

Supplemental Material

CBE—Life Sciences Education

Barnes *et al.*

Supplemental Table 1: Full demographic table of study participants (N= 2275). For age, median and inter-quartile range is provided here.

Gender		Parent Education level	
Female	1,623 (71%)	<HS	107 (4.7%)
Male	652 (29%)	HS	235 (10%)
Age	19 (18, 20)	Some college	278 (12%)
Religious affiliation		Associate	174 (7.6%)
Non-Catholic Christian	1,119 (49%)	BS	642 (28%)
Catholic	885 (39%)	MS	569 (25%)
Jewish	57 (2.5%)	>MS	270 (12%)
Muslim	100 (4.4%)	Race/ethnicity	
Hindu	65 (2.9%)	White	1,133 (50%)
Buddhist	49 (2.2%)	Asian	209 (9.2%)
		Black	213 (9.4%)
		Latinx	465 (20%)
		Multiracial	198 (8.7%)
		Other	57 (2.5%)

Supplemental Table 2: Unweighted and Weighted mean squares item fit statistics (equal to outfit and infit MNSQ respectively) for the aligned four-dimensional partial credit Rasch model for the Perceived Conflict between Evolution and Religion scale. Values of 0.7- 1.3 are considered to indicate good fit. There were no values outside this range.

item	Perceived Conflict Dimension	Unweighted MNSQ	Weighted MNSQ
Q36_1	PC_God	0.95	1.05
Q36_2	PC_God	0.89	0.98
Q36_3	PC_God	0.78	0.92
Q36_4	PC_God	0.75	0.87
Q36_5	PC_God	0.91	1.04
Q37_1	PC_Teachings	1.15	1.15
Q37_2	PC_Teachings	1.05	1.07
Q37_3	PC_Teachings	0.90	1.00
Q37_4	PC_Teachings	0.86	0.97
Q37_5	PC_Teachings	0.88	0.97
Q38_1	PC_Community	1.12	1.08
Q38_2	PC_Community	0.95	0.99
Q38_3	PC_Community	0.79	0.89
Q38_4	PC_Community	0.85	0.95
Q38_5	PC_Community	0.86	0.95
Q39_1	PC_Beliefs	0.98	1.08
Q39_2	PC_Beliefs	1.04	1.11
Q39_3	PC_Beliefs	0.81	0.98
Q39_4	PC_Beliefs	0.74	0.93
Q39_5	PC_Beliefs	0.83	0.98

Supplemental Table 3: Unweighted and Weighted mean squares item fit statistics (equal to outfit and infit MNSQ respectively) for partial credit Rasch models for microevolution, macroevolution, human evolution, religiosity and evolution understanding scales. Values of 0.7- 1.3 are considered to indicate good fit. There were no values outside this range. Reverse scored items are indicated with an asterisk.

Item	Unweighted MNSQ	Weighted MNSQ	Item	Unweighted MNSQ	Weighted MNSQ
Microevolution acceptance			Religiosity		
ISEA 9*	1.09	1.08	REL4	1.10	1.10
ISEA 10	1.14	1.09	REL6	0.83	0.99
ISEA 11	1.08	1.05	REL7	0.83	0.86
ISEA 12*	1.03	1.02	REL8	1.12	1.17
ISEA 13*	0.96	0.98	Evolution Understanding		
ISEA 14	1.06	1.05	evound1	1.02	1.02
ISEA 15*	0.93	0.98	evound2	1.06	1.01
ISEA 16	1.03	1.04	evound3	1.10	1.04
Macroevolution acceptance			evound4	0.91	0.95
ISEA 1	0.87	0.87	evound5	1.02	1.01
ISEA 2*	1.13	1.08	evound6	1.13	1.03
ISEA 3	0.81	0.80	evound7	0.96	0.98
ISEA 4	1.06	1.06	evound8	0.99	0.98
ISEA 5	0.90	0.90	evound9	0.95	0.96
ISEA 6*	1.10	1.07	evound10	0.90	0.94
ISEA 7	1.07	1.06	evound11	0.99	0.99
ISEA 8	1.28	1.28	evound12	0.96	0.98
Human evolution acceptance			evound13	1.07	1.05
ISEA 17	0.98	0.98	evound14	1.05	1.03
ISEA 18*	1.06	1.05			
ISEA 19*	1.01	1.02			
ISEA 20	0.86	0.88			
ISEA 21	0.82	0.86			
ISEA 22*	1.04	1.05			
ISEA 23	0.85	0.87			
ISEA 24	1.41	1.49			

Supplemental Table 4 Estimated marginal means with standard errors derived from a linear mixed model for perceived conflict between evolution and religion among college students with different religious affiliations. The model included age, gender, race/ethnicity, and parent education as covariates and course as a random effect with varying intercepts.

Religion	Perceived conflict with God		Perceived conflict with religious beliefs		Perceived conflict with religious community		Perceived conflict with religious teachings	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Non-Catholic Christian	1.39	0.13	1.18	0.12	0.93	0.12	0.84	0.11
Catholic	0.33	0.14	0.40	0.13	0.64	0.12	0.75	0.12
Jewish	-1.05	0.35	-0.98	0.33	-0.19	0.33	0.31	0.32
Muslim	1.17	0.26	1.00	0.25	0.51	0.25	0.48	0.24
Hindu	-0.95	0.37	-0.88	0.35	-1.44	0.35	-1.31	0.34
Buddhist	-1.26	0.37	-1.66	0.35	-2.55	0.35	-2.48	0.35

Supplemental Table 5 Parameter estimates and 95% confidence intervals of estimates from linear mixed models for microevolution acceptance among college students with an interaction between perceived conflict between evolution and religion measures and religiosity as predictors.

