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Shalom H. Schwartz, Jan Cieciuch, Michele Vecchione, Eldad Davidov ...+8 more authors

Institutions: Hebrew University of Jerusalem, Sapienza University of Rome, University of Zurich, Victoria University of Wellington ...+4 more institutions

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Refining the theory of basic individual values

Shalom H. Schwartz¹, Jan Cieciuch², Michele Vecchione³, Eldad Davidov⁴,
Ronald Fischer⁵, Constanze Beierlein⁶, Alice Ramos⁷, Markku Verkasalo⁸,
Jan-Erik Lönnqvist⁸, Kursad Demirutku⁹, Ozlem Dirilen-Gumus⁹, Mark
Konty¹⁰

¹The Hebrew University of Jerusalem, Israel and National Research University-Higher School of Economics, Moscow, Russia – ²University of Finance and Management, Warsaw, Poland – ³'Sapienza' University of Rome, Italy – ⁴Institute of Sociology, University of Zurich, Switzerland – ⁵Victoria University, Wellington, New Zealand – ⁶Leibniz-Institute for the Social Sciences, GESIS, Mannheim, Germany – ⁷Instituto de Ciências Sociais-Universidade de Lisboa, Portugal – ⁸University of Helsinki, Finland – ⁹Atilim University, Turkey – ¹⁰Berea College, United States

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Abstract

We propose a refined theory of basic individual values intended to provide greater heuristic and explanatory power than the original theory of 10 values (Schwartz, 1992). The refined theory more accurately expresses the central assumption of the original theory that research has largely ignored: Values form a circular motivational continuum. The theory defines and orders 19 values on the continuum based on their compatible and conflicting motivations, expression of self-protection vs. growth, and personal vs. social focus. We assess the theory with a new instrument in 15 samples from 10 countries (N=6059). CFA and MDS analyses support discrimination of the 19 values, confirming the refined theory. MDS analyses largely support the predicted motivational order of the values. Analyses of predictive validity demonstrate that the refined values theory provides greater and more precise insight into the value underpinnings of beliefs. Each value correlates uniquely with external variables.

Key words: Value theory, value continuum, basic values, value structure, prediction with values

The Schwartz (1992) theory of basic human values has spawned hundreds of studies during the past two decades.¹ The vast majority of these studies examine how the ten basic values or the four higher-order values relate to various attitudes, opinions, behaviors, personality, and background characteristics. Studies have also assessed value transmission and development in childhood and adolescence and value change over time (e.g., Bardi, et al., 2009; Knafo & Schwartz, 2003). Recently, studies of the discriminability of the ten values and their order around the motivational circle that the theory proposes have proliferated (e.g., Bilsky, Janik & Schwartz, 2011; Perrinjaquet, et al., 2007). Researchers have designed and successfully used five different types of instruments to measure the ten values (Döring, et al., 2010; Lee, Soutar, & Louviere, 2008; Oishi, et al., 1998; Schwartz, 1992, Schwartz, et al., 2001).

Schwartz (1992) sought to identify a comprehensive set of basic values that are recognized in *all* societies. He defined basic values as trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or group. He theorized that basic values are organized into a coherent system that underlies and can help to explain individual decision-making, attitudes, and behavior. This coherent structure is arises from the social and psychological conflict or congruity between values that people experience when they make everyday decisions (Schwartz, 1992, 2006a).

The first and second columns of Table 1 list the ten basic values identified in the theory and their conceptual definitions. These values are likely to be universal because they are grounded in one or more of three universal requirements of human existence with which people must cope: needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups. Each value is grounded in one or more of these three universal requirements of human existence (Schwartz, 1994).

Table 1 about here

¹ Google Scholar April 22, 2012 lists over 8200 citations to the three major articles that introduced the theory (Schwartz & Bilsky, 1987; Schwartz, 1992, 1994).

All of the studies that employ the theory of basic values treat the ten values as discrete entities. In doing so, none of them builds on the central assumption of the theory that Schwartz articulated when he first presented it:

...the array of values represents a continuum of motivations, the ...motivational differences between value(s) can be seen as continuous rather than as discrete. ...our theory-based partitioning of the space is arbitrary. It may eventually be superseded by a partitioning, based on a revised theory that points to discrete values with greater universal heuristic and predictive power. (Schwartz, 1992: 45-6)

Subsequent publications have reiterated this central assumption. For example:

The circular arrangement of values represents a continuum of related motivations, like the circular continuum of colors, rather than a set of discrete motivations. (Davidov, Schmidt, & Schwartz, 2008: 424)

The current research refines the value theory by building on the idea of the motivational continuum. It seeks to partition the continuum into a finer set of meaningful, conceptually distinct values with "greater universal heuristic and predictive power." We begin by examining the original value theory and identify new, potentially beneficial, conceptual distinctions. We then assess the distinctiveness of the values we identify through empirical research in ten countries. Finally, we assess the utility of the refined values by examining their predictive associations with a set of background, attitude, and belief variables.

Two examples illustrate how finer conceptual distinctions might lead to an improved theory. The original definition of self-direction values (Schwartz, 1992) implied two facets— independence of thought and of action. Studies of the relations of values to personality have revealed a strong positive correlation between self-direction values and the openness factor of the Big Five (e.g., Roccas, et al., 2002). A reanalysis of data from Caprara, et al. (2006), in

which we separated the thought and action facets, revealed that the thought facet alone, and not the action facet, accounted for this association.

Turning to security values, Schwartz's (1992) definition included two conceptual facets, personal security (safety for self) and societal security (stability and order in society). A study in Italy, Spain, and Germany separated these facets of security when predicting perceptions of the consequences of immigration (Vecchione, et al., in press). In a structural equation model, societal security strongly predicted perceptions that immigration has negative consequences in all three countries, whereas personal security did not predict at all. This revealed that the aspect of security values that led to perceiving immigration as threatening was concern for the impact of immigration on societal stability and order, not concern for one's personal safety.

These examples illustrate the potential benefits of a refined theory that partitions the motivational continuum of values into a larger number of more narrowly defined, conceptually distinct values. Such a theory can advance our understanding of the domain of values and our ability to use values to study other phenomena. Below, we specify 19 values that, we theorize, capture meaningful motivational differences on the continuum of values. We provide theoretical rationales for these values and for their locations on the circular motivational continuum. Our refined theory is compatible with the original ten, broad value constructs because the 19 values cover the same circular motivational continuum as the original ten. By combining adjacent values on the circle, it should be possible to recapture the original ten values or to form other groupings of values useful for studying specific topics.

The refined theory gives researchers the option of working with as large or as small a set of values as is appropriate to their purpose. They may choose to work with all 19 values or to combine values and work with the original 10, the four higher-order values, or even two subsets (e.g., growth vs. protection values). If only one part of the value circle interests a researcher, she

may gain from the greater conceptual detail and clarity that the refined theory provides by discriminating more fine-tuned values in that part of the circle.

Because existing instruments do not measure the set of 19 values, we present a new instrument. With it, we test whether it is possible to discriminate the 19 values in data from ten countries. We also assess whether the order of values around the motivational circle follows the order we theorize. Finally, we examine whether these more fine-tuned values enhance prediction or explanation of the relations of values to other variables.

Generating the Set of 19 Values

The values we identify are also grounded in these requirements and they fulfill the various functions that Schwartz (1992, 2006) attributed to the basic values. They focus on attaining personal or social outcomes, they promote growth and self-expansion or anxiety-avoidance and self-protection, they express openness to change or conservation of the status quo, and they promote self-interest or transcendence of self-interest in the service of others.

For values with multifaceted definitions, we sought to specify conceptually distinct subtypes. We also considered whether meaningful, unidentified value constructs might be found between some pairs of adjacent basic values on the motivational continuum. On these bases, we generated theoretical justifications for 19 values for which we could provide distinct conceptual definitions. We checked our theorizing about the potential, narrowly defined values against two types of empirical data from previous research.

First, we scrutinized the maps of the associations among the value items produced by multidimensional scaling in each of 344 samples from 83 countries.² These maps were based on data from the 56-7 item Schwartz Value Survey (SVS: Schwartz, 1992, 2006) and from the 40-item Portrait Values Questionnaire (PVQ: Schwartz, 2006; Schwartz, et al., 2001). We sought visual evidence for the potential subtypes we theorized. Second, we examined findings in four

²The maps are available from the first author.

confirmatory factor analysis (CFA) studies of values that might suggest sub-factors.³ One study analyzed SVS data (Schwartz & Boehnke, 2004) and three analyzed PVQ data (Beierlein, et al., 2012; Cieciuch & Schwartz, 2012; Knoppen & Saris, 2009).

We structure the analysis of the potential subtypes of each of the ten values as follows.

(a) We examine the conceptual definition of the value and ask if there are theoretical grounds for splitting it into more refined values. (b) We note items in the SVS and PVQ that may have tapped each potential refined value. (c) We assess the presence of visual evidence for the refined values in MDS maps of SVS data across 255 samples and of PVQ data across 89 samples. (d) We assess statistical evidence for the presence of the refined values in CFA studies.

Table 1, as noted above, lists the ten basic values and their conceptual definitions. Some values are conceptually broad, with multiple components (e.g., universalism); others are narrow, with only one component (e.g., hedonism). The number of items to measure each value reflects its presumed conceptual breadth (Schwartz, 1992) (e.g., more universalism items than hedonism items). Column 3 of Table 1 lists possible components of the values that we derived by asking whether there are theory-based grounds for splitting each value into more narrowly defined values. We next discuss each value, in turn, and note its potential subtypes, if any.

Self-Direction. The conceptual definition of self-direction suggests two potential subtypes, autonomy of *thought* and of *action*. Two SVS items express autonomy of *thought* (creativity/imagination, curious/interested)⁴ and two autonomy of *action* (choosing own goals/own purposes, independent/self-reliant). A fifth item is ambiguous (freedom/of action and thought). Two PVQ items express autonomy of *thought* (interested/curious, new ideas/creative) and two autonomy of *action* (own decisions/plan for self, independent/rely on self).

³We included only studies that analyzed relations among at least three items per basic value, the minimum needed to shed light on possible subtypes of the values.

⁴Each SVS item presents a specific value expanded upon in parenthesis. Each PVQ item also consists of two parts (sentences). We indicate this with slashes between the two parts of an item. Some items are abbreviated in the text. For a full version of the SVS items, see Schwartz (1992), and of the PVQ, see Schwartz (2003).

The MDS projections across samples in both the SVS and the PVQ analyses revealed separate sub-regions for each subtype within a self-direction region. Autonomy of *thought* items were located nearer universalism and autonomy of *action* items nearer stimulation. No CFA study examined the internal structure of the SVS self-direction items. We therefore performed an exploratory factor analysis of the data from Schwartz & Boehnke (2004).⁵ The two subtypes emerged clearly in analyses of both sets of 23 samples in that study. The three CFA analyses of PVQ data also found these two subtypes. In sum, support for splitting self-direction into two more narrowly defined values is strong.

The self-direction subtypes might be seen as two aspects of what the achievement literature calls ‘mastery’ motivation—pursuit of absolute/intrapersonal competence (Elliot & McGregor, 2001). Autonomy of *thought* refers to developing and using one’s understanding and intellectual competence, autonomy of *action* to exercising one’s capacity to attain self-chosen goals. Both refer to absolute/intrapersonal competence not external assessments of performance.

Stimulation. The conceptual definition of stimulation suggests three potential subtypes, *excitement*, *novelty*, and *challenge*. The SVS includes one item relevant to each: an exciting life/stimulating experiences, a varied life/ novelty and change, and daring/seeking adventure. The PVQ also includes one item relevant to each potential subtype: surprises/exciting life, do different things/try new things, and take risks/seek adventures. The MDS projections across samples revealed that, for both the SVS and PVQ, the three items intended to measure stimulation were located in a narrow spatial region. The four CFA studies confirmed a distinct stimulation factor in SVS data (see also Perrinjaquet, et al., 2006) and in PVQ data (see also Vecchione, Casconi, & Barbaranelli, 2009). From these analyses, we conclude that it is best to view stimulation as a single value.

⁵ We used principle axis extraction with orthogonal rotation in all factor analyses reported in this article.

Hedonism. The conceptual definition and the results of all the analyses indicate that hedonism has only one component, pleasure.

Achievement. The conceptual definition of achievement refers to what the achievement literature calls performance motivation—pursuit of normative competence (Elliot & McGregor, 2001). Schwartz (1992, 1994) emphasized that his achievement value refers to pursuing success as judged by the normative standards of one's culture, hence the words “demonstrating competence” in the definition. Respondents to the SVS and PVQ may, however, have understood some items as expressing mastery rather than performance motivation. We therefore considered the possibility of separating two achievement subtypes, *personal success* and *demonstrating competence*. Three SVS achievement items do not clearly indicate whether success is judged internally or externally (successful/achieving goals, ambitious/aspiring, capable/competent). Another is closer to the definition of power values (influential/having an impact on people and events). All five PVQ achievement items refer to external judgments of success in at least one of their two sentences (show abilities/have people admire, successful/impress others, ambitious/show capable, getting ahead/striving to do better).

The MDS projections of both the SVS and PVQ data show a spatial region in which there is no suggestion of separate subtypes. The three CFA studies of the PVQ each separated achievement values into two factors. However, neither factor clearly represented either of the two potential subtypes and the two factors were highly correlated. Moreover, our re-analysis of the Schwartz & Boehnke (2004) SVS data yielded only one factor on which all items loaded > .46. These findings reinforce the impression from the MDS analyses that it is best to view achievement as a single value. We narrow the original definition of *achievement* to express the underlying motivation to be judged as successful by others, dropping the concept of competence.

