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Value Isomorphism in the European Social Survey: Exploration of Meaning Shifts in Values Across Levels

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Abstract

The similarity of value structures at an individual and country level has long been debated. Previous research has shown a less than perfect match but has not been able to explain why any meaning shift might occur. In this study, the 21 Portrait Value Survey items included in the European Social Survey were analyzed. Data from representative samples from countries included in the 2002, 2004, and 2006 waves were analyzed using multidimensional scaling and generalized procrustean rotation. Values shifts were small but highly stable across time. The findings indicate that values toward the self-enhancement pole shift toward more social (conservation) and less power-oriented (self-transcendence) positions when aggregated. These shifts provide some initial support for cultural evolution arguments. The authors discuss implications of these data for relevant social evolutionary theories and for value measurement.

Keywords

cultural psychology, values, attitudes, beliefs, methodology

The values of individuals and cultures have been shown to influence a range of psychological phenomena at both the level of the individual and the society level (see Schwartz, 2006; Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2008). The near-universal circular structure of Schwartz's values at the individual level is now well accepted. A short version of the Portrait-Value Questionnaire (PVQ; Schwartz et al., 2001) has been included in the European Value Survey (ESS) and has been found to have a stable and robust two-dimensional structure (Bilsky, Janik, & Schwartz, 2010; Verkasalo et al., 2008). What remains unclear is whether the structure of values at the individual level is applicable to the structure of values found at the level of countries. In other words, are the structures of individual- and country-level dimensions comparable? This is a question of isomorphism or similarity in structure (Van de Vijver, Van Hemert, & Poortinga, 2008). While isomorphism is commonly proposed, the question of value similarity across levels is the subject of current debates (see Fischer, Vaclair, Fontaine, & Schwartz, 2010).

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Individuals endorse values and any emerging structure has a plausible meaning at the individual level. If we suppose that there can be a difference, what is the meaning of value structures at a cultural level (aggregated scores of the same individual-level data). Statistically, individual- and country-level dimensions are independent and indeed may not overlap (Dansereau, Alutto, & Yammarino, 1984). However, in the psychological domain, values are derived from responses of individuals, and country-level structures are estimated based on these aggregated individual-level scores. Yet the independence of both levels is hard to imagine because independence implies that individual- and country-level structures are caused by independent underlying factors (Fontaine, 2008; Lubke, Dolan, Kelderman, & Mellenbergh, 2003). What could these factors be, given that all measures are taken from individuals? Let us put this question in historical perspective.

Hofstede (1980) developed widely used dimensions of cultural values. He found that items that were unrelated or even negatively related at the individual level formed factors with positive intercorrelations between all items at the country level. Schwartz (2006, in press) reported slightly different structures of values at the country compared to the individual level. Some items (e.g., “humble” and “social power”) emerged in opposing value types at the individual level but formed a coherent value type at the country level. Both Hofstede and Schwartz argued that value structures at the individual level are conceptually and empirically distinct from the value structures at the country level. As a result, individual-level structures cannot be used to compare values across cultures. In contrast, Verkasalo et al. (2008) argued that the individual-level structure is sufficient and provided individual-level norms to compare scores across European countries. However, none of these authors actually tested value isomorphism in their study. A study by Fischer et al. (2010) was the first to examine the similarity of structures with the Schwartz Value Survey (Schwartz, 1992). The study extends this previous work by examining the stability and similarity of individual- and country-level structures of the ESS values, drawing upon representative samples across three time points.

Value Structures at the Individual and Country Level

Schwartz (1992) distinguished between 10 individual-level value types organized in a circular space. *Power* (PO) values refer to valuing social status and prestige, control, or dominance over people and resources. *Achievement* (AC) values capture an emphasis on personal success through demonstrating competence according to social standards. *Hedonism* (HE) values prioritize pleasure and sensuous gratification for oneself. *Stimulation* (ST) includes seeking excitement, novelty, and challenge in life. *Self-direction* (SD) is endorsed by individuals who value independent thought and action—choosing, creating, and exploring. *Universalism* (UN) values are concerned with understanding, appreciation, tolerance, and protection for the welfare of all people and for nature. *Benevolence* (BE) reflects motivations related to the preservation and enhancement of the welfare of people with whom one is in frequent personal contact. *Tradition* (TR) values are related to respect, commitment, and acceptance of the customs and ideas that traditional culture or religions provide the self. *Conformity* (CO) values are derived from motivations of restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms. Finally, *Security* (SE) values are concerned with the safety, harmony, and stability of society, of relationships, and of self.

