The Structure of Human Values at the Culture Level: A Meta-Analytical Replication of Schwartz's Value Orientations Using the Rokeach Value Survey

Christin-Melanie Vauclair, Katja Hanke, Ronald Fischer and Johnny Fontaine

Journal of Cross-Cultural Psychology 2011 42: 186
DOI: 10.1177/0022022110396864

Journal of Cross-Cultural Psychology
42(2) 186–205

DOI: 10.1177/0022022110396864
jccp.sagepub.com
SAGE

The Structure of Human Values at the Culture Level: A Meta-Analytical Replication of Schwartz's Value Orientations Using the Rokeach Value Survey

Christin-Melanie Vauclair[1], Katja Hanke[1], Ronald Fischer[1], and Johnny Fontaine[2]

Abstract

We conducted a meta-analysis using the Rokeach Value Survey (RVS) to replicate Schwartz's value structure at the culture level. In Study 1, data on value priorities from 37 different cultural groups were analyzed. Using a configurational verification approach, the structure of conflicting value types as predicted by Schwartz was replicated. Significant correlations with Schwartz's two-dimensional configuration of the Schwartz Value Survey (SVS) confirmed this finding. Furthermore, a set of value items that was not included in Schwartz's analysis formed a new value type labeled *Self-Fulfilled Connectedness* (*SFC*). It contains values that represent profound attachment to others as well as attributes of self-fulfillment. In Study 2, it was proposed that *SFC* may be an individualistic value orientation that shares some similarity with *Autonomy* but includes relational values as a main component. Correlations with country indices of subjective well-being, post-materialism, and socioeconomic development supported the idea that it is related to happiness, the pursuit of non-material goals, and endorsed in countries in which basic needs are fulfilled. Its theoretical meaning in the context of Schwartz's culture-level value theory is discussed.

Keywords

replication, cultural values, Rokeach Value Survey, Schwartz Value Survey

Values are considered to be one of the defining concepts for differentiating cultural groups from one another (Smith & Schwartz, 1997). An important question is how values are structured across different societies, so that cultures can be meaningfully described and compared to each

[1]Victoria University Wellington, New Zealand
[2]Gent University, Belgium

Corresponding Author:
Christin-Melanie Vauclair, School of Psychology, Victoria University of Wellington,
P.O. Box 600, Wellington, New Zealand.
Email: melanie.vauclair@vuw.ac.nz

other. Schwartz (1994b, 2006) developed a value structure theory at the culture-level, which was validated with numerous samples from all inhabited continents. Applying multidimensional scaling techniques on 45 values, he was able to show that they form seven value types organized in a quasi-circumplex way in a two-dimensional space. The culture-level value structure has been shown to relate empirically to a number of nation-level indicators, such as socioeconomic development, gender equality, social and moral attitudes, justice perceptions, and optimism (Fischer & Chalmers, 2008; Fischer et al., 2007; Schwartz, 2006; Vauclair & Fischer, in press). Yet before an empirical result can serve as established evidence, it must withstand the test of replicability (Amir & Sharon, 1990). To the best of our knowledge, Schwartz's culture-level value structure has not been independently replicated. Thus, the present study aims to test the replicability of Schwartz's cultural value types.

To accomplish that, we chose to conduct a meta-analysis using the Rokeach Value Survey (RVS; Rokeach, 1968, 1973), which shares most of its values with the Schwartz Value Survey (SVS; Schwartz, 1992). Moreover, the RVS contains an additional set of value items that have either not been included in the SVS or that have been excluded from Schwartz's culture-level analysis. Hence, we also examined whether these omitted values form a value type of their own. Despite the commonly shared opinion about replication studies as not producing anything new (Neuliep & Crandall, 1993), we will show that our replication contributes to the generation of new knowledge and prepares the ground for new theoretical perspectives.

For the sake of a more comprehensive structure of the article, we have separated our analyses into two studies according to the aims of our research: Study 1 deals with the replicability of Schwartz's culture value structure, and Study 2 focuses on those Rokeach values that were omitted in Schwartz's analysis. Before presenting the results, we briefly review Schwartz's theory. We also provide the rationale for using a meta-analysis to replicate the culture-level value structure.

Schwartz's Cultural Values Theory

Schwartz defines values as "desirable transsituational goals, varying in importance that serve as guiding principles in the life of a person or other social entity" (Schwartz, 1994b, p. 21). Thus, values do not only influence individuals in their aspirations and beliefs but shape whole societies in their policies, norms, and practices. Schwartz postulates that there are three basic issues in every society for which a solution must be found: (a) to what extent a person is embedded into a group, (b) how to preserve the social fabric, and (c) how to relate to the natural and social world. The solutions take the form of bipolar value orientations, and culture has an influence on what pole of the orientation is emphasized in a society. Regarding the first issue, *Autonomy* versus *Embeddedness* are possible societal solutions. *Autonomy*, split into *Affective* and *Intellectual Autonomy*, contains values that encourage individuals to pursue positive experiences for themselves as well as their own ideas and intellectual aspirations. The opposite pole *Embeddedness* becomes more important in societies in which social relationships, the traditional order, and the maintenance of the status quo are seen as priorities. The solution to the second societal problem lies in the value dimension *Hierarchy* versus *Egalitarianism*. The former emphasizes the legitimacy of a hierarchical social order and unequal resource allocation. The latter represents the opposite view that all individuals of a given society are equal, and mutual concern and cooperation are necessary to ensure everyone's welfare. The last societal issue produces the value types *Harmony* and *Mastery*. *Harmony* is accentuated in societies where the social and natural world is accepted as it is and emphasis is laid on fitting in harmoniously. *Mastery*, on the other hand, is the active control of the social and natural environment through self-assertion values.

Schwartz hypothesized that a societal emphasis on one pole of the cultural value orientation goes along with de-emphasizing its opposite pole, as they tend to conflict with each other: For example, a society that values *Egalitarianism* is very likely to devalue *Hierarchy* as it clashes with

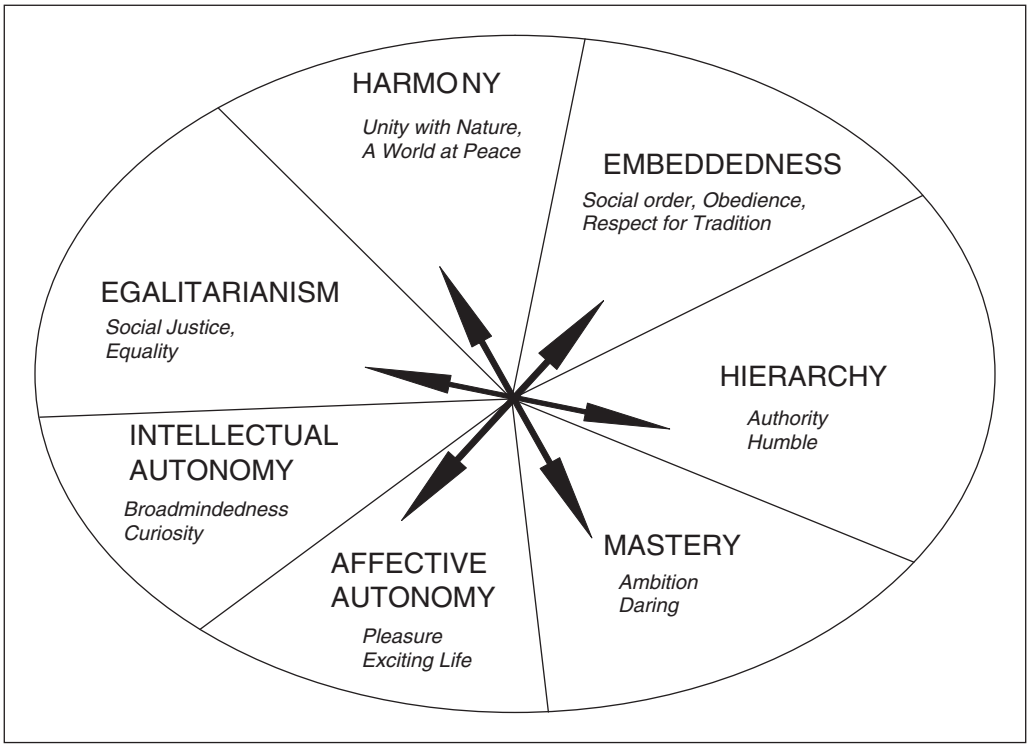

Figure 1. Prototypical Model of Schwartz's Culture-Level Value Structure (Adapted From Schwartz, 2006)

its assumptions of equal relationships (see Schwartz, 1994b, 2006, for a full elaboration of the theory). All three cultural value dimensions are conceptualized as fitting into a quasi-circumplex model, which is pictured in Figure 1. Conflicting value types are symbolized with opposing arrows. Adjacent value types are compatible as they share similar underlying assumptions. This value structure has important empirical implications. Correlations between the value types and other relevant variables take the shape of a sinusoidal curve that follows the order of the value types around the circle with first decreasing and then increasing correlations when moving away from the main diagonal (Schwartz, 1992).