Power. The conceptual definition of power suggests three potential subtypes. They share the goal of promoting own interests by controlling what happens and thereby minimizing or

avoiding anxiety-arousing threats. We label one subtype *dominance* over people—power to constrain others to do what one wants. The second is control of material *resources*—power to control events through one’s material assets. The third is *face*—maintaining and protecting prestige. *Face* expresses elements of both power and security values. Exploiting one’s prestige enables people to control others and to command resources. Protecting one’s prestige entails defending oneself against the threats to one’s security inherent in attacks on one’s public image.

The SVS includes items that measure all three potential power subtypes. The MDS analyses distinguished a *dominance* subtype (social power/control over others, authority/right to command), a *resources* subtype (wealth/material possessions), and a *face* subtype (social recognition/respect, preserving public image/maintaining face). The *dominance* and *resources* items were close to achievement in the value circle; the face items were closer to security. Re-analysis of the Schwartz and Boehnke (2004) data also supported these distinctions.

No PVQ items tapped *face*. MDS analyses suggested that the other power subtypes might be distinguishable. In the MDS space, the two *dominance* items (decision-maker/leader, in charge/tell others what to do) could be separated from the one *resources* item (being rich/having expensive things). Two CFA studies of the PVQ identified a single power factor on which the two *dominance* items loaded substantially more strongly than the one resource item (Beierlein, et al., 2012; Ciecuch & Schwartz, 2012). In the third CFA study, the *dominance* items formed a power factor and the *resources* item loaded on achievement (Knoppen & Saris, 2009).

Together, the empirical findings above provide some support for distinguishing each of the three more narrowly defined values. The refined theory therefore retains all three.

Security. The conceptual definition suggests two subtypes, *personal security* and *societal security*. Four SVS items express *personal security* (sense of belonging/feeling others care about me, healthy/not sick, reciprocating favors/avoiding indebtedness, clean/neat, tidy). Two SVS items express *societal security* (national security/nation safe from enemies, social order/societal

stability). One item (family security/safety for loved ones) taps primarily personal security, but it also expresses *benevolence-caring*. Two PVQ items express *societal security* (country safe/state vigilant against threats, stable government/social order) and three express *personal security* (clean/not a mess, avoid sickness/stay healthy, secure surroundings/avoid danger).

MDS analyses of both the SVS and PVQ data revealed clearly separable regions: The *personal security* items emerged near *power-face* and the *societal security* items emerged near *conformity (rules—see below)* and *tradition*. The one SVS and one PVQ item concerned with health clustered with neither security subtype.⁶ The CFA studies of the SVS and the PVQ all supported separate *personal* and *societal* types of security. In line with the MDS findings, the location of *health* was inconsistent across these studies. In sum, the set of analyses supports the distinction of at least two more narrowly defined security values. It also suggests that health is another value, but one whose meaning may vary considerably across cultures.

Conformity. The conceptual definition suggests two potential conformity subtypes, *interpersonal* (avoiding upsetting others) and *compliance* (complying with expectations). Two SVS items express *compliance* (self-discipline/resist temptation, obedient/meet obligations) and two *interpersonal* conformity (politeness/courtesy, honor parents/show respect). Two PVQ items express *compliance* (do what told/follow rules, behave properly/avoid doing anything people say is wrong) and two *interpersonal* conformity (polite/never disturb, respect parents/obey).

The empirical evidence provides some support for distinguishing these subtypes. In the MDS analyses of the SVS and the PVQ data, the *compliance* items were closer to security and the *interpersonal* items closer to the self-transcendence values. The CFA results were mixed. One study (Beierlein et al., 2012) discriminated the theorized subtypes, another (Cieciuch & Schwartz, 2012) discriminated only one conformity factor, and a third (Knoppen & Saris, 2009) discriminated two conformity factors consisting of item pairs that differ from our conceptual

⁶ The health item in the SVS was located in regions distant from security in 45% of the 255 samples, suggesting substantial cross-cultural variation in its meaning.

distinction and from the MDS findings. Together, the analyses support two potential subtypes of conformity. To sharpen the theoretical distinction, we dropped conformity to informal norms from *compliance* because it may also refer to *interpersonal* conformity. We labeled the new value *rules* to better express its narrower definition as “conformity to laws, rules, and authority.”

Tradition. The conceptual definition suggests a single value, maintaining cultural and religious traditions. Two SVS items express this *tradition* value (respect tradition/preserve customs, devout/hold religious faith) as do two PVQ items (traditional ways/keep customs, religious belief/do what religion requires,). However, two other SVS and two other PVQ tradition items point to a conceptually distinct value not mentioned in the definition of tradition. We label this value *humility*. The SVS items that express *humility* are humble/modest, self-effacing and accepting my portion/submitting to life’s circumstances. The PVQ items are humble/don’t draw attention to self and don’t ask for more/satisfied with what one has.⁷

It was possible to separate the *tradition* and *humility* items consistently in the MDS analyses of the PVQ and in about 40% of samples in the analyses of the SVS. Reflecting the heterogeneity of the items originally used to index tradition, this value exhibited the lowest internal reliability among the ten values across samples in both the SVS and PVQ analyses (Schwartz, 2005a,b). The CFA studies of the SVS did not try to split the tradition items. All three CFA studies of the PVQ, however, discriminated clear factors of items that represented *tradition* and *humility*. *Humility* was not part of the conceptual definition of tradition. We therefore identify it as distinct new value.

Benevolence. The conceptual definition of benevolence suggests a single value, *caring* for the welfare of ingroup members. However, the MDS analyses of the five SVS benevolence items alerted us to another possible subtype. Within the benevolence region, three *caring* items (helpful/working for others welfare, honest/genuine, forgiving/willing to pardon) separated

⁷We ignored two items that fit neither facet, either conceptually or empirically, 'detachment' and 'moderate'.

consistently from two others (responsible/dependable, loyal/faithful to friends). The latter were located nearer to conformity. This suggests a potential value that falls between *benevolence-caring* and conformity. We tentatively label it *dependability*. It may refer more to relations with friends and less to family than *caring* does.

The PVQ items do not permit discriminating *caring* and *dependability* subtypes. Three focus on *caring* (help near ones/care for their well-being, respond to needs/support those one knows, forgive/no grudges) and one mixes the two concepts (devoted to close others [*caring*] /loyal to friends [*dependability*]). We decided to assess a potential *dependability* value in the refined theory because it is conceptually quite different from *caring* and it received support in the MDS analyses of the SVS.

Universalism. The conceptual definition of universalism suggests three potential subtypes, *tolerance*, *societal concern*, and *protecting nature*, already noted in Schwartz (1992). Two SVS items express *tolerance* (broadminded/tolerant, wisdom/mature understanding), three express *societal concern* (equality for all, social justice, world at peace), and three express *protecting nature* (protect the environment, unity with nature, world beauty). One PVQ item expresses *tolerance* (listen to people who are different/ understand those who disagree), three express *societal concern* (equal opportunity for all, treat all justly/protect the weak, world peace/harmony), and two express *protecting nature* (care for environment, adapt/fit into nature).

The MDS analyses of both the SVS and the PVQ revealed distinct regions for all three universalism subtypes. Interestingly, the order of the universalism and benevolence value regions around the motivational circle reversed in about half the PVQ samples: Universalism was adjacent to tradition and conformity, and benevolence to self-direction. The CFA of SVS items supported separating *protecting nature* and *societal concern* but did not assess a possible *tolerance* subtype. The three CFAs of PVQ items yielded separate *protecting nature* and *societal concern* factors. The location of the one *tolerance* item was inconsistent.

Taken together, the analyses offer consistent support for the *protection of nature* and *societal concern* subtypes of universalism. *Tolerance* received limited support, perhaps because there were too few items that operationalized it clearly. We retain this potential subtype of universalism in order to assess it, and we measure it more adequately in the new instrument.

Table 2 summarizes the above discussion. It presents the 19 potential values of the refined theory and defines each one in terms of the motivational goal it expresses.

Table 2 about here

Evaluating the Refined Value Theory

Past research has successfully applied the original values theory for prediction and explanation. However, researchers have noted various problems of measurement, in particular, multicollinearity between adjacent values, low internal reliabilities of some indexes, and cross-loadings of items on multiple factors (e.g., Davidov, et al., 2008; Knoppen & Saris, 2009). The refined value theory and measure scale are intended to reduce or eliminate these problems.

The measurement problems all derive from the same source: Schwartz (1992, 2005a,b) attempted to operationalize the value theory in a way compatible with the assumption that values form a motivational continuum. This led him to select items for the SVS and the PVQ that would optimally cover the diverse substantive components in the conceptual definition of each basic value. But choosing diverse items to measure each value leads to low internal reliabilities. Moreover, because the ten values have fuzzy boundaries, some items inevitably also express elements of the motivations of adjacent values on the continuum. This produces cross-loadings of these items on multiple factors and contributes to multicollinearity between adjacent values.⁸

By increasing the number of values we distinguish, we can define each value more narrowly. Using a more homogeneous set of items to measure each value should increase the correlations among the items that measure it. This should increase internal reliabilities and may

⁸ The same problem affects various psychological constructs that seek to provide comprehensive coverage of the personality domain (e.g., Marsh et al., 2010).

reduce cross-loadings and multicollinearity. The 19 values cover all of the substantive components of the original ten values. Hence, this finer partitioning of the continuum preserves the previous coverage of the motivational goals that constitute the continuum.

In order to avoid an overly long scale, we generated three items for each value, the minimum necessary to carry out CFA analyses that control for random and nonrandom measurement errors (Bollen, 1989; Brown, 2006). Because each value presumably consists of only one conceptual component, we were able to measure each with the same number of items. We adopted the format of the PVQ but, in order to avoid double-barreled items, we limited each item to a single sentence. Each item portrays a person's goals, aspirations, or wishes that point implicitly to the importance of a value. The appendix lists the items.

For each portrait, respondents indicate how similar the person is to themselves. Respondents' values are inferred from the implicit values of the people they consider similar to themselves. We wrote new items to fit our more narrowly defined values and adapted or revised items from the PVQ and SVS that had effectively measured these values. In light of claims that rating scales with more response categories may provide better reliability, validity, and discriminating power (e.g., Preston & Colman, 2000), we compared two response formats. One was the six labeled alternatives of the original PVQ (1—not like me at all, 2—not like me, 3—a little like me, 4—somewhat like me, 5—like me, 6—very much like me). The other was an 11pt. scale labeled at its poles (0—completely NOT like me, 10—completely like me).

Ordering the 19 Values around the Circular Motivational Continuum

The original value theory specified the order of the values around the circle. Schwartz (1992, 1994) based the order on the conflict or compatibility between values that he theorized people experience if they seek to express any pair of values in a single decision or action. For example, defying authority elicits conflict between self-direction and conformity, but it is compatible with both self-direction and stimulation. A second determinant of the order of values

is the focus on personal (e.g., hedonism) versus social (e.g., tradition) outcomes. Schwartz (2006, 2009) later added other theorized bases for the order: whether pursuit of the value aims to avoid anxiety (e.g., security) or is relatively anxiety-free (e.g., universalism), and whether it serves self-protection (e.g., power) or fosters self-expansion and growth (e.g., benevolence).

We adopted this theorizing to generate the order of the 19 distinct values in Figure 1. The three outer circles identify the conceptual bases for this order. We theorize that the values bounded by the top half of the outermost circle express growth and self-expansion and are more likely to motivate people when they are free of anxiety. The values bounded by the lower half of the outermost circle are directed toward protecting the self against anxiety and threat. The values on the right in the next circle have a personal focus—concern with outcomes for self. Those on the left have a social focus—concern with outcomes for others or for established institutions.

Figure 1 about here

The second circle from the center indicates the boundaries between the four higher-order values into which values can be grouped. Openness to change values emphasize readiness for new ideas, actions, and experiences. They contrast with conservation values that emphasize self-restriction, order and avoiding change. Self-enhancement values emphasize pursuing own interests. They contrast with self-transcendence values that emphasize transcending own interests for the sake of others. Hedonism shares elements of both openness to change and self-enhancement. The innermost circle arrays the values such that pursuit of a value on one side of the circle is likely to conflict with pursuit of the values distant from it and on the other side of the circle.⁹

The proposed order in the figure corresponds to the order of the ten values in the original theory. Here, we provide theoretical rationales only for ordering the narrower values derived from the ten and for the new *humility* and *face* values. We also discuss influences of the underlying factors on the order of a few values that have not been noted previously.

⁹ The distances between the values around the circle may not be equal. Hence, visually opposite values, although likely to be antagonistic, are not necessarily the most strongly in conflict.

Beginning on the upper right of Figure 1, we place *self-direction-thought* closer to *universalism-tolerance* and *self-direction-action* closer to stimulation. Autonomy of *thought* shares an emphasis on intellectual openness with *universalism-tolerance* values. Autonomy of *action* is more compatible with the motivation for exciting activity that underlies *stimulation* values. *Self-direction-thought* probably conflicts more strongly with *tradition* values because insisting on traditional ideas and beliefs would limit freedom of thought. *Self-direction-action* probably conflicts more strongly with *conformity-rules* because always following rules would constrain freedom to decide what to do on one's own.