Schwartz and Bilsky (1987) proposed that these values reflect three universal human requirements or needs to which all individuals and groups of individuals must respond (Schwartz & Bilsky, 1987): biological needs of the organism, social interactional requirements for interpersonal coordination, and social demands for group welfare, smooth functioning, and survival. There are two major dimensions of values that organize these 10 value types into a two-dimensional value space (Schwartz, in press). The first value dimension separates openness to change values from

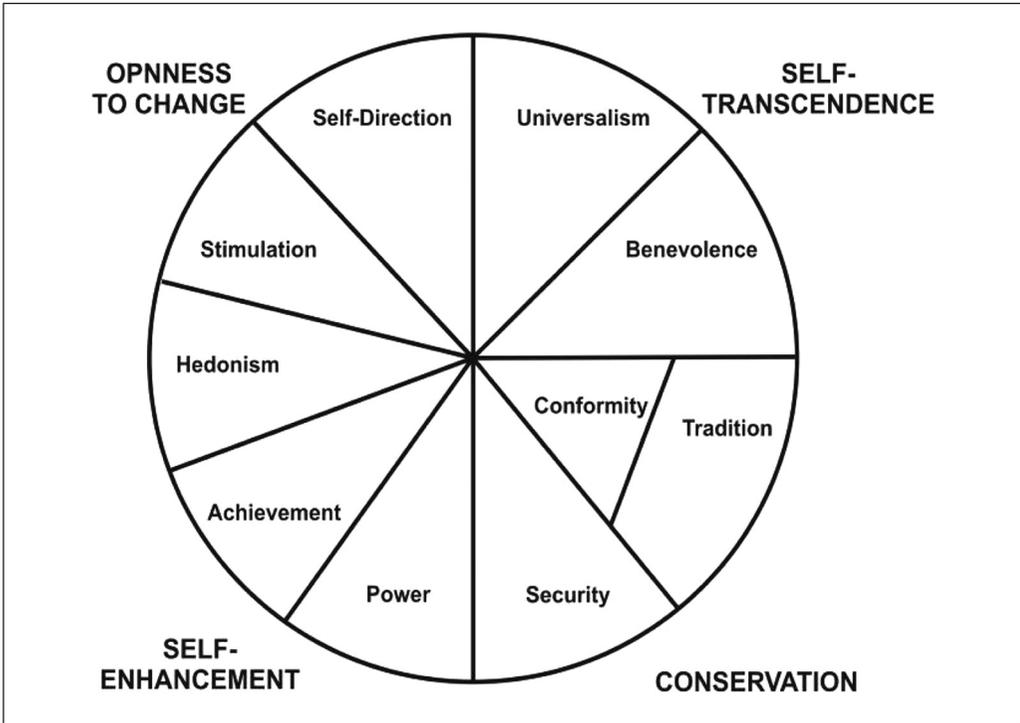


Figure 1. The Circular Individual-Level Value Structure (Schwartz, 1992)

conservation, contrasting *Stimulation* and *Self-Direction* values with *Tradition*, *Conformity*, and *Security* values. The second dimension is self-enhancement versus self-transcendence, separating *Power* and *Achievement* values from *Benevolence* and *Universalism* values. *Hedonism* shares similarities with both self-enhancement and openness to change. Moreover, recent studies give evidence that *Hedonism* is motivationally closer to openness to change than to self-enhancement (Schwartz & Boehnke, 2004). The 10 value types are organized in a circular structure (see Figure 1), based on the mutual compatibilities and conflicts among the values (see Schwartz, 1992, in press, for further explanations of this structure).

At the country level, according to Schwartz (1994), the value structure is divided into seven value types that are organized by three non-orthogonal dimensions. First, *Embeddedness* versus *Autonomy* values are related to a societal emphasis on requiring individuals to be strongly connected to a larger collective and deriving meaning in life is primarily through social relationships, compared to a societal context in which individuals are expected to find meaning in their own personal uniqueness and individuals express their own personal preferences, attitudes, and feelings. *Autonomy* can be further subdivided into an intellectual (people are expected to cultivate and express their own ideas and intellectual directions and find meaning in their own uniqueness) and an affective component (individuals are expected to pursue affectively positive experiences for themselves). The second dimension contrasts *Hierarchy* versus *Egalitarianism*, which is the extent to which individuals are socialized to comply with a hierarchical system of ascribed roles compared to the extent to which individuals are seen as moral equals. Finally, the last dimension differentiates between *Mastery* and *Harmony*, measuring the extent to which individuals seek to master and dominate the social and natural world compared to the extent to which individuals try to preserve and accept a harmonious state of the world. The structure is again organized into a circumplex model (see Figure 2).