Schwartz initially analyzed the culture-level value structure with student and teacher samples coming from more than 40 nations (Schwartz, 1994a, 1994b); 73 countries were included in more recent analyses (Schwartz, 2006).

Replicating Schwartz's Culture-Level Value Structure Using a Meta-Analysis

Aiming to replicate Schwartz's culture-level findings, we were confronted with choosing between two possible replication strategies: the test of reproducibility and the test of generalizability (Amir & Sharon, 1990). Testing the reproducibility has the aim to ensure that the empirical results are reliable. It is important to conduct a study that is as identical as possible to the original one in terms of the specific context where it has been carried out, that is, the population, the setting, and the time frame. If this so-called 'fairly precise' replication is successful, it supports the theory; if it is unsuccessful, it has the potential to impair the established theory. Testing the generalizability has the aim to examine the external validity of an empirical finding. The more imprecise

the replications, the greater is the benefit to the external validity of the tested relationships if the results support them (Rosenthal, 1991).

In cross-cultural psychology, the actual interest lies in conducting fairly imprecise replication studies to examine the generalizability of previous findings. However, the replication of culture-level studies requires data collection from a wide range of different cultures, which is very costly, effort-, and time-intensive. A solution to overcome this problem is to carry out a meta-analysis on studies that have already been conducted in different countries (cf., Norenzayan & Heine, 2005).

Meta-analysis is a set of techniques that statistically combines the results of several studies to provide an answer to the overall research question (Lipsey & Wilson, 2001). There is a distinction between a domain-based and instrument-based meta-analysis (van Hemert, 2003). The former uses a thematic domain from which cross-cultural studies can be sampled. In an instrument-based meta-analysis, studies are sampled that use the same psychological instrument. We chose to conduct an instrument-based meta-analysis, since it suited our purpose to obtain a cross-cultural dataset on personal values.

The RVS, published in the late 1960s by Rokeach (1968, 1973), is especially suited as it has been widely used around the world (Rohan, 2000). A meta-analysis using the RVS yields an independent pool of studies that allows generalizing beyond the sample characteristics of Schwartz's study. By choosing the RVS there is also the unique opportunity to test whether Schwartz's cultural value dimensions are identifiable if the measurement of values is based on a different response format. The main difference between the SVS and the RVS is that the latter is based on a rank-order procedure whereas the former follows a rating instruction on a Likert-type scale. If we found similar results with a different instrument, we could conclude that we have replicated a very robust phenomenon despite the variations in the assessment (Kline, 2004).

Hence, our aim was to conduct a meta-analysis on the RVS to obtain a cross-cultural data set that would enable us to test the structure of values at the aggregated culture-level. This implied (a) coding rank orders of Rokeach Values that were provided for specific samples in the studies and (b) aggregating sample scores within cultural groups by using the arithmetic mean. This kind of meta-analysis in which the mean is coded as the variable of interest is less often reported in the literature. Yet meta-analyses using central distribution information are possible (Lipsey & Wilson, 2001) and provide useful information for cross-cultural analyses (e.g., Dekker & Fischer, 2008; Fischer & Chalmers, 2008; Fischer & Mansell, 2009).

Study 1: Replicating Schwartz's Culture-Level Value Structure

We conducted a meta-analysis using the RVS by coding samples' mean rankings of values as reported in the respective studies. The RVS consists of 18 terminal and 18 instrumental values followed by a defining phrase that clarifies their meaning. Respondents are usually asked to rank order the two sets of values separately by assigning low rank orders (minimum 1) to important values and high rank orders (maximum 18) to unimportant ones.

Following Schwartz's choice of method, we employed multidimensional scaling (MDS) using all 36 Rokeach values to identify the culture-level value types. As the MDS is applied on a smaller set of values compared to Schwartz's (1994b) culture-level analysis (45 values), we expected that some neighboring value types may merge. The Rokeach values may not provide as much detail in value type specification as the larger list of values in Schwartz's instrument. We did not expect to identify a *Hierarchy* value type as the RVS does not contain values of this kind (e.g., *social power* and *authority*).

Method

Meta-Analysis

Literature search and inclusion criteria. We searched for relevant studies in the database PsycINFO covering the period 1968 (year of first publication of the RVS) to March 2006. The keywords used were *Rokeach* and *values*, which resulted in 558 references. Studies with children and young adolescents (younger than 16 years of age), clinical as well as delinquent samples were not included in the study. Furthermore, only those studies were selected where the original 18 terminal and 18 instrumental values had not been replaced by other values (as, for example, in Form G of the RVS). Furthermore, the mean or median rank orders needed to be reported for at least all 18 terminal or all 18 instrumental values. Some researchers also added specific values to the original list of Rokeach values. We dropped them from the analysis and recalculated the rank orders for the 18 original values. For ease of interpretation, we recoded the ranks so that higher numbers correspond to higher importance of the respective values and vice versa. Foreign-language articles (22 out of 130) were translated by the authors of this article or by bilingual speakers. The final data set consisted of 344 samples for which value priorities were coded. These samples had been assessed in 173 independent studies. The findings had been published in 130 articles.[1]

Samples. A summary of the sample characteristics can be seen in Table 1. The year of data collection of the studies ranged from 1967 to 2002. Gender was not reported for 48% of all samples. Of those that provided this information, 47.2% of the samples were male. The age of respondents ranged from 16 to 75. Samples were coded as falling either into the category of university students (54% of all samples), working adults (27%), general population (8%), or "others" (11%) (e.g., seniors). In total, our meta-analysis is based on the responses of 44,047 respondents from 32 different countries and five ethnic minority groups such as Hispanics in the United States.

To compare the distribution of countries to Schwartz's initial data set from which he derived his culture-level structure (cf., Schwartz, 1994a, pp. 29-29), we assigned each country to geographical regions. In Schwartz's data set, the majority of countries belonged to Europe/Eurasia (52.3%), followed by Asia (22.7%) and Latin America (9.1%). Countries from Oceania, North America, and Sub-Sahara constituted each 4.5% of the sampled countries and the Middle East was represented by 2.3% of all countries. Our data set consisted of proportionally fewer countries from Europe/Eurasia (27.0%) and the Sub-Saharan (2.7%) region and more countries from Asia (29.7%), the Middle East (16.2%), and Oceania (8.1%). The proportions of countries representing Latin America (10.8%) and North America (5.4%) were about the same. In total, 62.2% of the countries overlapped between Schwartz's (1994a) and our study.

