	2.851***	.111***	.075*	.027
Self-transcendence	.474	.491	1.00	.000	3.333***	-.034	.047	-.009
Self-enhancement	1.097	.295	.999	.024	2.703***	-.093**	.294***	.085*
<i>9-year-olds</i>								
Conservation	.079	.779	1.00	.000	3.245***	-.138***	.093***	.051***
Openness	2.524	.112	.953	.095	2.876**	.120***	.123***	.054***
Self-transcendence	5.647	.017	.895	.166	3.425***	-.080**	.079	.047*
Self-transcendence (quadratic trend)	2.165	.141	.974	.083	3.423***	-.044***	.078**	.024**
Self-enhancement	.006	.940	1.00	.000	2.412***	.091**	.246***	.079*
<i>10-year-olds</i>								
Conservation	.023	.879	1.00	.000	3.178***	-.98***	.104***	.013
Openness	.297	.585	1.00	.000	2.902***	.123***	.136***	.034**
Self-transcendence	.035	.851	1.00	.000	3.421***	-.121***	.109**	.018
Self-enhancement	.019	.889	1.00	.000	2.459***	.081**	.225***	.003
<i>11-year-olds</i>								
Conservation	.036	.849	1.00	.000	2.962***	-.052*	.146**	.036
Openness	.962	.327	1.00	.000	3.159***	.053*	.082**	.024
Self-transcendence	.505	.477	1.00	.000	3.147***	-.009	.196***	.027
Self-transcendence (quadratic trend)	.581	.446	1.00	.000	3.140***	.000	.166**	.006
Self-enhancement	1.434	.231	.995	.050	2.661***	-.020	.435***	.086
Self-enhancement (quadratic trend)	1.696	.193	.992	.064	2.675***	-.001	.369***	.027

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; * <.05; ** <.01; *** <.001.

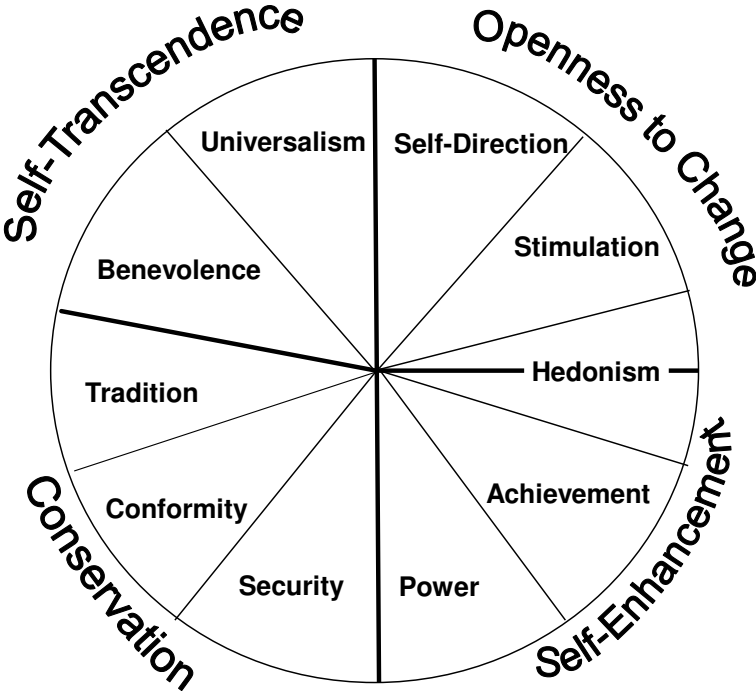
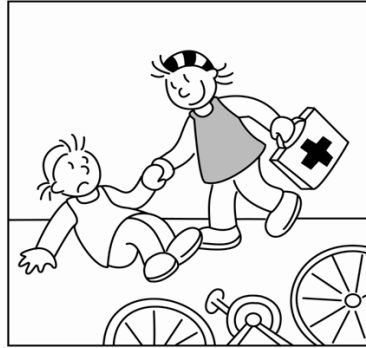


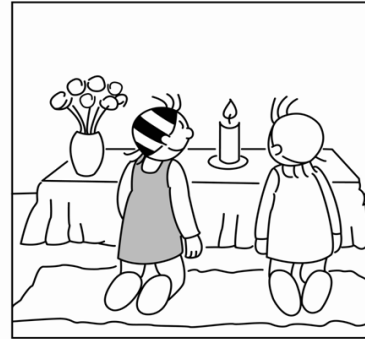
Figure 1. Circular model of 10 values and four higher-order values (adopted from Schwartz, 1992).



przyjaźnić się z obcymi
mit Fremden Freundschaft schließen
(to make friends with strangers)



pomagać innym
anderen helfen
(to help others)



myśleć o Bogu
an Gott denken
(to think of God)

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The ideas for the pictures and the captions were developed by Döring (2008).

