

Value of Children in Germany: Dimensions, Comparison of Generations, and Relevance for Parenting

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1 Aims of the Value of Children Project	44
2 Research Questions of the Present Study.....	45
3 Method.....	47
3.1 Participants, design, procedure.....	47
3.2 Description of the German sample.....	48
3.3 Instruments and reliabilities	49
4 Results.....	51
4.1 Dimensions of VOC	51
4.2 Cross-generational comparisons of VOC-dimensions	56
4.3 Relations between mothers' VOC and the parent-child relationship.....	58
4.3.1 Importance of VOC for mothers' parenting goals	58
4.3.2 Importance of VOC for mothers' expectations of grown-up children.....	59
5 Discussion	60
6 Conclusions	62
References	63

1 Aims of the Value of Children Project

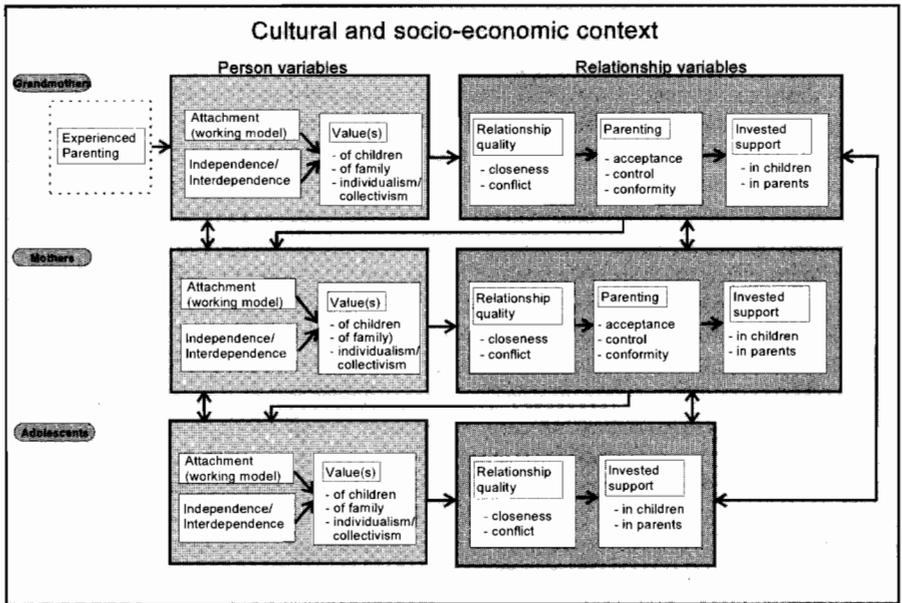
The aim of the interdisciplinary cross-cultural project “*Value of Children and Intergenerational Relations*” is to examine the relevance of the value of children for parent-child relations over the life-span in different cultures. Thus, the present study is an extension and modification of the original “Value of Children (VOC)” study of the 1970s which mainly tested relations among socio-economic conditions, value of children, and fertility (Arnold et al., 1975; Hoffman & Hoffman, 1973). The question of relations among socio-economic, cultural, and psychological variables, including the value of children and the quality of parent-child relationships, were not in the focus of the previous study.

Here, the universal and culture-specific conditions for relations between socio-economic and other structural features of several countries (respectively cultures), fertility (including wanted number of children), individual value orientations and aspects of the parent-child relation over three generations are studied (Trommsdorff, 2001). We start from the assumption that the value of children is part of the reciprocal relationships among the generations. A bidirectional perspective is taken here, which takes into account both parents’ and their children’s views and behaviors (Trommsdorff, in press). This approach has been advocated by several authors to account for the interactional effects of parents’ personality, the child’s behavior, and the socio-cultural context on parenting and parent-child relations (e.g., Bell, 1968; Grusec & Goodnow, 1994; Kuczynski, 2003; Maccoby & Martin, 1983; Schaffer, 1999).

Studying different generations of the same family allows for a more sophisticated view of the developmental changes in the parent-child relationship over the life span which may be seen as hierarchically structured in the beginning, satisfying the child’s basic needs, and which may change into a more horizontal relationship based on bidirectionality during further development (Trommsdorff, in press). This process, again, can differ cross-culturally (Trommsdorff & Kornadt, 2003). The quality of intergenerational relationships is conceptualized here as comprising parental attitudes, beliefs, parenting goals and expectations, parenting behavior, and the emotional or instrumental quality of intergenerational support. Apart from that, relations among the value of children and more general individual value orientations, attachment quality, and life satisfaction are studied here. It is assumed that these variables and their relations vary by culture. These assumptions are part of the culture-informed model of intergenerational relations over the life-span (Trommsdorff, 2001, in press) (see Figure 1).

This model integrates assumptions on social change of interdependence and independence in the family (Kagitcibasi, 1996), intergenerational solidarity (e.g., Bengtson & Roberts, 1991) and culture-specific developmental pathways of parent-child relations (Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000; Rothbaum & Trommsdorff, in press; Trommsdorff, in press).

Figure 1: Parent-child relations in three generations (The VOC-study)



Source: Trommsdorff (2001).

2 Research Questions of the Present Study

In the present analysis, selected questions from this theoretical model concerning the value of children and parent-child relations as well as the relations between these variables are of particular interest. Accordingly, this study deals with the following research questions:

The *first* aim is to analyze the structure of the value of children in Germany. The original VOC studies of the 1970s have already demonstrated several VOC dimensions drawing on theoretical assumptions by Hoffman & Hoffman (1973). These dimensions have been suggested partly based on correlations and factor analyses of empirical data and partly based on intuitive judgment to find a meaningful structure of the VOC data (Arnold et al., 1975). These dimensions roughly represent utilitarian/economic, psychological/emotional and social values (Hoffman, 1988; Kagitcibasi, 1996). However, the VOC dimensions for our present study have to be empirically tested again in each participating country as well as cross-culturally. This is partly due to different methods used. While in the present study we relied exclusively on a structured interview, in the original VOC study of the 1970s, open-ended questions were used as well. While we used Likert-type-scales, the original VOC study has assessed values by dichotomized answers. Furthermore, in the present study new

items have been added to the original ones. These changes plus the design of this study based on four different age cohorts make a clarification of the VOC dimensions in the present study necessary. The analysis of the VOC and the resulting dimensions will be the basis for our further analyses on intergenerational differences of VOC and its relation to intergenerational relationships.