Computation and analysis. For each sample, the reported mean or median rank orders were coded. Mean ratings were coded in cases where a rating procedure (10.5% of all samples) instead of the original ranking was used. To make this coded information maximally comparable, we rank-ordered terminal and instrumental values again within each sample. We rank-ordered the two sets of values separately. Before aggregating samples at the culture-level, we weighted all coded rank orders by their sample size in order to give more weight to large sample sizes. To obtain again ordinal data at the aggregated culture-level, we rank ordered the values within each cultural group. For Slovakia, only the instrumental values were available and for Slovenia only the terminal values. These countries were excluded from the analysis in Study 1, as the statistical procedure we were employing deleted missing values listwise.

We applied a nonmetric multidimensional scaling procedure (MDS; PROXSCAL in SPSS 14.01) on the Rokeach value rankings at the aggregated culture-level. MDS represents the value

Table 1. Sample Characteristics of the Meta-Analysis per Country

Cultural Sample	Year of Data Collection	*k* Samples	*N* Participants	Respondents
Australia	1986 to 2002	64	5,589	University students, working population, others
Bangladesh	1982 to 2002	2	200	University students
Brazil	1969 to 1988	18	3,136	General population, university students
Canada	1974 to 1990	7	382	University students, working population, others
Chile	1985	1	70	University students
China	1985 to 1997	14	2,424	University students
China, Hong Kong SAR	1988 to 2002	5	1,672	University students, others
Egypt	1993	1	658	Working population
Finland	1981	4	172	University students
Germany (West)	1974 to 1990	5	1,093	University students, working population
Israel	1966 to 1985	25	1,059	University students
Japan	1978 to 2002	9	709	University students, working population
Jordan	1986	2	2,000	University students
Malaysia	1982 to 2002	2	150	University students
Mexico	1983	6	168	Working population
New Zealand	1974 to 2002	4	240	University students
Papua New Guinea	1971 to 2002	8	1,645	University students, others
Poland	1982 to 1998	10	1,276	University students, others
Romania	1997	2	200	University students, others
Singapore	1988	1	65	University students
Slovakia	1995	2	179	Others
Slovenia	1985	2	1,409	Working population
South Africa	1984	3	123	Working population
Spain	1982 to 2001	2	632	University students, others
Sweden	1980	2	25	Others
Taiwan	1982 to 2001	2	200	University students
Turkey	1980	7	1,610	University students, working population
Ukraine	1969	2	84	University students, working population
United Kingdom	1975 to 1988	14	917	University students, working population, others
United States of America	1967 to 2001	98	14,710	General population, university students, working population, others
Vietnam	1977	1	349	General population
Malaysia Chinese	1982	1	79	University students
New Zealand Chinese	1982	1	100	University students
Hispanics in USA	1987 to 1993	2	161	General population, university students
Africans in Egypt	1992	1	43	Working population
Non-Egyptian Arabs in Egypt	1992	1	101	Working population
Totals	1967 to 2002	344	44,047	

Note: The year of data collection is based on the information given in the respective papers. If this information was missing, we calculated an estimated year of data collection by subtracting the average delay between data collection and publication (3.44 years) as inferable from some papers.

items as points in a geometrical space in such a way that the distances between the points reflect the associations between the items, with small distances corresponding to strong positive associations and large distances to zero or negative associations (Borg & Groenen, 1997). The

dissimilarity measure for the MDS was based on the Spearman correlations between all 36 value items.

The Rokeach-MDS also contained values which were excluded in Schwartz's (1994b) culture-level analysis and, hence, for which cross-cultural equivalence at the individual-level was uncertain. There were three reasons why we decided to use all values to derive a MDS configuration: (a) Past research using smallest space analysis of all 36 Rokeach values at the individual-level suggested that the structural relations among value types underlying people's value priorities were widely similar across different societies (Schwartz & Bilsky, 1987, 1990); (b) a recent analysis of value shifts in the SVS suggested that they are mostly due to other reasons than cross-cultural inequivalence in value meanings (Fontaine, Poortinga, Delbeke, & Schwartz, 2008); (c) if there was indeed a problem of unstable meaning of values, it would increase random error at the culture level (Fontaine, 2008), and thus lead to very low correlations of those items with other items. Empirically, this would most likely be shown by value items that take a central position in the MDS, since the correlations—and by implication the distances—would be low and about equal to all other values. Therefore, we would be able to detect unstable meaning of values and we could report for which values this is the case. Because other important content might be omitted, we concluded that it was important to include all values.

Comparison With the SVS. We used archival datasets of the SVS collected by Schwartz and his colleagues (Schwartz, 1992, 2005) between 1988 and 2002, including samples of both students and teachers.[2] Teacher data were available from 55 nations ($N = 15{,}975$) and student data from 66 nations ($N = 26{,}024$; see also Schwartz, 2005, for more details). We analyzed the SVS value structure separately for the student and teacher samples. The country-level structure was derived from z-transformed Euclidean distances based on the aggregated country means of students' and teachers' responses. Using PROXSCAL in SPSS 14.01, an interval-level MDS was run.

Unlike Schwartz, we applied MDS to all 55 value items that were consistently included in all studies. He excluded the 10 most shifting items across samples determined by using the configurational verification approach (Schwartz, 1992, 1994b). Recent re-analyses using bootstrap methods, however, demonstrated that the majority of the shifts have to be attributed to random sampling fluctuations, and not to inequivalence in the meaning of the value items (Fontaine et al., 2008). Furthermore, Fontaine (2008) found that the actual size of shifts (computed on the basis of value item coordinates) for excluded values from the culture-level analysis (e.g., mature love) was not systematically larger than for included values (e.g., clean, ambitious).

Qualitative comparison. To employ the configurational verification approach, we compared the SVS and RVS and found a conceptual overlap of 28 values. Twenty-three of these values were part of Schwartz's culture-level value structure. Therefore, we used these 23 matching values as a guideline for the configurational verification. This was done by drawing boundary lines around clusters of value items in the RVS-MDS, while avoiding overlap between regions as much as possible. Then, partition lines between these boundaries were drawn (see Schwartz, 1992).

Quantitative comparison. We also compared Schwartz's and our MDS configuration by correlating the coordinates of the 23 values to get an objective measure of their similarity. Prior to the correlation of value coordinates, the Rokeach and Schwartz's MDS needed to be transformed to maximal similarity. The reason is that MDS can produce configurations that are altered through rotation, inflection, or shrinkage (Borg & Groenen, 1997). We used Generalized Procrustes Analysis (GPA; Commandeur, 1991) to transform the data. Since we analyzed Schwartz's student and teacher data separately, there were three different MDS configurations to be transformed: (a) the configuration for the Rokeach values, (b) the configuration for Schwartz's students' values, and (c) the configuration for Schwartz's teachers' values.

