Agree to Agree: Appendix

Since survey weights are used throughout unless otherwise stated, the BES respondents without survey weights were not included all parts of the following analysis.

Appendix A: Variable Codings

Education Recodes

Table A1: BSA Education Recode

Original Coding	New Coding
Postgraduate degree	Postgrad
First degree	Undergrad
Higher educ below degree	A-level/equiv
A level or equiv	A-level/equiv
O level or equiv	GCSE/equiv
CSE or equiv	GCSE/equiv
Foreign or other	Missing
No qualification	No Qualification

Table A2: BES Education Recode

Original Coding	New Coding
No qualifications	No qualification
Below GCSE	No qualification
GCSE	GCSE/equiv
A-level	A-level/equiv
Undergraduate	Undergrad
Postgrad	Postgrad

Appendix B: Demonstration

Regression results

Table B1: BSA and BES Scales Regressed on Education

	BSA Left-Right	BES Left-Right	BSA Lib-Auth	BES Lib-Auth
Intercept	1.31	1.65	2.82	2.26
	(0.04)	(0.02)	(0.03)	(0.02)
GCSE/Equiv	0.22	0.01	−0.23	0.09
	(0.04)	(0.07)	(0.04)	(0.07)
A-level/Equiv	0.30	−0.12	−0.32	−0.23
	(0.06)	(0.04)	(0.05)	(0.04)
Undergrad	0.27	0.02	−0.68	−0.40
	(0.05)	(0.04)	(0.04)	(0.03)
Postgrad	0.24	−0.00	−0.84	−0.70
	(0.06)	(0.05)	(0.05)	(0.05)
R^2	0.01	0.01	0.13	0.12
Adj. R^2	0.01	0.00	0.13	0.12
Num. obs.	3123	1806	3125	1931

Demonstration Robustness

Indicators common to both datasets:

- **Ind1:** There is one law for the rich and one for the poor
- **Ind2:** Young people today don't have enough respect for traditional British values
- **Ind3:** Censorship of films and magazines is necessary to uphold moral standards
- **Ind4:** For some crimes, the death penalty is the most appropriate sentence
- **Ind5:** People who break the law should be given stiffer sentences

Table B2: Regression of Survey Membership on Common Indicators

	OLS	Logit	Probit
Intercept	0.56	0.25	0.16
	(0.03)	(0.11)	(0.07)
Ind1	0.01	0.05	0.03
	(0.01)	(0.03)	(0.02)
Ind2	−0.00	−0.02	−0.01
	(0.01)	(0.03)	(0.02)
Ind3	−0.01	−0.05	−0.03
	(0.01)	(0.03)	(0.02)
Ind4	−0.02	−0.06	−0.04
	(0.01)	(0.02)	(0.01)
Ind5	0.04	0.16	0.10
	(0.01)	(0.04)	(0.02)
R^2	0.01		
Adj. R^2	0.00		
Num. obs.	5170	5170	5170
AIC		7039.76	7040.06
BIC		7079.07	7079.37
Log Likelihood		−3513.88	−3514.03
Deviance		6841.30	6841.57

Table B3: Regression of Scales on Survey Month

	Left-Right	Lib-Auth
Intercept	1.64	2.04
	(0.02)	(0.02)
Aug	−0.03	0.00
	(0.03)	(0.03)
Sep	−0.04	0.04
	(0.04)	(0.05)
R^2	0.00	0.00
Adj. R^2	−0.00	−0.00
Num. obs.	1789	1914

Appendix C: Unit Intercept Confirmatory Factor Analysis

The standard confirmatory factor analysis model is given in its linear form as:

$$x_{ij} = \lambda_{j1}\eta_{i1} + ... + \lambda_{jm}\eta_{im} + \epsilon_{ij} \tag{1}$$

Which is the common factor model discussed in the main body of the paper. The assumptions of this model are:

1. The means of the common factors are 0
2. The common factors are normally distributed
3. The means of the unique components are 0
4. The unique components are normally distributed
5. The unique components are uncorrelated with the common factors
6. The unique components are uncorrelated with each other

The model can be expressed in a more compact matrix form:

$$\mathbf{x} = \boldsymbol{\Lambda}\boldsymbol{\eta} + \boldsymbol{\epsilon} \tag{2}$$

Where $\mathbf{x}$ is the $p \times 1$ vector of indicators, $\boldsymbol{\Lambda}$ is the $p \times m$ matrix of factor loadings, $\boldsymbol{\eta}$ is the $m \times 1$ vector of factor scores, and $\boldsymbol{\epsilon}$ is the $p \times 1$ vector of unique components. In turn, we can further express the model in terms of covariance matrices:

$$\boldsymbol{\Sigma} = \boldsymbol{\Lambda}\boldsymbol{\Psi}\boldsymbol{\Lambda}' + \boldsymbol{\Theta_{\epsilon}} \tag{3}$$

Where $\boldsymbol{\Sigma}$ is the $p \times p$ variance-covariance matrix of the indicators, $\boldsymbol{\psi}$ is the $m \times m$ variance-covariance matrix of the common factors, and $\boldsymbol{\Theta_{\epsilon}}$ is the $p \times p$ variance-covariance matrix of unique components which by assumption 6 is a diagonal matrix. When estimated with maximum likelihood (ML), assuming no (further) restrictions are placed on the latent variables means the discrepancy function minimised is:

$$F_{ML} = ln|\mathbf{S}| - ln|\boldsymbol{\Sigma}| + trace(\boldsymbol{S}\boldsymbol{\Sigma}^{\mathbf{-1}}) - p \tag{4}$$

Where $\mathbf{S}$ is the model-implied variance-covariance matrix and p is the number of indicators.

Person Intercept CFA

As discussed in the main body of the paper, unit intercept CFA is given by

$$x_{ij} = \lambda_{jc}\eta_{ic} + 1\eta_{ia} + \epsilon_{ij} \tag{5}$$

Where factor c would be the common factor and factor a would be the person intercept factor. Maydeu-Olivares and Coffman introduce three further assumptions for this model relative to regular CFA, which deserve discussion. The first two are:

7. The mean of the unit-intercepts is 0

8. The unit intercepts are uncorrelated with the unique components

Thus far, these are simply assumptions 1 and 5 repackaged for treating the unit-intercept factor separately. However, Maydeu-Olivares and Coffman make a further assumption:

9. The unit intercepts are uncorrelated with the common factor(s)

This assumption is explained in part by Maydeu-Olivares and COffman's choice of language for the model. As discussed in the main body of the paper, they specifically refer to the model as a *random-intercept* model and clearly are aiming to draw a parallel with multilevel regression modelling in their description of the unit-intercept confirmatory factor analysis model (indeed, their formulae reflect this too). However, as discussed in the main body of the paper, this comparison is not only unnecessary but arguably limits the utility of the model. I therefore drop this assumption and utilise the terminology person intercept instead.