Our *second* goal, thus, is to study similarities and differences between generations on these VOC dimensions. The VOC studies of the 1970s assumed that the socio-economic and cultural context influences the value of children (Arnold et al., 1975; Hoffman & Hoffman, 1973; Kagitcibasi, 1982). One central hypothesis was that in contexts characterized by a difficult economic situation, the desire and decision to have children is based on the expectation of parents for economic utility of their children, e.g., that the children will care for them in old age, while in affluent societies and high income families, emotional needs may be more important than economic needs. For example, previous studies showed that in economically poor regions (like in Indonesia or rural parts of Turkey) the economic VOC and expectations of obedience were higher than in economically developed countries (e.g., Hoffman, 1988; Kagitcibasi, 1982). A reduced importance of economic reasons for having children has been observed not only cross-culturally but also over time with economic development in several countries (Trommsdorff, Zheng, & Tardif, 2002). Furthermore, a decline in traditional value orientations of younger compared to older generations has often been cited (Inglehart, 1990, 1997; Trommsdorff, Mayer, & Albert, 2004). Based on these theoretical assumptions and results of previous studies, we expect in the present analyses that in Germany, a country that experienced tremendous economic development in the second part of the last century, the older generations will hold more traditional values of children than the younger generations. Especially, grandmothers should have higher economic values of children than their daughters and grandchildren, since this generation for the most part experienced times of economic strain themselves.

Often, in intergenerational comparisons of values, age and cohort effects are confounded. Intergenerational differences can be caused by different stages in the individual life cycle and related experiences as well as by different stages in the family process and by different historical situations. The comparison of three generations of the same family can give information on the stability and change in a culture's value system, the family, and the individual development; however, the possibly confounded effects cannot be fully disentangled by cross-sectional studies like the present one.

The first analysis compares the three generations of grandmothers, mothers, and adolescents, followed by a comparison of the two cohorts of mothers in the study (mothers of adolescent children and mothers of pre-school children). Furthermore, we test if there are gender differences with respect to the VOC dimensions in the adolescent sample. Male and female adolescents may differ in the values they attribute to children due to their future roles and social expectations as potential parents (e.g.,

Leaper, 2002; Ruble & Martin, 1998). Female adolescents may be higher on emotional VOC than male adolescents, reflecting the expected stronger emotional bond between mother and child than between father and child. On the other hand, male adolescents may be higher on traditional VOC-dimensions, reflecting an expected stronger role of the father as provider for the family and a higher responsibility for the family's economic well-being in the future. However, changes in gender specific roles within the family and reduced differences in socialization of girls and boys may have diminished gender differences on value of children at least in "modern" societies like Germany.

Third, we analyze the predictive power of mothers' VOC for parenting-related variables. Specifically, we ask if mothers' VOC has an effect on their parenting goals and future expectations of grown-up children. Thus, we investigate individual values held by the mothers in relation to more behavior relevant psychological variables. According to Hoffman & Hoffman (1973, p. 20) "value of children refers to the functions they serve or the needs they fulfill for parents." Hoffman (1988) argues that these needs and the respective values are related to child-rearing patterns. In her study, mothers from several cultures who held high economic-utilitarian values of children preferred obedience as compared to independence as parenting goal. Obedient children are more likely to contribute to the family income when they are grown up, thus fulfilling their parents' economic-utilitarian needs. On the other hand, Hoffman (1988) found that mothers who preferred emotional values of children preferred parenting goals related to the child's congeniality. For the present study we might therefore expect that mothers who hold high economic-normative and old-age security VOC prefer parenting goals like obedience rather than independence and to expect more future support from their grown-up children. In contrast, mothers who are high on emotional VOC might instead value parenting goals like independence or the child becoming a "good person." In short, we expect more traditional VOC-dimensions will be related to more traditional parenting goals as well as high expectations for future support while emotional VOC will be related to more "modern" parenting goals and less future expectations of grown-up children.

3 Method

3.1 Participants, design, procedure

The analyses reported in the present chapter are based on the data of the German sample of the Value-of-Children project. The sample includes three biologically related generations (mothers of adolescents, adolescents, grandmothers) and an additional group of mothers of preschool children. In Germany, $N = 310$ (male $N = 137$) adolescents between 14 and 17 years of age, their biological mothers ($N = 313$) as well as $N = 100$ grandmothers (biological mothers of the mothers) were interviewed. The additional sample of mothers of pre-school children (with target children between 2 and 5 years) comprised $N = 300$ participants.

The German sample was recruited through residents' registration offices from three different locations: a middle size university town in East Germany (Chemnitz), a middle size university town in Southern Germany (Konstanz), and a large city from an urbanized industrialized region in North-Western Germany (Essen). In each of the three places approximately one third of the full sample was interviewed. The standardized face-to-face interviews were carried out in 2002 by trained female interviewers individually for each person at the mothers' and grandmothers' homes. Adolescents filled in the questionnaires on their own while their mothers were interviewed in another room. The respondents answered all questions in the assigned sequence. They received a small gift at the end of the interview.

3.2 Description of the German sample

The mean age of mothers of pre-school children was 32.8 years ($SD = 4.6$, range 18-48 years), and they had between one and four children ($M = 1.6$, $SD = 0.6$). The mothers of adolescent children were on average 43.5 years old ($SD = 4.9$, range 33-60 years) and they had between one and six children ($M = 2.3$, $SD = 0.9$). Thus, the mean number of children per mother especially for the sample of mothers of adolescent children was much higher than the total fertility rate for Germany today (around 1.4) reported by Klaus, Klein, & Nauck (this volume). This corresponds with these authors' observation that the drop in fertility rate in Germany is rather due to an increased number of women who do not have children at all, but that once a child is born in the family, the likelihood of a second or third child to be born is quite high. Grandmothers' mean age was 69.6 years ($SD = 5.9$, range 58-83 years) and they had on average 2.7 children ($SD = 1.4$, range 1-6 children). The mean age of adolescents was 15.7 ($SD = 1.1$, range 13-20 years). Nine adolescents outside the selection criterion of 14-17 years of age (four 13-year-olds, four 18-year-olds and one 20-year-old) were included in the analyses as well.

