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A German value questionnaire developed on a lexical basis: Construction and steps toward a validation

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The factorial structure of a German taxonomy of human values found on a lexical basis in a previous study (Renner, 2003) was replicated in an independent Austrian sample (N = 1,160) and a 54 item questionnaire was constructed on the basis of the subfactors (study 1). In study 2, the dimensionality of the questionnaire was examined in another sample (N = 421) and corroborated by confirmatory factor analysis (CFA). Both samples were nearly representative with regard to gender, age group, and educational level. Most hypotheses about correlations with the Schwartz Value Survey (SVS) and measures of religious, political, and health-related attitudes were confirmed. The new instrument accounted for religious, patriotic, and nationalistic attitudes that are typical for German speaking countries better than the SVS did. For less culture-dependent, attitudes the SVS yielded higher correlations. It is suggested that the new instrument will be used as a culture specific measure of value orientations for German speaking countries.

Human values are personal and societal, cognitive and emotional, normative standards (Kluckhohn, 1951; Rokeach, 1973; Scholl-Schaaf, 1975; Schwartz, 1994) or generalizations of situation-specific goals, attitudes, and evaluations (Krampen, 2000; Rokeach, 1973; Schwartz, 1992). Although values reflect general human needs (Kluckhohn, 1951; Schwartz & Bilsky, 1987), they are acquired through learning and socialisation (Hofstede, 1991; Scholl-Schaaf, 1975; Schwartz, 1994) and can therefore be expected to be culture specific (Kluckhohn, 1951; Hofstede, 1984, 1991 and Triandis, 1995).

Inspite of this fact, previous instruments for the assessment of value orientations, e.g. the Schwartz Value Survey (SVS) (Schwartz, 1992) or Allport Vernon and Lindzey's (1951; German: Roth, 1972) Study of Values, were translated from an original version to other languages. Schwartz and Bardi (2001) reported that the value dimensions of the SVS were replicated in 61 nations and claimed that they had found a universal structure of values being applicable worldwide (cf. Schwartz & Bilsky, 1987). Translating questionnaires from one language into another implies the danger of overlooking culture-specific concepts, however.

A promising alternative toward developing a culture-specific questionnaire of human values is the "lexical approach" which starts from the assumption that individual differences which are important for people's lives and societal coexistence will be expressed by a single word in the language of the culture being examined. The more important such a difference the more likely it is that a specific word for it exists. Going back to Francis Galton, the lexical approach has influenced the search for human traits and has led to the establishment of the Big Five factors of personality.

On the basis of the lexical approach, culture specific taxonomies of human values and value related concepts have been developed: Angleitner and Ostendorf (1994) and Ostendorf (1990, 1996) compiled a taxononomy of personality descriptive terms in German, with "worldviews and attitudes" being one of the categories. This part of the taxonomy comprised political and religious concepts, whereas most definitions of human values also encompass terms related to personal and societal well-being, health, and success (Asendorpf, 2004; Rokeach, 1973; Schwartz, 1992). Similarly, Saucier's (2000) lexical analysis of so-called "isms" in the United States referred to ideological concepts. Cawley, Martin and Johnson (2000) examined "virtues" which are personality traits related to values. Ashton, Lee and Son (2000) reported that in lexical studies of human traits, for example in Hungarian, Italian, and Korean, a

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sixth factor in addition to the Big Five has been found which comprised value related traits like integrity, trustworthiness, or truthfulnesss. Recently, Aavik and Allik (2002) developed a taxonomy of human values on a lexical basis in Estonian and Renner (2003) in German; Renner, Peltzer and Phaswana (2003) did so in Northern Sotho, which is an indigenous language spoken by Black people in the Republic of South Africa.

In the present paper I am going to describe the development and first steps toward the validation of a culture specific questionnaire of human values in German which has been designed on the basis of the lexical taxonomy presented by Renner (2003). In study 1, the hypothesis was tested on whether the dimensions for value descriptive nouns found in a predominantly student sample previously (Renner, 2003) could be replicated in a near-representative sample. Study 2 was designed to assess the validity of the new instrument.

STUDY 1: replication of previous results and construction of the questionnaire

For details on how the value taxonomy was compiled and its factorial structure examined see Renner (2003). According to written instructions, two raters extracted 783 nouns and 684 adjectives from a German lexicon, and six others reduced the lists to 383 nouns and 299 adjectives. The participants rated these terms with regard to their subjective importance as guiding motives in life.

METHOD

Participants

The sample[1] (N = 1160) was stratified with regard to gender, age group (≤ 45 years vs. > 45 years) and educational group (with vs. without high-school diploma) in accordance to the general population. For this purpose, national census data were employed. The percentage of men and women, people above and below age 25, and of persons with and without high-school education was arranged in a cross-table. According to these percentages, the respective proportions of the sample were determined. University students, who received extra credits for their exams recruited the participants in Carinthia, a region in Southern Austria. A total of 603 women and 557 men participated. Their mean age was 42.2 years (SD = 14.5; range 16 to 92 years). Participants were not paid for their task.

[1] 190 of the 1,160 participants were included in the study described in Renner (2003).

Questionnaire

The questionnaire consisted of the 383 nouns and the 299 adjectives which were supplied with an 11-point Likert scale ranging from -5 (extreme disapproval) through 0 (neutral evaluation) to +5 (extreme approval). The leaflet comprised ten pages, the first page giving the instructions. The second page was designed to assess socio-demographic data; on page three to ten, the nouns and the adjectives were arranged in two columns, and the Likert scale was arranged at the right hand side of the words. Questionnaires were administered by the students in single sessions without a time limit. Only the nouns were used for the purpose of test construction.

Statistical methods

As orthogonal factors provide optimal reduction of information (Bortz, 1999), principal components analysis with Varimax rotation was computed. The number of components was determined by the scree criterion, taking the recommendations by Fürntratt (1969) into account. Parallel analysis (Horn, 1965; O'Connor, 2000) in the previous study yielded far too many factors which did not meet the criterion by Fürntratt (1969). Therefore, this method was disregarded for determining the number of factors to retain. As items with low communalities did not appear to be suitable candidates for test items, according to the method suggested by Oishi, Diener, Suh & Lucas (1999), only items with communalities of h^2 = .25 were retained and the factor analysis repeated. Next, item difficulties were computed and items with 15% or 85% affirmative ratings removed. Only items without substantial multiple loadings (a<.30 on the second factor) and with factor loadings of a<.45 were included in the further analysis; items with item-total correlations of r_{it} <.50 were removed.

In accordance with the procedure used by Saucier and Ostendorf (1999) for determining subdimensions of the Big Five, in a first step, we aimed at replicating the five broad factors found by Renner (2003) in an independent sample. Only after they had been replicated, in a second step, we extracted subdimensions. This procedure seemed more dependable than a single step hierarchical one. For determining subdimensions, the remaining items of each factor were factor analysed again by prinicipal component analysis with Varimax rotation. The same criteria were used for determining the number of components. All the items which had no substantial multiple loadings (a<.30) on the subdimensions were retained in the final questionnaire.