To identify the scales of the common factors in the person intercept model, the variances of the common factors are constrained to 1 (as opposed to their first loading being constrained to 1). By contrast, the variance of the unit-intercept is freely estimated. The important feature of such a model is that the loading of the unit-intercept factor is constrained across indicators. A method of creating such an intercept while constraining the unit-intercept variance to 1 would simply be to apply equality constraints to the unit-intercept loadings, such that they were equal across all indicators:

$$x_{ij} = \lambda_{jc}\eta_{ic} + \lambda_a\eta_{ia} + \epsilon_{ij} \tag{6}$$

As stated in the main body of the paper, the difference between (6) and (5) is that instead of a loading of '1' on η_{ia}, there is now a freely estimated loading lacking a 'j' subscript as it is common to all indicators.

Ordinal Confirmatory Factor Analysis

One potential flaw of the person intercept CFA model is that it does not fully take into account the ordinal nature of the indicator variables typical for Likert scales. In ordinal CFA, the relationship between the latent variables and the observed categories are assumed to exist via a threshold relationship:

$$\begin{aligned} x^*_{ij} &= \lambda_{j1}\eta_{i1} + ... + \lambda_{jm}\eta_{im} + \epsilon_{ij} \\ x_{ij} &= K \quad if \quad \tau_{jk} < x^*_{ij} < \tau_{jk+1} \end{aligned} \tag{7}$$

Where x^*_{ij} is the latent variable underlying x_{ij}, K is one of the t values x_{ij} can take on, τ_{jk} is the kth threshold for indicator j, $\tau_{j0} = -\infty$ and $\tau_{jt} = \infty$.

Ordinal CFA makes similar assumptions to continuous CFA:

1. The means of the common factors are 0
2. The common factors are normally distributed
3. The means of the unique components are 0
4. The unique components are normally distributed
5. The unique components are uncorrelated with the common factors
6. The unique components are uncorrelated with each other

It follows that x_{ij}^* is normally distributed with mean 0 and the covariance matrix:

$$\boldsymbol{\Sigma} = \boldsymbol{\Lambda\Psi\Lambda}' + \boldsymbol{\Theta_\epsilon} \tag{8}$$

To identify the variances of the unique components, we set

$$\boldsymbol{\Theta_\epsilon} = \mathbf{I} - diag(\boldsymbol{\Lambda\Psi\Lambda}') \tag{9}$$

such that the covariance matrix becomes a correlation matrix $\mathbf{P}$.

Ordinal CFA is often estimated in a three-step procedure. First, the thresholds are estimated alone using maximum likelihood. The thresholds are often estimated by the corresponding percentage of respondents in each category of the ordinal variable. Second, the polychoric correlation matrix of the observed indicators is estimated via maximum likelihood. Third, assuming no restrictions are placed on the thresholds, a least squares discrepancy function based on the polychoric correlations can be used:

$$F_{LS} = (\hat{\boldsymbol{p}} - \boldsymbol{p(\theta)})'\boldsymbol{V}(\hat{\boldsymbol{p}} - \boldsymbol{p(\theta)}) \tag{10}$$

Where $\hat{p}$ is the polychoric correlation matrix estimated in the second step, $p(\theta)$ is the model-implied correlation matrix, $\boldsymbol{\theta}$ represents the parameters of the model, and $\boldsymbol{V}$ is a weighting matrix. The choice of weighting matrix determines the exact estimation method being used. If $\hat{\boldsymbol{\Gamma}}$ is an estimate of the asymptotic covariance matrix of estimated polychoric correlations, then:

- Weighted Least Squares (WLS): $\boldsymbol{V} = \hat{\boldsymbol{\Gamma}}$
- Diagonally Weighted Least Squares (DWLS): $\mathbf{V} = diag(\hat{\boldsymbol{\Gamma}})^{-1/2}$
- Unweighted Least Squares (ULS): $\boldsymbol{V} = \boldsymbol{I}$

Similarly to regular CFA, implementing the unit intercept in ordinal CFA is relatively straightforward. We can either set the loadings of the unit-intercept factor to 1 while freeing its variance:

$$x^*_{ij} = \lambda_{jc}\eta_{ic} + 1\eta_{ia} + \epsilon_{ij} \tag{11}$$

Or alternatively we can can constrain its variance to 1 while constraining the loadings to be equal but freely estimating their value:

$$x^*_{ij} = \lambda_{jc}\eta_{ic} + \lambda_{a}\eta_{ia} + \epsilon_{ij} \tag{12}$$

Continuing with the convention established above, for the remainder of this paper I refer to these models as (11) OCFA1 and (12) OCFA2.

Appendix D: Correction

Identifying Scale CFA

Please note that the empathy scale indicators have been shortened. So 'empathy1' is 'em1', and so on.

Table D1: Zero CFA Check

	Model	
	Estimate	Std. Err.
	Loadings	
Zero		
zero1	0.41	0.01
zero4	0.49	0.02
zero5	-0.53	0.02
zero7	0.61	0.01
zero9	-0.59	0.01
zero11	-0.58	0.02
Acq		
zero1	1.00^{+}	
zero4	1.00^{+}	
zero5	1.00^{+}	
zero7	1.00^{+}	
zero9	1.00^{+}	
zero11	1.00^{+}	
	Latent Variances	
Zero	1.00^{+}	
Acq	0.10	0.00
	Fit Indices	
χ^2(df)	253.63	
CFI	0.96	
TLI	0.93	
RMSEA	0.07	
Scaled χ^2(df)	181.16(8)	