We place *hedonism* between the openness to change and self-enhancement higher-order values, as in the original theory. However, we locate *hedonism* in the growth/anxiety-free sector, together with the openness to change values. This helps to explain why *hedonism* is closer to openness to change in about two-thirds of samples (Schwartz, 2006). *Achievement* is a self-enhancement value, but it is located on the border between the self-protection/anxiety-avoidance and the growth/anxiety-free sector sectors. This signifies the possibility that one may seek success according to social standards out of a desire to gain admiration and power (self-protection) but also as a way publicly to confirm one's capabilities (growth).

Evidence from the MDS and CFA analyses discussed above did not suggest a particular order for *power-dominance* and *power-resources*; both were near *achievement*. We tentatively locate *dominance* nearer to *achievement* because both share a focus on interpersonal relations absent in *resources*. We locate *face* on the border between *power* and *security*. *Face* is related to power in its concern with maintaining control through status and prestige and to security in its concern with avoiding shame or humiliation. We locate *personal security*, which concerns outcomes for self, in the personal focus sector and *societal security*, which concern outcomes for others, in the social focus sector.

We split the original *tradition* and *conformity* values into four more narrowly defined values on conceptual and empirical grounds. We locate *humility* values on the border between self-transcendence and conservation because the renunciation of self-interest inherent in it may reflect either concern for others or compliance with social expectations. Self-transcendent *humility* is a growth value that is grounded in freedom from anxiety. Compliant *humility* is a self-protecting value that is grounded in anxiety avoidance.

Of the conservation values, we locate *conformity-interpersonal* closest to the self-transcendence sector. Although the primary motivation of this value is to avoid negative social reactions, it does motivate individuals to consider the desires of others. We place *conformity-rules* next to *conformity-interpersonal* because they share a concern with everyday compliant behavior. *Conformity-rules* and *tradition* contribute to social order because both entail deference to and compliance with institutionalized expectations. Hence their proximity to *societal security*. In the original theory and MDS analyses (Schwartz, 1992, 2006), *tradition* values were located outside of *conformity* values, toward the periphery of the circle. This presumably reflected the greater abstractness of *tradition* values and their stronger opposition to openness. Although we locate *tradition* between *conformity-rules* and *societal security* in Figure 1, it is equally plausible that *tradition* is peripheral to these values.

As noted, there is little evidence for a distinct *benevolence-dependability* value. Our definition, “being a reliable and trustworthy member of the ingroup,” implies a degree of active self-confidence more compatible with self-direction than with conservation. Hence, we place it adjacent to universalism, closer to self-direction.

We place *universalism-societal concern* next to *benevolence-dependability* because both emphasize commitment to the welfare of others. They differ only in the object of concern—all societal members (*universalism*) or ingroup members (*benevolence*). *Universalism-tolerance* is next to *self-direction-thought*, for reasons noted above. We place *universalism-nature* between

the other two *universalism* values where it emerged in the MDS analyses of the SVS samples.. However, in more than half of the MDS analyses of PVQ samples, *universalism-nature* reversed locations with *benevolence*, emerging next to what we now distinguish as *humility*. *Humility* and *universalism-nature* share a conception of human beings as embedded in a greater reality of which they are but a small part. The placement of *universalism-nature* is therefore uncertain.

Assessing the Internal Validity of the Refined Theory of Individual Values

Methods

Samples and Procedure

We gathered data during 2010 in ten countries: Finland, Germany, Israel, Italy, New Zealand, Poland, Portugal, Switzerland, Turkey, and the United States. Table 3 provides the basic characteristics of the 15 samples. Participants were 2,150 adults and 3,909 university students who completed the questionnaire in their native language. Nine samples received the 6pt. response scale ($N = 3,261$) and six samples received the 11pt. response scale ($N = 2,798$).

Table 3 about here

The study sought to assess the validity of the theory in varied settings with different types of groups. Because we did not seek to compare the importance of values across countries, it sufficed to recruit convenience samples as follows: Finland—teachers gave the surveys to 11-13 year old pupils for their parents, who returned the completed surveys in sealed envelopes; Germany—students completed surveys in educational psychology classes; Israel—website postings offered a chance to win one of several 300 NIS (~\$75) prizes for completing the survey; Italy—students completes the survey in class sessions for course credit and then recruited four adults; New Zealand—online testing in partial fulfillment of course requirements; Poland—students completed the survey in university classes, adults were recruited either by phone or personally to complete a written survey in their homes; Portugal—students and adults were recruited to complete the survey in classrooms or online in response to emails sent to

personal and institutional lists; Switzerland— social science students received email requests that provided a link to an online site; Turkey—students found in cafeterias were requested to complete the survey on the spot: USA—criminal justice students received an email request that offered a chance to win one of nine \$50 gift cards.

Survey

Separate gender-matched versions of the value survey, differing only in pronouns, were used in the languages that distinguish gender. The survey consisted of 57 values items followed by 33 attitude, opinion, personality, and background items. For the value items, we first formed three sets of 19 items with one item per value. After randomizing each set, we combined them, reordering slightly so that at least two other items separated items intended to measure values adjacent in the value circle. The first author (who composed the survey) checked the translations and back-translations into English with the aid of native speakers. He repeated this procedure until all agreed that the translated version optimally captured the nuances of each item.

Statistical Analyses

CFA. We evaluated the factor structure of the values with confirmatory factor analysis, using Mplus 5.1 (Muthén & Muthén, 1998–2008). We estimated parameters using the maximum likelihood estimator. The theory-based model posits 19 oblique value factors, each measured with three marker items. To achieve identification, we fixed the variance of the latent factors to 1, allowed the loadings to be estimated freely, but allowed no covariances between uniquenesses. Past research indicates the need to correct for biases (e.g., social desirability or acquiescence) that influence the importance attributed to values, regardless of individuals' "true" value priorities (e.g., Schwartz, 1992, 2006). To control such bias, we included a common factor on which we fixed the loadings of all items to 1 (cf. Billiet & McClendon, 2000).

For the CFA analyses, we combined the samples into two sets, the nine samples that responded to the 6pt scale and the six that responded to the 11pt scale. Because we combined

data from different countries, we computed the pooled within-sample covariance matrix for each sample set, starting from the raw responses. This allowed us to exclude from the analysis the variability in responses that is due to between country differences. We handled missing values with the expectation-maximization (EM) algorithm, which imputes missing values based on a maximum-likelihood estimation (Schafer, 1997). The proportion of missing data was only .3% in the 6pt sample set but 13% in the 11pt sample set. We are less confident of the findings in the 11pt sample set because imputing so much missing data may distort results. We retained it, however, to examine whether results replicate even under these circumstances.

We evaluated the covariance structure models with multiple fit indexes: χ^2 , Comparative Fit Index (CFI, Bentler, 1990), Root Mean Square Error of Approximation (RMSEA, Steiger & Lind, 1980), and Standardized Root Mean Square Residuals (SRMR, Jöreskog & Sörbom, 1993). We regarded CFI values $> .90$ (Bentler, 1990), RMSEA values $< .06$ (Browne & Cudeck, 1993), and SRMR values $< .08$ (Hu & Bentler, 1999) as indicating a reasonable fit.

MDS. To assess the structure of relations among the 19 values and their locations around the circular motivational continuum, we ran multidimensional scaling analyses. We included the items retained to measure the values based on the CFA. We also assessed whether the 19 values form structures comparable to the original ten and the four higher-order values using MDS. We ran separate MDS analyses for each of the 15 samples plus analyses on the combined sets of samples that responded to the 6pt scale and the 11pt scale. For the single sample analyses, we used the SPSS18 MDS Proxscal program, with ordinal proximity transformations, Euclidian distance measures, Z-score transformations of values. For the combined sets, we used the pooled within-sample covariance matrixes as input. For all analyses, we used a custom initial configuration (Bilsky, et al., 2011) derived from the theorized circle in Figure 1.¹⁰ We compared

¹⁰The design matrix for the initial configuration assigned starting coordinates for each of the 19 values at increasing angles of 19 degrees (i.e., 19 x 19 ~ 360). Results were very similar using Torgerson initial configurations.

the structures of the combined 6pt. and 11pt. response scale samples by rotating one structure to the other with Generalized Procrustes Analysis (Commandeur, 1991).

Results

Descriptive Statistics

Table 4 displays descriptive statistics for the 57 value items and 19 values for the 6pt. and 11pt. response scales. The means are value priorities, based on the relative importance of each value to each person derived by centering each person's responses on his or her own mean (Schwartz, 2005a, 2006). We used value priorities when computing zero-order correlations but uncentered responses in all other analyses. Table 4 also lists the IoQ index of the reliability for each value. The IoQ corresponds to the correlation between the observed variables and the latent variable (Sarlis & Gallhofer, 2007).

Table 4 about here

Confirmatory Factor Analyses

Table 5 reports goodness of fit statistics for the initial model of 57 items, 19 value factors, and one common factor (1a and 1b). For both response formats, the CFI index fell below .90, although the other indexes suggested a reasonable fit. Because it is the validity of the 19 value model and not of particular items that concerns us, we examined the modification indexes. This led to dropping the nine items marked with asterisks in the Appendix and in Table 4. We also shifted item BED1 (loyalty) from the *benevolence-dependability* to the *benevolence-caring* because its cross-loading on the latter was higher than its loading on the former. We relabeled it BEC4. Apparently, being "loyal to those close to him/her" was understood as expressing caring more than dependability. After these modifications, at least two items indexed each value. The revised model yielded an acceptable fit for the 6pt response format (Table 5, model 2a) and a slightly poorer fit for the 11pt response format (model 2b).

Table 5 about here

Table 6 lists the standardized regression weights (loadings) of the items on the value factors and on the common method factor. For the 6pt format, all loadings of items on value factors are substantial and all but one are greater than the .4 criterion suggested by Brown (2006). For the 11pt format, seven items failed to reach the .4 criterion, perhaps reflecting the poorer quality of the data due to the large amount of imputation of missing values. We also examined the correlations between the latent factors. The mean correlation across the 171 correlations of each response format was .18 ($sd = .23$) for the 6pt format and .15 ($sd = .29$) for the 11pt format. None of the correlations exceeded .80.¹¹

Table 6 about here

In order to test whether the 19 values could be combined to recapture the original ten basic values, we performed a second-order CFA. For this purpose, we added to the previous model six second-order oblique factors to represent the six values that the refined theory split into multiple values. The second-order factors, with their first-order factors in parentheses, were: benevolence (*dependability, caring*), universalism (*concern, nature, tolerance*), security (*personal, societal, face*), self-direction (*thought, action*), power (*resources, dominance*), and conformity (*rules, interpersonal, humility*). The SRMR and RMSEA fit indexes for these second-order models were acceptable, but the CFI index was a little below .90 (Table 5, models 3a and 3b).

We did not try to improve the fit by consulting the modification indexes in this case because the theory specified a model that required collapsing the 19 values in a particular way. However, given the large number of variables in these models, the good fit indicated by the other indexes, and the replication of findings in two sets of data, it seems reasonable not to reject the models of ten basic values because of the CFI. As Kenny and McCoach (2003) noted, even in correctly specified models, CFI tends to worsen as the number of variables in a model grows

¹¹ The covariance matrixes and the table of correlations among the latent factors are available from the authors.

large. They suggested that, if the CFI seems “slightly lower than hoped, but the RMSEA seems a bit better, then there may be no real cause for concern” (p. 349).

Multidimensional Scaling Analyses

Discriminating 19 Values. Figure 2 presents results of the multidimensional scaling analysis of the 48 items retained in the CFA. The analysis used the pooled within-sample covariance matrix to combine the data of the samples from nine countries who responded to the 6pt scale. Each labeled point in this two-dimensional graphic plot represents a value item. We split the space into regions that represent the *a priori* values. Bent lines pose no problem with respect to interpretation as long as a particular value region does not include items of a different value (Borg & Shye, 1995; Shye, Elizur & Hoffman, 1994). This figure will serve as a visual aid in describing results of the MDS plots for each of the 15 separate samples and for the combined sample of respondents to the 11pt. scale.

Figure 2 about here

Figure 2 splits the space into 18 regions. With one exception, each region encompasses all of the items that operationalize one of the values and no other items. The exception is a region on the lower left; it contains both the *interpersonal conformity* and *humility* items. The MDS plot for the combined sample from six countries who responded to the 11pt scale was very similar to Figure 2. We split the space into 19 value regions with the *interpersonal conformity* and *humility* items in separate, adjacent regions. *Interpersonal conformity* was also adjacent to *universalism nature* and *humility* to *conformity-rules*. Following rotation with Generalized Procrustes Analysis (Commandeur, 1991), the coordinates of the items in the two plots correlated .99 on the first dimension and .98 on the second dimension. Thus, the MDS analyses of both combined sets of data supported the distinctiveness of at least 17 *a priori* values and left open the question of whether *humility* and *interpersonal conformity* are distinguishable.

For the MDS analyses in the 15 samples, we provide summary statistics. We considered a distinct value region to be present (a) for values measured with three items, when the items could be connected in the MDS plot while enclosing no more than one item from another value and (b) for values measured with two items, when a line connecting the items did not cross two items from other values. Table 7 (column 1) lists, for each of the 19 values, the number of samples out of the 15 in which it formed a distinct region ($M = 14.16$, $SD = .87$).

Table 7 about here

In 80% of samples, at least 17 of the 19 values formed distinct regions ($M = 17.80$, $SD = 1.42$). Values that are theorized to be adjacent in the circle may intermix with one another and items may emerge in adjacent regions by chance (Schwartz & Sagiv, 1995). Column 2 therefore lists the number of times that each value formed a distinct region either alone or with a theoretically adjacent value. It reveals that all 19 values formed either distinct regions or joint regions with an adjacent value in almost every sample.