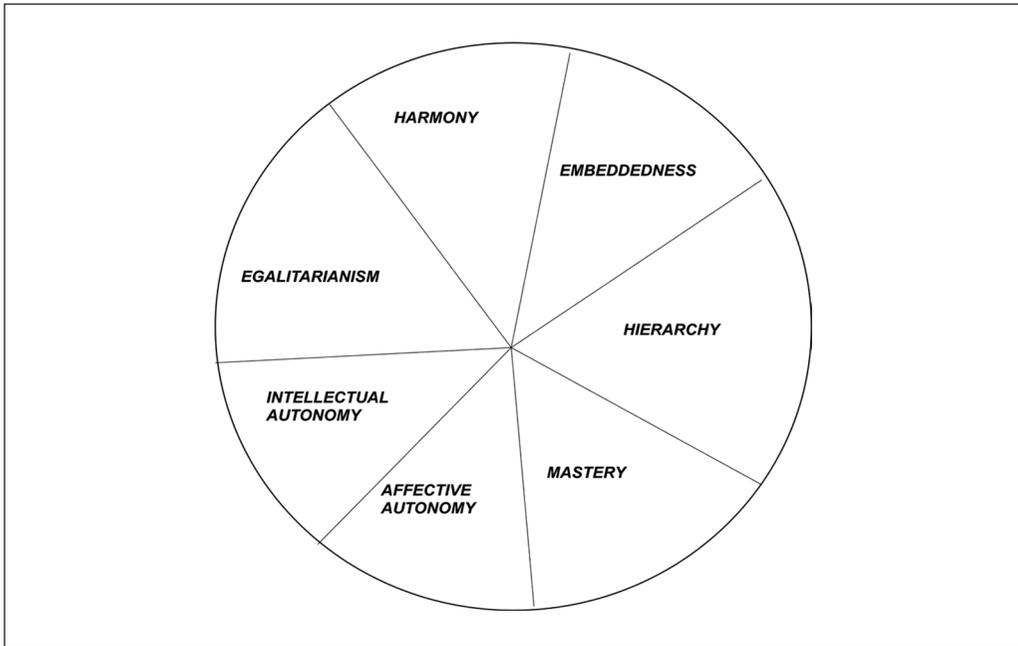


Figure 2. The Circular Country-Level Value Structure (Schwartz, 1994)

Schwartz (1994, in press) argues that this structure emerges because societies need to resolve basic problems of organizing and regulating human activity. The three main problems organizing the structure are (a) the optimal regulation of individual-group relations (*Embeddedness-Autonomy*), (b) organization of social relations that preserve the social fabric (*Hierarchy-Egalitarianism*), and (c) the appropriate utilization of human and natural resources (*Harmony-Mastery*). The organizing principles or causal factors at the country level are directly matched onto the three underlying dimensions. At the individual level, however, there is no one-to-one correspondence between the organizing factors (biological needs, coordinating social interaction, group survival) and the two organizing dimensions.

Implications of Different Value Structures

What does this posited disjunction between individual and societal value structures imply for methods of value measurement? Let's take, for example, *humble*, a value that is often cited in the context of the two different structures (Schwartz, 1994, in press). *Humble* is located in the *Tradition* value type at the individual level, relatively close to benevolence. The closest surrounding values are *honest*, *loyal*, and *self-discipline*. It therefore captures humility and interpersonal sincerity. It is opposed to *social power*, *wealth*, and *authority* (which form the *Power* value type). In contrast, at the country level, *humble* now emerges together with these three power values and opposing *honest* and *loyal*. Hierarchy requires individuals to both exercise social power toward those below them and humility toward those higher up. Therefore, *humble*, *social power*, and *authority* become interdependent in the organization of social interaction (Schwartz, in press).

One direct implication for measurement of this separation relates to the interpretation of means at separate levels. If individual- and country-level structures really are different, the means (or other statistical information) that apply to the level of individuals coming from different countries cannot be compared using individual-level structures. Using individual-level designs

confuses within-country and between-country variability. Confused measures lead to confusions in results, for means have no meaningful interpretation. This point presents a subtle, critical, yet largely unrecognized implication of lack of isomorphism between individual and group levels of value organization (Dansereau et al., 1984).

Previous Studies of Isomorphism

To date, there are two studies that have explicitly examined the issue of value isomorphism. The first, by Fischer et al. (2010), considered value isomorphism in teacher and student samples across 53 and 66 countries using the Schwartz Value Survey (SVS). Fischer et al. found substantive similarity when examining the SVS, however levels of similarity fell somewhat short of strict criteria of isomorphism. Nevertheless, the authors also found that isomorphism was substantively higher than would be expected by chance. In a second study, Fischer and Poortinga (2010) examined value isomorphism across a number of student samples using the SVS and also included a social norms version of the SVS (Fischer, 2006), asking whether the type of rating influences value isomorphism. Notably, the social norms version of the SVS asks about the same values, but with the instruction to rate each value in terms of the importance for most people in one's country. Similar to the previous study on the SVS, Fischer and Poortinga found high similarity but not strict isomorphism (indicating near-perfect similarity). In the current study, further evidence of the stability of structures at each level with a different instrument (the PVQ, Schwartz et al., 2001) across different time points is presented. Given the limited attention paid to the organizations of values at the country level, such an examination is of interest in its own right.