$^{+}$Fixed parameter

CFA Results

Zero-Sum CFA Results

Table D3: Zero-Sum CFA1

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.81	0.02

lr2	0.70	0.01
lr3	0.81	0.01
lr4	0.83	0.01
lr5	0.61	0.01
AuthCorrected		
al1	0.85	0.01
al2	0.99	0.02
al3	0.73	0.01
al4	0.56	0.02
al5	0.72	0.01
Z		
zero7	0.58	0.01
zero1	0.40	0.01
zero4	0.48	0.02
zero11	-0.59	0.02
zero5	-0.55	0.02
zero9	-0.60	0.01
Acq		
lr1	1.00^{+}	
lr2	1.00^{+}	
lr3	1.00^{+}	
lr4	1.00^{+}	
lr5	1.00^{+}	
al1	1.00^{+}	
al2	1.00^{+}	
al3	1.00^{+}	
al4	1.00^{+}	

al5	1.00$^+$	
zero7	1.00$^+$	
zero1	1.00$^+$	
zero4	1.00$^+$	
zero11	1.00$^+$	
zero5	1.00$^+$	
zero9	1.00$^+$	
	Latent Variances	
Z	1.00$^+$	
LeftCorrected	1.00$^+$	
AuthCorrected	1.00$^+$	
Acq	0.08	0.00
	Fit Indices	
χ^2(df)	3134.95	
CFI	0.90	
TLI	0.89	
RMSEA	0.07	
Scaled χ^2(df)	2641.83(103)	

$^+$Fixed parameter

Table D4: Zero-Sum CFA2

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.83	0.02
lr2	0.74	0.02

lr3	0.85	0.01
lr4	0.87	0.02
lr5	0.65	0.02
AuthCorrected		
al1	0.87	0.02
al2	1.02	0.03
al3	0.75	0.02
al4	0.57	0.02
al5	0.74	0.02
Z		
zero7	0.67	0.05
zero1	0.50	0.05
zero4	0.60	0.05
zero11	-0.49	0.05
zero5	-0.44	0.05
zero9	-0.50	0.05
Acq		
lr1	0.32	0.02
lr2	0.32	0.02
lr3	0.32	0.02
lr4	0.32	0.02
lr5	0.32	0.02
al1	0.32	0.02
al2	0.32	0.02
al3	0.32	0.02
al4	0.32	0.02
al5	0.32	0.02

zero7	0.32	0.02
zero1	0.32	0.02
zero4	0.32	0.02
zero11	0.32	0.02
zero5	0.32	0.02
zero9	0.32	0.02
	Latent Variances	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
Z	1.00^{+}	
Acq	1.00^{+}	
	Fit Indices	
χ^2(df)	2705.09	
CFI	0.92	
TLI	0.90	
RMSEA	0.07	
Scaled χ^2(df)	2307.25(97)	

$^{+}$Fixed parameter

Table D5: Zero-Sum OCFA1

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.67	0.01
lr2	0.81	0.01
lr3	0.83	0.01

lr4	0.81	0.01
lr5	0.67	0.01
<u>AuthCorrected</u>		
al1	0.80	0.01
al2	0.70	0.01
al3	0.75	0.01
al4	0.50	0.01
al5	0.79	0.01
<u>Z</u>		
zero7	0.70	0.01
zero1	0.45	0.01
zero4	0.52	0.01
zero11	-0.57	0.01
zero5	-0.59	0.01
zero9	-0.67	0.01
<u>Acq</u>		
lr1	1.00^{+}	
lr2	1.00^{+}	
lr3	1.00^{+}	
lr4	1.00^{+}	
lr5	1.00^{+}	
al1	1.00^{+}	
al2	1.00^{+}	
al3	1.00^{+}	
al4	1.00^{+}	
al5	1.00^{+}	
zero7	1.00^{+}	

zero1	1.00^{+}	
zero4	1.00^{+}	
zero11	1.00^{+}	
zero5	1.00^{+}	
zero9	1.00^{+}	
	Latent Variances	
Z	1.00^{+}	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
Acq	0.05	0.00
	Fit Indices	
χ^2(df)	6344.31	
CFI	0.90	
TLI	0.92	
RMSEA	0.08	
Scaled χ^2(df)	1855.01(167)	

$^{+}$Fixed parameter

Table D6: Zero-Sum OCFA2

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.78	0.01
lr2	0.86	0.01
lr3	0.90	0.01
lr4	0.85	0.01

lr5	0.68	0.01
AuthCorrected		
al1	0.81	0.01
al2	0.74	0.01
al3	0.76	0.01
al4	0.49	0.01
al5	0.78	0.01
Z		
zero7	0.69	0.03
zero1	0.49	0.03
zero4	0.61	0.03
zero11	-0.54	0.03
zero5	-0.55	0.03
zero9	-0.70	0.03
Acq		
lr1	0.35	0.01
lr2	0.35	0.01
lr3	0.35	0.01
lr4	0.35	0.01
lr5	0.35	0.01
al1	0.35	0.01
al2	0.35	0.01
al3	0.35	0.01
al4	0.35	0.01
al5	0.35	0.01
zero7	0.35	0.01
zero1	0.35	0.01

zero4	0.35	0.01
zero11	0.35	0.01
zero5	0.35	0.01
zero9	0.35	0.01
	Latent Variances	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
Z	1.00^{+}	
Acq	1.00^{+}	
	Fit Indices	
χ^2(df)	3190.44	
CFI	0.95	
TLI	0.94	
RMSEA	0.07	
Scaled χ^2(df)	3933.42(97)	

$^{+}$Fixed parameter

Table D2: Empathy CFA Check

	Model	
	Estimate	Std. Err.
	Loadings	
Empathy		
em1	0.30	0.01
em2	0.32	0.01
em3	0.30	0.01
em4	-0.34	0.01
em5	0.29	0.01
em6	0.25	0.01
em7	-0.45	0.01
em8	-0.48	0.01
em9	-0.39	0.01
em10	-0.47	0.01
Acq		
em1	1.00^{+}	
em2	1.00^{+}	
em3	1.00^{+}	
em4	1.00^{+}	
em5	1.00^{+}	
em6	1.00^{+}	
em7	1.00^{+}	
em8	1.00^{+}	
em9	1.00^{+}	
em10	1.00^{+}	
	Latent Variances	
Empathy	1.00^{+}	
Acq	0.05	0.00
	Fit Indices	
χ^2(df)	2268.03	
CFI	0.87	
TLI	0.83	
RMSEA	0.12	
Scaled χ^2(df)	1513.06(34)	

