Are the Schwartz value orientations comparable in China, Russia and Germany?

Eva Heim; Saskia Scholten; Andreas Maercker; Juergen Margraf

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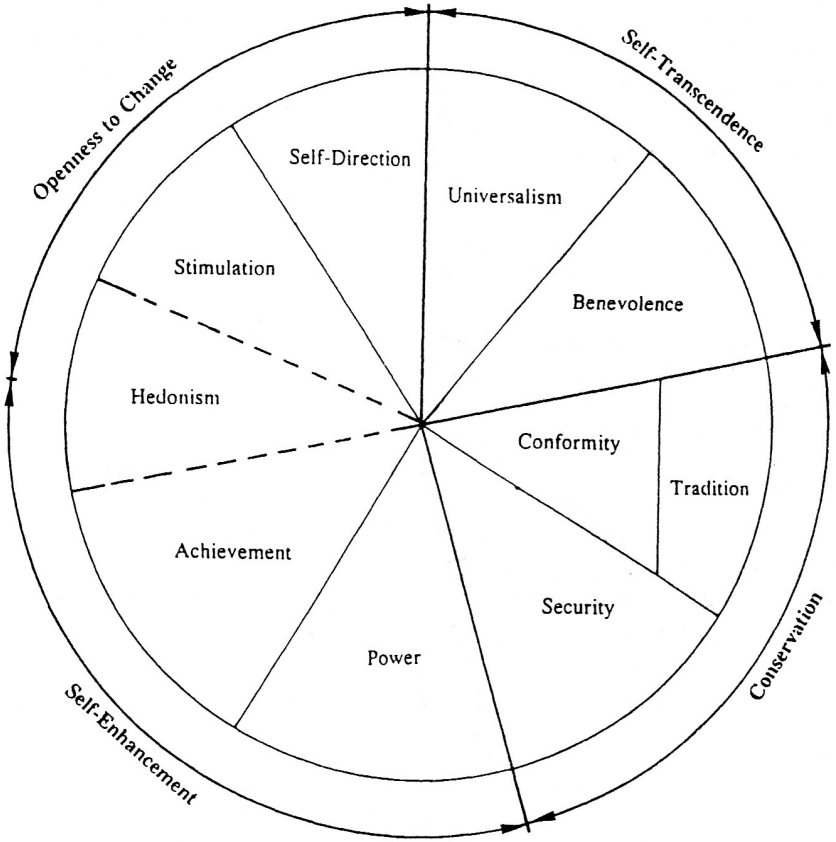
Schwarz value theory



Background

- The PVQ-21 has been included in the European Social Survey (ESS) since 2002
  - First round: Three pairs of (adjacent) values correlated highly and were therefore unified, resulting in a seven-factor model. This seven-factor model showed metric, but not scalar invariance
  - Second round: Eleven out of 25 countries were excluded from the study due to high correlation of at least one additional pair of values. Measurement invariance was tested across the remaining 14 countries. Again, the analysis provided evidence for configural and metric invariance, but not for scalar invariance
  - Third round: 17 countries were excluded and metric invariance was found for the remaining eight countries

Aims and hypotheses

- Our study aimed at testing the measurement invariance of the PVQ across China, Germany and Russia.
- Considering the fact that previous studies of the ESS rejected the hypothesis of full scalar invariance of the PVQ-21, we did not expect full scalar invariance in our study.
- Given at least partial scalar invariance, Germany, China, and Russia can be compared with regard to the relative importance they give to the Schwartz values.

Hypotheses: Self-transcendence

- Universalism and benevolence (self-transcendence values) are hypothesised to be highly pronounced in China due to the Confucian tradition
- Germany has scored high on universalism in comparative studies most probably due to the high emphasis given to egalitarian rights and social justice

-> We hypothesised universalism and benevolence to be highly pronounced in China and Germany compared to Russia.