Even less evidence is available concerning the second question that I raised above, about the explanation for why value structures may be different at the two levels. One hypothesis is that value shifts are artifacts of measurement. This is the position taken by some of the authors in previous isomorphism studies (Fischer et al., 2010). If this hypothesis were correct, we might expect a regression of items to the centre of the configuration. Variances of aggregate items are smaller than variances at the individual level (Fischer, 2009). These range restrictions are likely to lead to reduced correlations, resulting in compressed dimensions in multidimensional analyses. The upshot is that items that are located at the extreme ends of a dimension may shift toward the centre when being aggregated. Such a shift would not be very interesting from a theoretical perspective. Are there any other explanations?

The following describes some different, more theoretically driven conjectures about why differences may emerge.

Potential Systematic Shifts in Value Structures

It is possible that there are systematic shifts in sets of values that account for the lack of isomorphism or similarity in structure at different levels. Drawing upon evolutionary accounts of group development (e.g., Baumeister, 2005; Sidanius & Pratto, 2001), some arguments for relative differences in structure between levels can be put forward. Evolutionary processes operate at two levels: the level of genes (individual) and groups (culture) (Brown, Dickens, Sear, & Laland, 2011; Wilson, Van Vugt, & O'Gorman, 2008).

In some instances, evolutionary processes at the group level may be compatible with genetic processes at the individual level. This may result in some value dimensions having similar meaning across levels. In their evolutionary development, humans had to survive in harsh and hostile environments that required them to establish bonds with other humans, while also creating a need for them to establish a sense of their own individuality and self-control to be able to resist

threatening group demands and to interpret multiple meanings in social interactions (Baumeister, 2005; Tooby & Cosmides, 1990). Subsequently, this social bonding of humans also required the same differentiation at the group level, with social institutions needing to differentiate between the interests of the individual versus the interests of the group (e.g., detecting and punishing free riders). Different cultural groups have emphasized one aspect of survival over the other, depending on their specific ecological and historical circumstances (Berry, 1967, 1994; Diamond, 1997; Lumsden & Wilson, 1981; Wilson et al., 2008). The distinction between personal versus social values appears functional for both individuals and groups. At the individual level, this differentiation is the most salient and stable value orientation (Fischer, Milfont, & Gouveia, 2011; Fontaine, Poortinga, Delbeke, & Schwartz, 2008). At the country level, this distinction has served as a major dimension differentiating societies around the globe (Hofstede, 2001). Therefore, values may shift less between levels in their relative orientation along openness to change versus conservation.

In other cases, genetic (individual)- and cultural (group)-level processes may diverge. This may have implications for the second organizing principle of self-enhancement versus self-transcendence values at the individual level. Self-enhancement values (e.g., social power, wealth, showing one's ability) at the individual level are located between conservative values and individualistic and self-centered values (openness to change). They form a cluster of values that is clearly opposed to values with a more social orientation (self-transcendence, but also conformity and tradition; see Fontaine et al., 2008). Individuals who value achievement and power do not tend to value conformity or benevolence. For the survival of an individual (the genetic survival of the individual), these motivations are not compatible. Helping nonkin, conforming to often costly group norms, and preserving the social structure are clearly not motivations that benefit the survival of an individual (it does not increase the survival of this individual, and it is costly and could result in negative survival consequences, see Wilson et al., 2008).

Yet at the group level, a joint pursuit for wealth, power, benevolence, and conformity provide differential advantage of one group over others. Social dominance theory (SDT; Sidanius & Pratto, 2001) argues that hierarchical groups had an evolutionary advantage over more egalitarian groups (see also Henrich & Gil-White, 2001). Hierarchically structured groups allow for greater role specialization (food producers, enforcers or warriors, and elites or leaders), which then leads to greater net reproductive success compared to other egalitarian-type group arrangements. Hierarchical stratification allows for more efficient extraction of resources for group survival (food, women) than less hierarchically organized groups and isolated out-group individuals. Groups that are hierarchical can better accumulate resources and wealth among members, leading to higher chances of group survival (Sidanius & Pratto, 2001). Anthropological evidence demonstrates that more socially complex small-scale societies (pastoral and agricultural societies) have a greater inequality of wealth (both material and nonmaterial wealth) than less complex societies (hunter and gatherer societies) (Borgerhoff Mulder et al., 2009).

These theories suggest that as soon as social institutions emerge that require preservation of traditions and conformity for survival, power and wealth are used to differentiate between members within a society. In other words, socially more complex societies are also more hierarchically differentiated, and therefore, for the system to function, it needs both members who take charge (power, achievement) and those who follow (conforming, loyal). Schwartz (in press) used a similar argument for explaining the shifting position of the value of *humble* across levels of analysis. Here, I expand these arguments by indicating that it affects not only *humble* but other related values (specifically values associated with the self-enhancement versus self-transcendence dimensions in general).