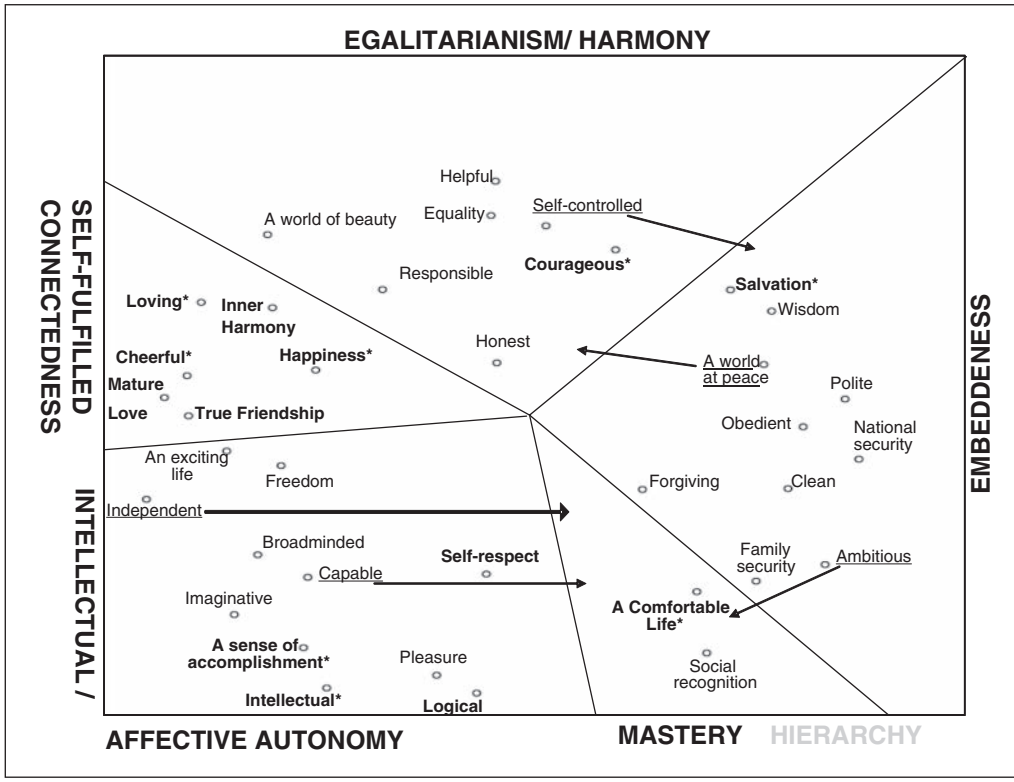

Figure 2. MDS Representation of All 36 Rokeach Values

Results and Discussion

Configurational Verification

The general value structure. The two-dimensional solution using the Rokeach values yielded a relatively high Kruskal Stress (Kruskal & Wish, 1978) of .25, with a possible minimum of 0 indicating perfect fit between solution and original distances. We kept the two-dimensional solution since our aim was to replicate Schwartz's two-dimensional model (see also Kruskal & Wish, 1978, for a discussion on the trade-off between fit and interpretability).

Figure 2 shows the MDS on all 36 Rokeach values in a two-dimensional space. The configurational verification approach revealed that there were four value clusters organized in a circular order that matched Schwartz's value clusters. As can be seen in the figure, the adjacent and thus compatible value orientations *Egalitarianism* and *Harmony* merged into a single value cluster. Similarly, *Affective* and *Intellectual Autonomy* merged together. In line with Schwartz's predictions, *Embeddedness* was opposite to *Autonomy* values and *Egalitarianism* and *Harmony* were opposed to *Mastery.* This confirms the organization of Schwartz's value types according to their conflicts and compatibilities. Taking into account that it is not possible to replicate the *Hierarchy* value type as there are no *Hierarchy* values in the RVS, we can state that we were able to identify four out of six of Schwartz's value types. The reduced number of emerging value clusters may be a result of underrepresentation of values in the respective value domains (Fontaine, 2008) and the absence of *Hierarchy* values.[3]

Table 2. Spearman Correlations of SVS and RVS Culture-Level Data Following Generalized Procrustes Analysis

	RVS Dim 1	RVS Dim 2	SVS Student Dim 1	SVS Student Dim 2	SVS Teacher Dim 1	SVS Teacher Dim 2
RVS Dim 1	—					
RVS Dim 2	–.03	—				
SVS student Dim 1	.85***	–.06	—			
SVS student Dim 2	–.14	.51**	–.02	—		
SVS teacher Dim 1	.76***	–.07	.93***	.08	—	
SVS teacher Dim 2	.07	.59**	.10	.64***	.23	—

Note: Dim 1 and 2 refer to Dimensions 1 and 2 in the two-dimensional space of the MDS. $N = 23$ value items.
*$p < .05$. **$p < .01$. ***$p < .001$.

Shifting values. There were five values, *independent*, *capable*, *ambitious*, *a world at peace*, and *self-controlled*, that were located in different value clusters as compared to Schwartz's solution. The arrows in Figure 2 indicate where they should fit in Schwartz's configuration. It is noteworthy that these values did not shift to opposite value types but rather to adjacent ones with which they are theoretically compatible. Furthermore, the location of some of these values shows that they are meaningfully associated with the value types to which they shift. The value *independent*, for example, is not located in *Mastery* but in the *Autonomy* value domain. Independence can be regarded as a key value for *Autonomy*. The value shifts may also be due to methodological reasons, including sampling of different cultural groups, a different composition of countries representing geographical regions, and differences in translation of items. It is difficult to identify the precise reasons with the present study.

Correlational Analysis

Similarity of the value structure. Table 2 shows the Spearman correlation coefficients for the value configuration based on 23 matching values after GPA transformation. As can be seen, all correlations for the same dimensions are significant, ranging from .51 to .85. There is a slightly higher similarity to the students' SVS-MDS than to the teachers.'

Follow-Up Analyses

Value profiles of countries. To test whether the value profile of countries obtained with our RVS data is similar to the SVS data, we correlated country scores of the 29 countries common to both SVS and RVS (using one-tailed statistical tests). We had four Rokeach value types to correlate with the corresponding Schwartz's value types. In order to increase reliability of SVS-country scores, we combined the teacher and student samples (see also Schwartz, 2006). *Intellectual* and *Affective Autonomy* in the SVS data were combined and all SVS responses were centered to correct for scale use (Schwartz, 1992, 2007).

We found the strongest relationship for the Rokeach and Schwartz's *Embeddedness* value type ($r_s = .67$, $p < .001$), followed by a moderate and marginally significant correlation between the RVS- and SVS-*Mastery* value type ($r_s = .31$, $p = .06$). There was no significant correlation

between the SVS- and RVS-*Autonomy* value type ($r_s = .14$, $p = .23$). There was also no significant correlation for RVS-*Egalitarianism*/*Harmony* and SVS-*Egalitarianism* ($r_s = .24$, $p = .11$) or SVS-*Harmony* ($r_s = -.08$, $p = .34$).

There are several possible reasons for this. It is noteworthy that the correlations were less well confirmed for those value types that merged with others or that consisted only of a few values. Furthermore, the use of somewhat different items to index value domains might have caused priority differences across surveys (a common problem in other areas of psychology, such as personality). Another important issue is that the RVS data cover a long time period. Inglehart and Baker (2000) illustrated that developing and low-income countries showed little change in their traditional values, whereas more advanced industrial societies became more secular-rational from 1981 to 1998. Hence, the position of some countries on these kinds of values (e.g., *Autonomy*) averaged across four decades is likely to be different from Schwartz's scores. Another possible explanation is restriction of range problems that decrease covariances. Schwartz and Bardi (2001) reported a relatively universal value hierarchy, with some values consistently being rated higher or lower than others. This should lead to restriction of range, especially when using a ranking procedure. We found indeed higher variances for the value types correlating with the SVS types ($s^2_{\text{Embeddedness}} = 6.75$; $s^2_{\text{Mastery}} = 6.31$) than for the others ($s^2_{\text{Intellectual/Affective Autonomy}} = 3.21$; $s^2_{\text{Egalitarianism/Harmony}} = 3.14$). While all these reasons can cause deviations in scores for specific countries, it does, however, not point to a real difference in the value structure. The main point of our analysis is that the position of values relative to each other was well replicated.

Robustness of the RVS structure. We tested whether sample type accounted for the RVS structure. We were somewhat restricted in our analyses since many countries are only represented by a few samples in our meta-analytical data set, which does not allow testing the direct impact of sample type on structural stability. We split the sample-level data set into student and nonstudent samples and followed the same procedures as above for both data sets. The student sample data set consisted of 27 and the nonstudent data set of 24 cultural groups, with 15 cultural groups overlapping. The MDS solutions on these two subsamples were compared after GPA rotation. Spearman correlations of the two configurations for all 36 values revealed high overlap (dimension 1: $r_s = .72$; dimension 2: $r_s = .60$, both $p < .001$, one-tailed). Considering that the two subsamples consisted of different sample types coming to some extent from different countries, we concluded that the Rokeach value structure was replicable. Specific sample characteristics seemed to have little impact on the overall structure.