Model with an interaction between PC_God & Religiosity			Model with an interaction between PC_Beliefs & Religiosity			Model with an interaction between PC_Community & Religiosity			Model with an interaction between PC_Teachings & Religiosity		
Predictor	Beta	95% CI1	Predictor	Beta	95% CI1	Predictor	Beta	95% CI1	Predictor	Beta	95% CI1
Religiosity	0.14	0.08, 0.20	Religiosity	0.13	0.07, 0.19	Religiosity	0.14	0.08, 0.20	Religiosity	0.14	0.08, 0.20
Religious affiliation	Ref: <i>Non-Catholic</i>										
<i>Catholic</i>	0.01	-0.12, 0.13	<i>Catholic</i>	0.01	-0.12, 0.13	<i>Catholic</i>	0.01	-0.12, 0.13	<i>Catholic</i>	0.01	-0.12, 0.13
<i>Jewish</i>	0.1	-0.26, 0.47	<i>Jewish</i>	0.1	-0.27, 0.46	<i>Jewish</i>	0.1	-0.26, 0.46	<i>Jewish</i>	0.1	-0.26, 0.46
<i>Muslim</i>	-0.08	-0.37, 0.22	<i>Muslim</i>	-0.08	-0.38, 0.21	<i>Muslim</i>	-0.08	-0.37, 0.22	<i>Muslim</i>	-0.08	-0.37, 0.22
<i>Hindu</i>	-0.29	-0.69, 0.12	<i>Hindu</i>	-0.29	-0.70, 0.12	<i>Hindu</i>	-0.29	-0.69, 0.12	<i>Hindu</i>	-0.29	-0.69, 0.12
<i>Buddhist</i>	0.37	-0.04, 0.79	<i>Buddhist</i>	0.35	-0.07, 0.77	<i>Buddhist</i>	0.36	-0.06, 0.78	<i>Buddhist</i>	0.37	-0.05, 0.79
Evolution understanding	0.32	0.26, 0.37	Evolution understanding	0.32	0.26, 0.38	Evolution understanding	0.32	0.26, 0.37	Evolution understanding	0.32	0.26, 0.37
PC_God	-0.45	-0.55, -0.36	PC_God	-0.46	-0.55, -0.36	PC_God	-0.45	-0.55, -0.36	PC_God	-0.45	-0.55, -0.36
PC_Community	0.11	0.03, 0.19	PC_Community	0.11	0.03, 0.18	PC_Community	0.11	0.03, 0.19	PC_Community	0.11	0.03, 0.19
PC_Teachings	-0.05	-0.13, 0.03	PC_Teachings	-0.05	-0.13, 0.02	PC_Teachings	-0.05	-0.13, 0.03	PC_Teachings	-0.05	-0.13, 0.03
PC_Beliefs	-0.34	-0.44, -0.25	PC_Beliefs	-0.34	-0.43, -0.24	PC_Beliefs	-0.34	-0.44, -0.25	PC_Beliefs	-0.34	-0.44, -0.25
Race/ethnicity	Ref: <i>White</i>										
<i>Asian</i>	-0.13	-0.38, 0.12	<i>Asian</i>	-0.13	-0.37, 0.12	<i>Asian</i>	-0.13	-0.38, 0.12	<i>Asian</i>	-0.13	-0.38, 0.12
<i>Black</i>	-0.18	-0.38, 0.02	<i>Black</i>	-0.18	-0.38, 0.02	<i>Black</i>	-0.18	-0.38, 0.02	<i>Black</i>	-0.18	-0.38, 0.02
<i>Latinx</i>	-0.13	-0.29, 0.03	<i>Latinx</i>	-0.13	-0.30, 0.03	<i>Latinx</i>	-0.13	-0.29, 0.03	<i>Latinx</i>	-0.13	-0.29, 0.03
<i>Multiracial</i>	0.03	-0.17, 0.23	<i>Multiracial</i>	0.04	-0.16, 0.24	<i>Multiracial</i>	0.03	-0.17, 0.23	<i>Multiracial</i>	0.03	-0.17, 0.23
<i>Other</i>	-0.21	-0.58, 0.16	<i>Other</i>	-0.2	-0.57, 0.16	<i>Other</i>	-0.21	-0.57, 0.16	<i>Other</i>	-0.21	-0.58, 0.16
Age	0.01	-0.04, 0.07	Age	0.01	-0.04, 0.07	Age	0.01	-0.04, 0.07	Age	0.01	-0.04, 0.07
Gender	Ref: <i>Female</i>										
<i>Male</i>	-0.13	-0.25, -0.01	<i>Male</i>	-0.13	-0.25, -0.01	<i>Male</i>	-0.13	-0.25, -0.01	<i>Male</i>	-0.13	-0.25, -0.01
Parent education level	Ref: <i><HS</i>										
<i>HS</i>	-0.13	-0.44, 0.18	<i>HS</i>	-0.13	-0.43, 0.18	<i>HS</i>	-0.13	-0.43, 0.18	<i>HS</i>	-0.13	-0.43, 0.18
<i>some college</i>	-0.09	-0.40, 0.21	<i>some college</i>	-0.09	-0.39, 0.21	<i>some college</i>	-0.09	-0.39, 0.21	<i>some college</i>	-0.09	-0.40, 0.21
<i>Associate</i>	-0.05	-0.37, 0.28	<i>Associate</i>	-0.05	-0.37, 0.28	<i>Associate</i>	-0.05	-0.37, 0.28	<i>Associate</i>	-0.05	-0.37, 0.28
<i>BS</i>	0.02	-0.26, 0.31	<i>BS</i>	0.03	-0.26, 0.31	<i>BS</i>	0.02	-0.26, 0.31	<i>BS</i>	0.02	-0.26, 0.31
<i>MS</i>	-0.12	-0.41, 0.17	<i>MS</i>	-0.12	-0.41, 0.18	<i>MS</i>	-0.12	-0.41, 0.17	<i>MS</i>	-0.12	-0.41, 0.17
<i>>MS</i>	-0.12	-0.44, 0.19	<i>>MS</i>	-0.12	-0.44, 0.19	<i>>MS</i>	-0.12	-0.44, 0.19	<i>>MS</i>	-0.12	-0.44, 0.19
Religiosity * PC_God	0	-0.06, 0.05	Religiosity * PC_Beliefs	0.02	-0.04, 0.07	Religiosity * PC_Community	0	-0.05, 0.06	Religiosity * PC_Teachings	0	-0.06, 0.05

AIC	7724.5	AIC	7724.1	AIC	7724.5	AIC	7724.5
Random effects variance	0.005	Random effects variance	0.005	Random effects variance	0.005	Random effects variance	0.005
Residual variance	1.700	Residual variance	1.700	Residual variance	1.700	Residual variance	1.700

Supplemental Table 6 Parameter estimates and 95% confidence intervals of estimates from linear mixed models for macroevolution acceptance among college students with an interaction between perceived conflict between evolution and religion measures and religiosity as predictors.

Model with an interaction between PC_God & Religiosity			Model with an interaction between PC_Beliefs & Religiosity			Model with an interaction between PC_Community & Religiosity			Model with an interaction between PC_Teachings & Religiosity		
Predictor	Beta	95% CI	Predictor	Beta	95% CI	Predictor	Beta	95% CI	Predictor	Beta	95% CI
Religiosity	-0.07	-0.11, -0.02	Religiosity	-0.07	-0.12, -0.02	Religiosity	-	-0.12, -0.02	Religiosity	-0.07	-0.12, -0.02
Religious affiliation	Ref: <i>Non-Catholic Christian</i>										
<i>Catholic</i>	0.19	0.08, 0.29	<i>Catholic</i>	0.19	0.09, 0.30	<i>Catholic</i>	0.19	0.09, 0.30	<i>Catholic</i>	0.19	0.09, 0.30
<i>Jewish</i>	0.39	0.10, 0.69	<i>Jewish</i>	0.38	0.08, 0.68	<i>Jewish</i>	0.38	0.08, 0.68	<i>Jewish</i>	0.37	0.08, 0.67
<i>Muslim</i>	0.01	-0.23, 0.25	<i>Muslim</i>	0.02	-0.22, 0.26	<i>Muslim</i>	0.01	-0.23, 0.26	<i>Muslim</i>	0.02	-0.22, 0.26
<i>Hindu</i>	-0.03	-0.36, 0.30	<i>Hindu</i>	-0.04	-0.37, 0.30	<i>Hindu</i>	-	-0.37, 0.29	<i>Hindu</i>	-0.04	-0.37, 0.29
<i>Buddhist</i>	-0.03	-0.36, 0.31	<i>Buddhist</i>	-0.03	-0.37, 0.31	<i>Buddhist</i>	-	-0.36, 0.33	<i>Buddhist</i>	-0.04	-0.38, 0.31
Evolution understanding	0.14	0.09, 0.18	Evolution understanding	0.14	0.09, 0.18	Evolution understanding	0.14	0.09, 0.18	Evolution understanding	0.14	0.09, 0.18
PC_God	-0.47	-0.55, -0.39	PC_God	-0.47	-0.55, -0.40	PC_God	-	-0.55, -0.40	PC_God	-0.48	-0.55, -0.40
PC_Community	-0.04	-0.10, 0.03	PC_Community	-0.04	-0.10, 0.02	PC_Community	-	-0.11, 0.01	PC_Community	-0.04	-0.10, 0.02
PC_Teachings	0.05	-0.01, 0.12	PC_Teachings	0.05	-0.01, 0.12	PC_Teachings	0.05	-0.01, 0.11	PC_Teachings	0.05	-0.02, 0.11
PC_Beliefs	-0.29	-0.37, -0.22	PC_Beliefs	-0.29	-0.37, -0.21	PC_Beliefs	-	-0.36, -0.20	PC_Beliefs	-0.28	-0.36, -0.20
Race/ethnicity	Ref: <i>White</i>										
<i>Asian</i>	0.17	-0.04, 0.37	<i>Asian</i>	0.17	-0.03, 0.37	<i>Asian</i>	0.17	-0.03, 0.37	<i>Asian</i>	0.17	-0.03, 0.37
<i>Black</i>	0.03	-0.13, 0.19	<i>Black</i>	0.03	-0.13, 0.19	<i>Black</i>	0.03	-0.13, 0.19	<i>Black</i>	0.03	-0.13, 0.19
<i>Latinx</i>	-0.05	-0.18, 0.09	<i>Latinx</i>	-0.05	-0.18, 0.09	<i>Latinx</i>	-	-0.18, 0.09	<i>Latinx</i>	-0.05	-0.18, 0.09
<i>Multiracial</i>	0.07	-0.09, 0.24	<i>Multiracial</i>	0.07	-0.09, 0.24	<i>Multiracial</i>	0.07	-0.09, 0.24	<i>Multiracial</i>	0.08	-0.09, 0.24
<i>Other</i>	-0.28	-0.58, 0.02	<i>Other</i>	-0.27	-0.57, 0.03	<i>Other</i>	-	-0.57, 0.03	<i>Other</i>	-0.27	-0.57, 0.03
Age	0.05	0.00, 0.09	Age	0.05	0.00, 0.09	Age	0.05	0.00, 0.09	Age	0.05	0.00, 0.09
Gender	Ref: <i>Female</i>										
<i>Male</i>	0.02	-0.08, 0.12	<i>Male</i>	0.02	-0.07, 0.12	<i>Male</i>	0.02	-0.07, 0.12	<i>Male</i>	0.02	-0.08, 0.12
Parent education level	Ref: <i><HS</i>										
<i>HS</i>	-0.09	-0.34, 0.16	<i>HS</i>	-0.09	-0.33, 0.16	<i>HS</i>	-	-0.33, 0.17	<i>HS</i>	-0.08	-0.33, 0.17
<i>some college</i>	-0.06	-0.30, 0.19	<i>some college</i>	-0.05	-0.29, 0.20	<i>some college</i>	-	-0.29, 0.20	<i>some college</i>	-0.05	-0.29, 0.20