$^{+}$Fixed parameter

Empathy CFA Results

Table D7: Empathy CFA1

	Model

	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.83	0.02
lr2	0.70	0.01
lr3	0.84	0.01
lr4	0.82	0.01
lr5	0.65	0.02
AuthCorrected		
al1	0.90	0.02
al2	1.03	0.02
al3	0.77	0.02
al4	0.63	0.02
al5	0.77	0.01
E		
em1	0.29	0.01
em2	0.31	0.01
em3	0.29	0.01
em4	-0.34	0.01
em5	0.28	0.01
em6	0.25	0.01
em7	-0.46	0.01
em8	-0.49	0.01
em9	-0.40	0.01
em10	-0.48	0.01
Acq		
lr1	1.00^{+}	

lr2	1.00^{+}	
lr3	1.00^{+}	
lr4	1.00^{+}	
lr5	1.00^{+}	
al1	1.00^{+}	
al2	1.00^{+}	
al3	1.00^{+}	
al4	1.00^{+}	
al5	1.00^{+}	
em1	1.00^{+}	
em2	1.00^{+}	
em3	1.00^{+}	
em4	1.00^{+}	
em5	1.00^{+}	
em6	1.00^{+}	
em7	1.00^{+}	
em8	1.00^{+}	
em9	1.00^{+}	
em10	1.00^{+}	
	Latent Variances	
E	1.00^{+}	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
Acq	0.04	0.00
	Fit Indices	
χ^2(df)	4227.66	
CFI	0.89	

TLI	0.87	
RMSEA	0.07	
Scaled χ^2(df)	3470.77(169)	

$^+$Fixed parameter

Table D8: Empathy CFA2

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.85	0.02
lr2	0.72	0.02
lr3	0.85	0.01
lr4	0.83	0.02
lr5	0.67	0.02
AuthCorrected		
al1	0.92	0.02
al2	1.08	0.03
al3	0.79	0.02
al4	0.65	0.02
al5	0.80	0.02
E		
em1	0.13	0.05
em2	0.16	0.05
em3	0.14	0.05
em4	-0.49	0.05
em5	0.13	0.05

em6	0.10	0.05
em7	-0.61	0.05
em8	-0.64	0.05
em9	-0.55	0.05
em10	-0.63	0.05
Acq		
lr1	0.27	0.03
lr2	0.27	0.03
lr3	0.27	0.03
lr4	0.27	0.03
lr5	0.27	0.03
al1	0.27	0.03
al2	0.27	0.03
al3	0.27	0.03
al4	0.27	0.03
al5	0.27	0.03
em1	0.27	0.03
em2	0.27	0.03
em3	0.27	0.03
em4	0.27	0.03
em5	0.27	0.03
em6	0.27	0.03
em7	0.27	0.03
em8	0.27	0.03
em9	0.27	0.03
em10	0.27	0.03
	Latent Variances	

LeftCorrected	1.00^{+}
AuthCorrected	1.00^{+}
E	1.00^{+}
Acq	1.00^{+}
	Fit Indices
χ^2(df)	3846.21
CFI	0.90
TLI	0.88
RMSEA	0.07
Scaled χ^2(df)	3164.99(163)

$^{+}$Fixed parameter

Table D9: Empathy OCFA1

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.68	0.01
lr2	0.80	0.01
lr3	0.85	0.01
lr4	0.81	0.01
lr5	0.68	0.01
AuthCorrected		
al1	0.81	0.01
al2	0.73	0.01
al3	0.76	0.01
al4	0.50	0.01

al5	0.81	0.01
<u>E</u>		
em1	0.61	0.01
em2	0.69	0.01
em3	0.66	0.01
em4	-0.53	0.01
em5	0.63	0.01
em6	0.48	0.01
em7	-0.77	0.01
em8	-0.78	0.01
em9	-0.56	0.01
em10	-0.78	0.01
<u>Acq</u>		
lr1	1.00^{+}	
lr2	1.00^{+}	
lr3	1.00^{+}	
lr4	1.00^{+}	
lr5	1.00^{+}	
al1	1.00^{+}	
al2	1.00^{+}	
al3	1.00^{+}	
al4	1.00^{+}	
al5	1.00^{+}	
em1	1.00^{+}	
em2	1.00^{+}	
em3	1.00^{+}	
em4	1.00^{+}	

em5	1.00^{+}	
em6	1.00^{+}	
em7	1.00^{+}	
em8	1.00^{+}	
em9	1.00^{+}	
em10	1.00^{+}	
	Latent Variances	
E	1.00^{+}	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
Acq	0.04	0.00
	Fit Indices	
χ^2(df)	7500.96	
CFI	0.90	
TLI	0.92	
RMSEA	0.08	
Scaled χ^2(df)	1682.38(239)	

$^{+}$Fixed parameter

Table D10: Empathy OCFA2

	Model	
	Estimate	Std. Err.
	Loadings	
LeftCorrected		
lr1	0.79	0.01
lr2	0.88	0.01
lr3	0.95	0.01

lr4	0.89	0.01
lr5	0.73	0.01
<u>AuthCorrected</u>		
al1	0.87	0.01
al2	0.75	0.01
al3	0.83	0.01
al4	0.59	0.01
al5	0.87	0.01
<u>E</u>		
em1	0.65	0.04
em2	0.73	0.04
em3	0.71	0.04
em4	-0.49	0.04
em5	0.68	0.04
em6	0.53	0.04
em7	-0.73	0.04
em8	-0.74	0.04
em9	-0.52	0.04
em10	-0.74	0.04
<u>Acq</u>		
lr1	0.33	0.01
lr2	0.33	0.01
lr3	0.33	0.01
lr4	0.33	0.01
lr5	0.33	0.01
al1	0.33	0.01
al2	0.33	0.01

al3	0.33	0.01
al4	0.33	0.01
al5	0.33	0.01
em1	0.33	0.01
em2	0.33	0.01
em3	0.33	0.01
em4	0.33	0.01
em5	0.33	0.01
em6	0.33	0.01
em7	0.33	0.01
em8	0.33	0.01
em9	0.33	0.01
em10	0.33	0.01
	Latent Variances	
LeftCorrected	1.00^{+}	
AuthCorrected	1.00^{+}	
E	1.00^{+}	
Acq	1.00^{+}	
	Fit Indices	
χ^2(df)	4465.90	
CFI	0.94	
TLI	0.93	
RMSEA	0.08	
Scaled χ^2(df)	4111.71(163)	