Hypotheses: Conservation

- Conservation values, i.e., conformity, tradition and security (conservation), are assumed to be high in China because these values are in line with the Confucian principles of social order and rules of conduct.
- At the same time, economic growth has led to high competition. Therefore, we also expect power and achievement (self-enhancement) values to be highly pronounced in China.

-> Although some of these values are conceptualised as being opposed to each other (i.e., benevolence / universalism vs. power / achievement), we still assume that both of them are present in China coincidently due to societal change

Methods

- Portrait Values Questionnaire (PVQ, Schwartz et al., 2001)
- Bochum Optimism and Mental health (BOOM) research program
- Student samples from Germany (N= 1’118), China (N= 9’601), and Russia (N= 3’890)
- Germany: online survey; Russia: paper-pencil; China: both online and paper-pencil

Statistical models

1. Three single-group CFAs, one for each country, using the ten-factor structure proposed by Schwartz et al. (2001)
   - high covariance between adjacent values occurred in all countries
   - „magnifying glass strategy“
2. MGCFA to test configural, metric and scalar invariance
3. Latent factor mean comparisons across all countries indicated mean differences for all latent factors. Paired group comparisons were conducted post-hoc

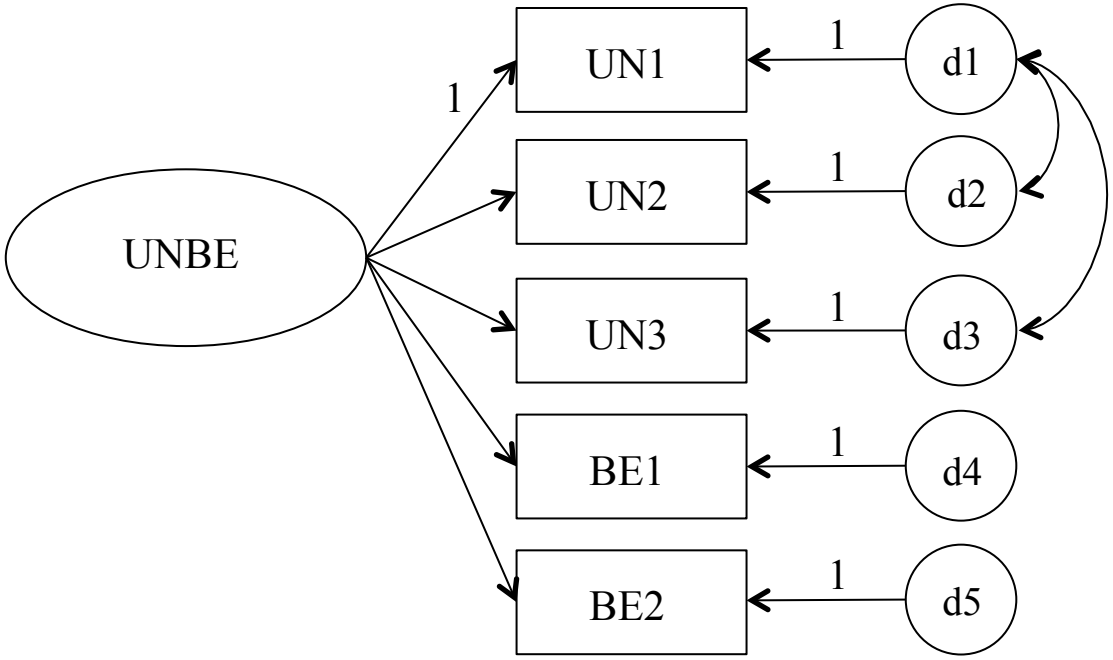
Model fit and statistical procedure

- 'Robust maximum likelihood estimation' (MLR) with its default settings for standard errors and test statistics.
- Missing values were treated with full information maximum likelihood estimation.
- Model fit was evaluated using the conventional χ^2 test and additional fit-indices (CFI, RMSEA, SRMR)
- When comparing configural, metric and scalar invariance models, we applied the criterion of change in CFI (ΔCFI) = .01 (Chen, 2007)