Associate	-0.08	-0.35, 0.18	Associate	-0.08	-0.34, 0.19	Associate	-	-0.34, 0.19	Associate	-0.08	-0.34, 0.19
BS	-0.13	-0.37, 0.10	BS	-0.13	-0.36, 0.11	BS	-	-0.36, 0.11	BS	-0.13	-0.36, 0.11
MS	-0.14	-0.37, 0.10	MS	-0.13	-0.37, 0.11	MS	-	-0.37, 0.11	MS	-0.13	-0.37, 0.11
>MS	-0.03	-0.29, 0.23	>MS	-0.03	-0.28, 0.23	>MS	-	-0.28, 0.23	>MS	-0.03	-0.28, 0.23
Religiosity * PC_God	-0.06	-0.10, -0.01	Religiosity * PC_Beliefs	-0.03	-0.08, 0.01	Religiosity * PC_Community	-	-0.08, 0.01	Religiosity * PC_Teachings	-0.02	-0.07, 0.02
AIC	6801.8		AIC	6806.8		AIC	6805.7		AIC	6807.6	
Random effects variance	0.001		Random effects variance	0.001		Random effects variance	0.001		Random effects variance	0.001	
Residual variance	1.135		Residual variance	1.137		Residual variance	1.137		Residual variance	1.138	

Supplemental Table 7 Parameter estimates and 95% confidence intervals of estimates from linear mixed models for human evolution acceptance among college students with an interaction between perceived conflict between evolution and religion measures and religiosity as predictors.

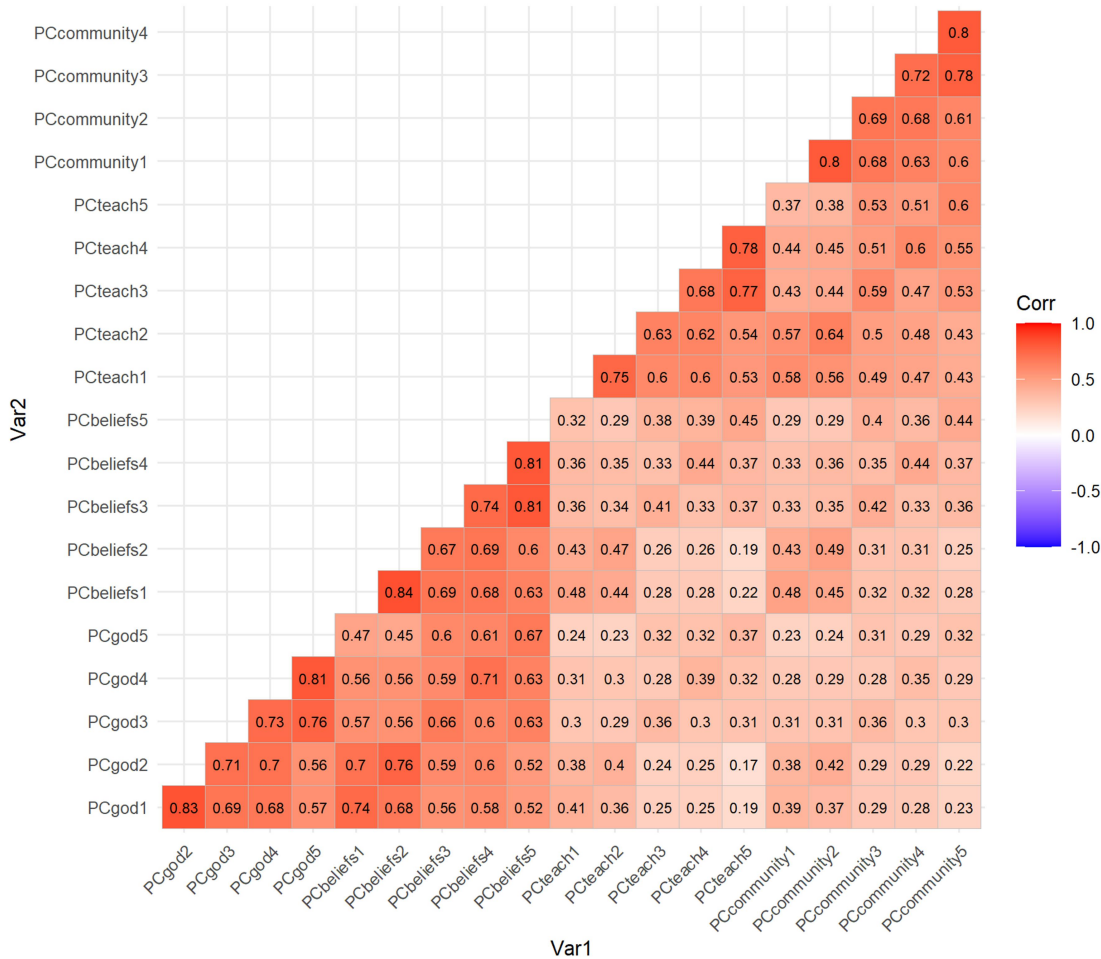
Model with an interaction between PC_God & Religiosity			Model with an interaction between PC_Beliefs & Religiosity			Model with an interaction between PC_Community & Religiosity			Model with an interaction between PC_Teachings & Religiosity		
Predictor	Beta	95% CI _l	Predictor	Beta	95% CI _l	Predictor	Beta	95% CI _l	Predictor	Beta	95% CI _l
Religiosity	-0.19	-0.25, -0.13	Religiosity	-0.19	-0.25, -0.13	Religiosity	-0.19	-0.25, -0.14	Religiosity	-0.19	-0.25, -0.14
Religious affiliation	Ref: <i>Non- Catholic Christian</i>										
<i>Catholic</i>	0.35	0.23, 0.48	<i>Catholic</i>	0.36	0.24, 0.48	<i>Catholic</i>	0.36	0.24, 0.48	<i>Catholic</i>	0.36	0.24, 0.48
<i>Jewish</i>	0.5	0.15, 0.84	<i>Jewish</i>	0.49	0.14, 0.83	<i>Jewish</i>	0.49	0.14, 0.83	<i>Jewish</i>	0.48	0.13, 0.83
<i>Muslim</i>	-0.05	-0.34, 0.23	<i>Muslim</i>	-0.05	-0.33, 0.23	<i>Muslim</i>	-0.05	-0.33, 0.23	<i>Muslim</i>	-0.05	-0.33, 0.23
<i>Hindu</i>	0.22	-0.17, 0.61	<i>Hindu</i>	0.22	-0.17, 0.61	<i>Hindu</i>	0.21	-0.18, 0.60	<i>Hindu</i>	0.21	-0.18, 0.60
<i>Buddhist</i>	0.41	0.01, 0.80	<i>Buddhist</i>	0.4	0.00, 0.80	<i>Buddhist</i>	0.43	0.03, 0.83	<i>Buddhist</i>	0.4	0.00, 0.80
Evolution understanding	0.18	0.12, 0.23	Evolution understanding	0.18	0.12, 0.23	Evolution understanding	0.18	0.12, 0.23	Evolution understanding	0.18	0.12, 0.23
PC_God	-0.63	-0.72, -0.54	PC_God	-0.63	-0.72, -0.54	PC_God	-0.63	-0.72, -0.54	PC_God	-0.63	-0.72, -0.54
PC_Community	-0.06	-0.13, 0.01	PC_Community	-0.06	-0.13, 0.01	PC_Community	-0.07	-0.15, 0.00	PC_Community	-0.06	-0.13, 0.01
PC_Teachings	0.08	0.01, 0.15	PC_Teachings	0.08	0.01, 0.16	PC_Teachings	0.08	0.01, 0.15	PC_Teachings	0.07	0.00, 0.14
PC_Beliefs	-0.47	-0.56, -0.37	PC_Beliefs	-0.46	-0.56, -0.37	PC_Beliefs	-0.45	-0.54, -0.36	PC_Beliefs	-0.45	-0.54, -0.36
Race/ethnicity	Ref: <i>White</i>										
<i>Asian</i>	-0.2	-0.43, 0.04	<i>Asian</i>	-0.2	-0.43, 0.04	<i>Asian</i>	-0.19	-0.43, 0.04	<i>Asian</i>	-0.19	-0.43, 0.04
<i>Black</i>	-0.1	-0.29, 0.09	<i>Black</i>	-0.1	-0.29, 0.09	<i>Black</i>	-0.1	-0.29, 0.09	<i>Black</i>	-0.1	-0.29, 0.09
<i>Latinx</i>	-0.24	-0.40, -0.08	<i>Latinx</i>	-0.24	-0.40, -0.08	<i>Latinx</i>	-0.24	-0.40, -0.08	<i>Latinx</i>	-0.24	-0.39, -0.08
<i>Multiracial</i>	-0.05	-0.24, 0.14	<i>Multiracial</i>	-0.05	-0.24, 0.14	<i>Multiracial</i>	-0.05	-0.24, 0.14	<i>Multiracial</i>	-0.05	-0.24, 0.14
<i>Other</i>	-0.29	-0.64, 0.06	<i>Other</i>	-0.28	-0.63, 0.07	<i>Other</i>	-0.28	-0.63, 0.07	<i>Other</i>	-0.28	-0.63, 0.07
Age	0.05	0.00, 0.11	Age	0.05	0.00, 0.11	Age	0.05	0.00, 0.11	Age	0.05	0.00, 0.11
Gender	ref: <i>Female</i>										
<i>Male</i>	0.1	-0.01, 0.22	<i>Male</i>	0.1	-0.01, 0.22	<i>Male</i>	0.11	-0.01, 0.22	<i>Male</i>	0.1	-0.01, 0.22