The majority of the mothers of pre-school children were married (80%), 3% were remarried, and 17% were cohabiting. Eighty-eight percent of the mothers of adolescents were married, 8% remarried and 4% cohabiting. As single mothers were not included in our study to make the sample consistent with respect to the family structure of the participants, the mothers' samples are not representative for Germany with respect to marital status of mothers. Fifty-one percent of grandmothers were married, 3% remarried, 7% divorced, and 39% widowed. Mothers of pre-school children had on average spent the longest time in school (12 years) while mothers of adolescent children had 11 years of schooling and grandmothers 9 years. Twenty-three percent of the mothers of pre-school children, 17% of the mothers of adolescent children, and 1% of the grandmothers had a university degree. Fifty-three percent of the adolescents attended Gymnasium (university-bound track). Only 4% of the mothers of pre-school children, 7% of mothers of adolescent children, and 26% of the grandmothers were without any vocational training. Seventy-nine percent of the mothers of adolescent children and 58% of the mothers of pre-school children were currently gainfully employed. These data are not quite in line with the rather traditional family model

with mothers of pre-school children not being gainfully employed as described by Klaus, Klein, & Nauck (see chapter one of this volume). The employment rate was also higher than that reported for German mothers of pre-school children in other studies (e.g., Lauer & Weber, 2004). With respect to religious affiliation most respondents were either Protestant, Roman Catholic or had no religion. Thirty-one percent of the mothers with pre-school children were Protestant, 27% Roman Catholic and 35% had no religion. The distribution for mothers of adolescent children was 29% Protestant, 34% Roman Catholic, and 32% no religion; for adolescents it was 21% Protestant, 25% Roman Catholic, and 41% no religion. Grandmothers were predominantly Roman Catholic (51%) while 22% were Protestant and 21% had no religion.

3.3 Instruments and reliabilities

The study as a whole is comprised of a large number of self-report questions which were assessed in the four subsamples (see Schwarz, Chakkarath, Trommsdorff, Schwenk, & Nauck, 2001). Most instruments were used in all four sub-samples while some instruments were only included in the questionnaires for mothers, grandmothers, or adolescents with the questionnaire for mothers being largest. In the present report only the reliabilities and means of the scales used in the following analyses are reported. Items had to be rated on five point scales (with "1" representing the lowest and "5" the highest degree; e.g., 1 = "not important at all" to 5 = "very important"). All scales were built by averaging across items. For an overview of the reliabilities and means of all instruments see Mayer, Albert, Schwarz, & Trommsdorff (2003).

Values of children were assessed through a selection of original items from the VOC study of the 1970s (e.g., Arnold et al., 1975) as well as newly developed items and some items from the Family and Fertility Survey (FFS) (e.g., Pohl, 1995). Based on a combination of exploratory principal components analysis and confirmatory multifactorial factor analyses (for a detailed description see section 4.1) the four VOC-dimensions Emotional VOC (4 items; e.g., "Because of the pleasure you get from watching your children grow"), Economic-Normative VOC (4 items; e.g., "To have one more person to help your family economically"), Family VOC (4 items¹; e.g. "Because any new family member makes your family more important") and Old-Age Security VOC (2 items; e.g. "Children can help you when you're old") were used for further analyses. The alpha reliabilities (Pearson correlations in case of 2 items) for mothers of pre-school children, grandmothers, mothers of adolescent children, and adolescents (in this sequence) were: for Emotional VOC $\alpha = .77$, $\alpha = .79$, $\alpha = .77$, $\alpha = .77$; for Economic-Normative VOC $\alpha = .60$, $\alpha = .67$, $\alpha = .73$, $\alpha = .69$; for Family VOC $\alpha = .73$, $\alpha = .79$, $\alpha = .77$, $r = .46$; for Old-Age Security VOC $r = .53$, $r = .51$, $r = .53$, $r = .54$.

¹ Two items in the adolescent sample, see section 4.1.

Parenting goals. The importance of the parenting goals *obedience, independence, popularity with others, academic achievement, and being a good person* was assessed in the mothers' and grandmothers' questionnaires (grandmothers were asked with respect to their grandchild). In the analyses reported here only mothers' parenting goals are considered. Some descriptive results regarding parenting goals are given in the following since our hypotheses are concerned only with the relation between VOC and parenting goals. The reported importance was rather high for all parenting goals (see Table 1). Mothers of adolescent children and mothers of preschool children did not differ significantly in their importance ratings of the parenting goal "being a good person," and the difference with regard to academic achievement only tended towards significance. They differed significantly in their importance ratings for obedience which was more important for mothers of pre-school children; for independence which was more important for mothers of adolescent children; and for popularity with others, which was slightly more important for mothers of adolescent children.

Expectations of grown-up children. Based on an open question from the original Value-of-Children study (Arnold et al., 1975) a standardized instrument was developed and tested in the pilot study which was again slightly modified for the main study. The instrument consisted of two scales assessing mothers' expectations of a grown-up daughter (7 items) and of a grown-up son (7 items). Items in the two scales were worded identically with the exception of referring either to a grown-up son or to a grown-up daughter. The expectations concern a range of practical as well as financial and emotional assistance (e.g. "that he/she continues living close to me"). Since the respective expectations of sons and daughters were highly correlated one scale averaging across all 14 items was built. The alpha reliability of this scale was $\alpha = .88$ for mothers of adolescent children and $\alpha = .87$ for mothers of pre-school children. Mothers' expectations of their future grown-up children were rather low and did not differ significantly between the two mothers' samples (see Table 1).