RESULTS

The first principal component analysis yielded the following eigenvalues for the first 15 components: 69.3, 22.4, 14.8, 9.7, 7.0, 5.4, 5.0, 4.4, 4.0, 3.6, 3.3, 3.2, 3.0, 3.0, 2.9. Therefore, five factors were extracted which met the requirements by Fürntratt (1969) and explained a total of 32.3% or 18.3, 5.9, 3.9, 2.5 and 1.8% of the variance respectively. 94 items (mostly negations like antisemitism - Antisemitismus or words difficult to understand like egalitarianism - Egalität) had communalities <.25 and were removed. 289 nouns remained and their ratings were factor analyzed again. These were the eigenvalues of the first 15 components: 64.4, 18.3, 13.5, 7.9, 6.1, 4.4, 4.0, 3.8, 3.1, 2.9, 2.8, 2.7, 2.6, 2.4, 2.4. Five factors were extracted again which explained a total of 38.1% or 22.3, 6.3, 4.7, 2.7 and 2.1% of the variance respectively. The highest 10 loadings on each factor and the communalities can be seen from Table 1.

Table 1

Rotated component matrix from the ratings of the nouns by $N = 1{,}160$ participants (highest 10 loadings on each factor)

German noun	English translation	I	II	III	IV	V	h^2
Factor I: Intellectualism							
Humanität	Humanity	0.64	0.20	0.14	-0.01	0.04	0.48
Humanismus	Humanism	0.62	0.15	0.13	0.03	0.02	0.43
Weltoffenheit	Openmindedness	0.62	0.20	0.05	0.15	-0.02	0.45
Völkerverständigung	Understanding among nations	0.61	0.25	0.13	-0.09	0.05	0.46
Vielfalt	Variety	0.60	0.16	0.03	0.15	-0.08	0.41
Kritikfähigkeit	Powers of discernment	0.57	0.20	-0.07	0.02	-0.05	0.38
Objektivität	Objectiveness	0.57	0.18	0.01	0.06	0.19	0.40
Kultur	Culture	0.57	0.13	0.15	-0.05	0.06	0.37
Selbsterkenntnis	Self-knowledge	0.56	0.32	0.06	0.13	-0.02	0.44
Individualismus	Individualism	0.56	0.07	-0.03	0.18	-0.10	0.36
and 75 others							
Factor II: Harmony							
Familiensinn	Sense of family	-0.06	0.61	0.27	0.00	0.18	0.48
Geborgenheit	Warmth	0.04	0.60	0.23	0.18	0.10	0.46
Harmonie	Harmony	0.17	0.60	0.21	0.16	0.14	0.47
Freundlichkeit	Friendlyness	0.12	0.59	0.11	0.15	0.08	0.41
Lebensfreude	Joie de vivre	0.28	0.59	-0.01	0.12	0.06	0.44
Gemeinschaft	Community	0.16	0.58	0.21	0.13	0.13	0.43
Familie	Family	-0.07	0.57	0.24	-0.02	0.15	0.41
Gemeinsamkeit	Community	0.18	0.56	0.18	0.16	0.12	0.42
Kindesliebe	Child love	0.15	0.56	0.18	0.00	0.16	0.40
Zusammenhalt	Cohesion	0.17	0.56	0.18	0.15	0.25	0.46
and 62 others							
Factor III: Religiosity							
Gottesgnade	Blessing of God	0.01	0.12	0.79	-0.04	0.16	0.67
Gottvertrauen	Faith in God	0.06	0.15	0.77	-0.08	0.07	0.63
Gottesglaube	Belief in God	0.04	0.14	0.77	-0.06	0.12	0.63
Glaubensfestigkeit	Firmness of faith	0.10	0.14	0.75	-0.02	0.11	0.60
Frömmigkeit	Piety	-0.06	0.05	0.74	0.12	0.17	0.60
Glaubensstärke	Strength of faith	0.12	0.14	0.74	-0.01	0.07	0.58
Gottesfürchtigkeit	Fear of God, piety	-0.01	0.10	0.74	0.02	0.19	0.59
Frommheit	Piety	-0.07	0.07	0.74	0.10	0.18	0.59
Glaube	Faith	0.09	0.17	0.73	-0.05	0.06	0.57
Religiosität	Religiosity	0.07	0.06	0.73	-0.03	0.13	0.56
and 42 others							

Table 1 - continued

German noun	English translation	I	II	III	IV	V	h^2
Factor IV: Materialism							
Reichtum	Wealth	0.07	-0.03	0.02	0.70	0.10	0.51
Profit	Profit	0.08	-0.01	-0.02	0.70	0.20	0.53
Gewinn	Yield, earnings	0.06	0.08	-0.01	0.67	0.15	0.48
Vermögen	Fortune	0.05	0.06	-0.01	0.67	0.23	0.50
Karriere	Career	0.10	0.09	-0.02	0.66	0.11	0.46
Wohlhabenheit	Being well-off	0.08	0.02	0.10	0.66	0.19	0.49
Triumph	Triumph	0.09	-0.02	0.07	0.65	0.16	0.46
Wohlstand	Affluence, prosperity	0.07	0.05	0.04	0.63	0.21	0.45
Komfort	Comfort	0.10	0.27	-0.02	0.60	0.13	0.45
Lifestyle	Life style	0.16	0.05	0.07	0.58	-0.02	0.37
and 35 others							
Factor V: Conservatism							
Nationalbewußtsein	National identity	-0.03	0.11	0.23	0.25	0.68	0.59
Vaterlandsliebe	Patriotism	-0.01	0.15	0.29	0.22	0.67	0.61
Nationalgefühl	National consciousness	-0.01	0.12	0.24	0.25	0.67	0.58
Tradition	Tradition	0.07	0.13	0.28	0.13	0.61	0.50
Traditionsbewußtsein	Sense of Tradition	0.09	0.13	0.29	0.15	0.61	0.51
Pflichterfüllung	Discharge of duties	0.09	0.29	0.22	0.17	0.59	0.53
Volkstümlichkeit	Popularity, tradition	0.00	0.12	0.43	0.11	0.59	0.57
Patriotismus	Patriotism	0.10	-0.04	0.18	0.18	0.58	0.41
Pflicht	Duty	0.11	0.23	0.22	0.17	0.57	0.48
Pflichtgefühl	Sense of duty	0.12	0.32	0.23	0.12	0.57	0.51
and 25 others							

Factor I comprises humanitarian, cultural or intellectual values and has been termed "Intellectualism". Factor II was called "Harmony" and pertains to value concepts related to emotional warmth and security and to an inner and outer state of equilibrium. Some concepts which are related to love and the joys of life and which emphasize closeness to other people must be distinguished from hedonistic and more egocentric values belonging to Factor IV. Factor III ("Religiosity") comprises themes related to religious belief, remission of sins and, in a few cases, charity. Factor IV ("Materialism") pertains to economic and societal success and to hedonistic goals. Factor V ("Conservatism") comprises values related to tradition, nationalism, security of the state, and societal adjustment.

168 of the 289 items had sufficient factor loadings (a> .45). 28 of these were excluded on the basis of their item difficulties and 9 others because of poor item-total correlations (e.g. Demut - humility, Friede - peace, Faschismus - fascism). Another 38 items had substantial loadings (a> .30) on more than one factor and therefore were removed. 93 items remained for the extraction of the subfactors.

Table 2 gives the rotated factor loadings of the principal components analysis for the items belonging to Factor I (Intellectualism).

The highest eigenvalues were 10.4, 1.7, 1.4, 1.3, 1.1, 0.9... Therefore, from Factor I two subdimensions were extracted, one of them representing a broad-minded and understanding approach to life ("Open-Mindedness"), the other one standing for cultural values ("Culture"). The two subdimensions explain a total of 41.7% of the variance or 35.8, and 5.9%, respectively. For reasons of economy, from Open-Mindedness, only eight items which had the highest loadings were included in the final questionnaire. In the case of Culture, only three items were retained for psychometric reasons. Although similar in content, they nevertheless represent different facets of cultural values in the German language.