Parent education level	Ref: <HS										
HS	0.21	-0.08, 0.51	HS	0.22	-0.08, 0.51	HS	0.22	-0.07, 0.51	HS	0.22	-0.07, 0.51
some college	0.15	-0.14, 0.44	some college	0.16	-0.13, 0.45	some college	0.17	-0.12, 0.46	some college	0.16	-0.13, 0.45
Associate	0.12	-0.20, 0.43	Associate	0.12	-0.19, 0.44	Associate	0.13	-0.19, 0.44	Associate	0.13	-0.19, 0.44
BS	0.12	-0.16, 0.39	BS	0.12	-0.15, 0.40	BS	0.13	-0.14, 0.41	BS	0.13	-0.15, 0.40
MS	0.17	-0.11, 0.45	MS	0.17	-0.10, 0.45	MS	0.18	-0.10, 0.46	MS	0.18	-0.10, 0.46
>MS	0.25	-0.05, 0.55	>MS	0.26	-0.04, 0.56	>MS	0.26	-0.04, 0.56	>MS	0.26	-0.04, 0.56
Religiosity * PC_God	-0.06	-0.11, -0.01	Religiosity * PC_Beliefs	-0.04	-0.09, 0.01	Religiosity * PC_Community	-0.05	-0.11, 0.00	Religiosity * PC_Teachings	-0.03	-0.08, 0.02
AIC	7525.2		AIC	7529.0		AIC	7527.2		AIC	7529.6	
Random effects variance	0		Random effects variance	0		Random effects variance	0		Random effects variance	0	
Residual variance	1.561		Residual variance	1.564		Residual variance	1.562		Residual variance	1.564	

Supplemental table 8 Results from the mediation analyses using 1000 quasi-Bayesian Monte Carlo simulations to calculate confidence intervals and statistical significance. Mediation effect indicates the amount of the association of religiosity with evolution acceptance that is mediated by one's perceived conflict between evolution and beliefs of religious community and religious teachings. Direct effect indicates the amount of the association of religiosity with evolution acceptance not related to perceived conflict. Proportion mediated shows the proportion of total association of religiosity with evolution acceptance that can be attributed to perceived conflict. Bolded estimates indicate statistical significance.

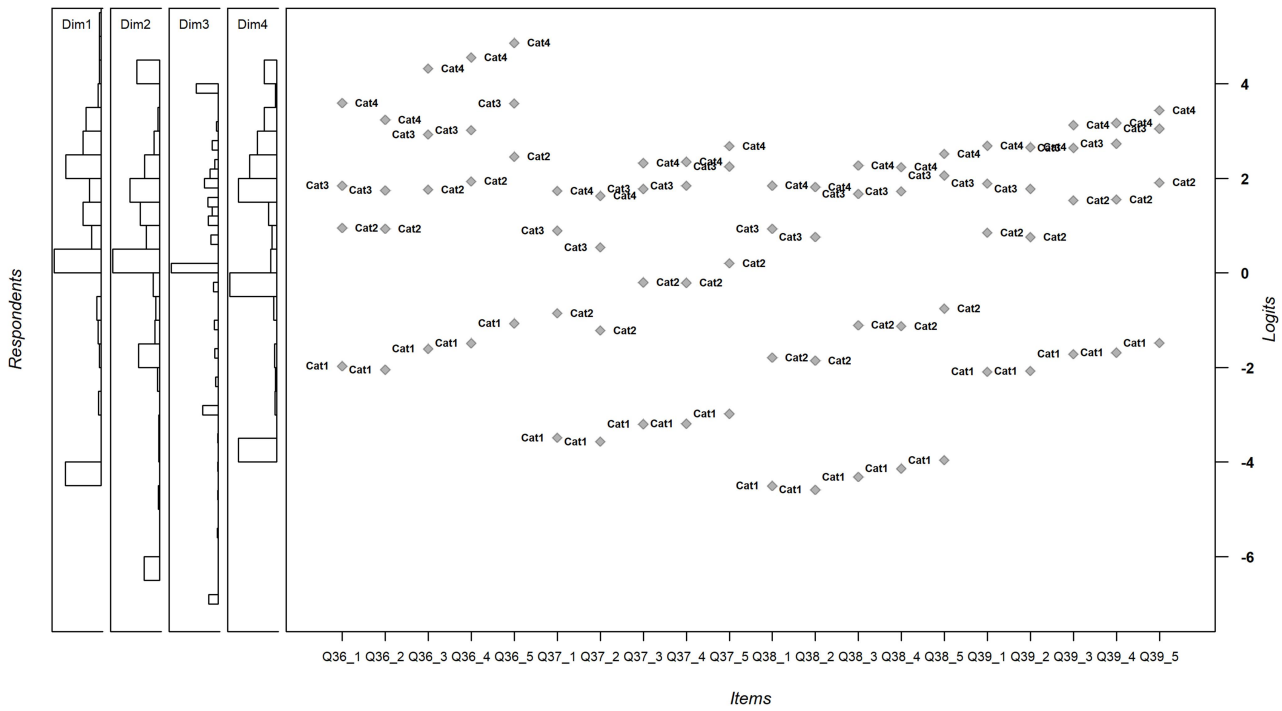
	Macroevolution acceptance			Human evolution acceptance		
	Estimate	95% CI Lower	95% CI Upper	Estimate	95% CI Lower	95% CI Upper
Mediator:	<i>Perceived conflict between evolution and one's religious community</i>					
Mediation effect	0.007	-0.006	0.02	0.009	-0.010	0.03
Direct effect	-0.245	-0.299	-0.19	-0.443	-0.503	-0.38
Total Effect	-0.238	-0.294	-0.18	-0.433	-0.496	-0.36
Proportion Mediated	-0.028	-0.087	0.03	-0.021	-0.069	0.02
Mediator:	<i>Perceived conflict between evolution and religious teachings</i>					
Mediation effect	0.010	-0.001	0.002	0.015	-0.001	0.03
Direct effect	-0.248	-0.301	-0.19	-0.450	-0.514	-0.39
Total Effect	-0.237	-0.292	-0.18	-0.436	-0.501	-0.37
Proportion Mediated	-0.042	-0.102	0.01	-0.033	-0.077	0