Rokeach Values Excluded in Schwartz's Study. The second focus of our study was aimed at the 13 Rokeach values that were not included in Schwartz's study on cultural value orientations (see Figure 2 in bold). A visual examination of these values in our RVS-MDS showed that they were not located in the center of the circle where they would be expected, if they were indeed unstable in their meaning across cultural samples. Most of them fell into value domains supporting their underlying meaning, for example *intellectual* clustered together with *Intellectual Autonomy*.

Six Rokeach values merit a closer examination. We suggest that this set of values, located in between *Autonomy* and *Egalitarianism*/*Harmony*, represents a new value domain consisting of self-focused values on the one hand and other-focused values on the other hand. The self-focused values (*cheerful*, *happiness*, *inner harmony*) refer to a strongly positive emotional state of mind. The other-focused values (*true friendship*, *mature love*, *loving*) represent mature relationships with profound feelings and attachment to others. We labeled this value cluster *Self-Fulfilled Connectedness* (*SFC*), emphasizing the joint qualities of a sense of flourishing and satisfaction in life as well as profound attachment to others.

Study 2 is devoted to examine this new value type. We aim to answer the following questions: What is its meaning and correlates? Does the new value type possess incremental validity?

Study 2: Examining the Separate Value Cluster

Based on our meta-analytical Rokeach data, we found that *SFC* is a value type that is located adjacent to *Autonomy* and opposed to *Embeddedness* in the value circle. This is a first indication of its underlying meaning. It suggests that *SFC* is an individualistic value orientation fitting with the fact that individualism/collectivism is a very broad theme in research on cross-cultural differences (Inglehart, 2006). Different value orientations such as *Individualism/Collectivism* (Hofstede, 1980), *Autonomy*/*Embeddedness* (Schwartz, 2006), as well as *Survival/Self-Expression* (Inglehart & Welzel, 2005) all reflect the common idea to what extent a given society emphasizes autonomous human choice (Inglehart, 2006). To make sure that *SFC* is indeed closely related to "individualistic" values, we tested its correlation with value types from the SVS. Correlations of *SFC* and Schwartz's cultural value orientations should produce a sinusoid pattern. We hypothesized that:

Hypothesis 1: *SFC* and compatible value types, that is, *Autonomy, Egalitarianism*, and *Harmony,* should yield positive correlations. The conflicting value types *Mastery*, *Hierarchy*, and *Embeddedness* should show negative correlations with *SFC*. *Embeddedness* should exhibit the strongest negative correlation.

Individualism and Relatedness

Despite the fact that different value dimensions assessing a form of individualism/collectivism share a great deal of commonality in their underlying meaning, they also have been found to capture unique aspects of culture (cf., Schwartz, 2006). This may be equally true for *SFC*. Individualism and collectivism are multidimensional constructs (Berry, Poortinga, Segall, & Dasen, 2002), and *SFC* may measure one aspect of individualism that is not included in Schwartz's value types of *Autonomy*. In Schwartz's conceptualization, the focus of *Autonomy* is on the pursuit of hedonistic experiences (*Affective Autonomy*) and following own ideas and intellectual aspirations (*Intellectual Autonomy*). *SFC* appears to go beyond this "ego-centric" focus. In *SFC* there is a synthesis of self- and other-focused values, that is, a sense of personal gratification and relatedness. This may appear as a contradiction at first sight, yet there is theoretical evidence that this synthesis may be a meaningful variation of an individualistic value orientation at the societal level.

Hofstede (1980), for example, explicitly included relatedness in the form of "concern for the immediate family" into his definition of individualism. Waterman (1981) pointed out that individualism does not necessarily mean disconnectedness or alienation from others. He argued that societies may develop an 'ethical kind of individualism' in which not only self-determined choices and the pursuit of personal goals are important but also self-chosen pro-social interdependencies. These kinds of societies derive a number of social benefits from emphasizing interrelatedness compared to societies emphasizing purely self-focused values. The well-being of closely related others becomes a function of one's own personal well-being. According to Waterman, social relationships that involve the most extensive mutuality and interdependence are friendship and romantic love, which are also values found in *SFC.* Hence, we predicted that:

Hypothesis 2: *SFC* is positively related to well-being at the culture-level.

Pursuit of Nonmaterial Goals

Another indication of the meaning of *SFC* is that it contains values which are of nonmaterial nature. This resembles the postmaterialism value orientation proposed by Inglehart (1990). Societies with a postmaterialist orientation emphasize self-expression and belonging besides intellectual

and aesthetic satisfaction. A materialist orientation constitutes the opposite pole of this value dimension and goes along with an emphasis on survival as expressed by values that relate to economic and physical security. Inglehart also offers an explanation why materialist values are prioritized in certain societies. He draws upon the scarcity hypothesis, which says that a materialist orientation is prevalent in societies where the economic and physical security is not guaranteed. Once these basic concerns are settled, there is a shift to postmaterialist values and nonmaterial ambitions become primary concerns. He empirically showed that advanced industrial societies shift from materialist to postmaterialist values. This phenomenon is not uniquely Western but appears in any society that has experienced the transition to high mass security. Therefore, our hypotheses for *SFC* were:

Hypothesis 3: *SFC* is positively related to postmaterialism.
Hypothesis 4a: *SFC* is more strongly endorsed in countries with higher level of socio-economic security.
Hypothesis 4b: The positive relationship between *SFC* and socioeconomic security is not unique to Western societies.

Method

Measures

Values. We computed a single country score for the value type *SFC*. For the nations Slovakia and Slovenia only half of the *SFC* values were available and used for the computation of the country score.[4]

Schwartz's value types were computed based on the 45 values included in his original analysis (Schwartz, 1994a, 1994b). To enhance reliability, we combined student and teacher data. Scores were centered following recommendations by Schwartz (1992, 2007).

Subjective well-being. We obtained country scores on subjective well-being (SWB) from Diener, Diener, and Diener (1995). They used data of national SWB surveys compiled by Veenhoven (1993). SWB comprises questions about people's happiness and their life satisfaction and is therefore a relatively comprehensive assessment of people's state of well-being.

Postmaterialism. We used data on the materialism/postmaterialism value orientation from all waves (1981 to 2004) of the European and World Value Survey study (see http://www.worldvaluessurvey.org/). We used the 12-item instead of the 4-item scale as it has been found to be more reliable (Inglehart, 1990). It contains items measuring attitudes toward physical/economic security (materialism) and toward nonmaterial goals (postmaterialism). Data were available from individuals belonging to 78 countries whose responses were aggregated at the country level.

Basic need fulfillment. We obtained several country indices related to the socioeconomic development of nations. When possible, we computed average scores of these indices for the last 40 decades to deal with the fact that the Rokeach data had been collected across different times (see also Table 1). We took the *Human Development Index* (HDI, from 1975 to 2005), which combines indicators of life expectancy, educational attainment, and income (United Nations Development Programme, 2006). We obtained the *Gross Domestic Product* per capita (GDP, from 1968 to 2003) as a measure of income (Maddison, n.d.). We derived measures of individual rights through the *Gender Empowerment Measure* (GEM, from 2007/2008) indicating the current national level of equal opportunities for men and women concerning political and economic participation, decision power, and command over resources (United Nations Development Programme, 2006). We also included indices measuring the level of *political rights* (e.g., freedom of the press and freedom to peacefully assemble) and of *civil liberties* (e.g., freedom of religion and the right to fair trial) from 1972 to 2005 (Freedom House, n.d.).

Since these five indices were highly correlated, we performed a principal component analysis. The screeplot indicated a one-factor solution (eigenvalues: 4.07, 0.64, 0.21, 0.07, 0.02) accounting for 81.32% of the total variance. We labeled it "Basic Need Fulfillment Index" (BNFI). We obtained a single BNFI for each country by standardizing each of the five indices and then averaging the standardized scores. Countries that scored high on BNFI showed higher level of human development, higher gross domestic product per capita, more equal opportunities between men and women, and more political rights and civil liberties. Countries with the highest and lowest score on this index were the United States and Egypt, respectively (see Table 3 for all country scores).