Latent mean comparison across countries

- When at least partial scalar invariance was achieved, we constrained latent factor means to be equal across all countries and conducted post-hoc comparisons
- To calculate the mean differences, successively, one country's mean was constrained to 0 and the other two means were estimated freely.
- For the latent means we used z-standardized estimates.
- Hedge's g was calculated as effect size measure to respect the different sample sizes

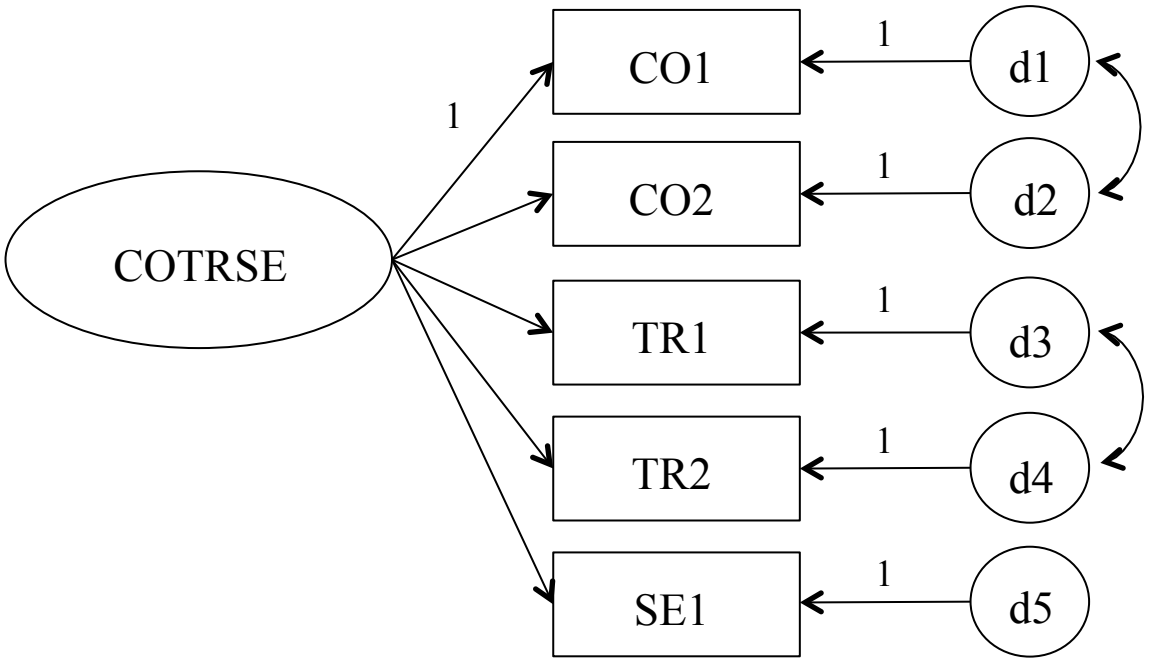
1. Single group CFAs



Note: *p≤.05 ; **p≤.01; ***p≤.001

Germany			**China**			**Russia**		
χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA
6.25 (3)***	.994	.031	55.83 (3)***	.992	.043	17.04 (3)***	.992	.035