$^{+}$Fixed parameter

CFA Measure Correlations

Table D11: Zero-Sum Left-Right

	CFA1	OCFA1	CFA2	OCFA2
CFA1				
OCFA1	0.991			
CFA2	0.987	0.974		
OCFA2	0.984	0.984	0.984	

Table D12: Empathy Left-Right

	CFA1	OCFA1	CFA2	OCFA2
CFA1				
OCFA1	0.982			
CFA2	0.985	0.958		
OCFA2	0.976	0.944	0.981	

Table D13: Zero-Sum Lib-Auth

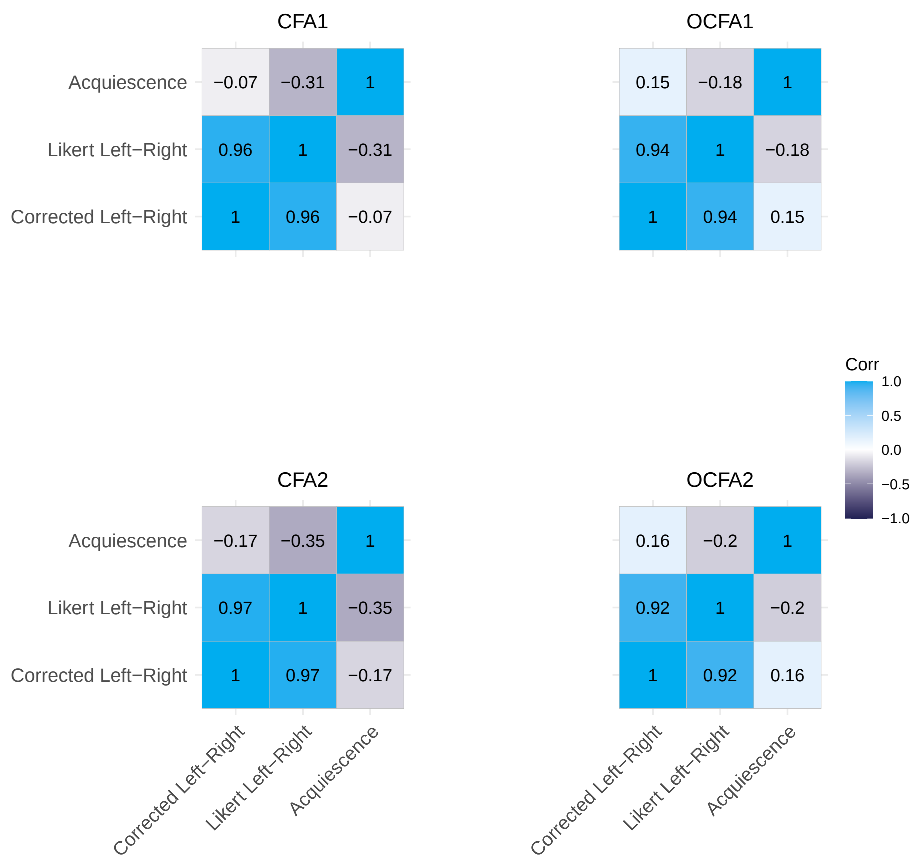
	CFA1	OCFA1	CFA2	OCFA2
CFA1				
OCFA1	0.986			
CFA2	0.989	0.973		
OCFA2	0.979	0.986	0.982	

