World Values Survey

Constructing indices for Secular and Emancipative Values

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The World Values Survey measures of secular values and emancipative values are theoretically explained and empirically tested for their cross-cultural reliability and validity in *Freedom Rising*[1], pp. 57-105. The backward estimates of emancipative values for decades before available survey data are explained in *Freedom Rising*, pp. 157-161. The following syntax for building secular values and emancipative values as well as their respective sub-indices is taken from the Online Appendix to *Freedom Rising* at www.cambridge.org/welzel (pp. 15-27). The description of the backward estimation procedure is taken from the same location (pp. 52-55). Note that the syntax below uses the variable numbers of the longitudinal datafile, that corresponds to the EVS-WVS integrated dictionary.

A. Creating SACRED-vs.-SECULAR VALUES (in short: SECULAR VALUES)

Sub-Index 1 (3 items): DEFIANCE

Sub-index	Title	Pseudo-code
I_AUTHORITY	Overall Secular Values-1: Inverse respect for authority	▪ if E018=1 then 0 ▪ if E018=2 then 0.5 ▪ if E018=3 then 1 ▪ else -99
I_NATIONALISM	Overall Secular Values-1: Inverse national pride	▪ if G006=1 then 0 ▪ if G006=2 then 0.33 ▪ if G006=3 then 0.66 ▪ if G006=4 then 1 ▪ else -99
I_DEVOUT	Overall Secular Values-1: Inverse devoutness	▪ if D054=1 then 0 ▪ if D054=2 then 0.33 ▪ if D054=3 then 0.66 ▪ if D054=4 then 1 ▪ else -99
DEFIANCE	Overall Secular Values-1: Defiance sub-index	▪ if (i_nationalism <> -99) and (i_authority <> -99) and (i_devout <> -99) then (i_nationalism+i_authority+i_devout)/3 ▪ if (i_nationalism = -99) and (i_authority <> -99) and (i_devout <> -99) then 0.077+0.463*i_devout+0.384*i_authority ▪ if (i_nationalism <> -99) and (i_authority = -99) and (i_devout <> -99) then 0.103+0.385*i_nationalism+0.434*i_devout

		▪ if (i_nationalism <> -99) and (i_authority <> -99) and (i_devout = -99) then 0.202+0.372*i_nationalism+0.363*i_authority ▪ else -99
WEIGHT1A	Overall Secular Values-1: Weight1a	▪ if (i_nationalism<>-99) and (i_authority<>-99) and (i_devout<>-99) then 1 ▪ else 0.66

The above procedure creates the **DEFIANCE** sub-index in such a way that, whenever all three of its components are available, it is the average of these three; whereas when one component is missing it is the linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possible combinations of available two components, this procedure is performed for each of these possibilities separately. All this is done to avoid losing observations when just one of the three components is unavailable.

Weight1a is used to weigh down cases in which the defiance sub-index is based on only two instead of three components.

Sub-Index 2 (3 items): DISBELIEF

Sub-index	Title	Pseudo-code
I_RELIGIMP	**Overall Secular Values-2: Inverse import of relig**	▪ if A006=1 then 0 ▪ if A006=2 then 0.33 ▪ if A006=3 then 0.66 ▪ if A006=4 then 1 ▪ else -99
I_RELIGBEL	Overall Secular Values-2: Inverse relig person	▪ if F034=1 then 0 ▪ if F034=2 then 1 ▪ if F034=3 then 1 ▪ else -99
I_RELIGPRAC	**Overall Secular Values-2: Inverse relig practice**	▪ if F028>=1 and F028<=4 then (F028-1)/6 ▪ if F028=5 then 0.5 ▪ if F028>=6 then (F028-2)/6 ▪ else -99
DISBELIEF	Overall Secular Values-2: Disbelief sub-index	▪ if (i_religimp <> -99) and (i_religbel <> -99) and (i_religprac <> -99) then (i_religimp+i_religbel+i_religprac)/3 ▪ if (i_religimp = -99) and (i_religbel <> -99) and (i_religprac <> -99) then 0.088+0.423*i_religbel+0.468*i_religprac ▪ if (i_religimp <> -99) and (i_religbel = -99) and (i_religprac <> -99) then 0.078+0.501*i_religimp+0.435*i_religprac ▪ if (i_religimp <> -99) and (i_religbel <> -99) and (i_religprac = -99) then 0.023+0.481*i_religimp+0.393*i_religbel ▪ else -99
WEIGHT2a	Overall Secular Values-2: Weight2a	▪ if (i_religimp <> -99) and (i_religbel <> -99) and (i_religprac <> -99) then 1 ▪ else 0.66

The above procedure creates the **disbelief** sub-index in such a way that, whenever all three of its components are available, it is the average of these three; whereas when one component is missing it is the linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possible combinations of available two components, this procedure is performed for each of these possibilities separately. All this is done to avoid losing observations when just one of the three components is unavailable.