Test of Incremental Validity. Since *SFC* is conceptually very close to *Autonomy*, we examined whether *SFC* significantly explains unique variance in the dependent variables (i.e., the external validity measures) over and above *Autonomy*. For each regression analysis, Schwartz's data on *Autonomy* were entered as a predictor in the first block and *SFC* was entered as a predictor in the second block. To reduce the likelihood of multicollinearity, we combined Schwartz's *Intellectual* and *Affective Autonomy* into one single *Autonomy* value type.

Results

Since we have directional hypotheses, the results reported in this section are based on one-tailed statistical tests.

Correlational Analyses

SFC and Schwartz's values (H1). The Spearman correlations between *SFC* and Schwartz's cultural value types confirmed the hypothesized sinusoidal pattern (see Figure 3). The correlations support in general the location of *SFC* in Schwartz's value circle as displayed in Figure 2. *SFC* is compatible with cultural values that lay emphasis on the individual (e.g., *Autonomy*) and is conflicting with the more "group-focused" values (e.g., *Embeddedness*). The strongest correlation is between *SFC* and *Embeddedness* ($r_s = -.56$, $p < .001$). The fact that SFC correlated moderately with neighboring value types and most strongly with group-focused values suggests that (a) it is a distinct value domain and (b) it is driven by the conflict of how individuals should relate to their group, i.e. whether meaning in life is derived through traditional group relationships, or whether individuals are free to derive meaning by choosing their in-group.

SFC and external validity measures (H2 - H4a). Concerning the relationship between *SFC* and subjective well-being, we found the hypothesized significant positive correlation ($r_s = .59$, $p < .001$). Also as predicted, we found a correlation between *SFC* and postmaterialism ($r_s = .61$, $p < .001$), meaning that a priority on *SFC* is related to an emphasis on nonmaterial goals.

Regarding the question of which societies tend to endorse *SFC*, we found that countries with a higher level of basic need fulfillment showed higher endorsement of *SFC* values ($r_s = .60$, $p < .001$). Of the other Rokeach value types, only correlations between BNFI and *Embeddedness* ($r_s = -.46$, $p < .01$) and *Mastery* ($r_s = -.62$, $p < .001$) reached significance.

Hypothesis 4b is concerned with whether the relationship between BNFI and *SFC* applies to Western and non-Western countries alike. To test this hypothesis, we split the data into Western (Anglo-Saxon countries and Europe, 14 countries) and non-Western (Asia, Africa, Middle East, and South America, 18 countries) and computed the correlations for each subsample. We found significant correlations for both the Western ($r_s = .53$, $p < .05$) and non-Western subsamples ($r_s = .60$, $p < .01$). These results support Inglehart's (1990) proposition: The higher the level of socioeconomic development of countries, the greater is the tendency to pursue nonmaterial goals, independent of cultural region. It is not a uniquely Western phenomenon but holds in non-Western societies too.

Table 3. Relative Ranking of SFC and Socioeconomic Indicators of 32 Countries

Nation	Mean Ranking Score of SFC	Subjective Well-Being[a]	Postmaterialism	BNFI
Australia	14.33	1.02	2.75	1.14
Bangladesh	7.42	–.29	1.79	–1.29
Brazil	14.83	.57	2.19	–.43
Canada	12.00	.97	2.66	1.17
Chile	14.33	.13	2.41	–.37
China	8.33	–1.92	1.27	–1.30
Egypt	8.00	–.78	1.66	–1.40
Finland	14.33	.74	2.90	.99
Germany	15.67	.18	2.56	1.00
Hong Kong, China (SAR)	12.33	—	—	.74
India	9.67	–1.13	1.73	–.70
Israel	11.33	–.18	2.12	.50
Japan	9.17	–.86	2.34	.73
Jordan	7.33	–.77	1.60	–.94
Malaysia	8.33	.08	—	–.54
Mexico	14.17	–.28	2.36	–.24
New Zealand	13.83	.82	2.43	1.00
Papua, New Guinea	8.17	—	—	–.40
Poland	11.67	–.90	1.91	–.25
Romania	9.33	—	1.81	–.79
Singapore	13.67	.43	1.95	–.05
Slovakia[b]	10.00	—	1.79	.13
Slovenia[b]	8.50	—	2.25	.35
South Africa	11.67	–.63	1.70	–.64
Spain	13.83	–.41	2.58	.60
Sweden	14.83	1.03	2.60	1.22
Taiwan	14.42	—	1.52	.01
Turkey	13.00	–1.02	2.32	–.75
Ukraine	11.42	—	1.45	–.62
United Kingdom	13.67	.69	2.42	.99
United States	10.17	.91	2.31	1.23
Vietnam	8.00	—	—	–1.33
M	11.49	–.07	2.12	–.075
SD	2.66	.82	.44	.86

Note: High scores on all of these variables indicate more of that quality. SFC = Self-Fulfilled Connectedness; BNFI = *Basic Need Fulfillment Index*. BNFI is an average score consisting of the Human Development Index, Gross Domestic Product per capita in U.S. dollars, Gender Empowerment Measure, Political Rights, and Civil Liberties. Higher BNFI scores denote higher fulfillment of these basic needs.

a. Country scores are from Diener et al. (1995).

b. Mean rank for these countries is based on a subset of *SFC* values.

Regression Analyses. *SFC* showed incremental validity as a predictor for SWB, $\Delta F(1, 20) = 5.03$, $p < .05$, $\beta = .43$, postmaterialism, $\Delta F(1, 24) = 6.30$, $p < .05$, $\beta = .39$, and BNFI, $\Delta F(1, 26) = 5.28$, $p < .05$, $\beta = .31$, after controlling for Schwartz's *Autonom*y value type.

Discussion

What does *SFC* mean for societies from a theoretical point of view? What are the basic issues with which each society is confronted and for which it needs to find a solution? We have so far

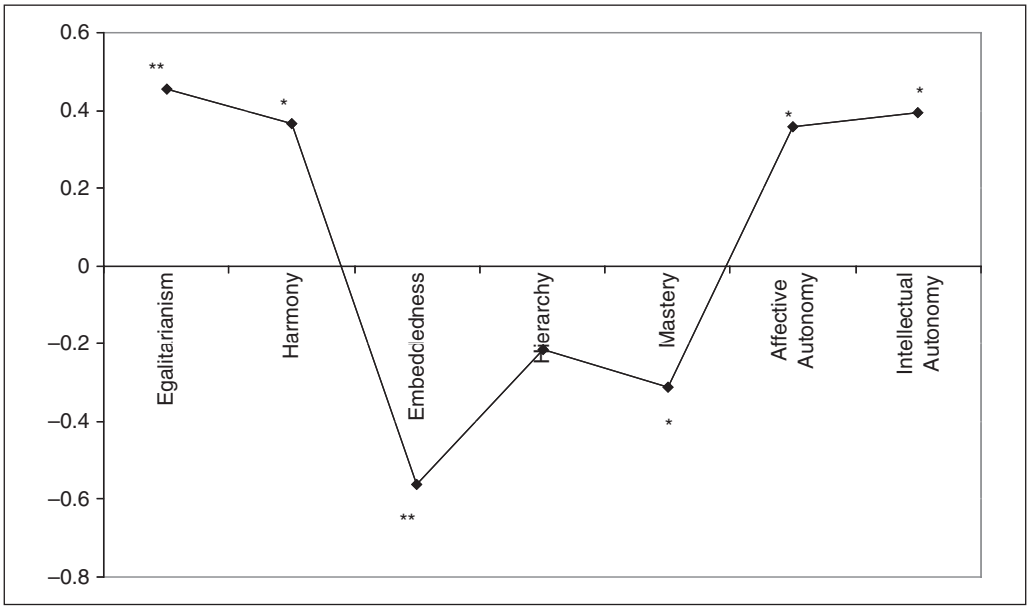

Figure 3. Spearman Correlations Between Average Ranking of *Self-Fulfilled Connectedness* and Schwartz's Culture-Level Value Types

interpreted *SFC* as an individualistic value orientation that is closely related to *Autonomy*. There are a number of reasons that guided us to interpret it that way and that we also found empirically confirmed: *SFC* is located very closely to *Autonomy* and clearly opposite to *Embeddedness* in the MDS. Furthermore, it contains a number of self-focused values and is empirically related to self-focused variables (e.g., subjective well-being). Moreover, we did not find a new opposite value type to *SFC*, which could have been interpreted as an entirely new value dimension. Taken all this together, it led us to conclude that *SFC* is a value type that is complementary to *Autonomy*. From this it follows that it relates to the same basic societal issue as *Autonomy* and *Embeddedness*, that is, to the question of the boundaries between the person and the group.