The rotated factor loadings for the subdimensions from Factor II (Harmony) can be seen from Table 3.

In this case the highest eigenvalues were 8.7, 1.4, 1.1, 0.9, 0.9, 0.8...; although a two-factor solution was the first choice, three factors were extracted according to the criterion by Fürntratt (1969), and with respect to the content of the items. The subfactors "Community" and "Family"

Table 2

Rotated component matrix of subfactors from Factor I "Intellectualism"

German noun	English translation	Open-mindedness	Culture	h^2
Weltoffenheit*	Openmindedness	0.66	0.20	0.48
Erkenntnis*	Understanding	0.65	0.04	0.42
Vielfalt*	Variety	0.64	0.15	0.43
Erkenntnisfähigkeit*	Ability to understand	0.63	0.11	0.41
Völkerverständigung*	Understanding among nations	0.63	0.27	0.47
Umsicht*	Circumspection	0.61	0.26	0.44
Völkerfreundschaft*	Friendship among nations	0.60	0.23	0.41
Sinn*	Sense	0.57	0.17	0.35
Wirklichkeitssinn	Sense of reality	0.57	0.13	0.34
Wertschätzung	Esteem	0.56	0.20	0.35
Zivilcourage	Courage of one's convictions	0.56	0.22	0.36
Selbstbestimmung	Self-determination	0.54	0.18	0.32
Wissbegierde	Curiosity	0.54	0.19	0.32
Objektivität	Objectiveness	0.53	0.32	0.38
Humanität	Humanity	0.53	0.51	0.54
Humanismus	Humanism	0.52	0.46	0.48
Liberalismus	Liberalism	0.52	0.19	0.31
Individualismus	Individualism	0.50	0.28	0.32
Loyalität	Loyalty	0.49	0.26	0.31
Umweltverträglichkeit	Environmental compatibility	0.48	0.27	0.31
Kritikfähigkeit	Powers of discernment	0.48	0.36	0.36
Ethik	Ethics	0.47	0.31	0.31
Integrität	Integrity	0.47	0.30	0.31
Konsens	Consensus	0.46	0.28	0.29
Idealismus	Idealism	0.45	0.31	0.31
Sozialkritik	Social criticism	0.45	0.33	0.31
Kulturerbe*	Cultural heritage	0.16	0.90	0.84
Kulturgut*	Cultural assets	0.16	0.90	0.83
Kultur*	Culture	0.23	0.84	0.75

Note: * indicates the items included in the final version of the questionnaire.

stand for interpersonal and familial warmth, and "Love of Life" represents personal well-being which still takes into account the interests of others. The three subdimensions together explain 53.1% of the variance or 41.5, 6.6, and 5.0% of the variance, respectively.

In Table 4 the rotated component matrix of subdimensions from Factor III (Religiosity) is given.

Table 3

Rotated component matrix of subfactors from Factor II "Harmony"

German noun	English translation	Community	Family	Love of Life	h^2
Gemeinschaft*	Community	0.83	0.21	0.19	0.77
Gemeinschaftsgeist*	Sense of community	0.80	0.22	0.12	0.70
Gemeinsamkeit*	Community	0.76	0.24	0.19	0.67
Zusammengehörigkeit	Solidarity	0.58	0.31	0.32	0.54
Zusammenhalt	Unity, team spirit	0.57	0.33	0.36	0.56
Einigkeit	Unity	0.49	0.31	0.13	0.36
Versöhnung	Reconciliation	0.43	0.32	0.39	0.43
Familiensinn*	Sense of family	0.25	0.76	0.07	0.65
Kindesliebe*	Child love	0.16	0.69	0.24	0.56
Elternliebe*	Parental love	0.27	0.61	0.13	0.46
Friedensbereitschaft*	Desire for peace	0.17	0.59	0.27	0.45
Geborgenheit	Warmth	0.36	0.58	0.23	0.52
Harmonie	Harmony	0.32	0.52	0.34	0.49
Fairness	Fairness	0.23	0.45	0.34	0.37
Freundlichkeit	Friendlyness	0.35	0.45	0.31	0.43
Lebensfreude*	Joie de vivre	0.13	0.17	0.85	0.77
Lebenskraft*	Vitality	0.15	0.14	0.83	0.72
Wohlbefinden*	Well-being	0.19	0.22	0.62	0.47
Liebe*	Love	0.25	0.27	0.54	0.43
Vertrauen	Trust	0.38	0.31	0.45	0.45
Sicherheit	Security	0.35	0.31	0.35	0.34

Note: * indicates the items included in the final version of the questionnaire.

Table 4

Rotated component matrix of subfactors from Factor III "Religiosity"

German noun	English translation	Faith	Grace	h^2
Religion*	Religion	0.85	0.26	0.80
Gottesglaube*	Blessing of God	0.85	0.35	0.84
Glaube*	Faith	0.83	0.34	0.81
Glaubensfestigkeit*	Firmness of faith	0.83	0.36	0.81
Gottvertrauen*	Faith in God	0.82	0.37	0.82
Gottesgnade*	Blessing of God	0.81	0.40	0.81
Religiosität*	Religiosity	0.80	0.27	0.72
Glaubensstärke*	Strength of faith	0.80	0.37	0.78
Christlichkeit*	Christianity	0.76	0.24	0.64
Vergebung*	Forgiveness	0.21	0.78	0.65
Gnade*	Grace	0.25	0.74	0.61
Seelenheil*	Salvation	0.27	0.71	0.58
Erlösung	Salvation	0.33	0.65	0.53
Sündenvergebung	Forgiveness of sins	0.42	0.59	0.53

Note: * indicates the items included in the final version of the questionnaire.

Table 5

Rotated component matrix of subfactors from Factor IV "Materialism"

German noun	English translation	Property	Success	Hedonism	h^2
Wohlstand*	Affluence, prosperity	0.85	0.11	0.22	0.78
Wohlhabenheit*	Being well-off	0.81	0.11	0.27	0.73
Vermögen*	Fortune	0.79	0.22	0.24	0.72
Besitz	Possession	0.63	0.39	0.06	0.56
Eigentum	Property	0.62	0.39	0.05	0.54
Profit	Profit	0.60	0.30	0.37	0.58
Gewinn	Yield, earnings	0.54	0.45	0.29	0.58
Aufstieg*	Advancement	0.20	0.77	0.11	0.65
Erfolg*	Success	0.29	0.72	0.13	0.62
Karriere*	Career	0.25	0.69	0.32	0.65
Image	Image	0.16	0.58	0.40	0.53
Ertrag	Yield	0.47	0.49	0.14	0.48
Hochgenuss*	Absolute delight	0.18	0.10	0.80	0.69
Genuss*	Delight	0.14	0.12	0.78	0.64
Lifestyle	Life style	0.10	0.44	0.50	0.46
Komfort*	Comfort	0.37	0.35	0.50	0.51
Stolz*	Pride	0.30	0.22	0.48	0.37

Note: * indicates the items included in the final version of the questionnaire.