Weight2a is used to weigh down cases in which the disbelief sub-index is based on only two instead of three components.

Sub-Index 3 (3 items): RELATIVISM

Sub-index	Title	Pseudo-code
I_NORM1	**Overall Secular Values-3: Inverse norm conform1**	▪ if (F115=1) then 0 ▪ if (F115 > 1) then 1 ▪ else -99
I_NORM2	Overall Secular Values-3: Inverse norm conform2	▪ if (F116=1) then 0 ▪ if (F116>1) then 1 ▪ else -99
I_NORM3	**Overall Secular Values-3: Inverse norm conform3**	▪ if (F117=1) then 0 ▪ if (F117>1) then 1 ▪ else -99
RELATIVISM	Overall Secular Values-3: Relativism	▪ if (i_norm1<>-99) and (i_norm2<>-99) and (i_norm3<>-99) then (i_norm1+i_norm2+i_norm3)/3 ▪ if (i_norm1 = -99) and (i_norm2<>-99) and (i_norm3<>-99) then 0.078+0.450*i_norm2+0.424*i_norm3 ▪ if (i_norm1<>-99) and (i_norm2 = -99) and (i_norm3<>-99) then 0.050+0.441*i_norm1+0.465*i_norm3 ▪ if (i_norm1<>-99) and (i_norm2<>-99) and (i_norm3 = -99) then 0.071+0.419*i_norm1+0.469*i_norm2 ▪ else -99
WEIGHT3A	**Overall Secular Values-3: Weight**	▪ if (i_norm1<>-99) and (i_norm2<>-99) and (i_norm3<>-99) then 1 ▪ else 0.66

The above procedure creates the **relativism** sub-index in such a way that, whenever all three of its components are available, it is the average of these three; whereas when one component is missing it is the linear transformation of the available two components. The formlula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possible combinations of available two components, this procedure is performed for each of these possibilities separately. All this is done to avoid losing observations when just one of the three components is unavailable.

Weight3a is used to weigh down cases in which the relativism sub-index is based on only two instead of three components.

Sub-Index 4 (3 items): SCEPTICISM

Sub-index	Title	Pseudo-code
		▪

I_TRUSTARMY	**Overall Secular Values-4: Inverse trust in army**	▪ if E069_02=1 then 0 ▪ if E069_02=2 then 0.33 ▪ if E069_02=3 then 0.66 ▪ if E069_02=4 then 1 ▪ else -99
I_TRUSTPOLICE	Overall Secular Values-4: Inverse trust in police	▪ if E069_06=1 then 0 ▪ if E069_06=2 then 0.33 ▪ if E069_06=3 then 0.66 ▪ if E069_06=4 then 1 ▪ else -99
I_TRUSTCOURTS	**Overall Secular Values-4: Inverse trust in courts**	▪ if E069_17=1 then 0 ▪ if E069_17=2 then 0.33 ▪ if E069_17=3 then 0.66 ▪ if E069_17=4 then 1 ▪ else -99
SCEPTICISM	Overall Secular Values-4: Scepticism index	▪ if (i_trustarmy<>-99) and (i_trustpolice<>-99) and (i_trustcourts<>-99) then (i_trustarmy+i_trustpolice+i_trustcourts)/3 ▪ if (i_trustarmy = -99) and (i_trustpolice<>-99) and (i_trustcourts<>-99) then 0.099+0.427*i_trustpolice+0.408*i_trustcourts ▪ if (i_trustarmy<>-99) and (i_trustpolice = -99) and (i_trustcourts<>-99) then 0.059+0.411*i_trustarmy+0.475*i_trustcourts ▪ if (i_trustarmy<>-99) and (i_trustpolice<>-99) and (i_trustcourts = -99) then 0.060+0.395*i_trustarmy+0.473*i_trustpolice ▪ else -99
WEIGHT4A	**Overall Secular Values-4: Weight 4a**	▪ if (i_trustarmy<>-99) and (i_trustpolice<>-99) and (i_trustcourts<>-99) then 1 ▪ else 0.66