Table D14: Empathy Lib-Auth

	CFA1	OCFA1	CFA2	OCFA2
CFA1				
OCFA1	0.982			
CFA2	0.987	0.963		
OCFA2	0.973	0.941	0.978	

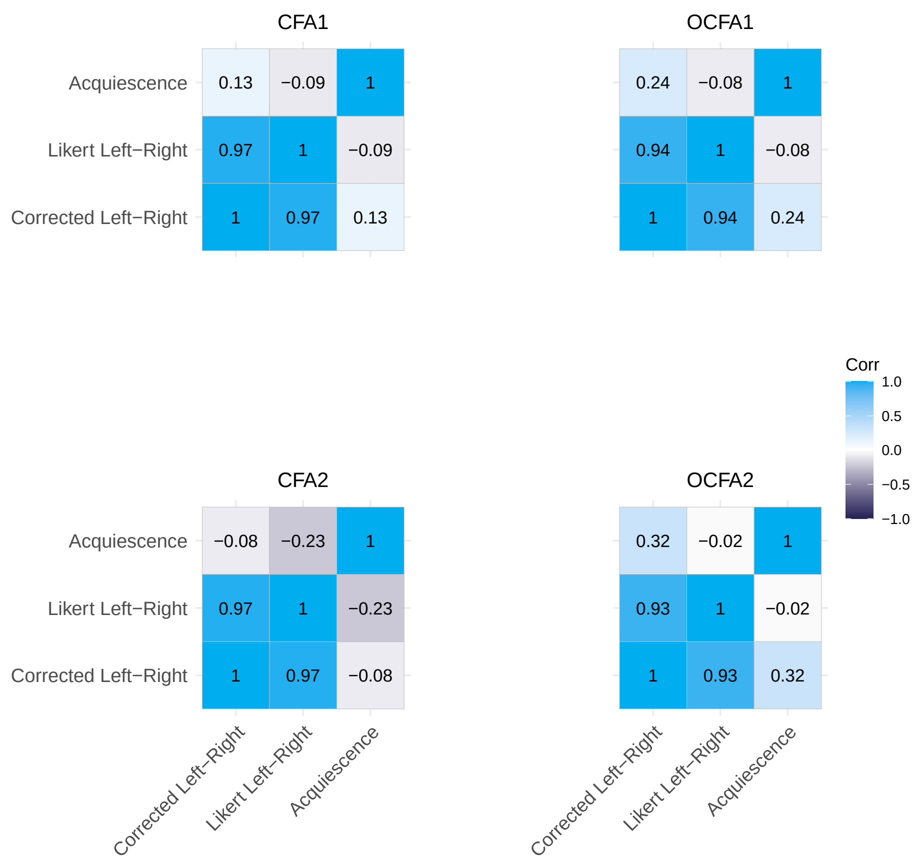
CFA vs Likert

Figure D1: Zero-Sum Left-Right Correlations



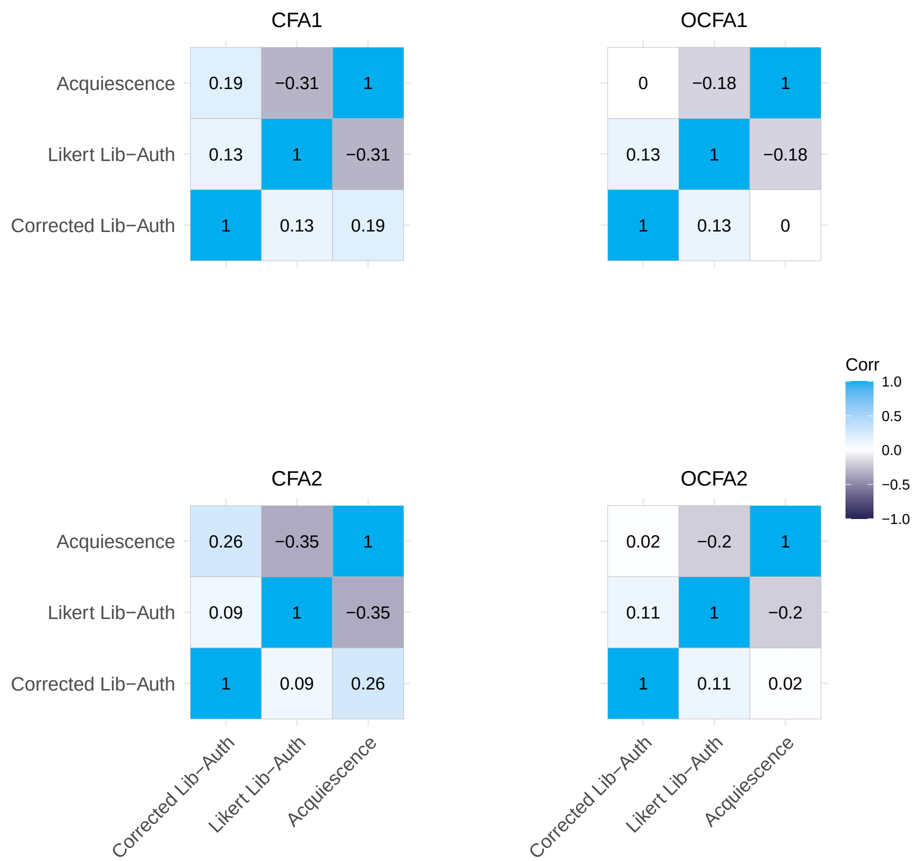
These correlation matrices compare the corrected left-right scale, left-right likert scale, and recovered acquiescence factor for the zero-sum subset of BESIP.

Figure D2: Empathy Left-Right Correlations



These correlation matrices compare the corrected left-right scale, left-right likert scale, and recovered acquiescence factor for the empathy subset of BESIP.

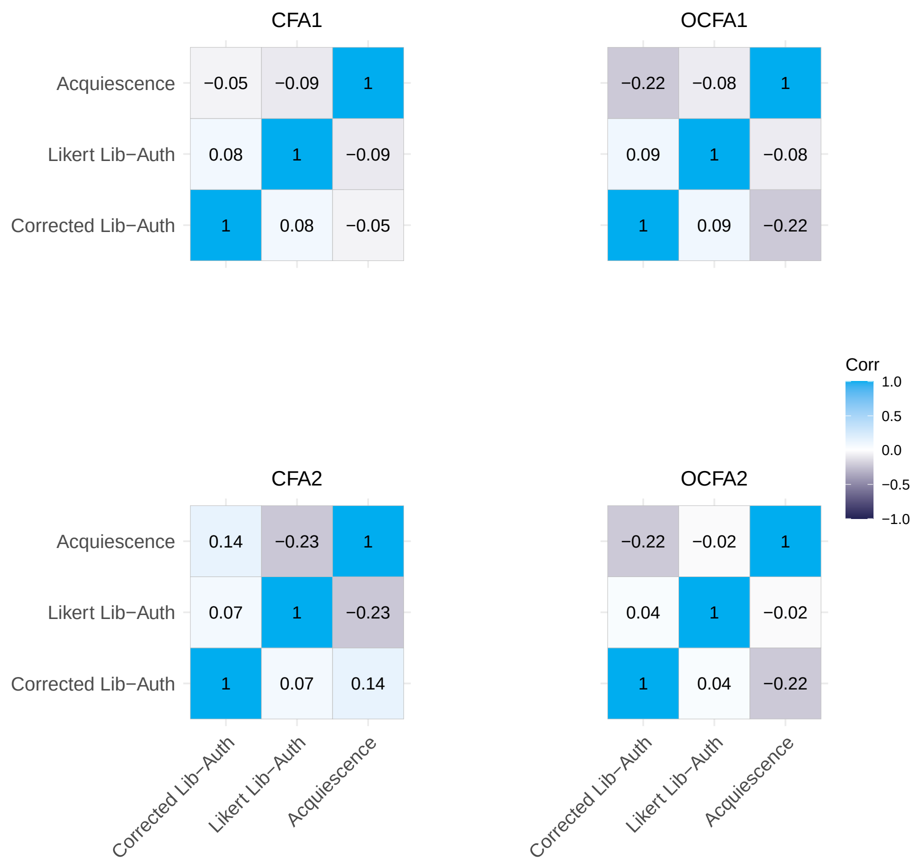
Figure D3: Zero-Sum Libertarian-Authoritarian Correlations



These correlation matrices compare the corrected libertarian-authoritarian scale, libertarian-authoritarian likert scale, and recovered acquiescence factor for the zero-sum subset of BESIP.

Marginal Distributions

Figure D4: Empathy Libertarian-Authoritarian Correlations



These correlation matrices compare the corrected libertarian-authoritarian scale, libertarian-authoritarian likert scale, and recovered acquiescence factor for the empathy subset of BESIP.