Table 1: Parenting goals and expectations of grown-up children in the two cohorts of mothers

Parenting goals and expectations of grown-up children	Mothers of adolescent children		Mothers of pre-school children		<i>t</i> (607)
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)	
Parenting goals					
Obedience	3.57	(.73)	3.74	(.79)	-2.73**
Independence	4.44	(.58)	3.94	(.80)	8.75**
Popularity with others	3.60	(.72)	3.46	(.74)	2.45*
Academic achievement	3.91	(.69)	3.80	(.72)	1.93+
Being a good person	4.62	(.53)	4.63	(.57)	-0.21
Expectations of grown-up children	2.02	(.58)	2.05	(.56)	-0.68

** $p < .01$. * $p < .05$. + $p < .10$.

4 Results

4.1 Dimensions of VOC

In the original VOC-study, the reasons for having children were usually divided into economic, emotional and social-normative values (Arnold et al., 1975). However, these dimensions can only be considered as a broad framework. For example, the category “old-age security” has been treated as belonging to the economic dimension but also as a separate category entailing economic as well as emotional aspects of old-age security (Kagitcibasi, 1982). In order to analyze the structure of the positive value of children in the German samples, a combination of exploratory and confirmatory factor analytic procedures was applied. To assess the structural equivalence of VOC-dimensions multi-group analyses were carried out.

The VOC-instrument was not identical in all sub-samples. The VOC-scale for the mothers' questionnaire contained 27 items, that for grandmothers 23 items, and that for adolescents 18 items. This was due to the non-applicability of some items in the mothers' questionnaire to grandmothers or adolescents. Grandmothers and adolescents were presented with a subset of items asked in the mothers' questionnaire. To retain as much information (items) as possible, while also reducing the complexity of factor solutions, two different analyses were conducted. The first started with the 23 items that were common for the mothers' and grandmothers' sample and resulted in a common factor solution for these two generations. Starting from the factor structure found in the first analysis, a second analysis was carried out to reach a common factor structure for all samples employing the reduced item-pool of 16 items that were asked in all three questionnaires.

VOC-factor structure for mothers and grandmothers. First, a principal component analysis was carried out on the 23 items common to the mothers' and grandmothers' samples. In a second step the solution found with the exploratory procedure was validated in each sample through confirmatory factor analyses. This two-step procedure was necessary since factors found in a pan-cultural (in this case pan-generational) exploratory factor analysis (Leung & Bond, 1989) can conceal group-specific idiosyncrasies in the factor structure.

Exploratory factor analysis. A principal component analysis (PCA) with Varimax rotation yielded a four factor solution that explained 54% of the variance (see Table 2). The first factor represented the emotional value of children (four items) and the second factor contained economic as well as normative aspects of the value of children (six items). Three items representing the dimension “old-age security/long-term-orientation” loaded on the third factor. The fourth factor included family-related reasons for having children (four items). Since exact criteria for a simple structure (Thurstone, 1947) are not available, the criterion for a clear loading of an item on a specific factor was set to a difference of more than .20 between the loading on this factor and loadings on other factors and to a minimum loading of .50. Six of the 23

items showed strong cross-loadings according to these criteria and therefore could not be clearly assigned to a specific factor (items 01, 04, 11, 13, 15, 16). These items were not considered further in the following confirmatory analyses.

Table 2: Principal component analysis of VOC-dimensions: Mothers and grandmothers

Nr.	VOC-Items	Component			
		1	2	3	4
10	Feeling of love between parent and child	.78	-.02	.10	.09
09	Pleasure watching children grow	.77	.07	.12	.18
22	To have someone to love and care for	.70	.06	.15	.12
08	Fun to have young children around	.68	.14	.05	.17
16	Share what you have with children	.59	.06	.39	.05
20	To carry on the family name	.06	.74	.19	.13
19	To have a girl/another girl	.15	.74	-.01	.01
24	To have a boy/another boy	.07	.72	.06	.08
21	To help your family economically	.00	.70	.20	.26
18	To be sure that enough children will survive	.09	.61	.28	.16
25	A duty according to your belief	-.02	.60	.11	.08
11	Standing/reputation among your kin	-.01	.50	.35	.41
01	Child helps around the house	.03	.47	-.12	.41
12	Less likely to be lonely in old age	.19	.16	.71	.21
27	Children can help you when you're old	.12	.39	.62	.14
17	Life will be continued through child	.28	.21	.62	.14
13	Raising child helps to learn about life/self	.37	-.07	.49	.26
03	Bring parents closer together	.18	.21	.10	.71
06	More contacts/communication with kin	.16	.22	.30	.69
02	Makes family more important	.19	.08	.06	.66
05	Increases sense of responsibility	.23	.01	.29	.66
04	More reason to succeed in work	.06	.48	.12	.52
15	New friends through your children	.02	.28	.39	.47

Note. Principal component analysis with Varimax rotation. Factor loadings in bold print mark items that were included in the following confirmatory factor analysis.

Confirmatory factor analysis. The program AMOS 5 (Arbuckle, 2003; Arbuckle & Wothke, 1999) was used to carry out confirmatory factor analyses. A test of the four-factor model resulted in significant chi-square values and non-satisfying fit indices in all three samples. Inspection of modification indices showed that the error covariance between items 19 (“To have a girl/another girl”) and 24 (“To have a boy/another boy”) was especially high in all three samples. Since both items were identically formulated (except the words girl and boy, respectively), it was comprehensible also from the item-content that the residuals of these items were substantially correlated. Therefore the model was modified by setting this error correlation free. In all three samples, this modified model showed a satisfying fit with RMSEAs below .06 and CFIs of at least .94 (see Table 3). With the exception of item 25 (“Duty to have children according to your belief”) which yielded loadings slightly below .50 in all three samples items showed high loadings on the respective factor.