The above procedure creates the **scepticism** sub-index in such a way that, whenever all three of its components are available, it is the average of these three; whereas when one component is missing it is the linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possible combinations of available two components, this procedure is performed for each of these possibilities separately. All this is done to avoid losing observations when just one of the three components is unavailable.

Weight4a is used to weigh down cases in which the scepticism sub-index is based on only two instead of three components.

Overall SECULAR VALUES index

The following procedure creates the overall index of secular values **SACSECVAL** in such a way that, whenever all four of its components are available, it is the average of these four; whereas when one component is missing it is the average of the remaining three components. No linear transformation is applied because the averages of the four components are quite similar.

SECVALWGT is an average weight of the specific weights for the four sub-indices. This weight should be used when analyzing the index of secular values. The average weight down-weighs cases proportional to the number items missing, related to the total of all 12 items on which the overall index of secular values is based.

INDEX	Title	Pseudo-code

SACSECVAL	**Overall Secular Values**	▪ if (scepticism<>-99) and (relativism<>-99) and (disbelief<>-99) and (defiance<>-99) then (scepticism+relativism+disbelief+defiance)/4 ▪ if (scepticism = -99) and (relativism<>-99) and (disbelief<>-99) and (defiance<>-99) then (relativism+disbelief+defiance)/3 ▪ if (scepticism<>-99) and (relativism = -99) and (disbelief<>-99) and (defiance<>-99) then (scepticism+disbelief+defiance)/3 ▪ if (scepticism<>-99) and (relativism<>-99) and (disbelief = -99) and (defiance<>-99) then (scepticism+relativism+defiance)/3 ▪ if (scepticism<>-99) and (relativism<>-99) and (disbelief<>-99) and (defiance = -99) then (scepticism+relativism+disbelief)/3 ▪ else -99
SECVALWGT	Weight for overal secular values	▪ (weight1a+weight2a+weight3a+weight4a)/4

B. OBEDIENT-vs.-EMANCIPATIVE VALUES (in short: EMANCIPATIVE VALUES)

Sub-Index 1 (3 items): AUTONOMY

Sub-index	Title	Pseudo-code
I_INDEP	**Emancipative Values-1: Independence as kid quality**	▪ if A029=1 then 1 ▪ if A029=0 then 0 ▪ else -99
I_IMAGIN	Emancipative Values-1: Imagination as kid quality	▪ if A034=1 then 1 ▪ if A034=0 then 0 ▪ else -99
I_NONOBED	**Emancipative Values-1: Obedience not kid quality**	▪ if A042=1 then 0 ▪ if A042=0 then 1 ▪ else -99
AUTONOMY	Emancipative Values-1: Autonomy subindex	▪ if I_INDEP>-99 and I_IMAGIN>-99 and I_NONOBED>-99 THEN (I_INDEP+I_IMAGIN+I_NONOBED)/3 ▪ if I_INDEP>-99 and I_IMAGIN>-99 and I_NONOBED=-99 THEN 0.175+0.397*I_INDEP+0.366*I_IMAGIN ▪ if I_INDEP>-99 and I_IMAGIN=-99 and I_NONOBED>-99 THEN 0.037+0.364*I_INDEP+0.356*I_NONOBED ▪ if I_INDEP=-99 and I_IMAGIN>-99 and I_NONOBED>-99 THEN 0.102+0.379*I_IMAGIN+0.400*I_NONOBED ▪ else -99
WEIGHT1B	**Emancipative Values-1: Weight1b**	▪ if I_INDEP>-99 AND I_IMAGIN>-99 and I_NONOBED>-99 THEN 1 ▪ else 0.66

The above procedure creates the **autonomy** sub-index index in such a way that whenever all three of its components are available, it is the average of these three, whereas when one

component is missing it is a linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two specific components in question. Since there are three possibilities of which combination of two components is available, this procedure has to be performed separately for each combination. All this is done to avoid losing observations when just one of the three components is missing.