Column 3 of Table 7 lists the number of times each item emerged in its expected value region. Of the 48 value items, only three failed to emerge in the expected distinct region in at least 13 samples. Even these items emerged in a joint region formed by their expected value and an adjacent value in at least 14 samples (column 4). Thus, none of the single items should be considered problematic. This is not surprising, of course, because we dropped potentially problematic items based on the CFA of the two sets of combined samples. What the MDS findings add is evidence that all of the items performed well in the separate samples.

Testing the Order of Values around the Circle. The observed order of the 19 values around the circle in Figure 2 largely corresponded with the hypothesized order in Figure 1. There were, nonetheless, a few deviations. Most prominently, the positions of benevolence and universalism reversed. *Benevolence-dependability* was adjacent to self-direction, followed by *benevolence-caring*, *universalism-tolerance*, *universalism-concern*, and *universalism-nature*. The combined

humility and *conformity-interpersonal* region emerged in the expected location for these values in the circle. The MDS analysis of the combined samples that responded to the 11pt scale exhibited the same order but with *tradition* on the periphery of the circle, outside of rather than adjacent to *security-societal*.

The separate MDS plots for each sample showed patterns very similar to the combined samples. Benevolence and universalism were reversed in all 15 samples, with the exception that *universalism-tolerance* was adjacent to self-direction in three samples. The order of specific values within benevolence and universalism was the same as in the combined analyses in 11 the samples. As in Figure 2, tradition emerged toward the outside of the circle in 12 samples and *power-dominance* and *power-resources* emerged toward the outside of the circle in all 15 samples. In 13 samples, separate *humility* and *conformity-interpersonal* regions could be distinguished. Conformity-interpersonal was closer to the universalism region in 54% of these samples, humility in 15%, and they were equally distant in the rest.

Discriminating the Original Ten Values. If the 19 values form the same motivational continuum as the ten original values, regions that represent each of the ten values should appear in the MDS plots. Figure 2 (and the equivalent plot for the combined 11pt samples) support the conclusion from the CFA that the 19 values can be combined to recapture the original ten. These plots reveal that it is best to treat *face* as representing security and *humility* as representing conformity. The MDS plots of each sample also support a conclusion that the 19 values form the same motivational continuum as the ten original values. In thirteen samples, it is possible to split the plot into ten regions representing each original value. In the other two samples, eight original values form distinct regions and a pair of adjacent values forms another region.

The mean Cronbach alpha reliabilities of the ten values across the 15 samples (standard deviations in parentheses) were tradition .83 (.05), universalism .82 (.07), benevolence .81 (.07), security .78 (.04), self-direction .77 (.05), power .73 (.04), conformity .73 (.04), hedonism .70

(.09), stimulation .70 (.06) achievement .66 (.06). The reliabilities of all but the last three values exceeded those observed with both the SVS and the PVQ40 across samples (Schwartz, 2005b).

Discriminating the Four Higher-Order Values. Researchers sometimes combine the ten values into four higher-order values: self-transcendence, self-enhancement, openness to change and conservation. Combining the 19 values into the higher-order values was possible in every one of the 15 samples. None of the 19 values was out of place in any sample and at least 47 of the 48 items were located with their *a priori* higher-order value in every sample ($M = 47.8$).

Discussion

Evaluating the Refined Theory of 19 Values

Both the CFA and MDS analyses provided substantial support for the refinement of the theory of basic values. In the CFA, each of the 19 values formed a distinct factor on which the items designed to measure it loaded substantially. This finding replicated in two sets of samples. The MDS plots of the items largely reinforced this finding. In one set of combined samples, 17 values formed distinct regions and two theoretically adjacent values were intermixed. In the other combined set, every one of the 19 values formed a distinct region as they did in 80% of the 15 separate samples. All values formed either a distinct region or a joint region with a value adjacent in the theory-based circle in at least 93% of samples.

Although these findings support the 19 values in the refined theory, one finding merits a closer look. *Conformity-interpersonal* and *humility* formed distinct regions in the MDS plots of 13 of the 15 separate samples and in one combined sample, but they formed a joint region in the other combined sample. However, their order was inconsistent across the 15 samples. This inconsistency is probably why the MDS plot of the combined 6pt samples formed a joint region. There was no problem discriminating between these two values in the CFA analyses. The correlations between their latent factors were .58 in the 6pt sample set and .31 in the 11pt

sample set. It therefore seems reasonable to infer from the full set of analyses that *conformity-interpersonal* and *humility* are distinguishable.

The correlations between the pairs of latent factors for the 19 values were all less than .8 in the CFA analyses of both combined sample-sets. This is a substantial improvement over findings in earlier research (e.g., Davidov, et al. 2008). It reflects the relatively few strong cross-loadings of items on alternative values in this study. Consequently, multicollinearity when using multiple values as predictors in regressions should be less frequent.

Order of the 19 Values around the Circle

The observed order of values around the motivational circle was highly consistent across MDS plots. Hence, we limit our discussion to the order shown in Figure 2 and the theorizing that it confirms. We theorized that the order of the values expresses their grounding in four motivational dimensions. One dimension contrasts values concerned with self-protection and avoiding anxiety versus those that express anxiety-free growth. This dimension differentiates the values on the top versus bottom of Figure 1. A second dimension contrasts values focused on personal versus social outcomes (right and left in Figure 1). Third and fourth dimensions discriminate four sets of values, those that express self-transcendence versus self-enhancement and those that express openness to change versus conservation (the quadrants in Figure 1). The locations of all the values in the motivational circle, near to one another or far away around the circle, also fit the postulated compatibility or conflict between the goals of each value pair.

The observed order of the 19 values around the circle (Figure 2) fully confirmed the theorizing based on the four dimensions. Among values whose order the dimensions did not determine, however, there were three deviations from the hypothesized order: The *humility* and *interpersonal conformity* values were ordered inconsistently across samples; *tradition* was located peripheral to rather than adjacent to *societal security* in the 11pt sample set; and *benevolence* and *universalism* values were reversed. We consider each of these in turn.

Both *humility* and *interpersonal conformity* sometimes fell on the growth/self-protection border and between self-transcendence and conservation and sometimes fell in the conservation quadrant. This suggests that multiple motivations may underlie *interpersonal conformity* as they do *humility*. We originally understood *interpersonal conformity* as motivated by self-protection, defense against anxiety, and conservation of the status quo. Its items emphasize the importance of not upsetting, annoying, or irritating others. Our original placement of this value assumed that its goal was to avoid the consequences of interpersonal conflict for self. Its empirical location suggests that, like *humility*, it may also express the more anxiety-free goal of protecting others' interests. Both renouncing self-interest (*humility*) and avoiding harm to others (*interpersonal conformity*) may be motivated both by self-protection and by concern for the welfare of others.

Tradition was located toward the periphery of the circle, as in the original theory and MDS analyses (Schwartz, 1992, 2006). But here it was peripheral to *societal security* rather than to the broad conformity value as previously theorized and found. The modified definitions of the values may account for this changed location. We narrowed the definition of *tradition* to focus exclusively on maintaining group traditions, with the implied goal of preserving group stability. This drew it close to the more narrowly defined *societal security*, whose goal is to maintain stability in the larger society. At the same time, the narrowed focus of *interpersonal conformity* on avoiding harm in social interaction distanced it from *tradition*. *Tradition* was adjacent in the circle to the newly defined *conformity-rules*. Both *conformity-rules* and *tradition* call for submitting to abstract, formal expectations and both strongly oppose openness. Hence, both these values are now peripheral in the circle (see Figure 2), rather than one behind the other.

The reversal of the order of benevolence and universalism values in all 15 samples is not completely surprising. In 112 samples that responded to the PVQ40, the broad benevolence and universalism values reversed their order at least partially in 58% of samples.¹² Bubeck and

¹² Unpublished data available from the first author.

Bilsky (2004) and Liem, et al. (2011) observed this reversal among adolescents. They attributed it to a methodological artifact that drew universalism close to conformity. They noted that three of six universalism items and two of four conformity items included “should” statements. This created a shared normative connotation on the conceptual level that could induce empirical proximity. However, this cannot account for the reversal in our study. Only one of our nine *universalism* items and one of nine *conformity* and *humility* items included “should” wording.

We have no definitive explanation for the benevolence-universalism reversal. Any explanation must be compatible with three facts. This reversal was equally clear in adult and student samples and in samples from more and less Westernized and affluent countries, and it did not appear in studies using the Schwartz Value Survey prior to 2000. We offer one explanation that is compatible with these facts and invite readers to suggest others.

The universalism value most frequently adjacent to the conservation values (9 samples) was *universalism-nature*. It was also consistently distant from the center of the circle (14 samples). Variables more distant from the center of an MDS plot are typically more abstract, less close to one’s self-concept, and less often implicated in daily interaction (Levy, 1985). These attributes largely characterize the *nature* items, which refer to protecting the natural environment from destruction, pollution, and other threats. In the rhetoric in many countries, protecting nature has recently become normative, due in part to a growing perception that failure to do so threatens human security (e.g., Walker, 2006). For most people, however, these are abstract norms that demand little personal action or self-involvement (e.g., Dobson, 2003). The closeness of *universalism-nature* to conservation values may therefore reflect two newly shared sources of motivation, complying with norms and avoiding threat. But *universalism-nature* still shares with the other universalism values the motivation to contribute to the welfare of the wider society. Its location adjacent to the conservation values in the MDS plot, with the other universalism values close to it, expresses this pattern of associations.

Our refinement of benevolence into *caring* and *dependability* may also have contributed to the reversal. *Benevolence-dependability* was not represented in earlier values research. It expresses concern for close others in a more self-assured, autonomous way—‘others should rely on me’. As noted earlier, this makes *benevolence-dependability* conceptually closer to self-direction, leading to its location next to the openness values in the MDS plot. Moreover, our operationalization of benevolence omits three abstract indicators of benevolence present in the SVS—honest, forgiving, and responsible. Those three items have a strong traditional normative connotation. They express conventional modes of social bonding in established groups. In the SVS, they may have drawn benevolence close conceptually and empirically to the conservation values and distanced it from openness. In contrast, all of the current benevolence items refer to caring actively for the welfare of people one chooses as one’s close others. None of the retained benevolence items mentions any traditional, ascribed group (e.g., family). Here, benevolence expresses a more voluntary form of bonding with others that is closer to openness. Together, these effects of universalism and benevolence may account for their reversal in the MDS plot.

We do not discuss the locations of the remaining values because they were located as expected based on our theorizing about their motivational underpinnings in the introduction. We comment only on insights that the observed order gives regarding the nature of a few values.

We proposed *face* as a new, distinct value that expresses both self-enhancement and conservation motivations and is located between power and security. It emphasizes maintaining a public image that is a source of power and avoiding shame that undermines security. The *face* value significantly improves coverage of the motivational continuum because it fills the gap between power and security frequently observed in past MDS plots (Schwartz, 1992, 2006).

Building on past theorizing about security values (e.g., Schwartz, 1992, 2005a), we distinguished *societal-* from *personal-security*. The former emerged closer to the social-focus values and the latter to the personal-focus values. The locations in the circle of these

conceptually distinct aspects of security clarify their meanings. *Societal-security* is concerned with preserving the institutionalized order in society, like *tradition* and *conformity-rules* to which it is adjacent. *Personal-security*, like *face*, is concerned with avoiding threat to oneself.

Discriminating the Ten Original Values and Four Higher-Order Values

We postulated that the 19 values could be collapsed into the ten values in the original theory because they lie on the same motivational continuum. Both the CFA and MDS analyses confirmed this in the two sets of combined samples. We also compared the discrimination of the ten values in the current study, that was guided by the refined theory with their discrimination in 18 adult and student samples from the same countries that responded to the PVQ40, that was guided by the original theory. Discrimination of the ten values was at least as effective in the current study. The MDS plots yielded distinct regions for all ten values in 67% of the 15 samples and eight distinct regions plus a joint region of adjacent values in 33%. The equivalent figures for the PVQ40 studies were 67% and 17% plus another 17% with fewer distinct regions. Combining the 19 values into the four higher-order values was possible with no errors for all 15 current samples compared with 94% of PVQ40 samples.

Response Formats

We administered the 6pt response scale to samples in nine countries and the 11pt response scale to samples in six countries. In Italy, New Zealand, Poland, and Portugal, both formats were used with similar samples. Both response formats provided almost identical MDS plots, but the CFA findings were somewhat weaker with the 11pt scale. This may reflect the most important difference between the response formats, the much higher proportion of missing data with the 11pt scale. The replication of findings with two response formats strengthens confidence in the refined theory. However, for future research, we recommend using the 6pt response scale.

Having established that we can distinguish empirically among the 19 values, we next assess whether doing so yields more precise prediction and explanation of external variables. We

ask: Do the more fine-tuned values that we distinguished within the original ten values (three types of universalism, two of power, etc.) differ meaningfully in their associations? This will tell us if the finer distinctions that are possible statistically are also worth making substantively.