1. Single group CFAs



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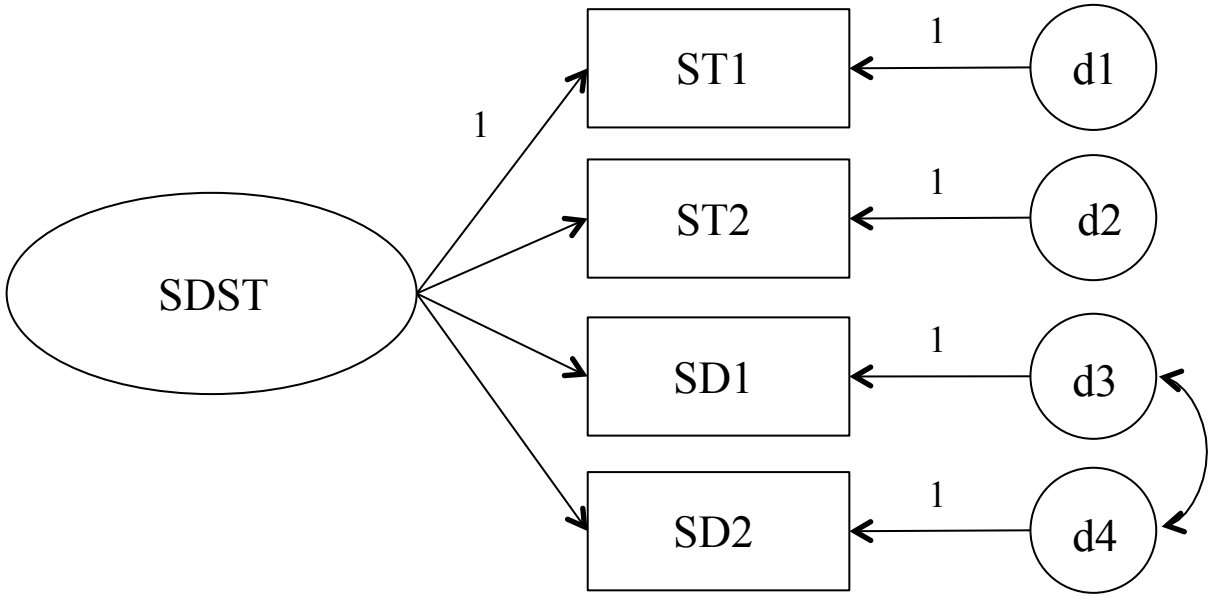
Germany			**China**			**Russia**		
χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA
6.83 (3)	.993	.034	15.33 (3)**	.996	.021	12.47 (3)**	.995	.028

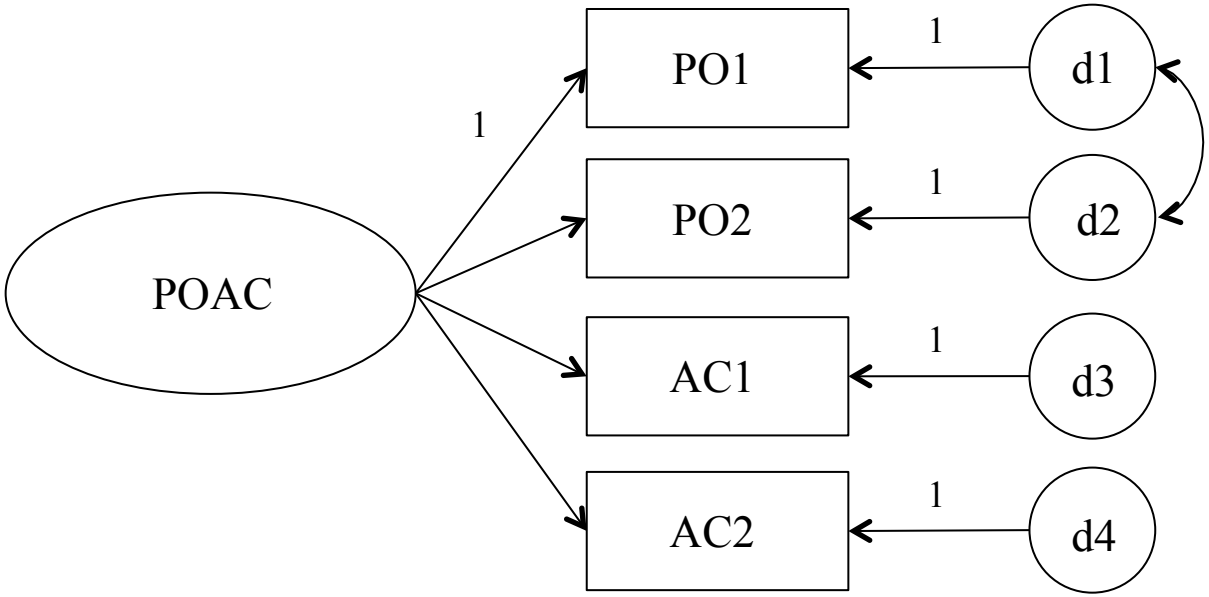
1. Single group CFAs



Note: *p≤.05 ; **p≤.01; ***p≤.001

Germany			**China**			**Russia**		
χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA	χ^2 *(df)*	CFI	RMSEA
.08 (1)	1.000	.000	2.63 (1)	1.000	.013	1.88 (1)	.999	.015