Weight1b is used to weigh down cases in which the autonomy sub-index is based on only two instead of three components.

Sub-Index 2 (3 items): EQUALITY

Sub-index	Title	Pseudo-code
I_WOMJOB	**Emancipative Values-2: Gender equality: job**	▪ if C001=1 then 0 ▪ if C001=3 then 0.5 ▪ if C001=2 then 1 ▪ else -99
I_WOMPOL	Emancipative Values-2: Gender equality: politics	▪ if D059=1 then 0 ▪ if D059=2 then 0.33 ▪ if D059=3 then 0.66 ▪ if D059=4 then 1 ▪ else -99
I_WOMEDU	**Emancipative Values-2: Gender equality: education**	▪ if D060=1 then 0 ▪ if D060=2 then 0.33 ▪ if D060=3 then 0.66 ▪ if D060=4 then 1 ▪ else -99
EQUALITY	Emancipative Values-2: Equality sub-index	▪ if I_WOMPOL>-99 and I_WOMEDU>-99 and I_WOMJOB>-99 THEN (I_WOMPOL+I_WOMEDU+I_WOMJOB)/3 ▪ if I_WOMPOL=-99 and I_WOMEDU>-99 and I_WOMJOB>-99 THEN 0.049+0.447*I_WOMEDU+0.404*I_WOMJOB ▪ if I_WOMPOL>-99 and I_WOMEDU=-99 and I_WOMJOB>-99 THEN 0.145+0.443*I_WOMPOL+0.372*I_WOMJOB ▪ if I_WOMPOL>-99 and I_WOMEDU>-99 and I_WOMJOB=-99 THEN 0.042+0.485*I_WOMPOL+0.421*I_WOMEDU ▪ else -99
WEIGHT2B	Emancipative Values-2: Weight2b	▪ if I_WOMPOL>-99 and I_WOMJOB>-99 and I_WOMEDU>-99 then 1 ▪ else 0.66

The above procedure creates the **equality** sub-index index in such a way that whenever all three of its components are available, it is the average of these three, whereas when one component is missing it is a linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possibilities of which combination of two components is available, this procedure has to be performed separately for each combination. All this is done to avoid losing observations when just one of the three components is missing.

Weight2b is used to weigh down cases in which one of the three components is missing, giving these cases three third of the unit weight of 1.

Sub-Index 3 (3 items): CHOICE

Sub-index	Title	Pseudo-code
I_HOMOLIB	Emancipative Values-3: Homosexuality acceptance	if F118<0 then -99 else (F118-1)/9
I_ABORTLIB	Emancipative Values-3: Abortion acceptable	if F120<1 then -99 else (F120-1)/9
I_DIVORLIB	Emancipative Values-3: Divorce acceptable	if F121<1 then -99 else (F121-1)/9
CHOICE	Emancipative Values-3: Choice sub-index	if I_HOMOLIB>-99 AND I_ABORTLIB>-99 AND I_DIVORLIB>-99 THEN (I_HOMOLIB+I_ABORTLIB+I_DIVORLIB)/3 if I_HOMOLIB=-99 AND I_ABORTLIB>-99 AND I_DIVORLIB>-99 THEN 0.008+0.434*I_ABORTLIB+0.439*I_DIVORLIB if I_HOMOLIB>-99 AND I_ABORTLIB=-99 AND I_DIVORLIB>-99 THEN 0.015+0.408*I_HOMOLIB+0.496*I_DIVORLIB if I_HOMOLIB>-99 AND I_ABORTLIB>-99 AND I_DIVORLIB=-99 THEN 0.069+0.416*I_HOMOLIB+0.505*I_ABORTLIB else -99
WEIGHT3B	Emancipative Values-3: Weight3b	if I_ABORTLIB>-99 AND I_DIVORLIB>-99 AND I_HOMOLIB>-99 then 1 else 0.66

The above procedure creates the **choice** sub-index index in such a way that whenever all three of its components are available, it is the average of these three, whereas when one component is missing it is a linear transformation of the available two components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the three component average on the two available components. Since there are three possibilities of which combination of two components is available, this procedure has to be performed separately for each combination. All this is done to avoid losing observations when just one of the three components is missing.

Weight3b is used to weigh down cases in which one of the three components is missing, giving these cases three third of the unit weight of 1.