Comparing Associations of Broad and Refined Values with the Same Background Variable

As a first step, for each broad value, we assess whether, when we examine its subtypes, we can better understand its association with a background variable that might influence it. We compare the correlations of the broad values with background variables in an Italian sample that responded to the PVQ40 (N=831, reported in Schwartz, 2005b) with the correlations of their subtypes with these variables in the Italian 6pt sample of the current study. The two samples were recruited in the same way from the same population and their distributions of gender, age, and education are well-matched. To compare correlations, we use summated scores for each value. We choose summated scores because—since the 19 values have no cross-loadings in the CFA—their interpretation is straight-forward, they are highly correlated with their respective factor scores (mean $r = .91$), and they are much easier for future researchers to construct.

We begin with the three conservation values, conformity, security, and tradition. Across representative samples in 20 European countries, age correlated positively with the importance of these broad values (Schwartz, 2006). This is presumably because people tend to become more embedded in social networks and more committed to habitual patterns as they grow older (Glen, 1974). In the earlier Italian study, conformity values correlated .21 with age. We expected conformity to rules, laws, and formal obligations to be more relevant than avoiding upsetting others for upholding the established institutions to which people become committed. In line with this reasoning, *conformity-rules* correlated significantly more positively with age than *conformity-interpersonal* ($r = .26$ vs. $.12$, $t = 2.24$, $p < .05$).¹³

¹³ All comparisons are for dependent correlations and significance levels are two-tailed, unless noted.

In the earlier study, security correlated .25 with age. Both subtypes of security are likely to become more important as people age. Comparison of the correlations for the subtypes of security in the current study reveals, however, that *societal security* correlated more strongly with age than *personal security* did ($r = .25$ vs. $.09$, $t = 2.67$, $p < .01$). Concern with societal security may be more linked to age than concern with security in one's immediate environment because people become more embedded in societal institutions and more aware of their dependence upon them as they grow older.

The refined theory splits the former broad tradition value into *tradition* and *humility* values. The broad tradition value correlated .25 with age in the earlier study. The current study suggests that this correlation may largely reflect a greater concern among older people with preserving cultural, family, or religious traditions. Here, the narrower *tradition* value correlated substantially more strongly with age than the *humility* value did ($r = .26$ vs. $.02$, $t = 3.55$, $p < .01$). Indeed, humbly accepting one's circumstances was virtually unrelated to age.

Across countries, the broad universalism value correlated positively with age (Schwartz, 2006). In the earlier Italian study, the correlation was .09. The more narrowly defined universalism subtypes tell a different story. *Universalism-nature* and *universalism-concern* both correlated more positively than *universalism-tolerance* with age ($r = .26$ and $r = .17$ vs. $r = -.13$, $t = 5.93$ and $t = 5.00$, respectively, both $p < .01$). That is, older people accorded less importance to tolerance for different ideas, life-styles, and groups than younger people did, but their concern for the welfare of all, including nature, was greater. The correlation difference for *universalism-nature* vs. *universalism-concern* was only borderline. As we will see below, however, other correlation differences between these subtypes of universalism are significant.

Across countries, the broad benevolence value correlated positively with age (Schwartz, 2006), but it was unrelated to age in the earlier Italian study ($r = -.01$). In the PVQ40, most benevolence items refer to actively caring for the needs of ingroup members. In contrast, the

items of the new *benevolence-dependability* value refer to being available for ingroup members to rely upon. This subtype of benevolence correlated $-.26$ with age in the current sample. It was higher in early adulthood, when people have dependent children, and declined thereafter. In contrast, as in the earlier sample, *benevolence-caring* correlated near zero with age in this sample ($r = .03$, $t = 3.39$, $p < .01$, for the correlation difference). Thus, the importance of concern for close others was unchanged with age, but the importance of being the one close others can rely upon went down.

Across countries, the broad self-direction value correlated positively with education (Schwartz, 2006), as it did in the earlier Italian study ($r = .19$). Education likely enhances the ability and motivation to think and act independently, which, in turn, induces people to seek higher levels of education. The *thought* and *action* subtypes of self-direction may not contribute equally to this association, however. Valuing cultivation of one's own ideas and abilities is more likely to motivate pursuit of higher education and to be enhanced by it than valuing freedom to determine one's own actions. Consistent with this reasoning, *self-direction-thought* correlated more highly with education than *self-direction-action* ($r = .22$ vs. $.12$, $t = 1.65$, $p < .05$, 1-tailed).

Across countries, being male correlated positively with the broad power value (Schwartz, 2006), as it did in the earlier Italian study ($r = .10$). The correlation of gender with power may be a compromise between correlations with the two power subtypes, *power-dominance* and *power-resources*. In the current Italian sample, these subtypes correlated $.13$ and $.07$ with gender, respectively, a non-significant difference. However, the direction of this correlation difference held in 13 of the 15 samples we studied ($p < .01$). This indicated a small but consistent tendency for the motivation to control others to contribute more to males' greater emphasis on power than the motivation to pursue material resources.

Assessing the Predictive Validity of the Refined Values Theory

Predicting Beliefs with the Revised Values vs. the Original Broad Values

As noted above, it is possible to combine subsets of the 19 values into the 10 values of the original theory. We next compare the predictive and explanatory power of the 19 values with that of the 10 combined values. We used hierarchical linear modeling (HLM: Raudenbush & Bryk, 2002) to study associations of values with two beliefs that were measured in all samples. This method takes the interdependence of individuals within each sample into account. We used group mean centering of the values because we wished to examine effects of differences in value priorities within each sample. We first specify hypotheses based on the 10 values and test them using HLM regression. We then examine whether the subtypes of the broad values identified as significant predictors yield better prediction and deeper insight into the value bases of the opinions. We also include age and gender as predictors if they contribute significantly.

First, consider the belief that, “It is hard to get ahead in life without lots of money.” We expect power, security, and hedonism values to contribute to agreeing with this belief. Power values motivate pursuit of material goods and self-interest. Security values motivate pursuit of personal safety, a goal much easier to attain with lots of money. Money also makes it easier to pursue a hedonistic life. In contrast, universalism and self-direction values may reduce agreement with this belief. For people who value universalism, worrying about their own material well-being is secondary to concern for the welfare of others. For those who value self-direction, having lots of money is unnecessary for pursuing opportunities to create, explore, choose, and understand. Tradition values should also weaken support for this belief because most traditions frown upon the pursuit of wealth. Although benevolence values emphasize transcending self-interest, concern about having sufficient money to care for one’s family probably balances this.

The hierarchical linear model including these values explained 14.3% of the variance in this belief. All the expected values contributed ($p < .02$, 2-tailed). Power values predicted most strongly ($\beta = .37$), followed by security ($\beta = .24$), universalism ($\beta = -.21$), self-direction ($\beta = -.14$), hedonism ($\beta = .10$), and tradition ($\beta = -.06$). Neither gender nor age added to the prediction.

The comparative analysis based on the 19 values considered the subtypes of the five broad predictor values. We based our expectations on the conceptual meaning of each refined value. This meaning suggests that (a) *power-resources* values are more relevant to believing it is hard to get ahead without lots of money than *power-dominance* values, (b) *personal security* values are more relevant than *societal security* values, and (c) *universalism-concern* values are more relevant than *universalism-tolerance* and *-nature* values. Because the essence of humility is to accept one's lot and not to strive for more, (d) the *humility* subtype of the former tradition value is more relevant than the revised *tradition* value that concerns traditional practices and beliefs. Finally, because a lack of money might hinder freedom of action, we expected (e) *self-direction-thought* rather than *-action* values to relate negatively to this belief.

The hierarchical linear model including these refined values plus *hedonism* explained 16.5% of the variance in this opinion. All of the values contributed significantly ($p < .01$, 2-tailed). *Power-resources* values predicted most strongly ($\beta = .44$), followed by *security-personal* ($\beta = .13$), *universalism-concern* ($\beta = -.10$), *self-direction-thought* ($\beta = -.10$), *hedonism* ($\beta = .07$), and *humility* ($\beta = -.07$). None of the other subtypes of these values added significantly. The random effects for *power-resources* and *security-personal* are significant. However, *power-resources* and *security-personal* predict positively in all 15 and in 13 samples, respectively, with non-significant negative coefficients in the other two samples. These findings provide substantially more insight than the analysis of the original ten values into the value underpinnings of the belief in the need for lots of money to get ahead. Moreover, the refined values explain about 15% more variance in the belief than the original values do.

As a second example, consider "Homosexual couples should have the same rights as married couples." This opinion expresses acceptance of people whom many respondents perceive as violating traditional norms in order to pursue their own pleasure. We therefore expect it to correlate negatively with *tradition* values and positively with *hedonism* values. We

also expect it to correlate positively with universalism values because they emphasize acceptance of those with different life-styles. The other openness values (stimulation and self-direction) may predict support for this view and the other conservation values (conformity, security) may predict opposition, depending upon the extent to which they add relevant content not captured by hedonism or tradition. We also included power values as a predictor because they relate strongly to right-wing authoritarianism and social dominance orientation (Cohrs, et al., 2005), both of which predict prejudice against homosexuals (Whitley, 1999).

The hierarchical linear model including the following values plus gender explained 13.0% of the variance in the belief. Tradition values predicted most strongly ($\beta = -.36$), followed by universalism ($\beta = .36$), gender-female ($\beta = .15$), hedonism ($\beta = .14$), security ($\beta = -.13$), and power ($\beta = -.07$; all $p < .02$, 2-tailed). Neither age nor any of the other values added to prediction.

The comparative analysis based on the 19 values considered the subtypes of the four broad predictor values plus hedonism and gender. The relative relevance of each subtype to opinions toward homosexuality suggests that (a) the facet of the former tradition value that refers to religious belief is more relevant than the *humility* subtype, (b) *universalism-concern* and *-tolerance* are more relevant than *universalism-nature*, (c) *societal security* is more relevant than *personal security* because homosexual marriage threatens social stability more than personal safety, and (d) *power-dominance* is more relevant than *power-resources* because equal rights for homosexuals undermine the dominance of those who reject them.

The hierarchical linear model including these refined values plus gender and hedonism explained 15.3% of the variance in this belief. *Tradition* values predicted most strongly ($\beta = -.33$), followed by *universalism-concern* ($\beta = .20$), *societal security* ($\beta = -.15$), *gender-female* ($\beta = .14$), *hedonism* ($\beta = .13$), *universalism-tolerance* ($\beta = .10$), *universalism-nature* ($\beta = .09$), and *power-dominance* ($\beta = -.04$). None of the other value-subtypes added significantly. The random effects for tradition and universalism-tolerance are significant. However, tradition predicts

positively in all 15 samples and universalism-tolerance predicts negatively in 12 samples, with non-significant negative coefficients in the other three samples. The one surprise was *universalism-nature*. These refined values gave a clearer picture of the value underpinnings of believing that homosexuals deserve equal rights than the broad values. Moreover, they explained about 18% more variance in this belief than the broad values.

The above analyses illustrate a few benefits of using the more narrowly defined values in the refined theory rather than the broad values used in earlier research.¹⁴ The comparisons show that the refined theory provides insights beyond those of the original theory into relations of values with background and attitudinal variables. The analyses do not yet demonstrate, however, that every one of the values in the new value circle contributes uniquely to the understanding and prediction of external variables. For this purpose, we examine correlations of each pair of adjacent values with a few external variables. We ask whether the correlations of each value differ significantly and in a meaningful way from those of the values adjacent to it in the circle. Adjacent values are conceptually similar and compatible, so their associations should usually be similar. Nonetheless, unless a value has associations with at least some external variables that differ from those of its adjacent values, distinguishing it provides no practical gain.

Unique Correlations with External Variables of Adjacent Values

Table 8 presents one correlation comparison with an external variable for each pair of adjacent values in the circle. The correlations are based on the combined sample of respondents to the 6pt scale, equally weighting each sample. All correlation differences are significant ($p < .001$, 2-tailed). Table 8 also lists the number of samples out of the 15 in this study in which the direction of the observed correlation difference is as predicted. The direction of all reported differences is consistent across samples ($p < .001$, 2-tailed). All correlation differences for the same variables are also significant and consistent in the combined sample of respondents to the

¹⁴Hierarchical linear models comparing prediction of four other beliefs and attitudes that provide further evidence for the benefits of the refined theory are available from the first author.

11pt scale. We do not report or discuss them in order save space. We next briefly discuss each pair of adjacent values in turn. We also note but do not show or discuss one or two other external variables whose correlations with the pair of values also differ as expected.¹⁵

Self-Direction-Thought and Self-Direction-Action. These two values differ in emphases on freedom to cultivate one's ideas and abilities vs. to act as one wishes. In choosing a job, the opportunity to take initiatives is likely to appeal to both types of self-direction and both are less likely to care about a high income. We would expect those motivated to cultivate their own ideas to care more about taking initiatives and less about income, however, than those motivated to act as they please. The correlation difference in Table 8, confirms that *self-direction-thought* predicts an emphasis on initiative more than *self-direction-action* does. The correlation difference for the importance of a high income in a job (not shown) favors *self-direction-action*.

Self-Direction-Action and Stimulation. Typically, people adapt their values to their life circumstances (Schwartz, 2006). With aging, the importance of *stimulation* may decrease more than that of *self-direction-thought* for several reasons. *Stimulation* values emphasize pursuit of pleasant excitement, novelty, and change. Physical aging leads to a gradual decline in strength, energy, and sharpness of the senses that make novelty and risk more threatening. As people move through life stages, exciting experimentation and adventures becomes less acceptable, exposure to novel challenges decreases, and social roles increasingly constrain opportunities for and raise the costs of risk-taking. Table 8 shows that *stimulation* values correlate more negatively with age than *self-direction-action* values do, as expected. *Stimulation* values also correlate more positively with reporting that one's daily life is filled with interesting things (not shown).