Regression Results

Figure D5: Density Plots of Left-Right Factors from Correction Models

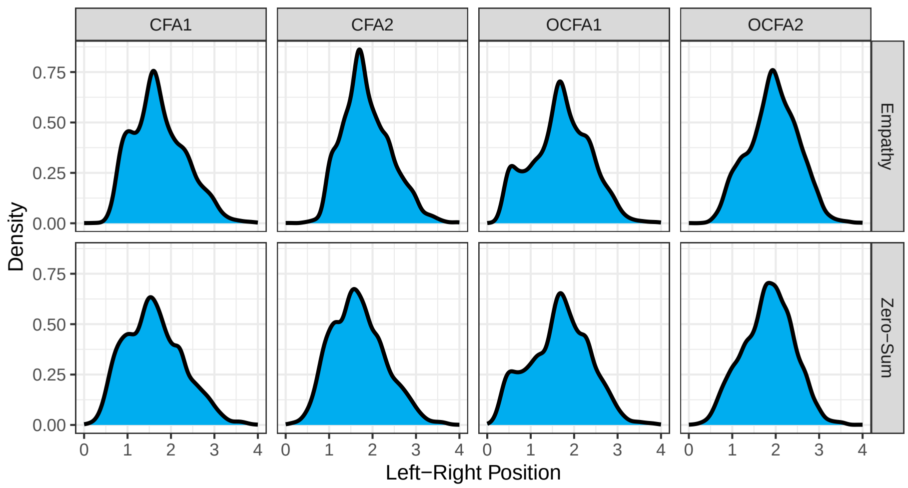


Figure D6: Density Plots of Lib-Auth Factors from Correction Models

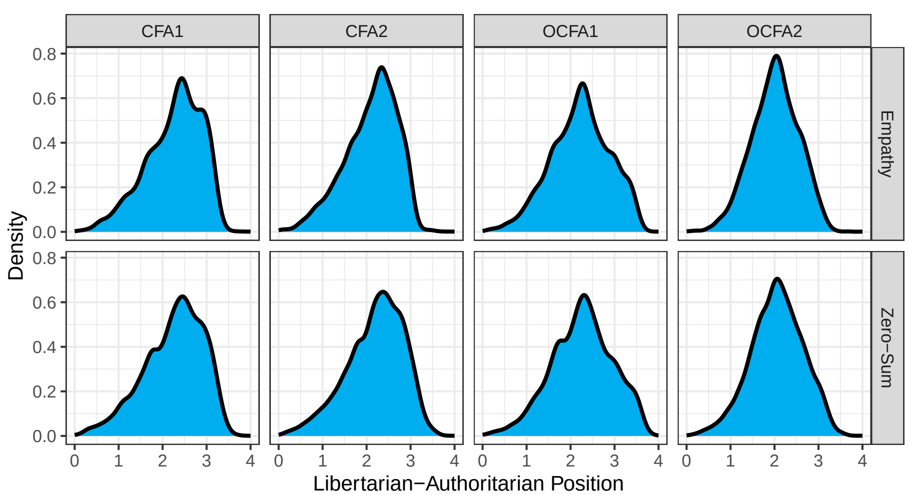


Table D15: Zero-Sum Left-Right

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	1.12	1.55	1.61	1.58	1.78
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Below GCSE	0.05	0.04	0.04	0.05	0.04
	(0.07)	(0.05)	(0.05)	(0.06)	(0.05)
GCSE/Equiv	0.09	0.06	0.06	0.08	0.06
	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)
A-level/Equiv	0.18	0.10	0.10	0.12	0.09
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
Undergrad	0.15	0.05	0.05	0.07	0.03
	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)
Postgrad	0.13	−0.00	0.00	0.02	−0.04
	(0.06)	(0.04)	(0.04)	(0.05)	(0.04)
R^2	0.00	0.00	0.00	0.00	0.00
Adj. R^2	0.00	0.00	0.00	0.00	0.00
Num. obs.	4965	4965	4965	4965	4965

Table D16: Empathy Left-Right

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	1.08	1.62	1.75	1.59	1.87
	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)
Below GCSE	0.17	0.09	0.09	0.12	0.07
	(0.08)	(0.06)	(0.05)	(0.06)	(0.05)
GCSE/Equiv	0.14	0.09	0.10	0.10	0.06
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
A-level/Equiv	0.18	0.11	0.11	0.11	0.07
	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)
Undergrad	0.22	0.14	0.15	0.14	0.09
	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
Postgrad	0.13	0.08	0.10	0.06	0.03
	(0.06)	(0.05)	(0.04)	(0.05)	(0.04)
R^2	0.01	0.00	0.00	0.00	0.00
Adj. R^2	0.00	0.00	0.00	0.00	0.00
Num. obs.	3847	3847	3847	3847	3847

Education Recode Regression Results

3 Category Robustness Check

This subsection of the appendix contains a re-run of the confirmatory factor analysis using 3-category instead of 5-category items. Given that MLR is only

Table D17: Zero-Sum Libertarian-Authoritarian

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	3.05	2.58	2.51	2.62	2.35
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Below GCSE	−0.05	−0.05	−0.05	−0.06	−0.06
	(0.07)	(0.05)	(0.05)	(0.05)	(0.05)
GCSE/Equiv	−0.13	−0.09	−0.09	−0.11	−0.09
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
A-level/Equiv	−0.45	−0.31	−0.30	−0.33	−0.28
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
Undergrad	−0.76	−0.53	−0.52	−0.57	−0.47
	(0.05)	(0.04)	(0.03)	(0.04)	(0.03)
Postgrad	−1.15	−0.79	−0.76	−0.82	−0.67
	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)
R^2	0.15	0.13	0.13	0.13	0.12
Adj. R^2	0.15	0.13	0.13	0.13	0.12
Num. obs.	4965	4965	4965	4965	4965

Table D18: Empathy Libertarian-Authoritarian

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	3.11	2.60	2.44	2.59	2.29
	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)
Below GCSE	−0.07	−0.03	−0.04	−0.06	−0.02
	(0.08)	(0.05)	(0.05)	(0.06)	(0.05)
GCSE/Equiv	−0.14	−0.09	−0.10	−0.11	−0.07
	(0.06)	(0.04)	(0.04)	(0.04)	(0.03)
A-level/Equiv	−0.53	−0.34	−0.34	−0.37	−0.27
	(0.06)	(0.04)	(0.04)	(0.04)	(0.03)
Undergrad	−0.77	−0.51	−0.50	−0.55	−0.41
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
Postgrad	−1.24	−0.85	−0.82	−0.88	−0.67
	(0.06)	(0.05)	(0.04)	(0.05)	(0.04)
R^2	0.16	0.16	0.16	0.15	0.14
Adj. R^2	0.16	0.16	0.16	0.15	0.14
Num. obs.	3847	3847	3847	3847	3847

generally recommended for five categories or above, I have restricted analysis to ordered CFA using the ULS estimation technique.

Table D19: Zero-Sum Left-Right Alternative

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	1.14	1.56	1.62	1.60	1.80
	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)
GCSE/Equiv	0.07	0.05	0.04	0.06	0.04
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
A-level/Equiv	0.16	0.09	0.08	0.10	0.07
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Undergrad	0.13	0.03	0.03	0.05	0.01
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Postgrad	0.12	−0.02	−0.01	0.00	−0.05
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
R^2	0.00	0.00	0.00	0.00	0.00
Adj. R^2	0.00	0.00	0.00	0.00	0.00
Num. obs.	4965	4965	4965	4965	4965

Table D20: Empathy Left-Right Alternative

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	1.14	1.65	1.79	1.63	1.90
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
GCSE/Equiv	0.08	0.06	0.06	0.05	0.04
	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)
A-level/Equiv	0.12	0.07	0.08	0.06	0.04
	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)
Undergrad	0.16	0.10	0.11	0.09	0.07
	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)
Postgrad	0.07	0.04	0.06	0.01	0.00
	(0.06)	(0.04)	(0.04)	(0.05)	(0.04)
R^2	0.00	0.00	0.00	0.00	0.00
Adj. R^2	0.00	0.00	0.00	0.00	0.00
Num. obs.	3847	3847	3847	3847	3847