1. Single group CFAs



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Germany			**China**			**Russia**		
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2. Multi-group CFA: Self-transcendence

	χ^2 (df)	CFI	RMSEA (90% CI)	SRMR	ΔCFI
Configural	82.597 (9)***	.992	.041 (.034; .048)	.012	
Metric	132.520 (17)***	.988	.037 (.032; .043)	.017	.004
Scalar	719.233 (25)	.927	.076 (.071; .080)	.044	.061
Partial scalar (τ_{12}, τ_{18}, τ_{19})	162.285 (19)***	.985	.039 (.035; .044)	.020	.003
Equal latent means	9573.288 (30)***	.901	.096 (.092; .101)	.073	.084

*p≤.05 ; **p≤.01; ***p≤.001; released loadings and intercepts are reported in brackets for the partial models

2. Multi-group CFA: Conservation

	χ^2 (df)	CFI	RMSEA (90% CI)	SRMR	ΔCFI
Configural	34.946 (9)***	.995	.024 (.017; .032)	.009	
Metric	57.784 (17)***	.993	.022 (.017; .028)	.012	.002
Scalar	992.084 (25)***	.825	.089 (.085; .094)	.041	.168
Partial scalar (τ_{12}, τ_{18}, τ_{19})	83.477 (19)***	.988	.026 (.021; .032)	.014	.005
Equal latent means	1060.969 (21)***	.812	.101 (.096; 106)	.075	.176

*p≤.05 ; **p≤.01; ***p≤.001; released loadings and intercepts are reported in brackets for the partial models

2. Multi-group CFA: Self-enhancement

	χ^2 (df)	CFI	RMSEA (90% CI)	SRMR	ΔCFI
Configural	28.571 (3)***	.996	.042 (.030; .055)	.007	
Metric	65.747 (9)***	.992	.036 (.029; .044)	.014	.004
Scalar	800.234 (15)***	.892	.104 (.098; .110)	.052	.100
Partial scalar (τ_2, τ_4)	102.948 (11)***	.987	.041 (.035; .048)	.018	.005
Equal latent means	645.030 (13)***	.913	.100 (.094; .106)	.073	.074