Supplemental Figure 1 Correlation matrix between all items on the perceived conflict scale.



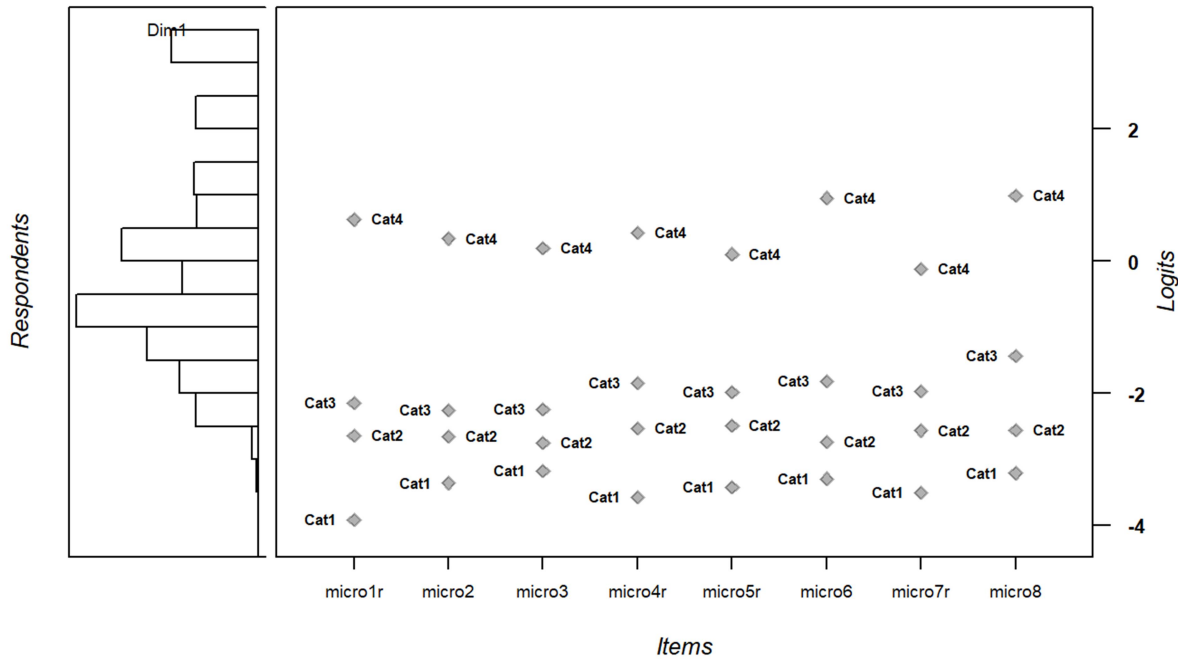
Supplemental Figure 2 Wright map of Perceived conflict between evolution and religion data. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. conflict. Q36_1-Q36_5 indicate PC_God items, Q37_1 to Q37_5 indicate PC_Teachings items, Q38_1 to Q38_5 indicate PC_Community items and Q39_1 to Q39_5 indicate PC_Beliefs items. Cat1 = “disagree”, Cat2= “neutral”, Cat3= “agree”, Cat4= “strongly agree”. Comparison of the histogram with the item difficulties shows that Rasch item difficulties are aligned well with person abilities indicating that there was wide variation in the levels of perceived conflict in our sample with few students picking “disagree” especially for the items about perceived conflict with beliefs of religious community and teachings of religion.

Wright Map



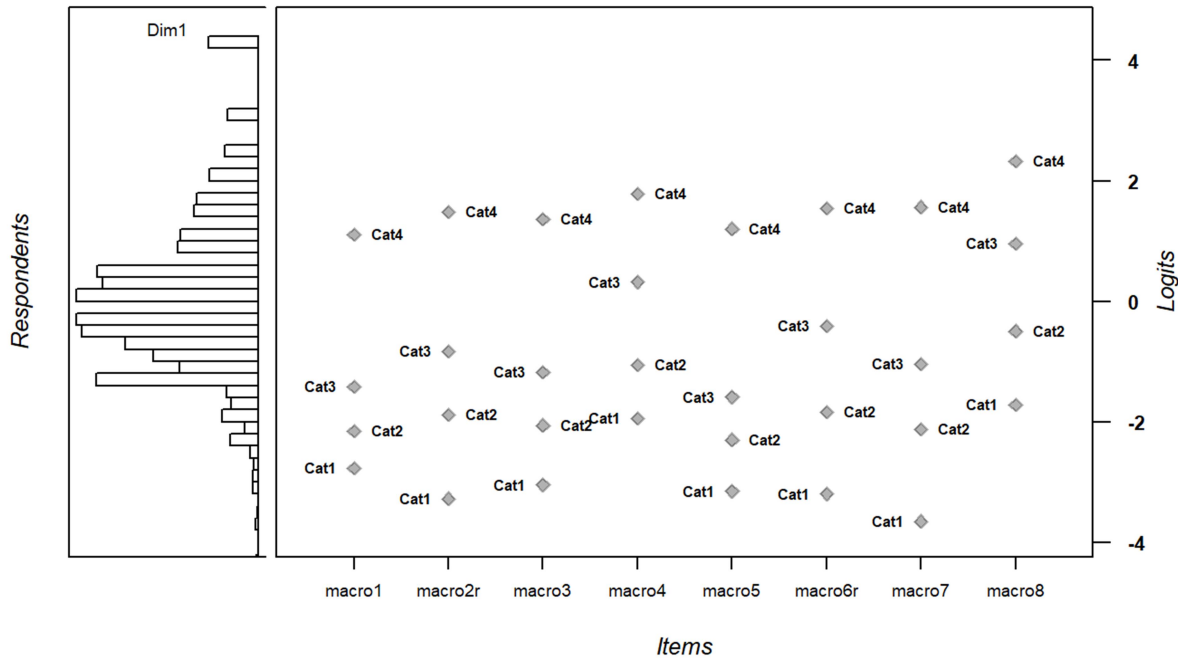
Supplemental Figure 3 Wright map of acceptance of microevolution data. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. high evolution acceptance. Cat1 = “disagree”, Cat2= “neutral”, Cat3= “agree”, Cat4= “strongly agree”. Comparison of the histogram with the item difficulties shows that Rasch item difficulties are below most person abilities indicating that most students in our sample were accepting of microevolution.