While Schwartz proposed that relationships play a major role in *Embeddedness* cultures, they do not seem to be important for *Autonomy*-oriented societies. Yet establishing relationships with others is an important universal need (cf., Ryan & Deci, 2002). We suggest that some societies may achieve it by embedding their members into social groups (as in *Embeddedness* cultures), other societies may compensate the lack of social networks by emphasizing the value of independence and hedonistic experiences (as in *Autonomy* cultures), or by leaving it to the individual to discover the intrinsic value of relationships (as in *Self-Fulfilled Connectedness* cultures). But what is then the difference of relationships in "embedded" and "connected" cultures?

In "embedded" cultures, there is a social structure that assures that individuals are cared for by automatically belonging to an established social group. There is not much choice: The social expectation is to fit into the pre-established social fabric with all its accompanying obligations. Thus, a sense of meaning and purpose in life may be derived from social relationships and from identifying with the group, which is rather imposed by society than based on free choice. Consequently, there may be a lesser awareness of the positive impact that social relationships have for the self. The great sense of personal gratification derived from relationships may be less accentuated in "embedded" than in "connected" societies. In *Self-Fulfilled Connectedness* societies on the other hand, the society provides the freedom for individuals to engage in discretionary relationships

that in turn provide a sense of meaning and satisfaction. The positive feelings of happiness and well-being derived from voluntary relationships may provide the underlying motivation to pursue this value type when relatedness is not "institutionalized" in a society.

We provided empirical evidence that *SFC* is a meaningful value type. It would be of great interest to include these kinds of values in further studies. There is already empirical evidence from individual-level studies that autonomy and relatedness are indeed compatible and not conflicting (see Kağıtçıbaşı, 2005, for a review). Studies that examine this phenomenon with the inclusion of *SFC* values in their value inventories may certainly give an extended insight into the system of values and its meaning for both individuals and societies.

General Discussion

The main purpose of our study was to replicate Schwartz's culture-level value types by conducting a meta-analysis using the RVS. The configurational verification approach suggested the replication of four out of six of Schwartz's cultural value types. Some of the value domains were not clearly separable probably because of item under-representation in the respective value clusters. We assessed the degree of similarity between the RVS- and SVS-MDS more precisely by correlating the coordinates of matching values and found significant and moderate to sizeable correlations. Can our replication be regarded as successful?

Regarding the level of imprecision to the original study, our study can be regarded as 'fairly imprecise.' Schwartz's (1994a, 2006) samples consisted of university students and teachers, whereas our meta-analysis included diverse samples such as working adults and samples from the general population. Our sampled cultural groups reflect also a somewhat different distribution in terms of geographical regions they belong to, compared to Schwartz's very first culture-level analysis. The response format of the RVS is entirely different to the SVS (ranking vs. rating), and value domains are indexed by somewhat different items. Finally, the time frame for which data were available is larger for the RVS data set than the SVS data set. In regard to all these factors, we think that our replication can be considered successful. The similarity of the MDS results despite the high degree of 'imprecision' in the replication can be interpreted as a strength in terms of the robustness of Schwartz's theory.

Limitations

There are a number of limitations in our studies. A major limitation is that we needed to average items across different decades to enhance the sample size at the country-level. In this way we ignored temporal effects and value changes. For some cultures, data on the Rokeach values were only available for specific years or different time frames than for others. We tried to address this issue for the correlational analyses in Study 2. We aimed to obtain country scores for the external variables that match the large time frame of the RVS data set. In some cases this was not possible (e.g., for postmaterialism). This mismatch of time frames of the country scores may be one explanation why our correlations were only of moderate size. However, there are probably a number of other factors that may have lowered our correlations, which are difficult to identify or which we could not control for. Yet the fact that we still found significant correlations in the hypothesized direction suggests that the relationships are relatively stable. Countries from Eastern Europe, for example, experienced great political and socioeconomic changes. Yet we found a consistent result: They scored relatively low on the Basic Need Fulfillment Index and also showed relatively low priority in regard to the *SFC* value type. This finding still emerged as significant even if the country scores were averaged across almost four decades. Despite all these

shortcomings, we provided theoretical and empirical evidence that *SFC* is a meaningful value type at the culture-level.

Another limitation of our meta-analysis is that we were not able to examine the value structure at the individual level, since data were only available for samples and in most of the cases the number of samples within countries was relatively low. Although our aim was to replicate Schwartz's culture-level value structure and not to examine the individual-level value structure, the issue of cross-cultural equivalence is important. Values with different meanings across cultures should not be used in cross-cultural comparison, since group differences may just reflect the fact that different concepts were measured in each culture (Schwartz, 1994a, 1994b). The more an item is affected by such meaning shifts, the less stable (and by consequence more central in the aggregated structure) a value item should become. The stability of the RVS structure and correlations of value types (including the new *SFC* value type) make this unlikely, but this does not rule out meaning shifts of values in specific cultural samples.

Although the use of value items at the culture-level, which were excluded by Schwartz (1994a, 1994b), may appear controversial, we believe that this is less of an issue than it appears. Schwartz's original work was conducted using all 36 Rokeach values (Schwartz & Bilsky, 1987, 1990) in seven cultures. The findings showed that specific values fell into clearly defined motivational categories and that the organization of motivational domains according to value conflicts and compatibilities was largely consistent across cultures. Values pertaining to our new value domain *SFC* did not show unusual instability. Furthermore, recent analyses using more stringent methods than the configurational verification approach suggest that value shifts at the individual level are mostly due to other reasons than cross-cultural inequivalence in meaning (Fontaine et al., 2008). Finally, we did not find value items located in the center of the RVS-MDS, which would point to random error at the culture level because of unstable meaning of values at the individual level.

Another point to consider is that meanings of values are represented by their patterns of relations with other values and may therefore change depending on what kind of values are included in the analysis (Schwartz & Bilsky, 1990). This is of concern if the values selected for study are a narrow sampling of the universe of value contents. Schwartz and Bilsky (1990) discussed this possibility for the RVS and concluded that the RVS represents a relatively comprehensive set of values. Adding new value items (from the SVS) did not show a significant change in meaning of the Rokeach values.

Conclusion

The emergence of a new finding is rather unusual when conducting replications. This may also be the reason why replication studies are often felt to be redundant and as not adding new knowledge or advancing the understanding of an issue. New findings are commonly seen as more informative and interesting, even if they are of unknown reliability and generalizability (Neuliep & Crandall, 1993). This study's contribution is two-fold: ensuring the generalizability of Schwartz's theory and adding new knowledge. We successfully replicated the structure of values at the culture level, and at the same time, we were able to identify a new value type, which we labeled *Self-Fulfilled Connectedness*. We hope that this discovery stimulates further studies to explore this particular value type and its meaning to individuals in different cultures.

Acknowledgements

We would like to thank the anonymous reviewers for their comments as well as Diana Boer, Vivian Miu-Chi Lun, and Paul Jose for stimulating discussions on this manuscript. We also wish to acknowledge the rich data source from the World Value Survey. Parts of this paper have been presented at IACCP in Mexico City, Mexico, 2007.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interests with respect to their authorship or the publication of this article.