Table 3: Confirmatory factor analysis of VOC-dimensions: Mothers and grandmothers

Nr.	Manifest variable	Latent variable	Factor loadings				
			MP	MA	GM		
08	Fun to have young children around	Emotional	.71	.61	.62		
09	Pleasure watching children grow	Emotional	.75	.79	.87		
10	Feeling of love between parent and child	Emotional	.67	.72	.70		
22	To have someone to love and care for	Emotional	.62	.62	.63		
18	To be sure that enough children will survive	Economic-normative	.59	.57	.58		
19	To have a girl/another girl	Economic-normative	.59	.47	.67		
20	To carry on the family name	Economic-normative	.54	.89	.77		
21	To help your family economically	Economic-normative	.72	.80	.69		
24	To have a boy/another boy	Economic-normative	.53	.61	.55		
25	A duty according to your belief	Economic-normative	.46	.49	.48		
02	Makes family more important	Family	.55	.59	.65		
03	Bring parents closer together	Family	.60	.69	.76		
05	Increases sense of responsibility	Family	.72	.67	.67		
06	More contacts/communication with kin	Family	.72	.74	.76		
12	Less likely to be lonely in old age	Old-age security/LTO	.73	.70	.62		
17	Life will be continued through child	Old-age security/LTO	.62	.62	.55		
27	Children can help you when you're old	Old-age security/LTO	.72	.71	.65		
Sample		Fit indices					
		<i>N</i>	χ^2	<i>df</i>	<i>p</i>	RMSEA	CFI
MP		282	174.4	112	<.01	.045	.95
MA		295	213.4	112	<.01	.056	.94
GM		95	127.2	112	.16	.038	.97

Note. MP = Mothers of pre-school children. MA = Mothers of adolescents. GM = Grandmothers. RMSEA = Root Mean Square Error of Approximation. CFI = Comparative Fit Index. LTO = Long-Term-Orientation.

The next step was to test the structural equivalence of the factor structure across the three samples. Therefore, a multi-group confirmatory factor analysis (Kline, 1998) was carried out. Several models with different restrictions were estimated simultaneously in all samples. In the first model all parameters varied freely between groups (non-restricted model). In the second model, the factor loadings were restricted to be equal between groups. In the third and fourth model, respectively, the structural covariances (inter-factor-correlations) and the measurement errors were restricted additionally. Since χ^2 -difference tests are "an overly sensitive index of model fit for large number of constraints, especially when estimated on large sample sizes" (Little, 1997, p. 58) a modeling rationale was applied to assess the level of structural equivalence, using the information criteria AIC (Akaike's Information Criterion; Akaike, 1987) and BCC (Browne-Cudeck Criterion; Brown & Cudeck, 1993). Both criteria favor more rather than fewer parameters (Nagl, 1992) and can therefore be described as conservative with respect to structural equivalence. Since the AIC showed the lowest value for the model with equal factor loadings, this model should be preferred according to this criterion (see Table 4). According to the BCC, the model with additional equal inter-factor-correlations should be preferred. Thus, according to the

modeling rationale applying AIC and BCC the factor structure of VOC-dimensions was structurally equivalent across the two mothers' and the grandmothers' sample at least with respect to factor loadings.

Table 4: Model comparisons (multi-group analyses)

Model	Analysis 1 Mothers & Grandmothers		Analysis 2 All samples	
	AIC	BCC	AIC	BCC
Model 1: Non-restricted	761.4	792.2	533.3	551.5
Model 2: Factor loadings	757.5	781.9	525.0	539.5
Model 3: Structural co-variances	759.5	778.8	523.8	533.8
Model 4: Measurement errors	903.0	913.3	830.3	834.8

Note. AIC = Akaike's Information Criterion. BCC = Browne-Cudeck Criterion. Cells in bold print mark the lowest value of the respective information criterion.

VOC-factor structure for all samples. The factor structure for mothers and grandmothers was validated through confirmatory factor analysis for all samples (including the adolescent sample) using the reduced item pool. We did not carry out another exploratory factor analysis for all samples with the reduced item pool. With this procedure it was possible to test whether the factor structure found for the two mothers' and the grandmothers' samples could be applied to the adolescent sample as well and whether the factor structure found in the first step also held for the reduced item pool in the mothers' and grandmothers' case. With respect to the factors Emotional VOC and Old-Age Security/Long-Term-Orientation VOC all items from the first analysis could be retained. In the Economic-Normative VOC-factor items 19 and 24 were left out since they were not asked in the adolescent questionnaire. The same holds for items 03 and 06 belonging to the Family VOC-factor.

Table 5: Confirmatory factor analysis of VOC-dimensions: All samples

Nr	Manifest variable	Latent variable	Factor loadings			
			A	MP	MA	GM
08	Fun to have young children around	Emotional	.63	.71	.61	.59
09	Pleasure watching children grow	Emotional	.67	.75	.78	.88
10	Feeling of love between parent and child	Emotional	.81	.64	.73	.71
22	To have someone to love and care for	Emotional	.66	.61	.62	.63
18	To be sure that enough children will survive	Economic-normative	.68	.56	.54	.52
20	To carry on the family name	Economic-normative	.66	.53	.86	.76
21	To help your family economically	Economic-normative	.70	.74	.83	.73
25	A duty according to your belief	Economic-normative	.38	.41	.50	.51
02	Makes family more important	Family	.65	.53	.52	.59
05	Increases sense of responsibility	Family	.68	.77	.74	.72
12	Less likely to be lonely in old age	Old-age security	.73	.71	.68	.66
27	Children can help you when you're old	Old-age security	.73	.76	.76	.76

Sample	Fit indices					
	<i>N</i>	χ^2	<i>df</i>	<i>p</i>	RMSEA	CFI
A	296	91.1	48	<.01	.055	.95
MP	286	62.2	48	.08	.032	.98
MA	298	86.6	48	<.01	.052	.96
GM	96	53.2	48	.28	.034	.99

Note. A = Adolescents. MP = Mothers of pre-school children. MA = Mothers of adolescents. GM = Grandmothers. RMSEA = Root Mean Square Error of Approximation. CFI = Comparative Fit Index.

Model tests yielded satisfying fit criteria for mothers' and grandmothers' samples but a relatively poor fit for the adolescents' sample ($\chi^2 = 162.7$, $df = 59$; RMSEA = .08; CFI = .89). For this sample, modification indices showed that item 17 ("Because your life will be continued through your children") of the Old-Age-Security/Long-Term-Orientation VOC-factor exhibited many cross-loadings to other factors. To get a clear-cut factor structure that could be applied to all samples, this item was excluded from further analyses (and the corresponding factor was labeled Old-Age-Security VOC from now on since both remaining items were related to benefits in old-age). The modified model reached a very good fit with a non-significant chi-square in the mothers of pre-school children's sample and the grandmothers' sample (see Table 5). In the other two samples where chi-square was still significant, the other fit criteria showed satisfying values. In the model comparisons using multi-group analyses, according to the information criteria AIC and BCC the model with equal factor loadings and equal structural co-variances (inter-factor correlations) should be preferred (see Table 4). Thus, structural equivalence of the four VOC-dimensions was given across all samples.