The important issue is that for groups, self-enhancement values (power and achievement) have strong adaptive and stabilizing social functions. It is through the exercise of power-related

values that social order (*Conformity* and *Tradition*, in particular) is reinforced and maintained, and vice versa, social power and achievement can only be exercised if there is a social structure that recognizes standards for achievement and validates social power. It is implausible to have a social hierarchy in groups in the absence of some form of social coordination. The stronger the social organization (conservation-values), the more likely the emergence of social hierarchy (since sedentary groups need social hierarchy to respond effectively to external threats; McNeill, 1985). Hence, self-enhancement values and conservation values are interdependent at the aggregate level and are less clearly distinguished in a two-dimensional value space.

The Current Study

The present study extends previous research in a number of ways. First, the ESS includes a short version of the Portrait Value Questionnaire (PVQ). To date, there is no examination of value isomorphism using the PVQ. Second, the ESS is based on representative samples across Europe. Previous research on isomorphism has relied on convenience samples of teachers and students (Fischer et al., 2010). Using representative samples from 20, 25, and 19 countries across the first three waves (2002, 2004, and 2006), the structure of values in a population can be examined and more accurate estimations of their country-level structure are possible. Third, the same instrument was used across various time points, ruling out instrument confounds in previous research (for example, in Fischer & Poortinga, 2010). This allows a more precise estimation of the stability of item shift. Finally, previous studies have focused on the dimensions and their similarity (Fischer et al., 2010). Little attention has been paid to the deviations in structure (shift in location coordinates between individual- and country-level structures) and whether these shifts were stable and meaningful. Therefore, the current study examines the differences in structure and possible explanations of positional shifts between levels, an issue that is particularly interesting for theoretical reasons. Previous studies have emphasized methodological and artifactual explanations. Here, I examine whether the shift of items across levels is dependent on their position in the value space at the individual level. I provided some theory-driven speculation of why such shifts may occur.

In summary, the present study further examines value isomorphism, using data from the European Social Survey. The analysis can contribute to current discussions about (a) isomorphism in the value domain—that is, whether individual-level value dimensions can be used to represent countries; (b) whether individual-level value structures can be used for cross-cultural comparisons; and (c) whether there are systematic effects of the position of items in the value space that lead to lack of isomorphism. Ultimately, these questions have some implications for the interpretation and meaning of values—that is, their ontological nature and evolutionary origins.

Method

Data from the first three waves of the European Social Survey (ESS) were used.¹ Data for 20 countries ($N = 37,334$, Wave 1), 25 countries ($N = 44,170$, Wave 2), and 19 countries ($N = 33,122$, Wave 3) were available. The PVQ presents short verbal portraits of different people gender-matched to the respondent (Schwartz et al., 2001). Each portrait describes a person's goals, aspirations, or wishes that point implicitly and/or explicitly to the importance of a value. For example, the sentence *it is important to him to live in secure surroundings. He avoids anything that might endanger his safety* describes a person who gives priority to security values. Respondents indicate how similar this person is to them on a 6-point Likert-type scale ranging from *very much like me* to *not like me at all*.

Data Preparation

I followed recommendations by Fontaine and Fischer (2010) for examining structural isomorphism. In the first step, the individual-level structure was calculated using Proxscal multidimensional scaling (MDS) and the average correlation matrix for the 21 values across all countries (pooled-within matrix) as input (using Torgerson scaling and interval data). The individual-level structure has been found to be stable across the countries included in the ESS (Bilsky et al., 2010; Verkasalo et al., 2008). There were three individual-level structures corresponding to each wave.

The country-level structure was computed using Proxscal MDS based on the aggregated means of the 21 items in each wave. Aggregating the means was justified given the cross-national variability in the ESS (Fischer & Schwartz, 2010). There were three country-level structures corresponding to each wave. A two-dimensional structure was estimated at both the individual and country level (see Schwartz, in press).

The coordinates of the MDS configurations cannot be directly compared in a multilevel analysis (Fontaine & Fischer, 2010). Rotation, reflection, translation, and dilation of the coordinate system can affect the coordinates, even when they have no effect on the relative distances between points. As a consequence, coordinates can appear to differ even when the value structures are in fact highly similar. To overcome this problem, all configurations were subjected to Generalized Procrustes Analysis (GPA; Borg & Groenen, 1997; Commandeur, 1991). GPA calculates the configurations in such a way that they correspond as closely as possible, without affecting the relative distances between points within each configuration. Following GPA, the spatial coordinates of individual value items are directly comparable between the various data sets, meaning that the correlations between the coordinates can be used as an index of structural value isomorphism. The three individual-level structures and the three country-level structures were rotated at the same time, making the coordinates comparable across levels and waves.

Isomorphism was estimated by correlating the rotated MDS coordinates. Item shift was computed by subtracting the country-level position from the individual-level position per wave. Stability of item shift is estimated by correlating the item shifts for each dimension across the three waves. Average item shift (AIS) is computed by averaging the difference between individual- and country-level dimensions across the three waves.