Table 6

Rotated component matrix of subfactors from Factor V "Conservatism"

German noun	English translation	Nationalism	Defence	Duty	h^2
Nationalbewusstsein*	National identity	0.80	0.35	0.18	0.79
Nationalgefühl*	National consciousness	0.79	0.35	0.19	0.79
Vaterlandsliebe*	Love of one's country	0.72	0.41	0.25	0.74
Traditionsbewusstsein*	Sense of tradition	0.72	0.12	0.38	0.68
Tradition*	Tradition	0.71	0.10	0.39	0.67
Patriotismus*	Patriotism	0.69	0.25	0.08	0.54
Verteidigungs-bereitschaft*	Willingness to defend	0.20	0.87	0.17	0.83
Verteidigung*	Defence	0.23	0.86	0.19	0.84
Landesverteidigung	National defence	0.40	0.64	0.16	0.60
Pflicht*	Duty	0.21	0.22	0.89	0.89
Pflichterfüllung*	Discharge of duties	0.21	0.26	0.88	0.88
Vollbeschäftigung	Full employment	0.37	0.04	0.44	0.34

Note: * indicates the items included in the final version of the questionnaire.

As the highest eigenvalues were 8.7, 1.2, 0.7, 0.6, 0.5, 0.5..., two subfactors were extracted which explained 70.9% of the variance together, or 62.2 and 8.6%, respectively. The first subdimension ("Faith") stands for a firm religious belief, the second one ("Grace") for experiencing the love of God, redemption, and salvation. In order to achieve a sufficient length of the scale with regard to its reliability, six items were included in the questionnaire although their secondary loadings were slightly higher than $a = .30$.

For Factor IV (Materialism), the factor loadings of the subcomponents are summarized in Table 5.

With the highest eigenvalues being 7.6, 1.4, 1.2, 0.9, 0.7, 0.7..., three subfactors were extracted. A four factor solution was not satisfactory. The three subcomponents together explained 59.3% of the variance or 44.4, 8.1, and 6.8%, respectively. Subdimensions I ("Property") and II ("Success") represent economic and professional advantage, subdimension III ("Hedonism") stands for pursuing personal enjoyment, possibly with little regard to other people's interests. Two items, career and comfort, were included in order to achieve sufficient reliabilities, although the secondary loadings minimally exceeded $a = .30$.

From Table 6 the rotated component matrix of the subdimensions from Factor 5 (Conservatism) can be seen.

Table 7

Descriptive statistics and internal consistencies ($N = 1\,160$; 11 point scale -5 ... +5)

Scale	Number of items	Cronbach's α	*M*	*SD*
1. Intellectualism	*11*	*.88*	*2.93*	*1.12*
1.1 Open-Mindedness	8	.85	3.06	1.10
1.2 Culture	3	.92	2.59	1.80
2. Harmony	*11*	*.87*	*3.88*	*0.90*
2.1 Community	3	.87	3.60	1.12
2.2 Family	4	.74	4.02	1.10
2.3 Love of life	4	.79	4.08	0.93
3. Religiosity	*12*	*.95*	*1.52*	*2.05*
3.1 Faith	9	.74	1.25	2.34
3.2 Grace	3	.74	2.31	1.73
4. Materialism	*10*	*.85*	*2.45*	*1.25*
4.1 Property	3	.89	2.14	1.73
4.2 Success	3	.73	2.73	1.44
4.3 Hedonism	4	.73	2.51	1.33
5. Conservatism	*10*	*.91*	*2.15*	*1.57*
5.1 Nationalism	6	.91	1.88	1.83
5.2 Defence	2	.89	2.28	1.90
5.3 Duty	2	.93	2.83	1.72
Total	*54*			

Table 8

Intercorrelations of the subscales (N = 1,160)

	1.1	*1.2*	*2.1*	*2.2*	*2.3*	*3.1*	*3.2*	*4.1*	*4.2*	*4.3*	*5.1*	*5.2*	*5.3*
1.1	1.00												
1.2	0.55	1.00											
2.1	0.42	0.27	1.00										
2.2	0.39	0.25	0.52	1.00									
2.3	0.50	0.37	0.34	0.52	1.00								
3.1	0.27	0.19	0.32	0.30	0.04	1.00							
3.2	0.33	0.23	0.33	0.28	0.08	0.87	1.00						
4.1	0.25	0.18	0.14	0.27	0.47	-0.04	-0.04	1.00					
4.2	0.36	0.30	0.24	0.24	0.37	-0.01	-0.01	0.53	1.00				
4.3	0.27	0.24	0.30	0.23	0.44	-0.11	-0.08	0.58	0.53	1.00			
5.1	0.24	0.33	0.34	0.26	0.22	0.38	0.34	0.31	0.27	0.33	1.00		
5.2	0.10	0.16	0.12	0.11	0.10	0.12	0.14	0.29	0.23	0.26	0.56	1.00	
5.3	0.21	0.17	0.28	0.30	0.24	0.21	0.18	0.27	0.26	0.24	0.54	0.32	1.00

Note: 1.1 = Open-mindedness, 1.2 = Culture, 2.1 = Community, 2.2 = Family, 2.3 = Love of Life, 3.1 = Faith, 3.2 = Grace, 4.1 = Property, 4.2 = Success, 4.3 = Hedonism, 5.1 = Nationalism, 5.2 = Defence, 5.3 = Duty.

The first eigenvalues were 6.3, 1.2, 1.1, 0.8, 0.8, 0.6..., and thus three subdimensions were extracted which together explained 72% of the variance or 52.6, 10.1, and 8.9%, respectively. The first subdimension "Nationalism" stands for nationalistic, patriotic and traditional values, the second one, "Defence", pertains to defending oneself and the home country. The third subdimension is "Duty"; it comprises values referring to discharging duties, e.g. at the workplace.

Table 7 gives the descriptive statistics and the internal consistencies (Cronbach's α) for the five broad scales and their subscales. Harmony and Intellectualism received the highest ratings, followed by Materialism and Conservatism. Ratings for Religiosity were lowest but in this case the standard deviation was high.

From Table 8 the intercorrelations of the subscales can be seen.

DISCUSSION

The broad scales as well as the subscales of the newly developed questionnaire, have satisfactory internal consistencies. The factors extracted closely resemble the ones found for German nouns by Renner (2003) in a non-representative sample, although they appeared in a different order with regard to the percentage of variance explained. For the purpose of test construction, in the present study, the factors Harmony, Religiosity and Materialism were renamed. Still, the five-factor structure proposed for human values could be replicated in a large representative population and thus it appears to be independent of the sampling procedure. Therefore, the hypothesis of study 1 was confirmed.

As outlined above, the sample was selected carefully with regard to the relative frequency of genders, age-groups, and educational levels according to cross-tables of these variables for the general population. Therefore, the sample used in this study can claim to be near-representative for the population.

The procedure chosen for extracting the factors resembles the one commonly used in psycho-lexical research and the amount of variance explained is similar to the results that were found in replication studies for the Big Five factors of personality on the basis of the lexical approach (Caprara & Perugini, 1994; Szirmák & de Raad, 1994).

Ostendorf (1996) had found two orthogonal dimensions for attitudes and world-views on a lexical basis in German, Religiosity and Conservatism, and both were replicated in the present study. It should also be noted that the five broad value dimensions found on a lexical basis are similar to five of the six value types already described by Spranger (1914/1966): his "Theoretical Type" partly resembles Intellectualism, and his "Social Type" is similar to Harmony; Eduard Spranger's "Religious Type" equals Religiosity and his "Economic Type" resembles "Materialism"; the "Political Type" described by Spranger has similarities with the positive and the negative pole of Conservatism. Only Spranger's "Esthetic Type" is not represented by a single factor found in the present study, where esthetic

values have moderate loadings on Intellectualism. Similarly, in an Austrian study, Polak, Zuba and Zulehner (2000) differentiated between family oriented, religious, work-related, and political values which are similar to four of the dimensions found in the present study: Harmony, Religiosity, Materialism, and Conservatism. These comparisons show that, in the present study, meaningful dimensions were found on an empirical basis, which account well for culture-specific values of German speaking countries.