Correlations among VOC-scales. In all samples, the four VOC-scales were generally positively correlated (see Table 6). For both samples of mothers as well as for grandmothers, significant positive correlations among all four VOC-scales were found. In the adolescents' sample Emotional VOC and Economic-Normative VOC were uncorrelated but all other scales were significantly correlated.

Table 6: Correlations among VOC-dimensions for four samples

VOC	MA (N = 313)				GM (N = 99)			
	1	2	3	4	1	2	3	4
1 Emotional	-	.21**	.41**	.36**	-	.26**	.59**	.44**
2 Economic-normative	.21**	-	.38**	.44**	.01	-	.48**	.56**
3 Family	.39**	.37**	-	.47**	.27**	.24**	-	.52**
4 Old-age security	.38**	.44**	.41**	-	.15**	.37**	.32**	-
	1	2	3	4	1	2	3	4
	MP (N = 300)				A (N = 310)			

Note. Pearson correlations. A = Adolescents. MP = Mothers of pre-school children. MA = Mothers of adolescents. GM = Grandmothers. ** $p < .01$.

4.2 Cross-generational comparisons of VOC-dimensions

For the comparisons of VOC-dimensions among the four German samples the scales constructed on the basis of the all-samples-solution were used. However, for the mothers' and grandmothers' sample, the two additional items of the family VOC-scale that were not included in the adolescents' questionnaire were included in order to tap important aspects of this dimension for the adult generations. Due to the different types of samples (a connected 3-generation-sample and a non-connected sample of mothers of pre-school children) different statistical analyses had to be carried out to adequately cover the whole range of similarities and differences among generations and cohorts.

Comparisons of VOC-dimensions in the 3-generation sample. For the comparison of the VOC dimensions among the valid 98 triads of grandmothers, mothers, and adolescents, an analysis of variance for dependent measures was used. For emotional VOC, the overall effect tended towards significance (see Table 7). Post-hoc comparisons showed that grandmothers had a significantly higher emotional VOC than their grandchildren (adolescents) while mothers did not differ significantly from their own mothers (grandmothers) as well as from their children (adolescents). Significant differences occurred for economic-normative VOC with grandmothers showing the highest and their daughters (mothers) the lowest value. The overall effect of family VOC was also significant. A significant contrast occurred between grandmothers and mothers with grandmothers showing a higher value than their daughters. Finally, significant intergenerational differences were found for old-age security VOC as well: grandmothers scored higher than both mothers and adolescents.

Table 7: Value of Children in three generations

VOC	Grandmothers (N = 98)		Mothers (N = 98)		Adolescents (N = 98)		Comparisons			
	M	(SD)	M	(SD)	M	(SD)	F	1/2	1/3	2/3
Emotional	4.07	(.64)	3.98	(.74)	3.85	(.77)	2.60+		*	
Economic-normative	2.23	(.77)	1.50	(.62)	1.78	(.61)	34.01**	**	**	**
Family	3.26	(.91)	2.95	(.85)	3.00	(.93)	3.61*	**	+	
Old-age security	3.15	(1.02)	2.76	(.94)	2.78	(.88)	6.05**	**	**	

Note. Repeated Measurement ANOVAS. ** $p < .01$. * $p < .05$. + $p < .10$.

Comparisons of VOC-dimensions between mothers of adolescents and mothers of pre-school children. For the comparison of VOC-dimensions between mothers of adolescents and mothers of pre-school children t tests for independent samples were carried out. Results showed that there was no significant effect for emotional VOC and for old-age security VOC (see Table 8). The difference for economic-normative VOC tended towards significance with mothers of adolescents tending to give these reasons for having children slightly more importance than mothers of pre-school

children. There was a significant effect for family VOC with mothers of adolescents scoring higher than mothers of pre-school children.

Table 8: Value of Children in the two cohorts of mothers

VOC	MA (N = 313)		MP (N = 300)		t (611)
	M	(SD)	M	(SD)	
Emotional	4.03	(.72)	4.12	(.70)	-1.57
Economic-normative	1.52	(.63)	1.44	(.52)	1.75+
Family	3.03	(.93)	2.85	(.92)	2.38*
Old-age security	2.74	(.93)	2.72	(.92)	0.17

Note. MA = Mothers of adolescents. MP = Mothers of pre-school children. * $p < .05$. + $p < .10$.

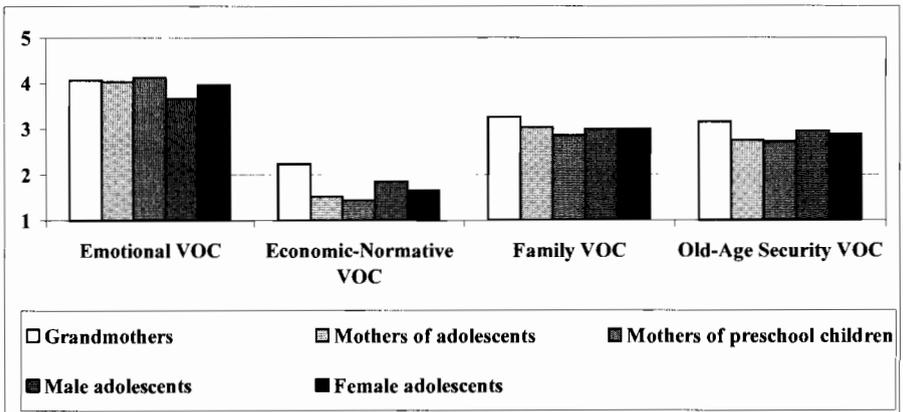
Comparisons of VOC-dimensions between male and female adolescents. Finally, adolescent boys and girls were compared on the VOC-dimensions using *t* tests for independent samples. Results showed that girls were significantly higher than boys in emotional VOC, and that boys were significantly higher than girls in economic-normative VOC (see Table 9). No significant differences were found for family VOC and for old-age security VOC.