Examining Item Shift

Regression analysis was conducted to predict AIS separately for Dimensions 1 and 2. First, the position of value items at the individual level was entered. The position was based on the average position of items across the three waves. This tests whether the shift is due to the location of items along each dimension, indicating systematic meaning shifts. The squared item coordinates were entered next, to test regression to the centre effects. Finally, for completeness, the interaction between Dimensions 1 and 2 at the individual level was entered. This could indicate specific location effects (e.g., whether only items that are positioned in one quadrant shift their meaning after aggregation).

Results

Assessment of Value Structure Isomorphism

I examined the overall similarity using the same method as Fischer et al. (2010) and Fischer and Poortinga (2010). There are no accepted criteria for examining strict isomorphism. Applying criteria from equivalence research to isomorphism would suggest that correlations higher than

Table 1. Correlation of GPA-Rotated Dimensions

	Individual Wave 1	Individual Wave 2	Individual Wave 3	Country Wave 1	Country Wave 2	Country Wave 3
Individual Wave 1	—	0.998	0.997	0.779	0.696	0.547
Individual Wave 2	0.997	—	0.998	0.780	0.687	0.538
Individual Wave 3	0.997	0.996	—	0.791	0.703	0.558
Country Wave 1	0.622	0.599	0.632	—	0.918	0.840
Country Wave 2	0.657	0.625	0.663	0.919	—	0.913
Country Wave 3	0.591	0.560	0.596	0.899	0.934	—

Dimension 1 is printed above the diagonal, and Dimension 2 is printed below the diagonal. *Individual* refers to the individual level, and *country* refers to the country level. All correlations are significant ($p < .01$).

.90 are indicating strict isomorphism or perfect fit of structures across levels (e.g., Fischer et al., 2010; van de Vijver & Poortinga, 2002). Previous examinations of value isomorphism were lower and ranged between a low of .43 and a high of .96.

Table 1 shows the correlations for the coordinates separately for Dimension 1 and Dimension 2. For Dimension 1, the average correlation at the individual level across the three waves was .998, the average correlation at the country level across the three waves was .899. The average of the cross-level correlations indicating degree of isomorphism for Dimension 1 was .675. For Dimension 2, the average correlation at the individual level across the three data collection points was .970, and the average correlation at the country level was .917. The mean cross-level correlation for Dimension 2 was .616, indicating that for both dimensions, levels fell short of strict isomorphism.

These figures suggest that the individual- and country-level dimensions are highly stable across the three time waves of the ESS, whereas there is less stability across levels. The correlations do not meet the criteria of .90 indicating strict isomorphism. Nevertheless, the shared variance is still substantial and varies between 45.6% for Dimension 1 and 37.9% for Dimension 2. At the same time, this fit is far from perfect.

Examining Item Shift

The first question was whether the shifts of items correlate across time waves. The average correlation for shifts along Dimension 1 was .82, with correlations being .83, .77, and .86 (Wave 1–Wave 2, Wave 1–Wave 3, and Wave 2–Wave 3, respectively). The average correlation for Dimension 2 was .89, with correlations being .89, .87, and .92 (Wave 1–Wave 2, Wave 1–Wave 3, and Wave 2–Wave 3, respectively). Therefore, AIS appears to be very stable (see Table 2 for AIS estimates).

To explain this shift, I first regressed the item coordinates for both dimensions at the individual level on AIS. Examining AIS for Dimension 1 first, the effect of individual-level coordinates was significant, $F(2, 18) = 6.08, p < .05, R^2 = .403$. The effect of positions along Dimension 1 was not significant (standardized $\beta = -.27, p > .15$), but the effect of position along Dimension 2 was significant (standardized $\beta = .49, p < .05$). The more an item was positioned toward the self-enhancement end of Dimension 2 at the individual level, the more it shifted toward conservatism at the country level. This suggests that domination- and achievement-oriented values at the individual level on average have a more socially conservative meaning at the country level.

Entering the squared coordinates next, the combined effect was not significant, $F(2, 16) = 1.79, p > .15, R^2 = .109$. The squared coordinates along Dimension 2 were nevertheless marginally

Table 2. Average Item Shift (AIS) Per Item (With Short Description) and Dimension