Stimulation and Hedonism. *Hedonism* values emphasize the pursuit of pleasure and sensuous gratification. Unlike *stimulation* values, they shun intense arousal in favor of less arousing enjoyment and comfort. Confirming this difference, Table 8 shows that *hedonism*

¹⁵ These correlation differences and the conceptual rationales for expecting them are available from the first author.

values correlate negatively with accepting going to war as a national act, whereas *stimulation* values are unrelated to this attitude. The near zero correlation for stimulation values may reflect the fact that war is both exciting and frightening. Reporting that one's daily life is filled with interesting things also correlates more positively with *stimulation* than with *hedonism* values (not shown), as one might expect given the different emphases of these two values on arousal.

Hedonism and Achievement. The goal of *achievement* values is success according to social standards. They motivate people to compete and seek admiration for their success. *Hedonism* values, in contrast, incline people to avoid the stress of competition. In line with this reasoning, Table 8 shows that *achievement* values correlate positively with agreeing that "my goal ... is to perform better than the other[s]" and *hedonism* values correlate negatively with this aspiration. The competitive orientation of *achievement* values also produces a positive correlation with 'going to war' compared with the negative correlation for *hedonism* values (not shown).

Achievement and Power-Dominance. *Power-dominance* values emphasize controlling others and imposing one's will on them. Unlike *achievement* values, they do not express a desire to be admired for success. Confirming this contrast, Table 8 shows that *achievement* values correlate positively but *power-dominance* values are uncorrelated with agreeing that "I strive to make sure that others think well of my work...". *Power-dominance* values also correlate more negatively than *achievement* values, as expected, with agreeing that "We should **not** try to impose our own views on people who disagree with us." *Power-dominance* but not *achievement* values are more important to men than to women (neither shown).

Power-Dominance and Power-Resources. *Power-resources* values emphasize obtaining wealth and material goods. Not surprisingly, *power-resources* values correlate more positively than *power-dominance* values with attributing importance to a high income in choosing a job (Table 8). *Power-resources* also correlate less negatively than *power-dominance* with agreeing that "We should **not** try to impose our own views on people who disagree with us" (not shown).

Power-Resources and Face. Rather than seeking material resources, *face* values concern protecting one's public image and avoiding humiliation. Thus, as expected, *power-resources* values correlate more positively than *face* values with agreeing that "It is hard to get ahead in life without a lot of money" (Table 8). On the other hand, *face* values are uncorrelated with age and being female, whereas *power-resources* values correlate negatively with both (not shown).

Face and Security-Personal. Rather than seeking to preserve one's reputation, *security-personal* values emphasize safety for self and dear ones in the immediate environment. As this distinction implies, *security-personal* values correlate more positively than *face* values with the assertions that "The police should have more powers so they can protect us better against crime" (Table 8) and that "A person's family should be his/her main priority in life" (not shown).

Security-Personal and Security-Societal. *Societal security* values concern safety and stability in the wider society rather than personal safety. Consistent with this difference, *societal security* values correlate more positively than *personal security* values with stands on issues of societal rather than personal stability and safety. They correlate more with agreeing that "... war is sometimes the only solution to international problems" (Table 8), "Any act is justified to fight terrorism," and "I follow politics closely" (not shown).

Security-Societal and Tradition. *Tradition* values emphasize maintaining cultural, family, or religious traditions. As such, they correlate more positively than *societal security* values with the importance of religion in life (Table 8), with the frequency of prayer, and with rejecting the idea of giving homosexuals the same rights as married couples (not shown).

Tradition and Conformity-Rules. *Conformity-rules* values emphasize compliance with rules, laws, and formal obligations. Unlike *tradition* values, they do not call for family or religious involvement. Consistent with this difference, *tradition* values correlate more positively than *conformity-rules* values with frequency of praying (Table 8) and with attributing importance to family and to participation in voluntary organizations (not shown).

In the circular order, *humility* and *conformity-interpersonal* each followed *conformity-rules* in half the samples. We therefore compare each, in turn, with *conformity-rules*. We also compare each, in turn, with *universalism-nature* that followed them in the circle.

Conformity-Rules and Humility. *Humility* values emphasize avoiding self-promotion and being satisfied with what one has but not compliance with formal rules. Consistent with this difference, *conformity-rules* values correlate more positively than *humility* values with agreeing that “The police should have more powers....” (Table 8) and with condemning lying in order to avoid making another person angry (not shown).

Conformity-Rules and Conformity-Interpersonal. Both types of conformity values stress compliance. However, *conformity-interpersonal* values focus on avoiding actions that might upset or harm others rather than on obeying formal rules. Consistent with this difference, *conformity-rules* values correlate more positively than *conformity-interpersonal* values with condemning both lying to avoid angering others (Table 8) and cheating on taxes (not shown).

Conformity-Interpersonal and Humility. As noted, *humility* values emphasize avoiding self-promotion and being satisfied with what one has. Consistent with this emphasis, *humility* values correlate more negatively than *conformity-interpersonal* values with agreeing that “It is hard to get ahead in life without a lot of money” (Table 8) and that “I strive to make sure that others think well of my work in school or at my job” (not shown).

Humility and Universalism-Nature. *Universalism-nature* values emphasize working to preserve the natural environment against threats, an active stance that conflicts with *humility*. Consistent with this contrast, *universalism-nature* values correlate more positively than *humility* values with following politics (Table 8) and with agreeing that voluntary organizations are important in one’s life (not shown).

Conformity-Interpersonal and Universalism-Nature. Unlike *universalism-nature*, *conformity-interpersonal* stresses avoiding negative interpersonal reactions. Joining a voluntary

organization can promote nature, but may risk interpersonal conflict with other volunteers.

Consistent with this reasoning, *universalism-nature* correlates more positively than *conformity-interpersonal* with agreeing that voluntary organizations are important in one's life (Table 8).

Conformity-interpersonal, concerns personal relationships and correlates negatively with following politics; *universalism-nature* concerns the wider world and correlates positively (not shown).

Universalism-Nature and Universalism-Concern. *Universalism-concern* values stress commitment to equality and justice. This is especially relevant to attitudes toward groups like immigrants or homosexuals. Thus, as expected, *universalism-concern* correlates more positively than *universalism-nature* with believing that immigrants deserve the same rights as citizens (Table 8) and that homosexual couples deserve the same rights as married couples (not shown).

Universalism-Concern and Universalism-Tolerance. *Universalism-tolerance* values stress accepting and understanding those with life-styles and beliefs different from one's own. However, they lack the element of concern for others' welfare central to *universalism-concern* values. Consistent with this distinction, *universalism-concern* values correlate more positively than *universalism-tolerance* values with agreeing that "... government should reduce differences in income..." (Table 8). Moreover, women accord more importance than men to *universalism-concern values*, but *universalism-tolerance* values are unrelated to gender (not shown).

Universalism-Tolerance and Benevolence-Caring. *Benevolence-caring* values emphasize devoting oneself to the welfare of ingroup members. They focus on the narrow circle of family and friends rather than on the well-being of others in the wider society. Consistent with this reasoning, *universalism-tolerance* values correlate more positively than *benevolence-concern* values with believing that immigrants deserve the same rights as citizens (Table 8) and with following politics closely (not shown). But *benevolence-concern* values are more important to women, whereas *universalism-tolerance* values are unrelated to gender (not shown).

Benevolence-Caring and Benevolence-Dependability. Both benevolence subtypes stress promoting ingroup members' welfare. They differ in the greater stress of *benevolence-caring* on devotion to practical and emotional needs and of *benevolence-dependability* on being reliable when called upon. The need for close emotional bonds remains strong or even increases with age but the need to be the one on whom others rely may decrease. Consistent with this reasoning, *benevolence-caring* correlates positively and *benevolence-dependability* negatively with age (Table 8). Reflecting a stronger female specialization on care-giving, *benevolence-caring* also correlates more positively than *benevolence-dependability* with being female (not shown)..

Benevolence-Dependability and Self-Direction-Thought. We have now come full-circle back to the start. For those who emphasize *self-direction-thought*, Which stresses individual freedom to cultivate own ideas and abilities, family is unlikely to be central. Family may be more central for those who emphasize *benevolence-dependability*, although friends may be more central for them. In line with this reasoning, *self-direction-thought* correlates more negatively than *benevolence-dependability* with agreeing that family should be a person's main priority in life (Table 8). However, *self-direction-thought* correlates more positively than *benevolence-dependability* with viewing opportunities for initiative as critical in choosing a job (not shown).

The above comparisons demonstrate that every single value has significantly stronger or weaker correlations than its adjacent values with at least two of the 22 external variables we considered. This increases our confidence in the external validity of the 19 values. Might the correlation comparisons with external variables suggest which response scale, the 6pt or 11pt, is preferable? As with that the structural analyses, the two scales provided very similar outcomes. Of the 47 significant correlation differences we examined, 23 were larger with one scale, 22 with the other, and two were equal.

Conclusions

The current research refined the theory of basic individual values by building on the central assumption of the original theory, the idea that values are arrayed on a circular motivational continuum. Our study contributes to a renewed interest in distinguishing motivational orientations within social and personality psychology (Grouzet, et al., 2005; Kenrick, et al., 2010). The refined theory partitions the continuum into a set of 19 meaningful, conceptually distinct values intended to provide greater universal heuristic and predictive power. The research supported the discrimination of the 19 values with data from 15 samples in ten countries. It also revealed a consistent ordering of these values around the circular continuum that is consistent with the motivational order of the original theory, with one exception. The order of benevolence values and universalism values reversed. Further research is necessary to assess our tentative explanation of this reversal.

Evidence supporting the circular motivational continuum implies that various ways of partitioning the circle are legitimate. If researchers keep in mind that values form a continuum, they can choose the number and sets of values into which to partition the continuum according to the aims of their research. The current MDS results support partitioning into 19, or 10, or four, or even two (e.g., growth vs. self-protection). The study demonstrates that it is possible to distinguish between various levels of abstraction within a motivational hierarchy. Depending on the required precision, researchers can derive hypotheses based on the different levels of motivational orientation that the theory provides. For example, an investigator interested in broad approach vs. avoidance motivation may be satisfied with the differentiation of growth vs. self-protection. However, predicting negative intergroup stereotypes or environmental behaviors would require a more differentiated treatment of values (separating security and universalism into their respective components). In general, more fine-tuned partitionings are likely to yield more precise understanding and prediction of the relations between values and other variables.

In past research, though only ten values were assessed, CFA often suggested the need to combine some of the adjacent values in the circle (e.g., Davidov et al. 2008; Perrinjaquet, et al. 2007). It is therefore striking that both CFA and MDS discriminated the full set of 19 values. The narrower and sharper definition of each value enabled us to generate items to tap each one that correlated less with other values. The successful application of CFA to discriminate 19 values means that researchers who wish to use structural equation modeling with factor scores for the values can do so.

The new instrument that was designed to operationalize the refined theory has been validated across diverse samples in ten countries. This instrument, unlike its predecessor, the PVQ40, consists of one sentence per item. This eliminates a problem that respondents sometimes report, wanting to give different responses to the two sentences in the same item. Respondents also require less time to complete each item. Although both the 6pt and 11pt response scales yielded quite similar results, the high proportion of missing data with the latter leads us to recommend only the 6pt scale.

We noted in passing the existence of a possible facet of values suggested by the MDS in addition to the type of motivation. Values differ systematically in the extent to which they are concrete/abstract, central/peripheral to self, and implicated in everyday social interaction. This may constitute another facet of values. We noted that both tradition and universalism-nature are relatively abstract, peripheral, and infrequently implicated in everyday interaction for most people. They are located in the MDS toward the periphery of the circle. Other values in the same higher-order value (e.g., *personal security, benevolence-caring, and -dependability*) are closer to the center of the circle. This central/peripheral conceptual facet that the MDS space represents applies to other values too. Thus, achievement, personal security, and interpersonal conformity are conceptually and empirically quite central, and power is more peripheral. Development of this topic is beyond the scope of the current article.

We examined the external validity of the refined values theory in three ways. First, we assessed whether the subtypes of each broad value increased our understanding of past empirical associations of that value. We examined the associations of the subtypes with a background variable that might influence it and compared them with the past associations of the broad value. In each case, the findings shed new light on the facets of the broad value that accounted for its past associations. Second, we compared the 19 refined values with the 10 combined values that represented the original theory in predicting beliefs, using hierarchical linear modeling. The refined theory provided greater and more precise insight into the value underpinnings of the beliefs that lots of money is necessary to get ahead in life and that homosexuals deserve equal rights. Finally, we tested whether each value in the refined value circle, compared with its adjacent values, contributed uniquely to the understanding and prediction of at least two external variables. Correlation differences between adjacent values confirmed their uniqueness.

Limitations and Future Research

This study included samples with varying educational and occupational levels from countries in different world regions. Nonetheless, most respondents were relatively well-educated and most countries were relatively high in socio-economic level. There is a need to evaluate the theory with less-educated samples, in countries with lower socio-economic profiles, and in world regions not yet studied (e.g., sub-Saharan Africa, the Far East, Latin America).

Because we dropped items that were problematic, we measured nine values with only two items each. To increase reliability of measurement, it is desirable to replace the dropped items with others that measure these values more effectively. At the same time, it may also be desirable to design a shorter instrument by selecting the two best items for each value, despite the cost in reliability. Such an instrument would more easily fit into large surveys that investigate many topics in addition to basic values. If necessary to increase reliability, some of the 19 values could be collapsed into broader sets, based on the circular continuum.