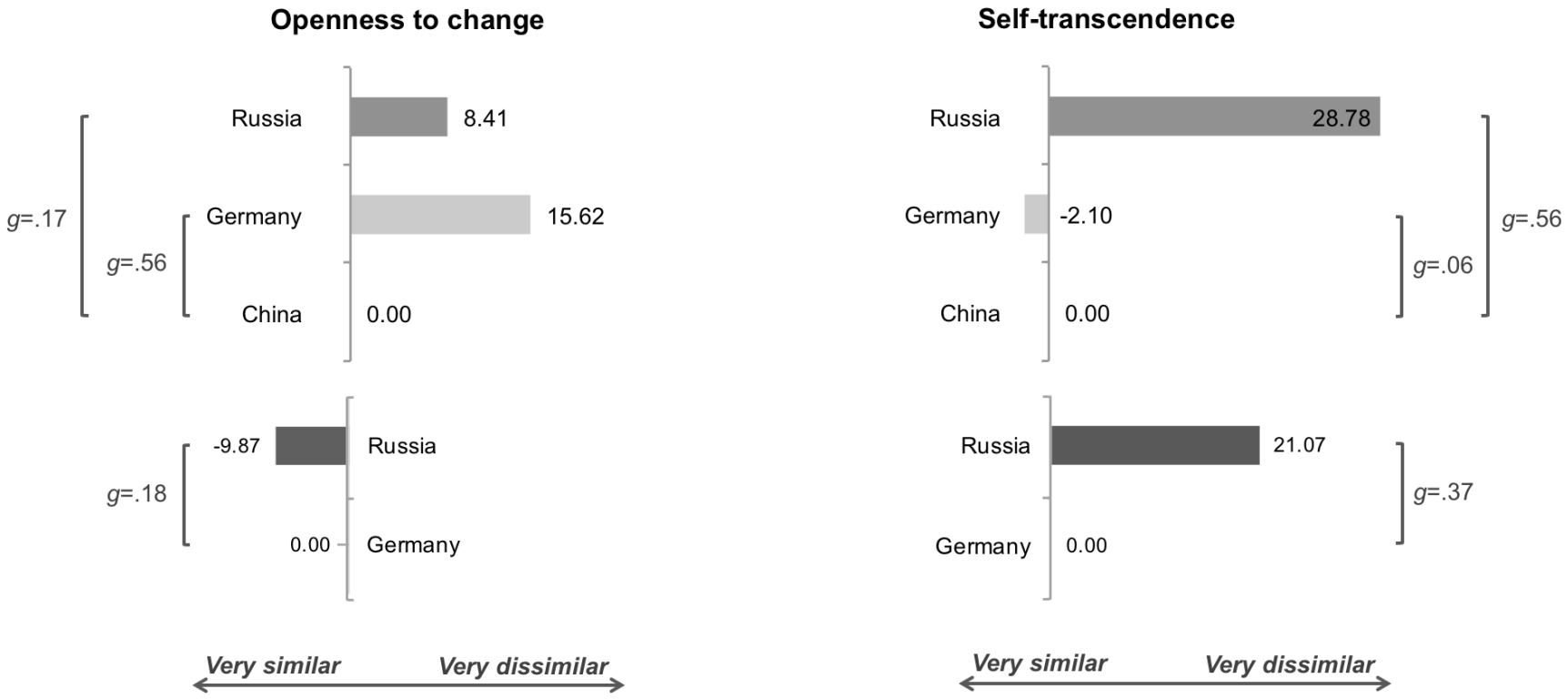
*p≤.05 ; **p≤.01; ***p≤.001; released loadings and intercepts are reported in brackets for the partial models

2. Multi-group CFA: Openness to change

	χ^2 (df)	CFI	RMSEA (90% CI)	SRMR	ΔCFI
Configural	4.703 (3)***	1.000	.011 (.000; .027)	.003	
Metric	122.314 (9)***	.985	.051 (.043; .059)	.023	.015
Partial metric (λ_1)	45.772(7)***	.995	.034 (.025; .043)	.014	.005
Partial scalar (λ_1, τ_1)	740.420 (11)***	.903	.117 (.110; .124)	.046	.092
Partial scalar (λ_1, τ_1, τ_{11})	151.545 (9)***	.981	.057 (.050; .065)	.020	.014
Equal latent means	7523.65 (18)***	.946	.087 (.080; .094)	.047	.035

*p≤.05 ; **p≤.01; ***p≤.001; released loadings and intercepts are reported in brackets for the partial models