Figure 2. Sample items from the PBVS-C (universalism on the left, benevolence in the middle, tradition on the right).

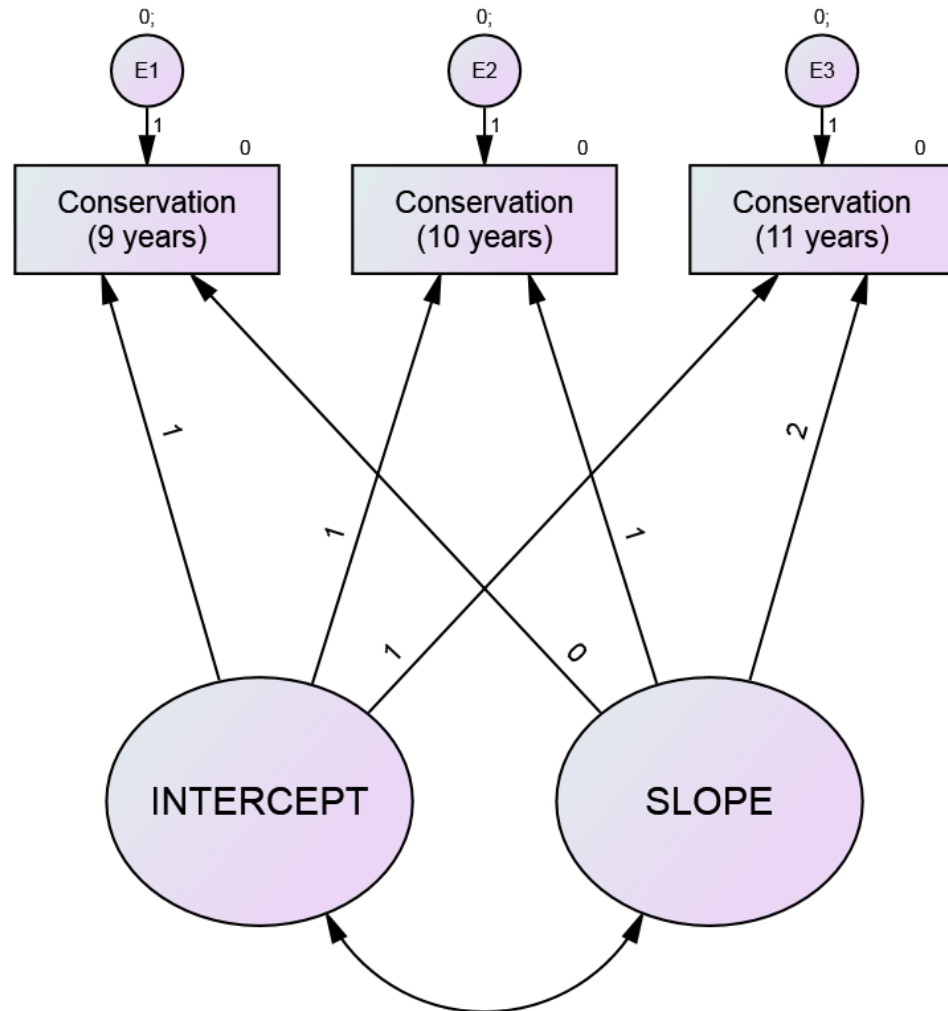


Figure 3. A latent growth curve model of conservation for children who were 9 years of age at the first measurement occasion. Note: The numbers next to the one-sided arrows imply constrained parameters; the loadings 0, 1, and 2 from the slope to the three measurements of conservation indicate that the model tests for a linear change over time; E1-E3 are the errors.