This research has demonstrated that the refined values theory provides greater precision of prediction and explanation for a diverse set of attitudes and beliefs than the original theory. It is plausible that the theory increases the predictive and explanatory power of values in relation to behavior, but there is yet no empirical evidence to support this assumption. Examining relations of the 19 values to behavior is a critical next step. The refined theory points in greater detail than the original theory to the motivational dynamics that underlie and organize the circle of values. It will be intriguing to investigate the extent to which these more detailed motivational dynamics also organize behaviors.

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Appendix: PVQ5X Value Survey (Male Version) with alpha reliabilities

Instructions

Here we briefly describe some people. Please read each description and think about how much each person is or is not like you. Put an X in the box [Circle the number] to the right that shows how much the person in the description is like you.

HOW MUCH LIKE YOU IS THIS PERSON?
[6 or 11 pt. response scale placed here below]

			6pt	11pt
			α	α
<i>Self-Direction-Thought</i>			.60	.69
SDT1	1 ^A	Being creative is important to him.		
SDT2	24	It is important to him to form his own opinions and have original ideas.		
SDI3	39	Learning things for himself and improving his abilities is important to him.		
<i>Self-Direction-Action</i>			.69	.71
SDA1	18	It is important to him to make his own decisions about his life.		
SDA2	33	Doing everything independently is important to him.		
SDA3	49	Freedom to choose what he does is important to him.		
<i>Stimulation</i>			.71	.73
ST1	10	He is always looking for different kinds of things to do.		
ST2	26	Excitement in life is important to him.		
ST3	41	He thinks it is important to have all sorts of new experiences.		
<i>Hedonism</i>			.72	.73
HE1	3	Having a good time is important to him.		
HE2	31	Enjoying life's pleasures is important to him.		
HE3*	46	He takes advantage of every opportunity to have fun		
<i>Achievement</i>			.72	.63
AC 1	16	He thinks it is important to be ambitious.		
AC2	37	Being very successful is important to him.		
AC3	55	He wants people to admire his achievements.		
<i>Power-Resources</i>			.84	.79
POR1	13	Having the feeling of power that money can bring is important to him.		
POR2	22	Being wealthy is important to him.		
POR3*	43	He pursues high status and power.		
<i>Power-Dominance</i>			.77	.74
POD1	6	He wants people to do what he says.		

POD2*	27	It is important to him to be the most influential person in any group.		
POD3	35	It is important to him to be the one who tells others what to do.		
<i>Face</i>			.62	.61
FAC1	9	It is important to him that no one should ever shame him.		
FAC2	19	Protecting his public image is important to him.		
FAC3*	51	He wants people always to treat him with respect and dignity.		
<i>Security-Personal</i>			.76	.72
SEP1*	12	He avoids anything that might endanger his safety.		
SEP2	25	His personal security is extremely important to him.		
SEP3	54	It is important to him to live in secure surroundings.		
<i>Security-Societal</i>			.75	.76
SES1	2	It is important to him that his country protect itself against all threats.		
SES2	30	He wants the state to be strong so it can defend its citizens.		
SES3	47	Having order and stability in society is important to him.		
<i>Tradition</i>			.85	.84
TR1	17	It is important to him to maintain traditional values or beliefs.		
TR2	38	Following his family's customs or the customs of a religion is important to him.		
TR3	44	He strongly values the traditional practices of his culture.		
<i>Conformity-Rules</i>			.70	.73
COR1*	15	He believes he should always do what people in authority say.		
COR2	28	It is important to him to follow rules even when no-one is watching.		
COR3	40	Obeying all the laws is important to him.		
<i>Conformity-Interpersonal</i>			.71	.69
COI1	4	It is important to him to avoid upsetting other people.		
COI2	21	He thinks it is important never to be annoying to anyone.		
COI3	52	He always tries to be tactful and avoid irritating people.		
<i>Humility</i>			.49	.38
HU1*	7	He tries not to draw attention to himself.		
HU2	34	It is important to him to be humble.		
HU3	50	It is important to him to be satisfied with what he has and not to ask for more.		
<i>Benevolence-Dependability</i>			.63	.78
BED1 ^B	11	It is important to him to be loyal to those who are close to him.		
BED2	42	He goes out of his way to be a dependable and trustworthy		

	friend.		
BED3	56	He wants those he spends time with to be able to rely on him completely.	
<i>Benevolence-Caring</i>			.76 .83
BEC1	23	It's very important to him to help the people dear to him.	
BEC2	32	Caring for the well-being of people he is close to is important to him.	
BEC3*	48	He tries always to be responsive to the needs of his family and friends.	
<i>Universalism-Concern</i>			.72 .77
UNC1	5	Protecting society's weak and vulnerable members is important to him.	
UNC2	29	He thinks it is important that every person in the world have equal opportunities in life.	
UNC3	53	He wants everyone to be treated justly, even people he doesn't know.	
<i>Universalism-Nature</i>			.85 .88
UNN1	8	He strongly believes that he should care for nature.	
UNN2	20	It is important to him to work against threats to the world of nature.	
UNN3	45	Protecting the natural environment from destruction or pollution is important to him.	
<i>Universalism-Tolerance</i>			.60 .63
UNT1*	14	He works to promote harmony and peace among diverse groups.	
UNT2	36	It is important to him to listen to people who are different from him.	
UNT3	57	Even when he disagrees with people, it is important to him to understand them.	

^AThe number preceding each item indicates its order in the survey.

^BBased on the CFA results and its content, BED1 was moved to BEC and relabeled BEC4.

*As the text explains, we dropped these items from the CFA and MDS analyses for both response scales in order to improve the fit of the theoretical model to the observed data. A revised version of the PVQ5X, the PVQ-R, is available from the first author.

Table 1. Conceptual Definitions of Ten Basic Values according to their Motivational Goals and Components of the Definitions that Suggest Subtypes of Values

Value	Conceptual Definition ^A	Definition Components
Self-Direction	Independent thought and action—choosing, creating, exploring	Autonomy of thought Autonomy of action
Stimulation	Excitement, novelty, and challenge in life	Excitement Novelty Challenge
Hedonism	Pleasure and sensuous gratification for oneself.	Single component: Pleasure
Achievement	Personal success through demonstrating competence according to social standards	Personal success Demonstrating competence
Power	Social status and prestige, control or dominance over people and resources	Dominance over people Control of material resources Face: Status and prestige
Security	Safety, harmony and stability of society, of relationships, and of self	Societal security Personal security
Conformity	Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms	Interpersonal: Avoiding upsetting others Compliance with social norms
Tradition	Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide	Single component: Maintaining cultural and religious traditions
Benevolence	Preservation and enhancement of the welfare of people with whom one is in frequent personal contact	Single component: Caring for ingroup members
Universalism	Understanding, appreciation, tolerance and protection for the welfare of <i>all</i> people and for nature	Tolerance Societal Concern Protecting nature

^AAdapted from Schwartz (1994:22)

Table 2. The 19 Values in the Refined Theory, Each Defined in Terms of its Motivational Goal

Value	Conceptual Definitions in terms of Motivational Goals
Self-Direction—Thought	Freedom to cultivate one's own ideas and abilities
Self-Direction—Action	Freedom to determine one's own actions
Stimulation	Excitement, novelty, and change
Hedonism	Pleasure and sensuous gratification
Achievement	Success according to social standards
Power—Dominance	Power through exercising control over people
Power—Resources	Power through control of material and social resources
Face	Security and power through maintaining one's public image and avoiding humiliation
Security—Personal	Safety in one's immediate environment
Security—Societal	Safety and stability in the wider society
Tradition	Maintaining and preserving cultural, family or religious traditions
Conformity—Rules	Compliance with rules, laws, and formal obligations
Conformity—Interpersonal	Avoidance of upsetting or harming other people
Humility	Recognizing one's insignificance in the larger scheme of things
Benevolence—Dependability	Being a reliable and trustworthy member of the ingroup
Benevolence—Caring	Devotion to the welfare of ingroup members
Universalism—Concern	Commitment to equality, justice and protection for all people
Universalism—Nature	Preservation of the natural environment
Universalism—Tolerance	Acceptance and understanding of those who are different from oneself

Table 3. Description of the Samples in the Study

Country	Sample Type	N	% Female	Language	Age mean (sd)	Mode	Response Scale
Finland	Adult	334	65%	Finnish	42.8 (6.1)	Individual written	6 pt.
Germany	Student	325	77%	German	23.4 (5.0)	Group written	6 pt.
Israel	Student	394	65%	Hebrew	25.7 (6.2)	Online	6 pt.
Italy	66% Adult 34% Student	388	59%	Italian	35.6 (14.5)	Individual written	6 pt.
Italy	69% Adult 31% Student	382	58%	Italian	36.2 (14.1)	Individual written	11 pt.
New Zealand	Student	527	68%	English	19.5 (4.2)	Online	6 pt.
New Zealand	Student	141	63%	English	19.3 (2.0)	Online	11 pt.
Poland	45% Adult 55% Student	547	66%	Polish	27.0 (10.0)	Written: Adults-Ind Students-Gp	6 pt.
Poland	66% Adult 34% Student	1295	66%	Polish	32.0 (13.2)	Written: Adults-Ind Students-Gp	11 pt.
Portugal	33% Adult 67% Student	295	58%	Portu- guese	27.0 (10,4)	34% online 66% group written	6 pt.
Portugal	33% Adult 67% Student	297	61%	Portu- guese	28.2 (11.3)	43% online 57% group written	11 pt.
Switzerland	Student	201	70%	German	28.8 (7.7)	Online	6 pt.
Turkey	Student	250	59%	Turkish	21.5 (1.6)	Individual written	6 pt.
Turkey	Student	240	52%	Turkish	21.8 (1.7)	Individual written	11 pt.
United States	Student	443	58%	English	24.0 (7.6)	Online	11 pt.

Table 4. Means and standard deviations of the 57 value items and of the 19 values, and reliability of the 19 values (equally weighting samples)

<i>Value</i>	<i>Item</i>	6pt scale				11pt scale			
		M	SD	M (SD)	IoQ	M	SD	M (SD)	IoQ
Self-Direction- Thought	SDT1	4.32	1.25	4.77	.66	6.71	2.37	7.63	.56
	SDT2	5.02	0.99	(.71)		8.14	1.85	(.80)	
	SDT3	4.98	1.02			8.07	1.95		
Self-Direction- Action	SDA1	5.18	0.95	4.96	.73	8.56	1.84	8.17	.64
	SDA2	4.53	1.20	(.71)		7.43	2.06	(1.36)	
	SDA3	5.17	0.97			8.51	1.80		
Stimulation	ST1	4.23	1.30	4.29	.76	6.77	2.28	6.97	.73
	ST2	4.21	1.35	(.90)		7.13	2.35	(1.65)	
	ST3	4.44	1.25			7.00	2.34		
Hedonism	HE1	5.18	0.96	5.08	.77	8.39	1.93	8.18	.71
	HE2	4.97	1.07	(.80)		7.96	2.04	(1.53)	
	HE3*	3.90	1.40			6.52	2.45		
Achievement	AC1	4.23	1.37	4.08	.75	6.90	2.44	6.75	.68
	AC2	4.01	1.43	(.91)		6.80	2.44	(1.60)	
	AC3	4.02	1.43			6.54	2.58		
Power- Resources	POR1	3.01	1.46	3.05	.85	4.90	2.79	4.98	.83
	POR2	3.09	1.44	(1.22)		5.06	2.65	(2.38)	
	POR3*	3.13	1.51			5.34	2.79		
Power- Dominance	POD1	3.38	1.35	3.12	.78	5.11	2.68	4.84	.74
	POD2*	3.00	1.45	(1.09)		5.10	2.62	(2.23)	
	POD3	2.86	1.33			4.56	2.66		

(continued)

Face	FAC1	4.20	1.35	4.24	.69	6.53	2.45	6.61	.64
	FAC2	4.28	1.26	(.90)		6.69	2.44	(1.76)	
	FAC3*	4.90	1.13			8.20	2.04		
Security- Personal	SEP1*	3.83	1.37	4.64	.75	6.00	2.63	7.62	.74
	SEP2	4.46	1.24	(.83)		7.38	2.30	(1.51)	
	SEP3	4.83	1.09			7.85	2.06		
Security- Societal	SES1	4.18	1.34	4.32	.76	6.83	2.66	7.03	.73
	SES2	4.35	1.34	(.81)		7.20	2.54	(1.15)	
	SES3	4.45	1.13			7.06	2.12		
Tradition	TR1	3.86	1.47	3.67	.86	6.22	2.83	5.83	.83
	TR2	3.56	1.60	(1.12)		5.63	3.15	(2.13)	
	TR3	3.60	1.41			5.65	2.77		
Conformity- Rules	COR1*	2.91	1.29	3.75	.81	4.74	2.67	5.88	.78
	COR2	3.71	1.37	(1.08)		5.79	2.67	(2.09)	
	COR3	3.79	1.34			5.96	2.66		
Conformity- Interpersonal	COI1	4.76	1.20	4.30	.76	7.40	2.38	6.70	.69
	COI2	3.76	1.39	(.85)		5.79	2.63	(1.63)	
	COI3	4.38	1.24			6.91	2.34		
Humility	HU1*	3.57	1.34	4.07	.63	5.26	2.61	6.73	.48
	HU2	4.26	1.34	(.95)		7.12	2.38	(1.84)	
	HU3	3.88	1.34			6.34	2.54		
Benevolence- Dependability	BED2	5.10	1.04	5.10	.66	8.22	1.94	8.13	.68
	BED3	5.10	1.00	(.72)		8.04	2.16	(1.51)	

(continued)

Benevolence-	BEC1	5.41	0.82	5.41	.72	8.67	1.78	8.71	.71
Caring	BEC2	5.36	0.84	(.60)		8.69	1.75	(1.27)	
	BEC3*	5.00	0.99			8.15	1.89		
	BEC4	5.46	0.82			8.78	1.78		
Universalism-	UNC1	4.62	1.15	4.72	.78	7.13	2.40	7.50	.72
Concern	UNC2	4.71	1.24	(.83)		7.52	2.46	(1.59)	
	UNC3	4.82	1.14			7.86	2.17		
Universalism-	UNN1	4.09	1.30	4.02	.87	6.33	2.55	6.34	.83
Nature	UNN2	3.79	1.32	(1.03)		6.11	2.48	(1.91)	
	UNN3	4.17	1.28			6.57	2.46		
Universalism-	UNT1*	3.67	1.36	4.61	.71	5.73	2.58	7.29	.65
Tolerance	UNT2	4.47	1.11	(.83)		7.03	2.10	(1.63)	
	UNT3	4.75	1.09			7.55	2.16		

*Items dropped in CFA and MDS

Note. Means and standard deviations for items are based on centering each person's responses around his or her mean for all 57 items and then adding the overall mean for all respondents to the same scale to restore the range to the original scale (4.26 for the 6pt scale, 6.83 for the 11 pt scale). Thus, the means reflect value priorities. Means calculated for the 19 values are based only on the items included in the CFA and MDS analyses.