When looking at the test items, one might argue that important values are missing: First, it must be kept in mind, however, that only variables with maximal factor loadings ("factor markers") are suitable for test construction. "Freedom", for example, which is an important value, has a loading of a = .53 on Harmony, which is substantial but not high enough for a factor marker. Second, many important values have substantial loadings on more than one factor: for example, "Human rights" has a loading of a = .47 on Harmony, and a loading of a = .43 on Intellectualism. Thus, many important values are "blends" of more than one factor. Similarly, among the Big Five, many important personality traits are represented by more than one factor: shyness, for example, is constituted by a "blend" of low Extraversion and high Neuroticism.

STUDY 2: toward a validation of the questionnaire

In order to ascertain the factorial validity of the new questionnaire, a replication study and confirmatory factor analysis in an independent sample seemed advisable (Hypothesis 1).

Renner (2003) found moderate correlations between some of the dimensions from the Schwartz Value Survey (SVS, Schwartz, 1992) and the factor scores from the lexical study. Among the nouns, Conservatism correlated positively with Conformity and Security, and negatively with Self-Direction. The Religiosity factor aligned with Tradition, and the Materialism factor with Hedonism and Power from the SVS. Materialistic values were correlated negatively with Universalism. Hypothesis 2 claims that these findings can be replicated in a near-representative sample. In addition, the relationship between the dimensions of the SVS and the subfactors found in the present study 1 will be examined.

As values can be understood as generalizations of situation-specific attitudes, measures of value orientations are expected to be correlated with attitude scales. As a further step toward the validation of the new questionnaire I therefore derived hypotheses from literature about the relationship of the new value scales with measures of religious, political and health related attitudes and compared the results with those obtained for the SVS.

Schwartz and Huismans (1995) reported that religious attitudes went along with a preference of Tradition, Conformity and Security as well as of Benevolence in the SVS. Religious people rated Stimulation, Hedonism, Achievement and Self-Direction low. Fehr and Heintzelman (1977) found that religious attitudes were associated with humanitarian values in the inventory of Allport, Vernon and Lindzey (1951). I therefore expected that religious attitudes would not only go along with religious values (3+)[2] but also be correlated positively with Community (2.1+) and traditional values (5.1+) and negatively with Hedonism (4.3-) (Hypothesis 3).

Braithwaite, Makkai and Pittelkow (1996) reported that Materialism vs. Post-Materialism in the sense of Inglehart (1977) went along with preferring "national strength and order" and with disregarding "international harmony and equality" in the Rokeach Value Survey (Rokeach, 1973). Therefore, Materialism vs. Post-Materialism sensu Inglehart (1977) was expected to be correlated positively with Nationalism (5.1+) and negatively with Open-Mindedness (1.1-) (Hypothesis 4).

According to the results of Frindte, Funke and Jacob (1997), Lorr, Suziedelis and Tonesk (1973), Oesterreich (1993) and Rim (1970), Authoritarianism in the sense of Adorno, Frenkel-Brunswick, Levinson, and Sanford (1950) characterizes a rigid, conservative and narrow-minded type of personality who anxiously clinges to established principles, adheres to a fundamentalist type of religiosity and feels threatened by anything new and foreign. I hypothesized that Authoritarianism will go along with Nationalism (5.1+) and Faith (3.1+) and will be correlated negatively with Open-Mindedness (1.1-) (Hypothesis 5).

Weiss and Reinprecht (1998) pointed out that patriotism is characterized by a person's attachment to his or her home country wheares nationalist attitudes have the additional connotation of disregarding foreign countries and feeling superior to them. Therefore, both patriotic and nationalist attitudes were expected to correlate positively with the value scale Nationalism (5.1+) (Hypothesis 6), but only nationalistic attitudes were expected to be correlated negatively with Open-Mindedness (1.1-) (Hypothesis 7).

With regard to the findings of Stromberg and Boehnke (1997), I expected that people voting for a conservative political party (Austrian people's party) would prefer Nationalism (5.1+) and decline Open-Mindedness (1.1-), whereas for voters of the "Green Alternative" party the opposite (5.1-, 1.1+) would be true (Hypothesis 8).

[2] See Table 7 for the names of the scales and subscales. For example, 3+ means an expected positive correlation with Religiosity, 4.3- means an expected negative correlation with Hedonism.

The findings by Braithwaite (1998), Feather (1979), and Joe, Jones and Miller (1981) indicate that right wing political attitudes go along with a preference of conservative and fundamentalistic religious value orientations and with maintaining high economic standards. Right wing attitudes were found to predict low tolerance for minorities, low autonomy and low tolerance of ambiguity as well as a rejection of hedonistic values. Therefore I hypothesized that people assigning themselves to a "right" position on a political left vs. right scale, would prefer the value dimensions Religiosity (3+), Profit (4.1+), Success (4.2+), and Conservatism (5+), and decline the dimensions Intellectualism (1-), and Hedonism (4.3-) (Hypothesis 9).

According to Antonovsky (1997), Sense of Coherence (SOC) is an individual's global orientation which expresses that life events are perceived as meaningful ("Meaningfulness") and structured ("Comprehensibility"), that the individual expects to have the resources to cope with negative events and that he or she perceives them as challenges worth investing effort and personal commitment ("Manageability"). I hypothesized that SOC will be correlated positively with Religiosity (3+) (for a review on religious coping see Mickley, Carson and Soeken, 1995) (Hypothesis 10). With respect to the results by Frenz, Carey and Jorgensen (1993), who did not replicate the three-dimensional structure of SOC postulated by Antonovsky (1997) but found SOC to be unidimensional, I did not formulate specific hypotheses for each of the SOC subscales but expected all of them, as well as the SOC total score, to be correlated significantly with Religiosity (3+).

METHOD

Participants

The sample was recruited by a public opinion research institute all over Austria and it was nearly representative for the adult general population with regard to gender, age group, educational level, county, and urban vs. rural areas. Six different age groups and three educational levels were differentiated. Similarly to study 1, the percentage of these variables in the general population was determined on the basis of cross-tables and subsequently the respondents were selected from lists of addresses according to these percentages. Participants were contacted at home, where they completed the questionnaires. 421 people, 200 men and 221 women, with a modal age of 35.0 years participated. 95 participants had a high-school diploma, 326 had none.

Questionnaires

The 54 value terms provided with an asterisk in Tables 2 to 6 were supplied with 5-point Likert scales, ranging from extreme approval through a neutral evaluation to extreme disapproval. Each term was provided with a short explanation of its meaning because pilot studies had shown that this improved comprehensibility for some of the participants. The instruction asked to rate each concept with respect to its subjective importance as a guiding motive in life. The SVS was administered in its German version (Schwartz, 1992; S. H. Schwartz, personal communication, February 16, 2001).

The following measures of attitudes were used:

Religiosity: Based on Glock (1962), Kecskes and Wolf (1993) presented three religious dimensions: Religious Experience, Religious Belief and Religious Knowledge. For the purpose of this study, the first two scales were used. Both scales are highly reliable ($r_{tt} = 0.96$). As according to Kecskes and Wolf (1993) these two scales are highly correlated ($r = .90$), I combined them to a single scale. Item examples are: "It happened to me that I got help from God in a specific situation", "Through my faith I have often felt close to God", and "I believe in an eternal life". All items have to be rated on a five-point Likert-type scale, ranging from extreme approval to extreme disapproval.