3. Latent mean comparison



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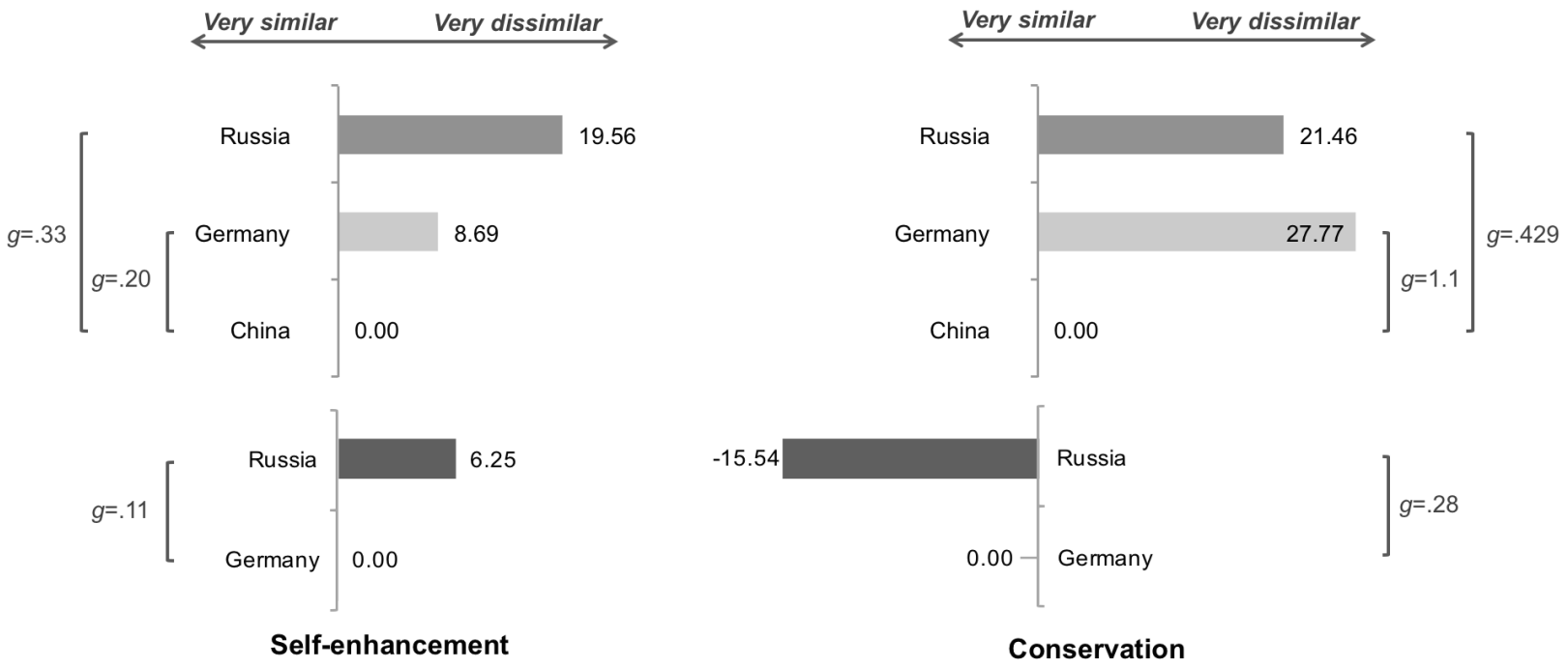
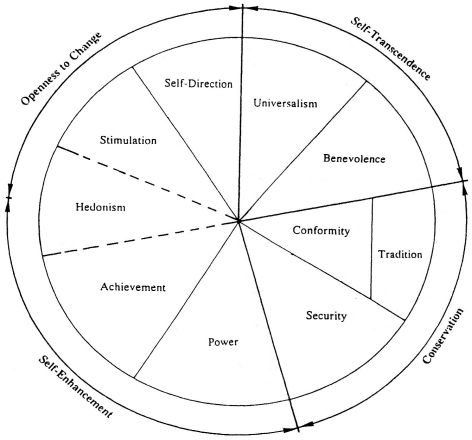


Discussion

- 10-factor and 7-factor structure could not be confirmed
- Limited divergent validity between value orientations, causing high correlation between factors and numerous cross-loadings
- Full metric and partial scalar invariance models for three higher-order factors (i.e., self-transcendence, conservation, and self-enhancement)
- Openness to change: ΔCFI = 0.014 from partial metric to partial scalar.

  ->“borderline” according to Byrne and Stewart (2006) and may still allow meaningful comparisons
- China scored highest on all value orientations: substantial discussion required


Openness to Change
Self-Transcendence
Conservation
Self-Enhancement
Self-Direction
Universalism
Stimulation
Benevolence
Hedonism
Conformity
Tradition
Achievement
Security
Power

THANK YOU!