Table 9: Value of Children in male and female adolescents

VOC	Males (N = 137)		Females (N= 173)		t (308)
	M	(SD)	M	(SD)	
Emotional	3.66	(.76)	3.96	(.72)	-3.53**
Economic-normative	1.85	(.63)	1.65	(.67)	2.63**
Family	2.99	(.94)	2.98	(.95)	0.15
Old-age security	2.95	(.94)	2.87	(.90)	0.78

Note. ** $p < .01$.

Figure 2: Value of Children in five samples



Note. Values for mothers of adolescents come from the full sample of $N = 313$ mothers, not from the reduced sample used in the 3-generation analysis.

A summary of the results regarding differences and similarities in values of children in the German samples is given in Figure 2. While differences among generations and samples occurred, an overall similarity regarding the relative importance of the four value-of-children dimensions in Germany can be observed.

4.3 Relations between mothers' VOC and the parent-child relationship

The analyses on the relations of VOC with other variables concerned the predictive value of mothers' value of children for their parenting goals and parental expectations of grown-up children. For these analyses the samples of mothers of adolescents and mothers of preschool children were pooled since we had no differential hypotheses regarding the relationship of VOC to parenting-related variables for the two cohorts of mothers. Possible biasing effects due to age differences, differences in the number of children, educational differences, and differences in (perceived) socio-economic status were partialled out by including demographic variables in the first step of the hierarchical regression analyses; in the second step the four VOC-dimensions were introduced.

4.3.1 Importance of VOC for mothers' parenting goals

Obedience. Economic-normative VOC had a significant positive effect on the endorsement of the parenting goal of obedience (see Table 10). Thus, the higher mothers valued economic and normative reasons for having children, the more likely they were to value obedience. In addition, there were negative effects of the demographic variables age and years of schooling on obedience. Older mothers and those with higher levels of education were less likely to hold obedience in high regard as a parenting goal for their child.

Independence. There was a positive significant effect of emotional VOC on independence (see Table 10). Thus, the higher mothers valued emotional reasons for having children the more likely they were to value independence as a parenting goal. However, the second step of the hierarchical regression analysis where the VOC-dimensions were entered yielded no significant ΔR^2 so that the single significant effect of one dimension has to be viewed with caution. There was also a significant positive effect of respondents' age on independence with older mothers more highly valuing independence as a parenting goal.

Being popular. There were no significant effects of VOC with respect to the parenting goal that the child should be(come) popular among his/her peers (see Table 10). There was a small significant negative effect of years of schooling on this parenting goal. More highly educated mothers placed less importance on their child's popularity among peers.

Academic Achievement. There was a significant positive effect of old-age security VOC on the parenting goal of academic achievement (see Table 10). As valuation of security in old age increased, mothers valued academic achievement more. Also, there was a significant negative effect of years of schooling on academic achievement. Thus, the higher the mothers' education the less they valued academic achievement as a parenting goal.

Good Person. Emotional VOC was significantly positively related to the parenting goal of the child becoming a "good person" (see Table 10). The higher mothers valued emotional reasons for having children the more they considered it important that their child grows up to become a good person.

4.3.2 Importance of VOC for mothers' expectations of grown-up children

Results showed that old-age security VOC had a significant effect on mothers' expectations of grown-up children (see Table 10). The higher the mothers valued old-age security reasons for having children, the higher were their expectations of grown-up children. Furthermore, there was a significant negative effect of number of children on the expectations of grown-up children. The more children that mothers already had, the lower were their expectations from a (single) grown-up child.

Table 10: Value of Children and demographic variables predicting parenting goals and expectations of grown-up children

	Parenting goals					Expectations of grown-up children
	Obedience	Independence	Being popular	Achievement	Good person	
	β	β	β	β	β	β
Step 1: Demographics ΔR^2	.06**	.09**	.02+	.04**	.00	.02*
Respondents age	-.16**	.32**	.09+	.01	.01	.01
Number of children	-.07	-.03	-.06	-.02	-.02	-.14**
Years of schooling	-.17**	.02	-.09*	-.17**	-.04	-.07+
Economic status	-.07	-.03	-.01	-.06	.01	-.03
Step 2: VOC ΔR^2	.05**	.01	.03**	.02**	.04**	.14**
Emotional	-.03	.09*	.03	-.06	.20**	.03
Economic-normative	.13**	-.03	.08+	.00	-.07	.05
Family	.07	.03	.08	.05	-.08	.05
Old-age security	.10+	-.08	.05	.15**	.06	.31**

Note. Hierarchical Regression Analysis. ** $p < .01$. * $p < .05$. + $p < .10$.

5 Discussion

The aim of the current analysis was to give a first insight into the data of the German VOC-study. A first step was to analyze the dimensionality of the value of children in the German samples. Second, differences and similarities between generations and cohorts regarding the VOC-dimensions were studied. Third, the importance of mothers' VOC for their own parenting goals and future expectations of grown-up children was analyzed. These questions and analyses can be considered basic questions of the current project since they focus on the value of children and its function for the parent-child-relationship. In the following, the separate steps of the analysis are discussed in detail.

VOC-dimensions. Starting from the need to create an empirically founded as well as theoretically meaningful set of value-of-children dimensions in the current project in general and for the German study in particular, several factor analytic procedures were employed to analyze the dimensionality of the VOC-construct. Through a combination of exploratory and confirmatory factor analysis, dimensions of the value-of-children were found that are structurally equivalent across all four German samples. Four dimensions emerged: emotional VOC, economic-normative VOC, family VOC, and old-age security VOC. Thus, economic-utilitarian and normative reasons for having children constitute one single dimension in Germany, while family-related values form a separate factor. The dimension related to old-age security consists of two rather different items, one focusing on practical help and one focusing on emotional help in old age. As expected, emotional reasons for having children formed a separate factor, including items related to the joy experienced with children as well as to the general emotional bond between parents and children.