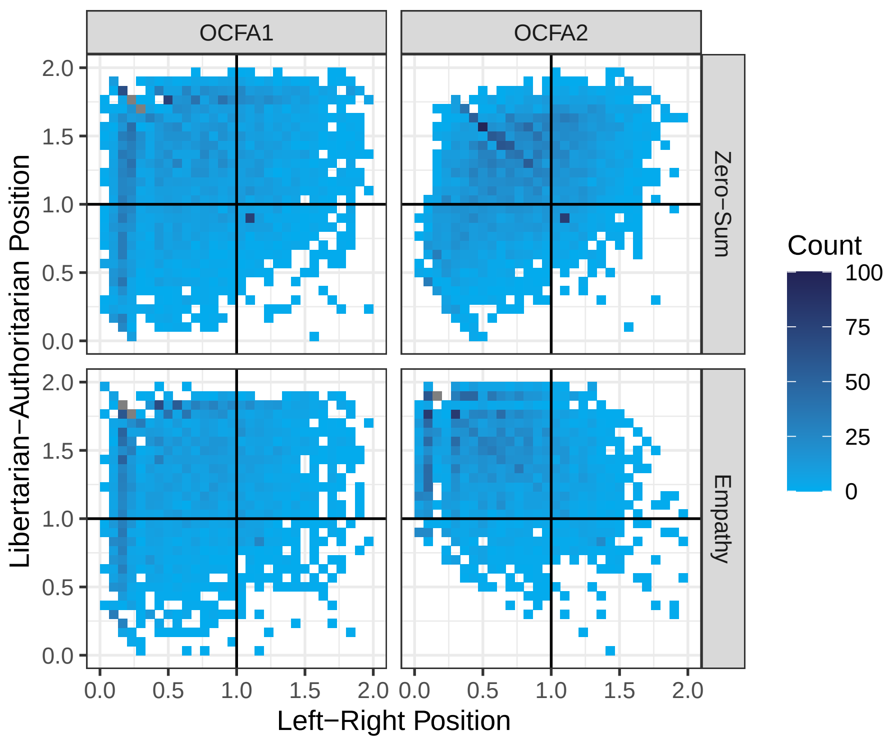
Table D21: Zero-Sum Libertarian-Authoritarian Alternative

	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	3.03	2.56	2.50	2.60	2.33
	(0.03)	(0.03)	(0.02)	(0.03)	(0.02)
GCSE/Equiv	−0.11	−0.08	−0.07	−0.09	−0.07
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
A-level/Equiv	−0.44	−0.29	−0.28	−0.31	−0.26
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Undergrad	−0.74	−0.52	−0.50	−0.55	−0.45
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Postgrad	−1.13	−0.77	−0.74	−0.80	−0.65
	(0.05)	(0.04)	(0.04)	(0.04)	(0.03)
R^2	0.15	0.13	0.13	0.13	0.12
Adj. R^2	0.15	0.13	0.13	0.13	0.12
Num. obs.	4965	4965	4965	4965	4965

Table D22: Empathy Libertarian-Authoritarian Alternative

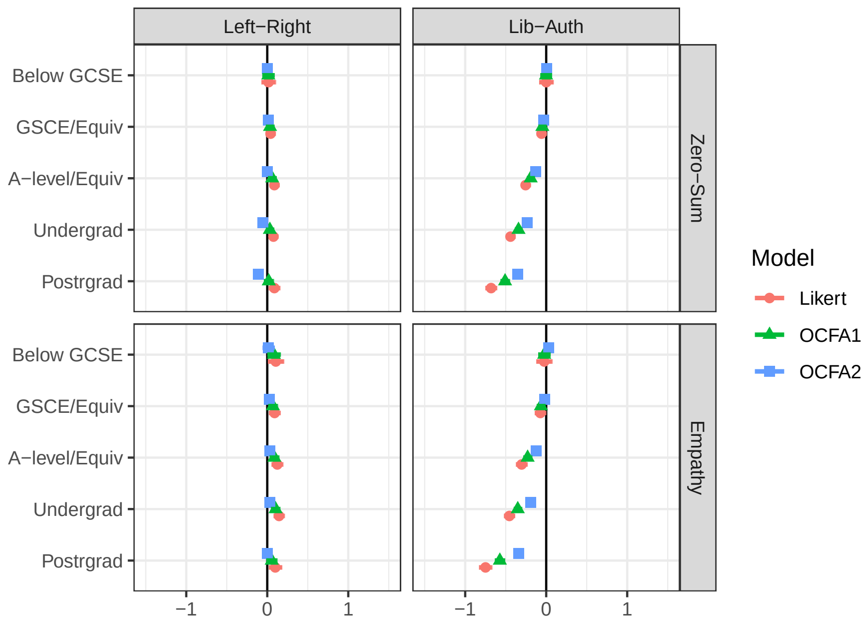
	Raw	CFA1	CFA2	OCFA1	OCFA2
Intercept	3.08	2.59	2.42	2.57	2.28
	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)
GCSE/Equiv	−0.12	−0.08	−0.08	−0.08	−0.06
	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)
A-level/Equiv	−0.50	−0.33	−0.32	−0.35	−0.26
	(0.05)	(0.03)	(0.03)	(0.04)	(0.03)
Undergrad	−0.74	−0.50	−0.48	−0.53	−0.40
	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Postgrad	−1.21	−0.84	−0.80	−0.86	−0.66
	(0.06)	(0.04)	(0.04)	(0.04)	(0.03)
R^2	0.16	0.16	0.16	0.15	0.14
Adj. R^2	0.16	0.16	0.16	0.15	0.14
Num. obs.	3847	3847	3847	3847	3847

Figure D7: Two-Dimensional Bin Plot of Voter Beliefs



Each plot uses a heatmap to show the joint distributions of the extracted factor scores. The left-right factor scores are on the x-axis, and the libertarian-authoritarian factor scores are on the y axis. The scores were rescaled to range from 0 to 2.

Figure D8: Coefficient Plots of Scales Regressed on Education



Plots showing the results of a regression of extracted factor scores on education level in BESIP. For all four plots, the reference category is no education. Plots are organised in columns by scale, and by row for subset of BESIP. Results for likert scale included for comparison.