Materialism vs. Postmaterialism: The measure described by Inglehart (1977, 1999) was employed. According to his theory, socio-economic progress after World War II has led to a change in political goals in Western industrialized societies; in the course of this change, according to the theory, materialistic goals were replaced by postmaterialistic ones. Materialistic goals, for example, refer to controling rise of prizes, economic growth or fighting crime, whereas postmaterialistic goals, for example, are a warmer and more social society, more right of participation in decisions concerning community and workplace, or the protection of expression of opinion. These concepts have to be rank ordered according to their subjective importance.

Authoritarianism: The instrument used for measuring Authoritarianism (Adorno, Frenkel-Brunswik, Levinson & Sanford, 1950) was presented by Oesterreich (1999) and comprises two subscales: Dogmatism (24 items) and Rigidity (17 items). Dogmatism refers to conservative and fundamentalistic opinions going along with dislike for the unknown; Rigidity, though related to Dogmatism, rather implies inflexible personality traits than ideological issues. Item examples for Dogmatism are: "There is too much talk and discussion and too little action"; "We have to hate some people for the things they believe in"; "Personal decisions should be based on the advice of older and more ex-

perienced people". Rigidity is operationalized by items like "Once I formed my opinion, I maintain it", "I always bring things I start to an end" or "I plan things carefully before starting". Both scales measure similar constructs (r = .58) and are sufficiently reliable (r_{tt} = .76 for Dogmatism, r_{tt} = .78 for Rigidity). Response format is "Yes vs. No" with a category in the middle, indicated by a question mark, which can be used if neither Yes nor No can be approved of.

Patriotism: A five-item scale devised by Weiss, Donat and Latcheva (1999) was employed in order to measure Patriotism. The scale is sufficiently reliable (r_{tt} = .81) and comprises items like "To be an Austrian represents a major part of my ego", "I'm proud to be an Austrian" or "When I see the Austrian flag, I feel great". The items have to be answered on a five-point Likert-type scale, ranging from extreme approval to extreme disapproval.

Nationalism. Nationalistic attitudes were operationalized by the instrument introduced by Schmidt (1970). This questionnaire of "national and nationalistic attitudes" is reported to be reliable (split half: r_{tt} = .87, re-test r_{tt} = .90). Test items stem from political and sociological literature and are presented in a dichotomous (True vs. False) format. Examples are: "Many people are right in seeing there sense in life in serving their home country", "A person needs values worth commiting his or her life to. One of those values is the home country", "It is most questionable, if it pays to die for one's home country" (reversed).

Right vs. left political orientation was assessed by a visual analogue scale, ranging from 1 (left) to 10 (right) (ZA & ZUMA, 1999).

Sense of Coherence (SOC) was assessed by the three subscales of SOC-29, an instrument described by Antonovsky (1983, 1997). In a multinational study, the subscales were found to have sufficient internal consistency, α ranging from .82 to .95 (Antonovsky, 1998). Each item is rated on a two-dimensional seven-point Likert scale, ranging from a negative to a positive pole. An example for the Meaningfulness subscale is: "Until now your life has had: no clear goals or purpose at all (negative pole) vs. very clear goals and purpose (positive pole)". The Comprehensibility subscale comprises items as for example: "In the past ten years your life has been: full of changes without your knowing what will happen next (negative pole) vs. completely consistent and clear (positive pole)". An example for an item of the Manageability subscale is: "How often do you have feelings that you're not sure you can keep under control? Very often (negative pole) vs. very seldom or never (positive pole)."

For determining preferences of political parties the participants received a ballot paper.

Statistical methods

In order to test Hypothesis 1, a confirmatory factor analysis (CFA) was performed by AMOS 4.1 (Arbuckle & Wothke, 1999). The 54 items of the questionnaire were modelled as observed variables, the 13 subfactors as latents with regression paths leading from them to the observed variables. The five broad factors were modelled as uncorrelated latent variables and regression paths led from them to the subfactors. Response set, i.e. the tendency to give high or low ratings throughout the questionnaire, was modelled as a latent variable, with regression paths leading to all the observed variables. According to Arbuckle and Wothke (1999), and Byrne (2001), error variances were allowed to correlate only in some cases when theoretical reasons could be given. This applied to some variables with similar content or wordage (e.g. Religion - religion and Religiosität - religiosity, Tradition - tradition and Traditionsbewusstsein - sense of tradition, Wohlbefinden - well-being and Wohlhabenheit - being well-off). As the assumption of multivariate normality was not fulfilled, following West, Finch and Curran (1995), CFI (Comparative Fit Index; Bentler, 1990) and IFI (Incremental Fit Index; Bollen, 1989) were employed to assess model fit. According to West et al. (1995), IFI and CFI "have only a small (...) bias, even under severely nonnormal conditions" (p. 74).

RESULTS

With regard to Hypothesis 1 the factorial structure of the new instrument was examined by a CFA in the independent sample[3]. With the exception of three items loading poorly on Open-Mindedness,[4] significant regression weights were achieved and the fit indices determined in advance indicated sufficient overall model fit (IFI = 0.906, CFI = 0.905) (cf. Bentler, 1992). Therefore, the hypothesized factorial structure as a whole was confirmed. As expected, the variables included in the model deviated considerably from multivariate normality (kurtosis = 564.25; *C.R.* = 74.4). The correlations of the present value scales with those from the SVS are given in Table 9.

In accordance with Hypothesis 2, Religiosity was correlated with Tradition, Conservatism aligned with Conformity and Security, and Materialism was correlated with Hedonism and Power, but the correlations in the present representative sample were lower than in the previous

[3] Results of the CFA are obtainable from the author upon request.

[4] A re-examination of the suitability of "Sinn" and "Umsicht" as test items measuring Open-Mindedness will be subject of further studies.

Table 9

Pearson Correlations of the new value scales and the SVS scales ($N = 421$)

	1	*2*	*3*	*4*	*5*	*1.1*	*1.2*	*2.1*	*2.2*	*2.3*	*3.1*	*3.2*	*4.1*	*4.2*	*4.3*	*5.1*	*5.2*	*5.3*
CONF	0.11*	0.28**	0.25**	0.12*	0.33**	0.10*	0.10*	0.27**	0.24**	0.17**	0.25**	0.23**	0.10*	0.11*	-0.10*	0.31**	0.21**	0.30**
TRAD	0.09	0.14**	0.45**	-0.04	0.28**	0.08	0.08	0.18**	0.12*	0.03	0.45**	0.42**	-0.05	-0.01	-0.04	0.30**	0.14**	0.18**
BENE	0.23**	0.25**	0.21**	0.12*	0.19**	0.22**	0.16**	0.21**	0.17**	0.23**	0.21**	0.20**	0.12*	0.09	0.10*	0.15**	0.12*	0.22**
UNIV	0.34**	0.28**	0.23**	0.09	0.18**	0.32**	0.28**	0.21**	0.20**	0.27**	0.22**	0.23**	0.05	0.10*	0.07	0.19**	0.08	0.16**
SELF	0.32**	0.18**	0.00	0.27**	0.06	0.29**	0.29**	0.09	0.06	0.27**	-0.01	0.03	0.18**	0.27**	0.22**	0.04	0.06	0.09
STIM	0.23**	0.11*	-0.01	0.24**	0.05	0.22**	0.18**	0.06	-0.06	0.25**	-0.02	0.02	0.12	0.26**	0.21**	0.09	0.02	-0.05
HED	0.11*	0.11*	-0.13*	0.39**	0.05	0.10*	0.10*	0.03	-0.01	0.24**	-0.13*	-0.10*	0.28**	0.28**	0.41**	0.03	0.10*	0.01
ACHIE	0.16**	0.18**	0.06	0.38**	0.21**	0.14**	0.15**	0.12*	0.08	0.22**	0.06	0.05	0.29**	0.37**	0.30**	0.19**	0.14**	0.19**
POW	0.01	0.06	0.10*	0.28**	0.23**	-0.01	0.05	0.06	0.00	0.09	0.09	0.11*	0.22**	0.27**	0.22**	0.22**	0.19**	0.11*
SEC	0.11*	0.29**	0.16**	0.24**	0.36**	0.09	0.12*	0.20**	0.25**	0.23**	0.16**	0.15**	0.25**	0.16**	0.18**	0.31**	0.31**	0.29**