		Dimension 1	Dimension 2
sd1	Thinking up new ideas, being creative	.00	.01
po2	Be rich, wants a lot of money and expensive things	.28	-.16
un3	Everyone should be treated equally, equal opportunities in life	.03	.06
ac4	Show abilities, wants people to admire him/her	.14	-.12
se5	Live in secure surroundings, avoid endangering safety	-.03	-.04
st6	Likes surprises, looking for new things, does lots of different things	.19	-.16
co7	People should do what they are told, follow rules	-.11	.23
un8	Listen to people who are different, wants to understand	-.09	.03
tr9	Be humble and modest, do not draw attention to him/herself	-.08	.09
he10	Having a good time, spoil him/herself	-.07	-.28
sd11	Make own decisions, be free and not depend on others	.03	-.05
be12	Help people around him/her, care for their well-being	-.12	.17
ac13	Being successful, people recognizing achievements	.19	-.01
se14	Government ensures safety, state should defend citizens	.05	.00
st15	Looking for adventures, likes taking risks, have exciting life	.11	.09
co16	Behave properly, avoid doing things that people say is wrong	-.06	.04
po17	Get respect from others, people do what he/she says	-.04	-.08
be18	Be loyal to friends, devote him/herself to close others	-.28	.04
un19	People should care for nature, looking after environment	-.02	.01
tr20	Tradition, follow customs	-.09	.20
he21	Having fun, do things that give pleasure	.00	-.06

significant (standardized $\beta = .37, p = .08$). There is a trend toward regression to the centre of the configuration. The more an item is located toward either end of the self-enhancement versus self-transcendence dimension at the individual level, the more likely the item is to move toward the centre of Dimension 1 at the country level. The interaction between Dimensions 1 and 2 in the final step was not significant, $F(1, 15) = .00, p > .50$.

For Dimension 2, the coordinates of the items at the individual level explained a significant amount of variance in AIS on Dimension 2, $F(2, 18) = 6.78, p < .01, R^2 = .430$. The location of items along Dimension 1 was marginally significant (standardized $\beta = .39, p = .06$). The more an item was positioned toward the conservation end (Dimension 1) at the individual level, the more likely it was to shift toward the self-enhancement end (Dimension 2) at the country level. The effect of item positions along Dimension 2 was significant ($\beta = -.40, p < .05$). Items that were situated toward the self-enhancement end at the individual level would shift on average toward the self-transcendence end at the country level. This indicates that items that have a strong power or achievement connotation at the individual level have a weakened domination or achievement connotation at the country level. The squared coordinates entered at the next step did not explain any additional variance, $F(2, 16) = 1.28, p > .30, \Delta R^2 = .079$. The interaction between Dimensions 1 and 2 in the final step did not explain any additional variance, $F(1, 15) = 48, p > .45, \Delta R^2 = .015$.

Discussion

Both individual- and country-level structures are highly stable in the ESS. The current study demonstrates that even the country-level structures are robust and stable (contrary to evidence with the SVS; see Fischer et al., 2010). There is no strict isomorphism: Individual- and country-level structures are somewhat similar, but not identical. A maximum of 45.6% of the variance was shared between levels for Dimension 1. The variations appear to be non-random as the deviations in structure were highly stable (correlations between shifting items typically exceeding .80). This indicates that there are meaningful and robust shifts that indicate empirical divergence of individual- and country-level value systems.

Systematic Shifts in Structures and Their Meanings

More importantly, the analysis showed that about 30% of the variability in structure can be explained by the position of items at the individual level. This is not a trivial amount of variance, also considering the relatively poor explanatory power of method factors in previous research (e.g., Fischer et al., 2010). The position of items along the second dimension is especially important for structural differences between individual- and country-level structures. Items located toward the self-enhancement end of the second dimension at the individual level shift more toward the self-transcendence end and toward conservation along the first dimension at the country level (see Figure 3 for some examples). This suggests that self-enhancing values at the individual level assume a more social and less domination-oriented meaning at the country level. In the ESS data set, pronounced shifts occurred for the items “be rich, have money and expensive things,” “be successful and people recognize achievements,” and “show abilities and be admired.” These values moved toward the conservation end. Also, conservation values at the individual level moved closer to self-enhancement values at the country level, thus showing wealth, power, and abilities to have some prosocial and stabilizing function for societies. This fits with arguments derived from social dominance theory (Sidanius & Pratto, 2001), arguing that the demonstration of dominance and ability between individuals has important social functions and fulfills a stabilizing societal function. The combination of self-enhancing and conservation values helps group survival by ensuring more effective extraction of resources from other groups and better defense against threats. Domination- and self-enhancing-oriented values (*Power, Achievement*) and values that highlight social conformity and maintaining the status quo (*Security, Conformity, Tradition*) align to produce hierarchy-enhancing legitimizing myths (Sidanius & Pratto, 2001). Put simply, more complex social systems can only function if there are individuals who take charge of the system (assume power, strive for wealth) and individuals who submit to the hierarchy and preserve it by conforming to those in power and maintaining traditions. As all societies in this sample were highly developed, the distinction between levels may have been clearer than in previous research (see the slightly higher levels of isomorphism across a more diverse set of societies in Fischer et al., 2010).