The family VOC-dimension deserves special attention since it is a “new” factor that did not occur in previous studies. The items “Having children brings your husband and you closer together” and “Having children intensifies contacts and communication with your kin” are related to improved social contacts within the family-context. The item “Because any new family member makes your family more important” is linked to the family as heightening the status of the self, and the item “Because having children increases your sense of responsibility and helps you to develop” is related to self-development and improved self-esteem. All four items reflect a secondary function of the child as a provider of socio-emotional well-being to the mother. While emotional VOC reflects the pleasures the mother experiences in the relationship *with* the child (what might be called the primary function of the child in providing well-being), family VOC reflects the personal gains the mother receives *through having* a child. The emergence of a “family-VOC factor” in Germany leads to the question of whether a similar factor can be found in other cultures. We can only speculate that a similar family VOC-dimension may be of great importance in East-Asian cultures like China and Korea with Confucian value systems where family-related values play a significant role for nearly all life domains (Kim & Park, 2000).

To summarize, the original emotional and economic VOC-dimensions could be replicated in this study with the economic dimension including normative reasons for having children. Furthermore, old-age security VOC appeared as a separate factor, emphasizing the importance of reasons for having children related to expectations in the far future. Finally, a new dimension, family VOC, was found which did not appear in previous studies.

Intergenerational differences. Regarding the comparison of VOC among generations, the hypothesis was that grandmothers would subscribe to the traditional (economic, old-age-security) value-of-children dimensions more than the younger generations. This expectation was based on modernization theories of value change, with respect to general and specific child-related value orientations (Inglehart, 1990, 1997; Trommsdorff, Zheng, & Tardif, 2002). The intergenerational differences found for the VOC-dimensions in this study were mostly in the expected direction. Grandmothers were highest on all three *non-emotional* VOC dimensions. This pattern reflects the shift from more traditional values of children to more emotion-only-focused values in the last decades and generations. However, emotional values had the highest importance for all generations, including grandmothers. Thus, holding more traditional values does not equate with disregarding emotional values. Despite intergenerational differences the pattern of value importance was the same for all generations: emotional values were most important, followed by family and old-age security values at about the same level, and economic-normative values were least important in all generations.

Cohort differences. The two samples of mothers, while differing in age, held very similar values of children. The higher family VOC of mothers of adolescents compared to mothers of pre-school children may reflect either a cohort difference (mothers of adolescents were on average 11 years older than mothers of pre-school children) or differences related to the experience of child-rearing and family-life in their respective developmental age and life course.

Gender differences. In the adolescent sample, gender differences were found for the emotional and the economic-normative value of children but not for the other two dimensions. While girls valued emotional value of children higher than boys, boys found economic-normative reasons more important than girls. These differences may be due to gender-role based modes of thinking about having children, based on different social expectations regarding their future role as parents (Leaper, 2002; Ruble & Martin, 1998). Altogether, however, boys' and girls' values of children were very similar. As in all other samples, the emotional value of children was most important, followed by family values, old-age security values, and economic-normative values of children. Thus, while minor gender differences of VOC exist, the overall similarity points to a rather low importance of gender-role based ways of thinking about children and family in Germany.

Value of children and the parent-child relationship. Beyond the exploration and testing of the dimensionality of VOC and the descriptive analysis of the (differential) importance of these dimensions for four different samples in Germany, we studied the importance of mothers' VOC for parenting-related variables. According to Hoffman (1988), more traditional (economic) values of children should be related to more traditional and conservative parenting goals and expectations while the emotional value should be related to more liberal parenting goals like independence and having fewer expectations of grown-up children. Our results indicate that people's reasons for wanting children do have an impact on their parenting goals and expectations for their children. Regarding the *expectations of grown-up children*, the old-age security value of children explained about 14% of the variance in addition to demographic variables. This effect is in line with our expectations since both the old-age security values and the expectations of grown-up children deal with expected future gratifications from having children.

With regard to *parenting goals*, the effects of VOC were also in the expected direction. The traditional VOC-dimension economic-normative VOC was positively related to the parenting goal of obedience. Additionally, the higher the old-age security value of children, the more academic achievement was valued by the mothers. Therefore, expectations concerning the far future seem to affect mothers' parenting goals in the present. Parents' tendency to monitor their child's achievement may be influenced by the hope for the child to be capable of providing old-age security. Emotional value of children was related to the more liberal parenting goal of independence, though this effect was rather weak. Furthermore, emotional value of children was also related to rearing the child to become a good person. Thus, emotional reasons for having children may be primarily related to parenting expectations related to the child's positive development as a human being and his/her congeniality as proposed by Hoffman (1988).

6 Conclusions

These first analyses of the German samples have shown that a meaningful set of dimensions of value of children occur and are structurally equivalent across the four different samples. The generational differences on these value-of-children dimensions reflect the shift from more traditional values of children (economic-normative and old-age security) for the grandmothers' sample to more emotional values in the younger generations. The general high emotional value of children indicates that despite these differences, holding more traditional values does not imply a disregard for emotional values. An open question is whether these differences are due to life-course effects, effects of social change, or both. Future analyses on the transmission of values across the generations and comparisons between the data from the old VOC-study from the 1970s and the new VOC-study will at least partly answer this question. Furthermore, mothers' value of children predicts aspects of the parent-child relationship (parenting goals and expectations) in the expected direction. Thus, the hypotheses based on Hoffman's (1988) assumptions (see also Kagitcibasi, 1996;

Trommsdorff, 2001) are mostly confirmed. The more traditional economic, family, and old-age security values of children are related to expectations of grown-up children and traditional parenting goals like obedience, while emotional value is related to the parenting goals of independence. Therefore, the VOC-dimensions affect behavior-relevant parenting-related variables. This result further validates the VOC-construct.

The analyses reported here do not yet include analyses based on the assumption of bidirectionality (Trommsdorff & Kornadt, 2003). According to this assumption, one additional important aspect has to be dealt with: the relationship between and the support exchanged between adult children and their parents. Due to constraints of length of this chapter, the focus of our analyses was only on the direction from parents to their children. Finally, since the main focus of this international and cross-cultural project is to find cultural differences and similarities with respect to the questions reported above, these analyses for the German culture are only the first step that has to be followed by cross-cultural comparisons. Only then we can see whether and to what extent the obtained dimensions of VOC as well as the patterns of relationships between VOC and the parent-child-relationship found in Germany are valid in a broader context of the world's cultures.

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