Wright Map



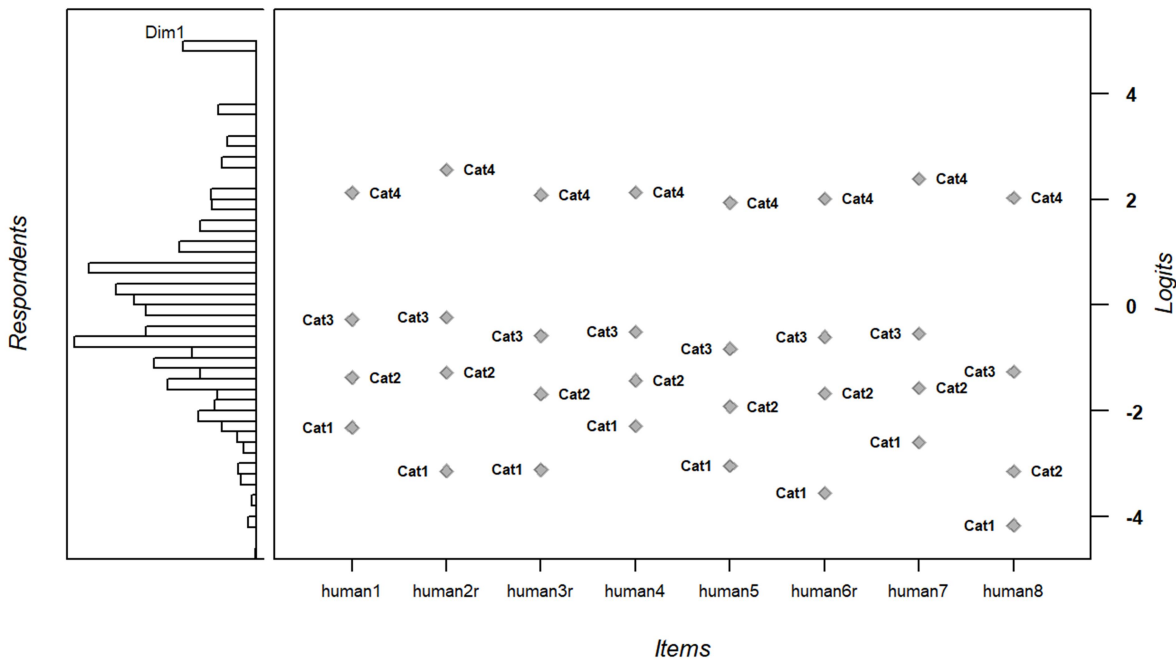
Supplemental Figure 4 Wright map of acceptance of macroevolution data. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. high evolution acceptance. Cat1 = “disagree”, Cat2= “neutral”, Cat3= “agree”, Cat4= “strongly agree”. Comparison of the histogram with the item difficulties shows that Rasch item difficulties are below most person abilities indicating that most students in our sample were accepting of macroevolution.

Wright Map



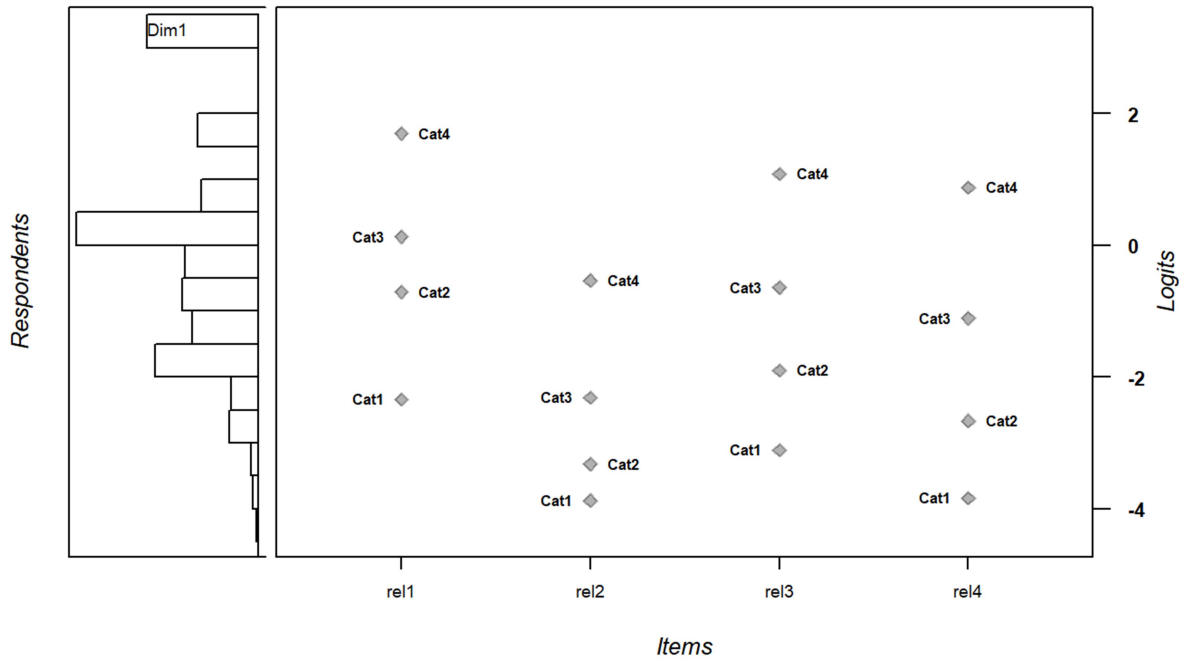
Supplemental Figure 5 Wright map of acceptance of human evolution data. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. high evolution acceptance. Cat1 = “disagree”, Cat2= “neutral”, Cat3= “agree”, Cat4= “strongly agree”. Comparison of the histogram with the item difficulties shows many more person abilities below Cat3, i.e. the agree option, compared to the Wright maps for micro- and macroevolution. This suggests that fewer students in our sample were accepting of human evolution, compared to their acceptance of micro- and macroevolution

Wright Map



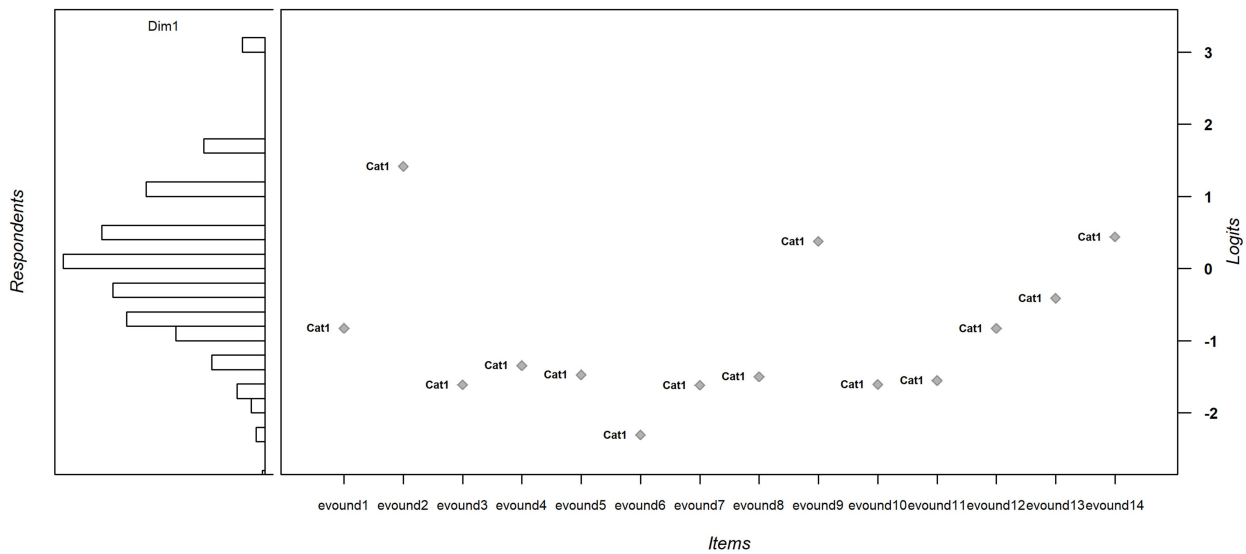
Supplemental Figure 6 Wright map of religiosity scale. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. high religiosity. Cat1 = “disagree”, Cat2= “neutral”, Cat3= “agree”, Cat4= “strongly agree”. Comparison of the histogram with the item difficulties shows a pretty wide distribution of religiosity among students in our sample, but with a skew towards higher religiosity. This can be explained by the exclusion of students that were not religious from the analyses of the perceived conflict scale.