Note: * $p < 0.05$; ** $p < 0.01$.

1 = Intellectualism, 2 = Harmony, 3 = Religiosity, 4 = Materialism, 5 = Conservatism, 1.1 = Open-mindedness, 1.2 = Culture, 2.1 = Community, 2.2 = Family, 2.3 = Love of Life, 3.1 = Faith, 3.2 = Grace, 4.1 = Property, 4.2 = Success, 4.3 = Hedonism, 5.1 = Nationalism, 5.2 = Defence, 5.3 = Duty; *CONF* = Conformity, *TRAD* = Tradition, *BENE* = Benevolence, *UNIV* = Universalism, *SELF* = Self Enhancement, *STIM* = Stimulation, *HED* = Hedonism, *ACHIE* = Achievement, *POW* = Power, *SEC* = Security

Table 10

Pearson correlations of value and attitude scales ($N = 421$)

Religiosity (H3, Kecskes and Wolf, 1993; 16 items)

2.1 +	$r = 0.23$**	4.3 +	$r = -0.17$**
3 +	$r = 0.78$**	5.1 +	$r = 0.32$**

Materialism/Post-Materialism (H4, Inglehart, 1999; 12 items

1.1 -	$r = -0.20$**	5.1+	$r = 0.25$**

Authoritarianism (H5, Oesterreich, 1999

	Total score	*Rigidity (17 items)*	*Dogmatism (24 items)*
1.1-	$r = -0.29$**	$r = -0.23$**	$r = -0.28$**
3.1+	$r = 0.22$**	$r = 0.25$**	$r = 0.13$**
5.1+	$r = 0.23$**	$r = 0.19$**	$r = 0.22$**

Patriotism (H6, Weiss, Donat and Latcheva, 1999; 5 items)

1.1 Ø	$r = -0.01$ n.s.	5.1+	$r = 0.55$**

Nationalism (H7, Schmidt, 1970; 21 items

1.1-	$r = -0.18$**	5.1+	$r = 0.47$**

Right vs. left political orientation (H9, ZA & ZUMA, 1999; visual analogue scale

1-	$r = -0.04$ n.s.	4.2+	$r = -0.03$ n.s.
3+	$r = 0.06$ n.s.	4.3-	$r = -0.00$ n.s.
4.1+	$r = -0.03$ n.s.	5+	$r = 0.17$**

Sense of Coherence (H10, Antonovsky, 1997

	Total Score	*Comprehensibility (11 items)*	*Manageability (10 items)*	*Meaningfulness (8 items)*
3+	$r = 0.12$*	$r = 0.13$**	$r = 0.06$ n.s.	$r = 0.10$*

* $p < 0.05$, ** $p < 0.01$.

+ Postive correlation, - negative correlation, Ø no significant correlation was expected

study when a predominantly student sample had been employed (Renner, 2003). Even lower correlations were obtained when partial correlations were computed controlling for the total score of the SVS, as suggested by Schwartz (1992). I speculated that higher correlations might result if only participants with a high-school diploma would be included. For the part of the sample with a high-school diploma substantial positive correlations between Intellectualism and Universalism (r = .54), Harmony and Benevolence (r = .43), and between Religiosity, Conformity (r = .41), Benevolence (r = .41) and Tradition (r = .58) were found. Materialism aligned with Hedonism (r = .48), Achievement (r = .49) and Power (r = .38), Conservatism with Conformity (r = .58), Tradition (r = .53), Benevolence (r = .46), Achievement (r = .47) and Security (r = .52). A similar pattern could be found in the subdimensions. The negative correlations between conservative values and Self-Direction, and between materialistic values and Universalism found by Renner (2003) did not appear in the present study. With this exception, Hypothesis 2 was confirmed.

As can be seen from Table 10, with the exception of right vs. left political orientations, and the Manageability subscale of the SOC, all the value scales were correlated with the attitude measures significantly in the hypothesized direction, although for Materialism, Authoritarianism, and SOC the correlations were low. Thus, Hypotheses 3, 4, 5, 6 and 7 were clearly and Hypothesis 10 was partly confirmed. Hypothesis 9 was not confirmed.

Voters of the Austrian People's Party (ÖVP) had a mean score for Open-Mindedness of 3.94 (SD = 0.47), those who voted for the other parties scored M = 3.81 (SD = 0.51). The hypothesis which predicted lower scores on Open-Mindedness for voters of the ÖVP therefore was not confirmed. As predicted, ÖVP voters had higher scores on Nationalism as compared to voters for the other political parties (M = 3.61, SD = 0.61 vs. M = 3.46, SD = 0.69) but the difference did not reach statistical significance (Mann-Whitney's U-Test p = .065, U = 7756, Z = - 1.842). Therefore, for voters of the ÖVP Hypothesis 8 was not confirmed. Voters of the Green Alternative Party scored M = 4.07 (SD = 0.49) on Open-Mindedness, those for the other parties scored M = 3.82 (SD = 0.49). This difference was highly significant in the predicted direction (p< 0.01, U = 3640, Z = -2.734). Voters for the Green Alternative Party had a lower mean on Nationalism as compared with the other voters (M = 3.00, SD = 0.65 vs. M = 3.60, SD = 0.63), and again the difference was highly significant (p< .01, U = 2465, Z = -5.174). Thus Hypothesis 8 was confirmed for voters of the Green Alternative Party.

Table 11 shows the correlations of the attitude scales with the scales from the SVS. In this case, higher correlations resulted when the total score from the SVS was controlled for, as recommended by Schwartz (1992). Therefore, partial correlations are reported.