Financial Disclosure/Funding

This study has been supported by grants from the Marsden Fund Council, administered by the Royal Society of New Zealand and a Victoria University of Wellington PhD scholarship.

Notes

1. The complete list of articles included in the meta-analysis can be obtained from the first author.
2. The SVS data set we used in this study was collected by Shalom Schwartz and is distributed by the Israel Social Science Data Centre (ISFC) at the Hebrew University Israel. We are highly indebted to Shalom Schwartz for using this rich source of information.
3. One reviewer pointed out that the merging of value types may be caused by the absence of *Hierarchy* values. To confirm that, we conducted a follow-up analysis on Schwartz's data. We applied an MDS on all 45 values Schwartz used for the culture-level analysis, but we excluded the *Hierarchy* values. The MDS solution showed that the overall value structure as such did not change. Yet the *Mastery* value type was more stretched and *Egalitarianism* and *Harmony* as well as *Intellectual* and *Affective Autonomy* were not clearly separable anymore. Drawing partition lines would result in at least one value that is misplaced in each of the value dimensions. This suggests that the distinction between value types may indeed to some extent be driven by their differing relations with *Hierarchy* values.
4. Analyses excluding Slovakia and Slovenia led to very similar results.

References

Amir, Y., & Sharon, I. (1990). Replication research: A "must" for the scientific advancement of psychology. *Journal of Social Behavior and Personality, Special Issue*, *5*, 51-69.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (2002). *Cross-cultural psychology: Research and applications* (2nd ed.). Cambridge, UK: Cambridge University Press.

Borg, I., & Groenen, P. J. F. (1997). *Modern multidimensional scaling. Theory and applications*. New York: Springer-Verlag.

Commandeur, J. J. F. (1991). *Matching configurations*. Leiden, the Netherlands: DSWO Press.

Dekker, S., & Fischer, R. (2008). Cultural differences in academic motivation goals: A meta-analysis across thirteen societies. *Journal of Educational Research*, *102*, 99-110.

Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, *69*, 851-864.

Fischer, R., & Chalmers, A. (2008). Is optimism universal? A meta-analytical investigation of optimism levels across 22 nations. *Personality and Individual Differences*, *45*, 378-382.

Fischer, R., & Mansell, A. (2009). Commitment across cultures: A meta-analytical approach. *Journal of International Business Studies*, *40*, 1339-1358.

Fischer, R., Smith, P. B., Richey, B. E., Ferreira, M. C., Assmar, E. M. L., Maes, J., et al. (2007). Organizational reward allocation principles: Testing organizational and cross-cultural differences. *Journal of Cross-Cultural Psychology*, *38*, 1-16.

Fontaine, J. R. J. (2008). Traditional and multilevel approaches in cross-cultural research: An integration of methodological frameworks. In F. J. R. van de Vijver, D. A. van Hemert, & Y. H. Poortinga (Eds.), *Individuals and cultures in multi-level analysis* (pp. 65-92). Mahwah, NJ: Lawrence Erlbaum Associates.

Fontaine, J. R. J., Poortinga, Y. H., Delbeke, L., & Schwartz, S. H. (2008). Structural equivalence of the values domain across cultures: Distinguishing sampling fluctuations from meaningful variation. *Journal of Cross-Cultural Psychology*, *39*, 345-365.

Freedom House. (n.d.). *Annual survey of freedom country scores 1972-1973 to 1998-1999*. Retrieved from http://www.freedomhouse.org/rankings.pdf

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.

Inglehart, R. (1990). *Culture shift in advanced industrial society*. Princeton, NJ: Princeton University Press.

Inglehart, R. (2006). Mapping global values. *Journal of Comparative Sociology*, *5*, 115-136.

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review, Special Issue*, *65*, 19-51.

Inglehart, R., & Welzel, C. (2005). *Modernization, cultural change and democracy*. New York and Cambridge, UK: Cambridge University Press.

Kağıtçıbaşı, Ç. (2005). Autonomy and relatedness in cultural context: Implications for self and family. *Journal of Cross-Cultural Psychology*, *36*, 403-422.

Kline, R. B. (2004). Replication and meta-analysis. In R. B. Kline (Ed.), *Beyond significance testing: Reforming data analysis methods in behavioral research* (pp. 247-271). Washington, DC: American Psychological Association.

Kruskal, J. B., & Wish, M. (1978). *Multidimensional scaling*. London: Sage.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.

Maddison, A. (n.d.). *World population, GDP and per capita GDP, 1-2003 ad*. Retrieved from http://www.ggdc.net/Maddison/Historical_Statistics/horizontal-file_03-2007.xls

Neuliep, J. W., & Crandall, R. (1993). Everyone was wrong: There are lots of replications out there. *Journal of Social Behavior & Personality, Special Issue*, *8*, 1-8.

Norenzayan, A., & Heine, S. J. (2005). Psychological universals: What are they and how can we know? *Psychological Bulletin*, *131*, 763-784.

Rohan, M. J. (2000). A rose by any name? The values construct. *Personality and Social Psychology Review*, *4*, 255-277.

Rokeach, M. (1968). *Beliefs, attitudes, and values*. San Francisco: Jossey-Bass.

Rokeach, M. (1973). *The nature of human values.* New York: Free Press.

Rosenthal, R. (1991). Replication in behavioral research. In J. W. Neuliep (Ed.), *Replication research in the social sciences* (pp. 1-30). Newbury Park, CA: Sage.

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3-36). Rochester, NY: University of Rochester Press.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology*, *25*, 1-65.

Schwartz, S. H. (1994a). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, *50*, 19-45.

Schwartz, S. H. (1994b). Beyond individualism/collectivism. New cultural dimensions of values. In U. Kim, H. C. Triandis, Ç. Kağıtçıbaşı, S. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, method, and applications* (pp. 85-119). Thousand Oaks, CA: Sage Publications.

Schwartz, S. H. (2005). Basic human values: Their content and structure across countries. In A. Tamayo & J. B. Porto (Eds.), *Valores e comportamento nas organizações* [Values and behavior in organizations] (pp. 21-55). Petrópolis, Brazil: Vozes.

Schwartz, S. H. (2006). A theory of cultural value orientations: Explication and applications. *Comparative Sociology*, *5*, 136-182.

Schwartz, S. H. (2007). Draft users manual: Proper use of the Schwartz value survey. Retrieved from http://www.crossculturalcentre.homestead.com

Schwartz, S. H., & Bardi, A. (2001). Value hierarchies across cultures. Taking a similarities perspective. *Journal of Cross-Cultural Psychology*, *32*, 268-290.

Schwartz, S. H., & Bilsky, W. (1987). Toward a universal psychological structure of human values. *Journal of Personality and Social Psychology*, *53*, 550-562.

Schwartz, S. H., & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, *58*, 878-891.

Smith, P. B., & Schwartz, S. H. (1997). Values. In J. W. Berry, M. H. Segall, & Ç. Kağıtçıbaşı (Eds.), *Handbook of cross-cultural psychology* (2nd ed., Vol. 3, pp. 77-118). Needham Heights, MA: Allyn & Bacon.

United Nations Development Programme (UNDP). (2006). *Summary. Human development report. Beyond scarcity: Power, poverty and the global water crisis*. New York: Author.

van Hemert, D. A. (2003). Cross-cultural meta-analyses. *Online Readings in Psychology and Culture Unit 2, Chapter 13*. Retrieved from http://www.ac.wwu.edu/~culture/vanhemert.htm

Vauclair, C.- M., & Fischer, R. (in press). *Do cultural values predict individuals' moral attitudes? A cross-cultural multilevel approach.* European Journal of Social Psychology.

Veenhoven, R. (1993). *Happiness in nations*. Rotterdam, the Netherlands: Risbo.

Waterman, A. S. (1981). Individualism and interdependence. *American Psychologist*, *36*, 762-773.