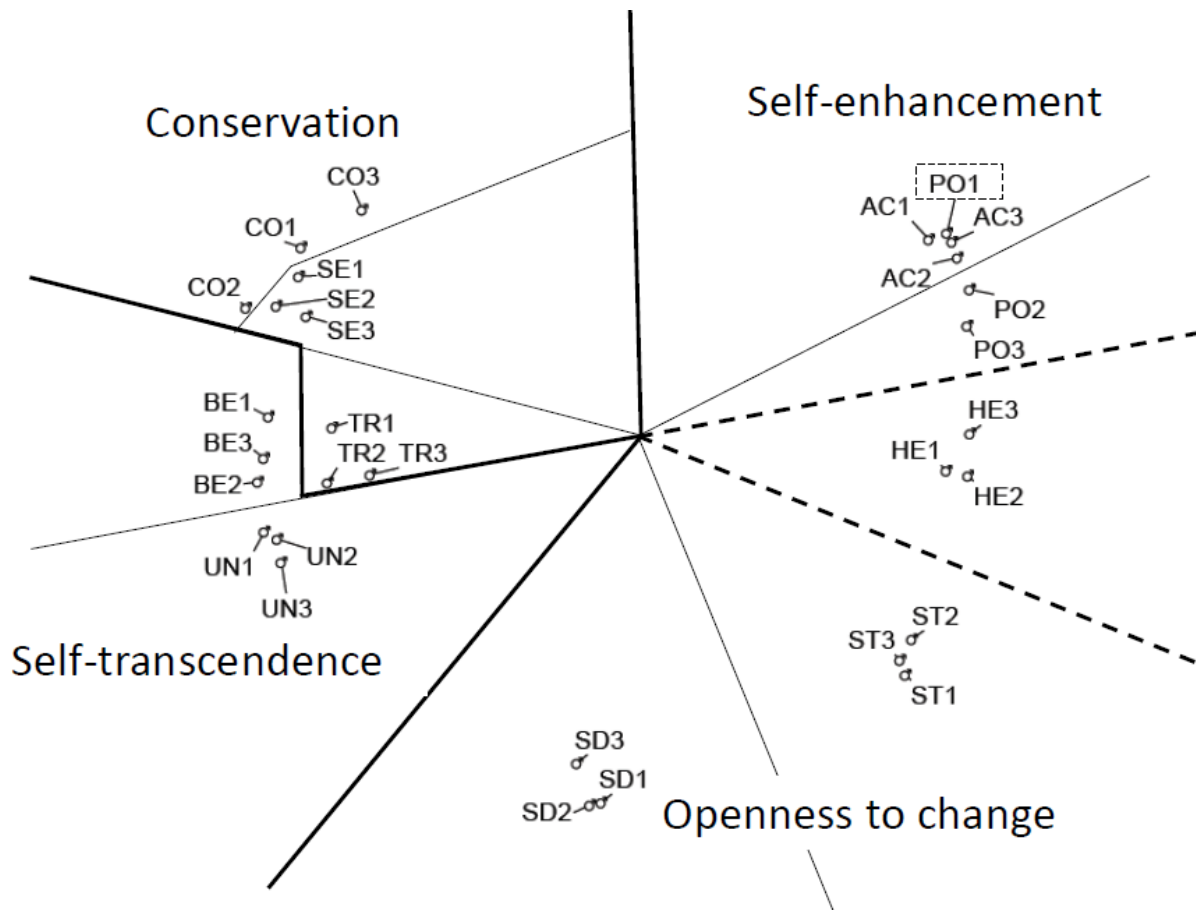


Figure 4. Multidimensional scaling of the 10 values measured at three occasions (Stress1 = .15). Abbreviations of values are displayed in Table 1. The numbers next to the value abbreviations indicate the occasion of measurement.