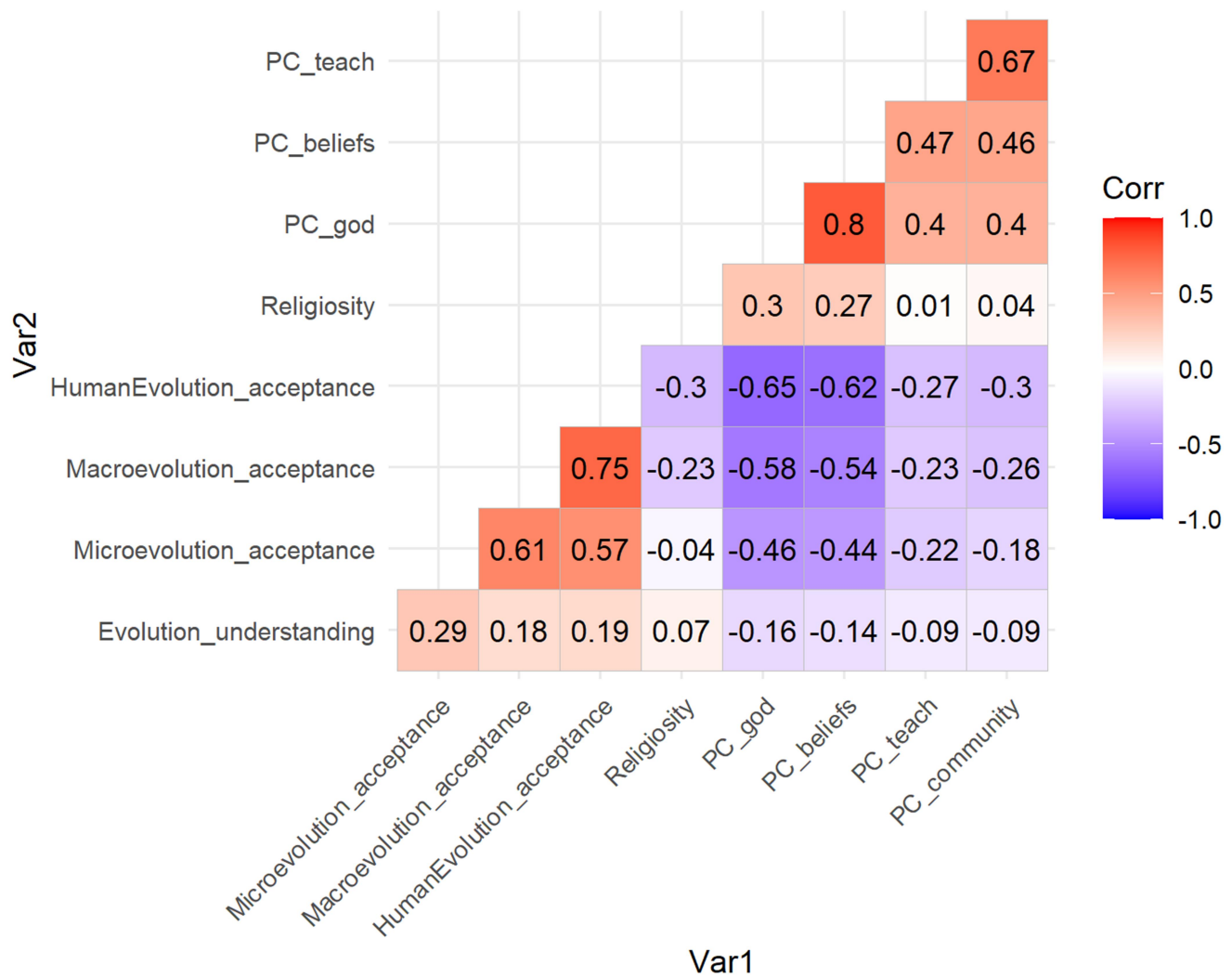
Wright Map



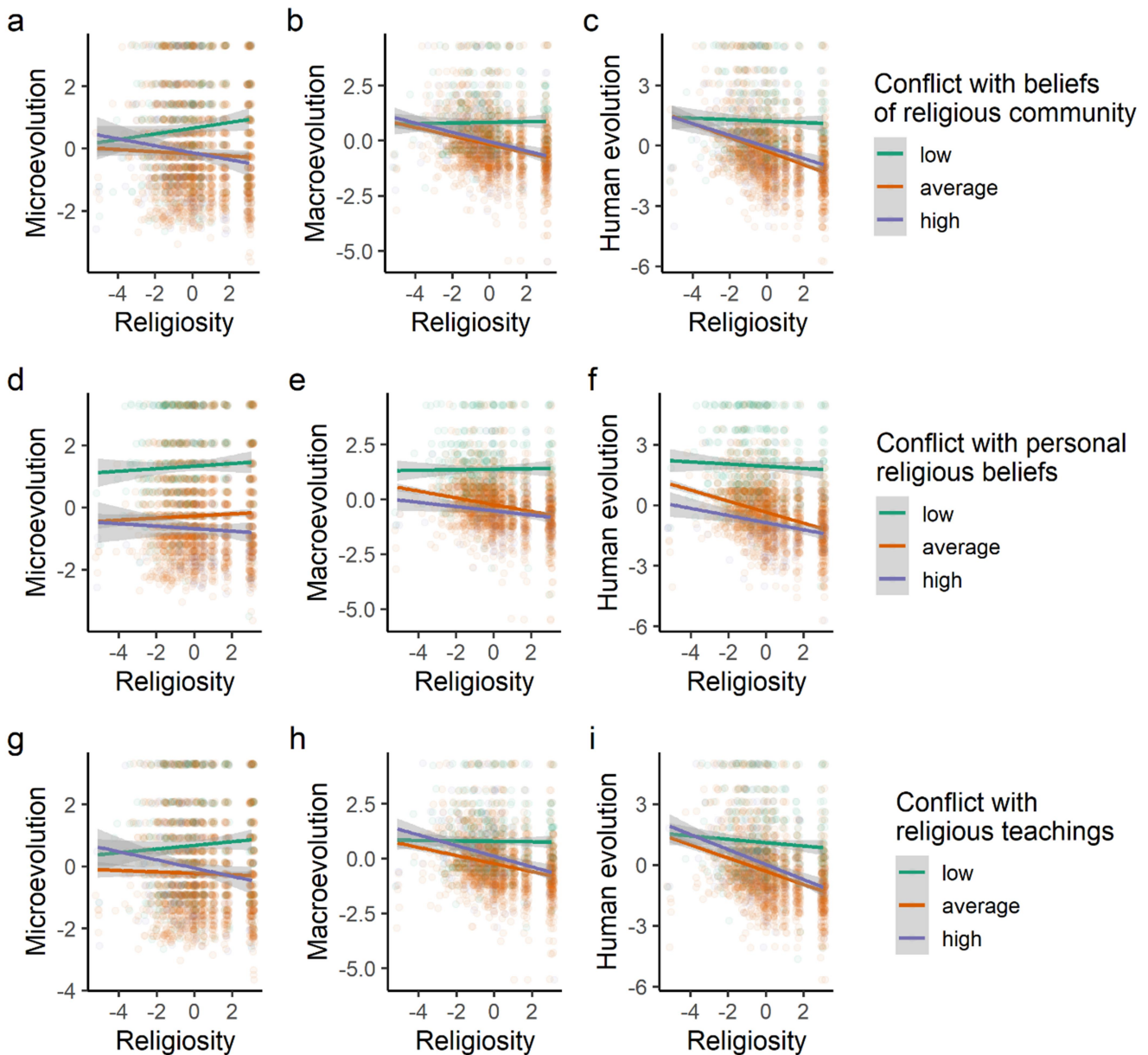
Supplemental Figure 7 Wright map of evolution understanding scale. The data points on the right represent item difficulties and the histogram on the left shows the distribution of person abilities. Higher points and higher respondents indicate more difficult items, i.e. high understanding. Since this was a dichotomous scale, Cat1 indicates “correct” answers. Comparison of the histogram with the item difficulties shows an almost normal distribution of evolution understanding among students in our sample.