Sub-Index 4 (3 items): VOICE

Sub-index	Title	Pseudo-code

I_VOICE1	**Emancipative Values-4: Voice 1**	if ((E003=2 and E004=4) or (E003=4 and E004=2)) THEN 1
		if ((E003=2 and E004<>4) or (E003=4 and E004<>2)) THEN 0.66
		f ((E003<>2 and E004=4) or (E003<>4 and E004=2)) THEN 0.33
		if ((E003>-1) and (E003>-1) and (E004>-1) and (E004>-1)) THEN 0
		else -99

I_VOICE2	Emancipative Values-4: Voice2	if E001=3 then 1 if E002=3 then 0.5 if (E001>-1) and (E002>-1) then 0 else -99

I_VOI2_00	**Emancipative Values-4: Voi2_00 (auxiliary)**	▪ if I_VOICE1>-99 and I_VOICE2>-99 then (I_VOICE1+I_VOICE2)/2 ▪ else -99
VOICE	Emancipative Values-4: Voice sub-index	▪ if I_VOI2_00>-99 then I_VOI2_00 ▪ if I_VOICE1>-99 THEN 0.656*I_VOICE1+0.136 ▪ if I_VOICE2>-99 THEN 0.613*I_VOICE2+0.141 ▪ else -99
WEIGHT4B	**Emancipative Values-4: Weight 4b**	▪ IF I_VOI2_00>-99 then 1 ▪ else 0.66

I_VOI2_00 is an auxiliary version of voice indices for the situation that both voice1 and voice2 or only one of them are available.

The above procedure creates the final index of **VOICE** in such a way that whenever voice1 and voice2 are available, the index is the average of the two. However, when (as in wave 1), the voice2 index is not available, the final voice index is a linear transformation of the voice1 index only. The formula for the linear transformation is obtained by regressing the combined voice1 and voice2 index on the voice1 index.

Weight4b is used to weigh down cases in which one of the three components is missing, giving these cases three third of the unit weight of 1.

Overall EMANCIPATIVE VALUES INDEX

The following procedure creates the overall index of emancipative values in such a way that whenever all four of its components are available, it is the average of these four, whereas when one component is missing it is a linear transformation of the available three components. The formula for the linear transformation (constant and component coefficients) is obtained from regressing the four component average on the three available components. Since there are four possibilities of which combination of three components is available, this procedure has to be performend for each of these possibilities separately. All this is done to avoid losing observations when just one of the four components is missing.

INDEX	Title	Pseudo-code
RESEMAVAL	**Emancipative values**	▪ IF (AUTONOMY<>-99) AND (EQUALITY<>-99) AND (CHOICE<>-99) AND (VOICE<>-99) THEN (AUTONOMY+EQUALITY+CHOICE+VOICE)/4 ▪ IF (AUTONOMY<>-99) AND (EQUALITY = -99) AND (CHOICE<>-99) AND (VOICE<>-99) THEN 0.103+0.266*AUTONOMY+0.305*CHOICE+0.286*VOICE ▪ IF (AUTONOMY = -99) AND (EQUALITY<>-99) AND (CHOICE<>-99) AND (VOICE<>-99) THEN 0.070+0.274*EQUALITY+0.304*CHOICE+0.271*VOICE ▪ IF (AUTONOMY<>-99) AND (EQUALITY<>-99) AND (CHOICE = -99) AND (VOICE<>-99) THEN 0.016+0.291*AUTONOMY+0.310*EQUALITY+0.288*VOICE ▪ IF (AUTONOMY<>-99) AND (EQUALITY<>-99) AND (CHOICE<>-99) AND (VOICE = -99) THEN 0.051+0.267*AUTONOMY+0.292*EQUALITY+0.290*CHOICE ▪ ELSE -99
WEIGHTB	Weight for Emancipative values	(WEIGHT1B+WEIGHT2B+WEIGHT3B+WEIGHT4B)/4

WeightB is an average weight of the specific weights for the four sub-indices. This weight should be used when analyzing the index of emancipative values. The average weight down-weighs cases proportional to the number items missing, related to the total of all 12 items on which the overall index of emancipative values is based.

[1] Welzel,, C. (2013). *Freedom Rising: Human Empowerment and the Quest for Emancipation*. New York: Cambridge University Press.

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