ITEM 1:	Es ist ihm wichtig, neue Ideen zu entwickeln und kreativ zu sein. Er macht Sachen gern auf seine eigene originelle Art und Weise. (Selbstbestimmung 1)
ITEM 2:	Es ist ihm wichtig, reich zu sein. Er möchte viel Geld haben und teure Sachen besitzen. (Macht 1)
ITEM 3:	Er hält es für wichtig, dass alle Menschen auf der Welt gleich behandelt werden sollten. Er glaubt, dass jeder Mensch im Leben gleiche Chancen haben sollte. (Universalismus 1)
ITEM 4:	Es ist ihm wichtig, seine Fähigkeiten zu zeigen. Er möchte, dass die Leute bewundern, was er tut. (Leistung 1)
ITEM 5:	Es ist ihm wichtig, in einem sicheren Umfeld zu leben. Er vermeidet alles, was seine Sicherheit gefährden könnte. (Sicherheit 1)
ITEM 6:	Er mag Überraschungen und hält immer Ausschau nach neuen Aktivitäten. Er denkt, dass im Leben Abwechslung wichtig ist. (Stimulation 1)
ITEM 7:	Er glaubt, dass die Menschen tun sollten, was man ihnen sagt. Er denkt, dass Menschen sich immer an Regeln halten sollten, selbst dann, wenn es niemand sieht. (Konformität 1)
ITEM 8:	Es ist ihm wichtig, Menschen zuzuhören, die anders sind als er. Auch wenn er anderer Meinung ist als andere, will er sie trotzdem verstehen. (Universalismus 2)
ITEM 9:	Es ist ihm wichtig, zurückhaltend und bescheiden zu sein. Er versucht, die Aufmerksamkeit nicht auf sich zu lenken. (Tradition 1)
ITEM 10:	Es ist ihm wichtig, Spaß zu haben. Er gönnt sich selbst gern etwas. (Hedonismus 1)

ITEM 11:	Es ist ihm wichtig, selbst zu entscheiden, was er tut. Er ist gern frei und unabhängig von anderen. (Selbstbestimmung 2)
ITEM 12:	Es ist ihm sehr wichtig, den Menschen um ihn herum zu helfen. Er will für derenWohl sorgen. (Benevolenz 1)
ITEM 13:	Es ist ihm wichtig, sehr erfolgreich zu sein. Er hofft, dass die Leute seine Leistungen anerkennen. (Leistung 2)
ITEM 14:	Es ist ihm wichtig, dass der Staat seine persönliche Sicherheit vor allen Bedrohungen gewährleistet. Er will einen starken Staat, der seine Bürger verteidigt. (Sicherheit 2)
ITEM 15:	Er sucht das Abenteuer und geht gern Risiken ein. Er will ein aufregendes Leben haben. (Stimulation 2)
ITEM 16:	Es ist ihm wichtig, sich jederzeit korrekt zu verhalten. Er vermeidet es, Dinge zu tun, die andere Leute für falsch halten könnten. (Konformität 2)
ITEM 17:	Es ist ihm wichtig, dass andere ihn respektieren. Er will, dass die Leute tun, was er sagt. (Macht 2)
ITEM 18:	Es ist ihm wichtig, seinen Freunden gegenüber loyal zu sein. Er will sich für Menschen einsetzen, die ihm nahe stehen. (Benevolenz 2)
ITEM 19:	Er ist fest davon überzeugt, dass die Menschen sich um die Natur kümmern sollten. Umweltschutz ist ihm wichtig. (Universalismus 3)
ITEM 20:	Tradition ist ihm wichtig. Er versucht, sich an die Sitten und Gebräuche zu halten, die ihm von seiner Religion oder seiner Familie überliefert wurden. (Tradition 2)
ITEM 21:	Er lässt keine Gelegenheit aus, Spaß zu haben. Es ist ihm wichtig, Dinge zu tun, die ihm Vergnügen bereiten. (Hedonismus 2)