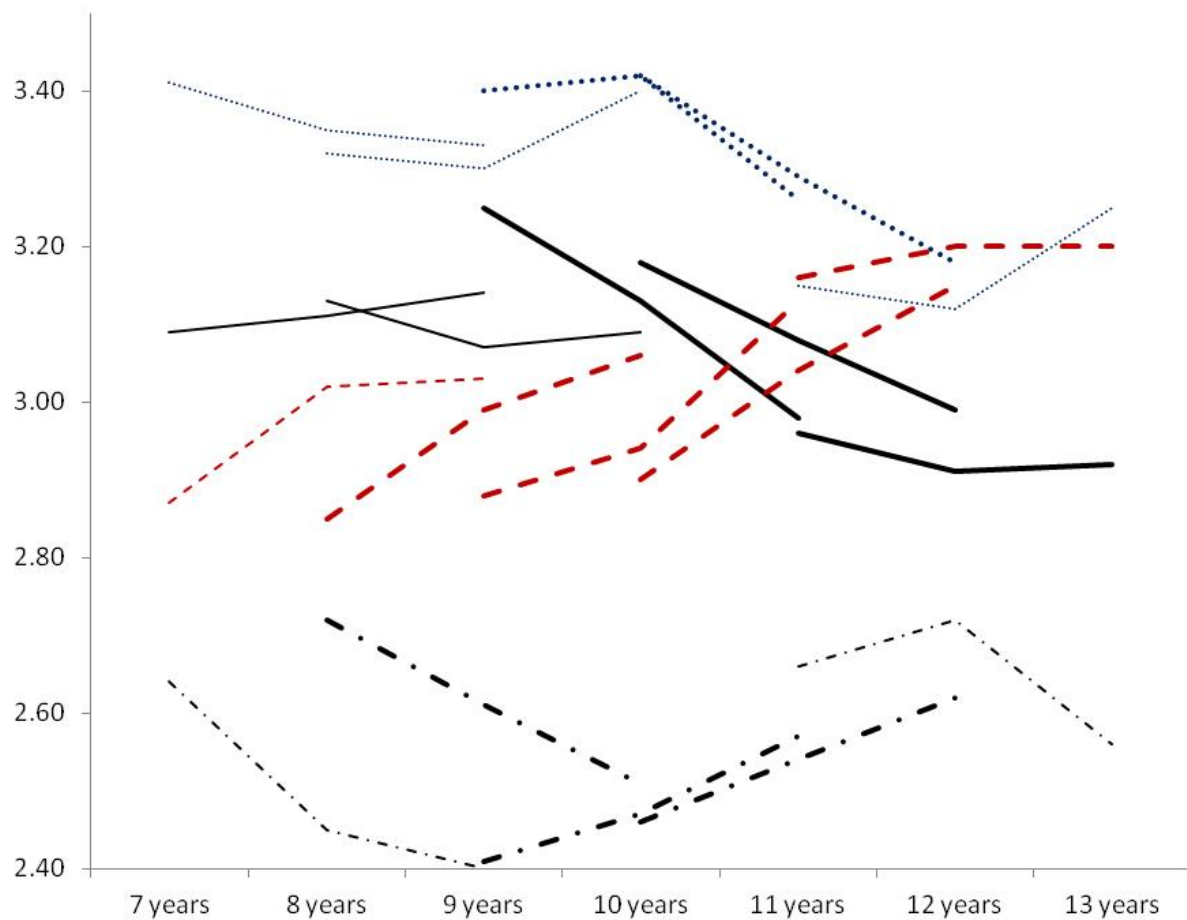


Figure 5. Temporal changes in the importance of the four higher-order values for five age groups (with 5 lines for each age cohort for the same value). Significant ($p < .05$) trends are noted in boldface type. Age is on the x-axis and the mean of the higher-order value preference is on the y-axis. The trends of value change are presented by using the following lines:

- Self-transcendence
- Conservation
- Openness to change
- · - · - Self-enhancement

Appendix

Correlations between Higher-Order Values at the Same Measurement Occasion (First Measurement Occasion/Second Measurement Occasion/Third Measurement Occasion)

	Conservation	Self-transcendence	Openness to change
<hr/>			
Group of children aged 7 years at the first measurement occasion			
Self-transcendence	.07 / .06 / .06		
Openness to change	-.45 / -.49 / -.53	-.24 / -.36 / -.19	
Self-enhancement	-.42 / -.37 / -.47	-.41 / -.56 / -.60	-.44 / -.26 / -.22
<hr/>			
Group of children aged 8 years at the first measurement occasion			
Self-transcendence	.33 / .26 / .35		
Openness to change	-.59 / -.69 / -.75	-.45 / -.37 / -.45	
Self-enhancement	-.56 / -.55 / -.53	-.58 / -.63 / -.70	-.10 / .02 / .10
<hr/>			
Group of children aged 9 years at the first measurement occasion			
Self-transcendence	.28 / .27 / .27		
Openness to change	-.54 / -.63 / -.56	-.54 / -.53 / -.47	
Self-enhancement	-.57 / -.49 / -.54	-.54 / -.56 / -.54	-.07 / -.04 / -.12
<hr/>			
Group of children aged 10 years at the first measurement occasion			
Self-transcendence	.39 / .29 / .38		
Openness to change	-.58 / -.64 / -.68	-.55 / -.46 / -.53	
Self-enhancement	-.59 / -.49 / -.56	-.55 / -.60 / -.64	-.07 / -.07 / .05
<hr/>			
Group of children aged 11 years at the first measurement occasion			
Self-transcendence	.23 / .30 / .43		
Openness to change	-.57 / -.67 / -.78	-.47 / -.42 / -.30	
Self-enhancement	-.64 / -.61 / -.53	-.60 / -.68 / -.80	.07 / .10 / .04
<hr/>			