IoQ = Index of Quality (Sarlis & Gallhofer, 2007) is a measure of reliability that corresponds to the correlation between the latent variable and the observed variables. The squared IoQ can be interpreted as the percentage of variation in the observed composite score, which can be attributed to the true variable of interest. The IoQ for each value was based only on the items that were retained in the CFA and MDS.

Table 5. Confirmatory factor analyses: Goodness of fit indexes.

Model	χ^2	<i>df</i>	CFI	SRMR	RMSEA (90% CI)
1a. Initial model (6 pt): 57 items, 19 oblique factors, one common factor	10231.26	1367	.869	.046	.045 (.044, .045)
1b. Initial model (11 pt): 57 items, 19 oblique factors, one common factor	13515.55	1367	.843	.078	.056 (.055, .057)
2a. Revised model (6 pt): 48 items, 19 oblique factors, one common factor	5527.24	908	.915	.036	.040 (.039, .041)
2b. Revised model (11 pt): 48 items, 19 oblique factors, one common factor	7702.45	908	.892	.048	.052 (.051, .053)
3a. Second-order model (6 pt): Ten basic values	7195.70	1019	.886	.046	.043 (.042, .044)
3b. Second-order model (11 pt): Ten basic values	9829.18	1019	.860	.057	.056 (.055, .057)

Note. For all χ^2 values, $p < .001$. CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation (CI = Confidence Interval).

Table 6. Standardized regression weights (loadings) for the revised CFA model with 48 items, 19 value factors, and one method factor

Value	Items	6pt Scale Loadings		11pt Scale Loadings	
		Value Factors	Method Factor	Value Factors	Method Factor
Self-Direction-Thought	SDT1	.382	.257	.242	.394
	SDT2	.630	.329	.617	.490
	SDT3	.482	.327	.473	.491
Self-Direction-Action	SDA1	.624	.339	.556	.487
	SDA2	.490	.281	.439	.456
	SDA3	.607	.343	.557	.499
Stimulation	ST1	.474	.254	.313	.402
	ST2	.697	.261	.731	.386
	ST3	.658	.272	.553	.409
Hedonism	HE1	.565	.346	.503	.465
	HE2	.784	.304	.724	.426
Achievement	AC1	.504	.254	.386	.400
	AC2	.731	.255	.622	.387
	AC3	.575	.244	.563	.353
Power-Resources	POR1	.772	.236	.604	.324
	POR2	.809	.237	.685	.327
Power-Dominance	POD1	.624	.248	.381	.336
	POD3	.742	.251	.685	.338
Face	FAC1	.451	.244	.381	.364
	FAC2	.693	.263	.695	.390
Security-Personal	SEP2	.616	.277	.560	.412
	SEP3	.694	.306	.776	.449

(continued)

Security-Societal	SES1	.619	.259	.560	.363
	SES2	.697	.264	.668	.393
	SES3	.548	.301	.583	.427
Tradition	TR1	.728	.239	.707	.347
	TR2	.768	.213	.755	.309
	TR3	.749	.239	.722	.349
Conformity-Rules	COR2	.683	.244	.630	.357
	COR3	.761	.254	.780	.360
Conformity- Interpersonal	COI1	.577	.280	.446	.395
	COI2	.579	.246	.536	.359
	COI3	.646	.267	.663	.397
Humility	HU2	.451	.266	.395	.390
	HU3	.693	.243	.361	.360
Benevolence- Dependability	BED2	.536	.326	.557	.466
	BED3	.557	.321	.640	.445
Benevolence-Caring	BEC1	.464	.392	.651	.501
	BEC2	.642	.385	.657	.514
	BEC4	.672	.390	.539	.510
Universalism-Concern	UNc1	.559	.282	.494	.405
	UNc2	.583	.265	.588	.388
	UNc3	.732	.286	.678	.426
Universalism-Nature	UNn1	.724	.253	.701	.368
	UNn2	.744	.256	.730	.374
	UNn3	.828	.259	.787	.380
Universalism- Tolerance	UNt2	.594	.294	.423	.440
	UNt3	.625	.293	.703	.441

Table 7. Number of Samples of 15 in which (a) Values Formed Distinct Regions or Joint Regions with an Adjacent Value and (b) Items Emerged in their Expected Value Region or in an Adjacent Region in the MDS Analyses

	(a) Values		(b) Items	
	Distinct Value Region	Distinct and/or Adjacent Region	Expected Region	Expected and/or Adjacent Region
Self Direction-Thought	13	15		
SDT1			13	15
SDT2			13	15
SDT3			14	14
Self Direction-Action	15	15		
SDA1			15	15
SDA2			15	15
SDA3			14	15
Stimulation	14	15		
ST1			14	15
ST2			14	15
ST3			13	15
Hedonism	14	14		
HE1			14	15
HE2			14	15
Achievement	15	15		
AC1			15	15
AC2			15	15
AC3			15	15
Power-Resources	13	15		
POR1			15	15
POR2			15	15
Power-Dominance	14	15		
POD1			15	15
POD3			15	15
Face	12	15		
FAC1			13	14
FAC2			13	14
Security-Personal	14	15		

	SEP2			15	15
	SEP3			15	15
Security-Societal		15	15		
	SES1			15	15
	SES2			15	15
	SES3			15	15
Tradition		15	15		
	TR1			15	15
	TR2			15	15
	TR3			14	15
Conformity-Rules		14	15		
	COR2			15	15
	COR3			15	15
Conformity-Interpersonal		14	15		
	COI1			12	14
	COI2			10	14
	COI3			15	15
Humility		13	14		
	HU2			13	15
	HU3			12	14
Benevolence-Dependability		13	14		
	BED2			14	15
	BED3			13	14
Benevolence-Care		15	15		
	BEC1			15	15
	BEC2			15	15
	BEC4			15	15
Universalism-Concern		15	15		
	UNC1			13	14
	UNC2			14	14
	UNC3			15	15
Universalism-Nature		15	15		
	UNN1			15	15
	UNN2			14	15
	UNN3			15	15
Universalism-Tolerance		15	15		
	UNT2			15	15
	UNT3			15	15

Table 8. Correlation Differences between Adjacent Values with External Variables

Correlations with Values Compared	# Samples as Predicted	Variable Correlated with Values (Response scale)	
SDThght .22	SDAct .14	13	In choosing a job, how important would it be that the job enable you to use your own initiative? (1-not at all important, 7-extremely important)
SDAct -.02	STim -.29	14	Age
STim .01	HEdon -.14	15	Going to war is sometimes the only solution to international problems. (1-completely disagree, 7-completely agree)
HEdon -.12	ACHiev .31	15	My goal in my classes or job is to perform better than the other students or workers. (1-not at all true of me, 7-completely true of me)
ACHiev .21	PODom .00	15	I strive to make sure that others think well of my work in school or at my job. (1-completely disagree, 7-completely agree)
PODom .13	PORes .43	15	In choosing a job, how important would it be that the job provide a high income? (1-not at all important, 7-extremely important)
PORes .36	FAce .12	15	It is hard to get ahead in life without a lot of money. (1-completely disagree, 7-completely agree)
FAce .01	SEPers .33	13	The police should have more powers so they can protect us better against crime (1-completely disagree, 7-completely agree)
SEPers .03	SESoc .21	15	Going to war is sometimes the only solution to international problems. (1-completely disagree, 7-completely agree)
SESoc .24	TRadtn .59	15	In your life, how important is religion? (1-not at all important, 7-extremely important)
TRadtn .45	CORules .13	15	Apart from when you are at religious services, how often if at all do you pray? (1-never, 7-every day; 2-6 labeled frequencies)



Figure 1. Proposed circular motivational continuum of 19 values with sources that underlie their order.

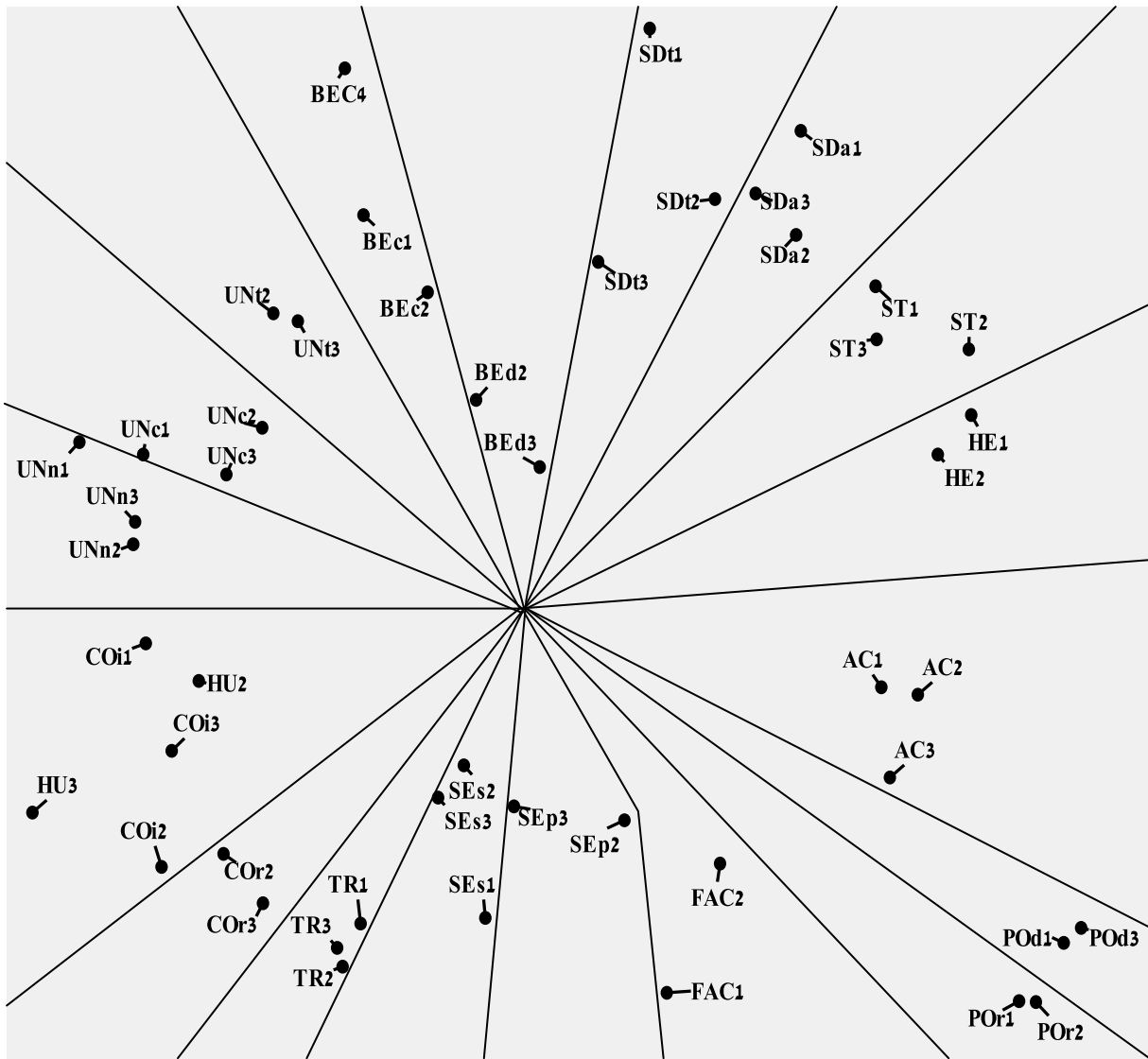


Figure 2. Multidimensional scaling analysis of 48 items based on the pooled within-sample covariance matrix for nine countries that responded to the 6pt scale. $N \sim 3250$, Stress 1 = .19, Dispersion Accounted for = .96, Tucker's Coefficient of Congruence = .98