Religious attitudes were correlated positively with Tradition and negatively with Hedonism; Materialism vs. Post-Materialism aligned with Conformity and Security, and Auhoritarianism with Conformity while it correlated negatively with Self-Enhancement. Patriotism and Nationalism aligned negatively and significantly with Self-Enhancement and positively with Conformity and Tradition. Low but significant positive correlations were found

Table 11

Partial correlations of SVS-scales and attitudes scales with SVS total score controlled for (N = 421)

	CONF	*TRAD*	*BENE*	*UNIV*	*SELF*	*STIM*	*HED*	*ACHIE*	*POW*	*SEC*
Religiosity	0.17**	0.39**	0.06	0.06	-0.27**	-0.14**	-0.33**	-0.17**	0.01	0.02
Materialism/Postmaterialism	0.32**	0.03	-0.01	-0.11*	-0.25**	-0.22**	-0.10	0.02	0.16**	0.33**
Authoritarianism (Total)	0.39**	0.25**	0.06	-0.10	-0.44**	-0.31**	-0.19**	-0.01	0.18**	0.24**
Authoritarianism (Rigidity)	0.37**	0.27**	0.12*	-0.11*	-0.39**	-0.34**	-0.26**	-0.01	0.09	0.23**
Authoritarianism (Dogmatism)	0.32**	0.16**	-0.02	-0.06	-0.38**	-0.20**	-0.06	-0.00	0.23**	0.19**
Patriotism	0.15**	0.21**	-0.09	-0.03	-0.27**	-0.00	-0.14**	-0.07	0.19**	0.19**
Nationalism	0.28**	0.18**	-0.11*	-0.13*	-0.31**	-0.05	-0.07	-0.06	0.23**	0.22*
Right vs. left	0.08	0.11*	0.00	-0.12*	-0.06	-0.02	-0.07	0.01	0.08	0.09
S.O.C. (Total)	0.11*	-0.05	0.16**	-0.10*	0.01	-0.18**	-0.03	0.09	-0.08	0.06
S.O.C. (Comprehensibility)	0.19**	0.03	0.15**	-0.14**	-0.11*	-0.25**	-0.08	0.11*	0.02	0.17**
S.O.C. (Manageability)	0.05	-0.07	0.15**	-0.07	0.08	-0.16**	0.02	0.04	-0.11*	0.01
S.O.C. (Meaningfulness)	0.02	-0.10	0.11*	-0.06	0.08	-0.03	-0.01	0.09	-0.13*	-0.03

* p< 0.05, ** p< 0.01

between SOC and Conformity and Benevolence, and negative ones between SOC and Universalism and Stimulation.

When only data from participants with a high-school diploma were used[5], for the newly developed questionnaire higher correlations were obtained between Conservatism and Authoritarianism ($r = .45$), Dogmatism ($r = .49$), Patriotism ($r = .65$) and Nationalism ($r = .60$) while other correlations were lower than in the total sample. For the SVS, in the high-school sample a correlation of $r = .42$ was found between Religiosity and Tradition but the correlations between Materialism vs. Postmaterialism and the SVS scales were lower than in the total sample. In the high-school part of the sample Universalism correlated negatively and significantly with Authoritarianism ($r = -.40$) but the correlations of the SVS scales with Patriotism, Nationalism, right vs. left political orientation and SOC did not differ substantially from the total sample.

DISCUSSION

Confirmatory Factor Analysis (CFA) yielded affirmative results and this poses an argument for the factorial validity of the questionnaire as the factor structure originally proposed could be replicated in an independent sample.

With regard to convergent validity, most of the assumptions about correlations between the new scales and the value domains of the SVS were confirmed. The hypotheses about correlations of the newly developed scales with religious attitudes, Materialism vs. Post-Materialism, Auhoritarianism, Patriotism and Nationalism were confirmed. The value subdimension of Nationalism accounted well for religious, nationalistic, and patriotic attitudes. Substantial correlations of Nationalism with the measures of Authoritarianism and Materialism vs. Post-Materialism were obtained in the high-school part of the sample only.

Although, with the exception of the Manageability subscale, the hypotheses for Sense of Coherence (SOC) were confirmed, the correlations were disappointingly low. This was the case for both, the Religiosity dimension of the new questionnaire, and all of the SVS scales. Contrary to the expectations, therefore, the concept of SOC does not appear to be substantially connected to human values, as far as they are measured by the SVS or the newly developed instrument.

With regard to right vs. left political orientation the hypothesis was not confirmed and the correlations with the SVS were low. Further studies are suggested in order to determine whether the one-dimensional conception of a "right" vs. "left" political point of view is still in line with contemporary political opinions or a more complex model of political attitudes is needed.

The hypothesis pertaining to value orientations of voters for the "Green Alternative" party was confirmed. This was not the case for the conservative "Austrian peoples' party" (ÖVP) when their voters were compared with the remaining sample. This finding can be explained by the fact that the hypothesis was derived from German literature (Stromberg & Boehnke, 1997) with regard to the German "Christlich Demokratische Union" which can be compared to the Austrian ÖVP. In the meantime, however, a second conservative party, the Freiheitliche Partei Österreichs, has gained influence in Austria and its voters scored higher on Nationalism and lower on Open-Mindedness than the ÖVP voters did.

Both in the total sample and in the high-school part of the sample the newly developed instrument accounted considerably better for religious, patriotic and nationalistic attitudes than the SVS did. The opposite was true for Materialism vs. Post-Materialism and Authoritarianism, where higher correlations were obtained with the SVS. For a possible explanation, it may be speculated that the measures of patriotic and nationalistic attitudes as well as the present value questionnaire were constructed specifically for German speaking countries whereas the concepts of Authoritarianism and Materialism vs. Post-Materialism on the one hand and the SVS on the other are not culture specific.

As "universal" measures of human values, like the SVS (Schwartz, 1992), partly account for the values that are of importance in a given culture, empirical results obtained by such instruments could be used effectively in order to develop hypotheses for the present study. It must be kept in mind, however, that there is a clear need for instruments that are sensitive for the facets of values that prevail in a given culture. For example, the SVS does not contain a scale for Religiosity (Schwartz, 1992), while high versus low ratings of Religiosity clearly differentiate between members of the Austrian society.

GENERAL DISCUSSION

A sufficiently reliable instrument for measuring value orientations among the Austrian population has been constructed and the results indicate its factorial and convergent validity. Whereas in both studies the factor structure proved to be stable over different parts of the population, study 2 has shown that educational level is an important moderator variable when measures of values and attitudes are compared with each other. This finding indicates that value and attitude concepts may be understood differently

[5] Details can be obtained from the author.

by people with a high versus a low level of education, and future research is suggested regarding this topic.

Most importantly, in accordance with its designation, the present instrument has been shown to account well for culture-specific facets of Austrian value orientations. The new instrument is not meant to question existing ones like the SVS, which claim to assess universal values, but to supplement them and to assess culture-specific circumstances more accurately. Inspite of some similarities, the newly developed questionnaire and the SVS measure different aspects of value orientations and the results indicate that the present instrument accounts for culture-specific values of German speaking countries better than the SVS is able to do.

Further research is needed in order to examine the culture-specific content and structure of values among Western and non-Western societies. The study by Renner et al. (2003) revealed considerable differences between European and African values and the factor structure of Estonian values, described by Aavik and Allik (2003), differed from the one found by Renner (2003) for Austria. Currently, on the basis of the lexical approach, Arabic values and those of the United States of America are being examined by the present author.

With respect to the questionnaire presented here, further steps towards its validation are suggested. For example, instead of using Pearson correlations, convergent validity might be examined further by Structural Equation Modeling, using the scales and subscales of the value measure as exogenous and those of the attitude measures as endogenous variables. Thus, the sets of hypotheses examined in the present study could be tested in a more sophisticated way.

Future studies also might focus on similarities between the newly developed instrument and other existing measures, apart from the SVS. As mentioned above, the factor structure of Austrian values found by Renner (2003), at first glance, has striking similarities with Spranger's (1914/1966) "Ways of Life". Although accepted worldwide, Spranger's typology might reflect the values of German speaking countries in the first place. Therefore, measures of Spranger's "Ways of Life" (e.g. Roth, 1972) might constitute appropriate criteria for further studies towards assessing the convergent validity of the new instrument introduced here.

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