An interesting shift was observed for the benevolence items. They moved toward the middle of the configuration on Dimension 1 (regression to the mean) but also toward the individualistic end (openness to change). This is the mirror image of the shifts observed for the self-enhancement values toward conservation. Although not predicted, this shift of these two items is in line with a recent observation by Vauclair, Hanke, Fischer, and Fontaine (2011) in their replication of the country-level structure with Rokeach Value Survey data. They found a cluster of values at the country level called “self-fulfilled connectedness” that combined items of both self- and other-directed values. The current shift of these toward other-oriented values (benevolence) toward a

coordinate social interaction and individual-group relations. At the same time, the importance of pursuing one's own interests versus emphasizing the welfare of close and distant others appears to have different functions at individual and country levels. Conservation and self-enhancement are relatively clearly differentiated at the individual level, possibly reflecting needs of the organism for belonging and competence (Baumeister, 2005; Deci & Ryan, 2001; see also Schwartz, 1992). At the country level, these two value orientations become more closely aligned because groups pursuing both types of values have benefits for survival. As a consequence, within societies there will be people who highly endorse both types of values that are orthogonal (or conflicting) at the individual level. This also results in paradoxical conditions, where dominance at the group level becomes altruistic and prosocial and facilitates survival of the group (Henrich, 2009; Henrich & Gil-White, 2001). Aggregated values capture some variability that is independent of the personal motivations of those individuals who answered the instruments and reflects the social context in which the individual is situated. The meaning of certain but not all values changes through aggregation, and this is reflected in a slightly different structural organization.

Schwartz (1994) argued that values have different meanings at both the individual and country level, but he did not clearly explain how the two levels might be linked. Here, I suggest that there are systematic processes that can explain why value structures shift across levels. An important avenue is to align value research more closely to evolutionary approaches in psychology, as this can provide important insights into the proximate and ultimate explanations of psychological constructs. The question is what functions values fulfill and how these functions then organize their structure. Values are a prime candidate for such an approach due to their fundamental importance in the psychological make-up of humans (e.g., as guiding beliefs in people's lives about the purposes in life and how to achieve these purposes). The emergence of values as motivational systems has to be linked to evolutionary adaptive mechanisms.

As further demonstrated in the current study, (a) the value structure is stable at the individual and societal level across time and (b) shifts in positions across levels are not random. Other research has shown that individual-level structures can be replicated using different methods and research methods (see Maio, 2010, for a review). However, the ultimate causal factors remain elusive. The alignment (and misalignment) of individual- and country-level dimensions can shed some light on these ultimate functions, and I entertained some theory-driven speculations. Values have functions at both levels and the patterns in the current study point toward processes that change their meaning depending on these functions. Examining these organizing factors is an unexplored avenue for further research and has the potential for providing value researchers with more ultimate explanations of human behavior.

Limitations

Obviously, the ESS contains only 21 items, with most of the 10 individual value types captured by only two value items. Therefore, these results are preliminary and need to be replicated with instruments that have more value items. The PVQ items as included in the ESS also measure various components within each item (each item contains two sentences). Therefore, we cannot ascertain which components are responsible for any shifts (or lack of shifts). However, the availability of representative samples across different time points offsets these limitations and provides some assurance about the stability of the reported shifts. A further limitation is the application to mainly European samples. Using data from the ESS, we cannot determine whether the current findings are replicable in larger and more culturally diverse samples of nations. This is an avenue for future research. The level of nonisomorphism was slightly higher than in previous studies with the SVS across a broader set of societies (Fischer et al., 2010). Considering the highly developed nature of this select sample of societies, the greater divergence could point to the validity of the evolutionary arguments put forward in this article. An

important test of isomorphism would involve a sample of societies that vary in social complexity, as this should allow a more powerful test of the evolutionary arguments put forward in this article. I predict that increasing social complexity will lead to the emergence of a different value structure at the group level.

Implications

What are the implications for researchers wishing to compare values across samples from different countries? The major shifts were encountered along the second dimension, and the relative level of isomorphism was higher along the first dimension. Therefore, comparisons of samples along the openness to change versus conservation dimension can be made (cf., Verkasalo et al., 2008), especially if researchers are not interested in making fine-grained distinctions between individual value types and are more interested in the broad underlying dimension. However, the relative shift along the second dimension should lead to greater caution when comparing samples. Given that several items have different meanings between countries than within countries, any observed differences in correlations or means will be ambiguous. If comparing scores across cultural groups, it would be more appropriate to use the country-level constructs. When making these comparisons, researchers are typically interested in between-group variability, so it is appropriate to use the structure that reflects this between-group variability. If individual-level structures are used, the results will reflect both types of variability (cf., Dansereau et al., 1984). The results also show how it is possible to explore the processes linking individual- and country-level structures. Here, I have pointed to evolutionary processes underlying social dominance theory as an explanatory framework, but certainly other mechanisms might be involved. Less than 50% of the variance was shared between individual- and country-level structures: There is much that remains to be explained and awaits further empirical investigations.

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1. Data were retrieved from Jowell et al. (2003).

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