Wright Map

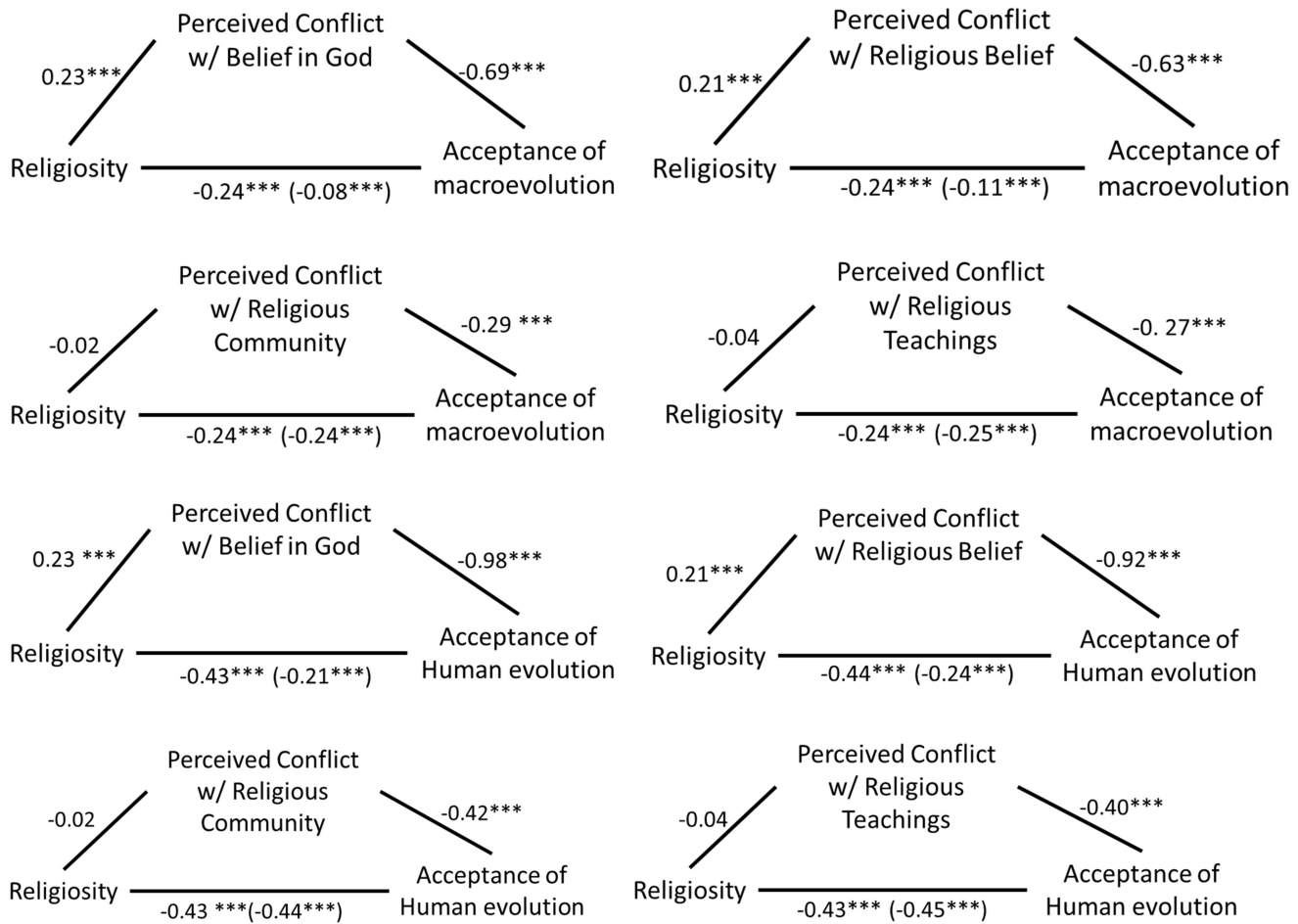


Supplemental Figure 8 Correlation matrix between all predictor variables used in linear mixed models.

Supplemental Figure 9 Scatterplots of evolution acceptance measures against religiosity measures with overlaid OLS regression lines broken down by students' perceived conflict between evolution and beliefs of religious community (a-c), perceived conflict between evolution and personal religious beliefs (d-f), and perceived conflict between evolution and religious teachings (g-i) (a,d,g) microevolution acceptance, (b,e,h) macroevolution acceptance, and (c,f,i) human evolution acceptance. The points were jittered for clarity, and darker points indicate multiple overlapping points.



Supplemental Figure 10: mediation models illustrating the mediation effect of various types of perceived conflict between evolution and religion on the relationship between religiosity and evolution acceptance. Coefficients within the parenthesis are the reduced coefficients after adding perceived conflict between religion and evolution to models.



Additional Supplemental Material 1: Survey questions analyzed in the order they were presented to participants in our study.

Understanding of Evolution

This portion of the survey is meant to determine how much you understand about current evolutionary theory as proposed by scientists. Please answer the following questions based on your understanding of evolution.

Please choose whether each statement is true, false, or you don't know enough to answer based on your **understanding of evolution**:

1. Individuals don't evolve, species do.
2. Evolution is a progression towards more advanced species.
3. Mutations occur all the time.
4. Species evolve to be perfectly adapted to their environments.
5. In most groups of organisms, more offspring are born than survive.
6. Mutations can be passed down to the next generation.
7. More genetic variability makes a population more resistant to extinction.

8. Natural selection is the same thing as evolution.
9. The characteristics an organism acquires during their lifetime are often genetically passed down to their offspring.
10. Natural selection is the only cause of evolution.
11. The more recently species share a common ancestor, the more closely related they are.
12. Evolution means progression towards perfection.
13. Natural selection is a random process.
14. Natural selection means that only the smartest and physically strongest organisms survive.

Acceptance of Microevolution

Please indicate whether you agree or disagree with the following statements, **based on your personal opinion**. (5-pt Likert-scale)

1. I think that organisms, as they exist now, are perfectly adapted to their natural environments and so will not continue to change.
2. I think all groups of organisms will continue to change.
3. I think there are a large number of examples of organisms that have undergone evolutionary changes within the species (i.e., antibiotic resistance in bacteria, production of new strains of the flu virus).
4. I think that species were created to be perfectly suited to their environment, so they do not change.
5. I don't accept the idea that a species of organism will evolve new traits over time.
6. I think there is an abundance of observable evidence to support the theory describing how variations within a species can happen.
7. I think that species exist today in exactly the same shape and form in which they always have.
8. I think there is overwhelming evidence supporting the theory of evolution to explain how variations in a species develop over time.

Acceptance of Macroevolution

Please indicate whether you agree or disagree with the following statements, **based on your personal opinion**. (5-pt Likert-scale)

1. I think that new species evolved from ancestral species.
2. I think that the fossil evidence that scientists use to support evolutionary theory is weak and inconclusive.
3. I think there are a large number of fossils found all around the world that support the ideas that organisms evolve into new species over time.
4. I think all complex organisms evolved from single celled organisms.
5. I think that new species evolve from a lot of small changes occurring over relatively long periods of time.
6. I think there is little or no observable evidence to support the theory that describes how one species of organism evolves from a different ancestral form.
7. I think the forms and diversity of organisms have changed dramatically over time.
8. I think that all organisms come from a single common ancestor.

Acceptance of Human Evolution

Please indicate whether you agree or disagree with the following statements, **based on your personal opinion**. (5-pt Likert-scale)

1. I think there is reliable evidence to support the theory that describes how humans were derived from ancestral primates.
2. I think that humans adapt, but they have not/do not evolve.
3. I think that the physical structures of humans are too complex to have evolved.
4. I think that humans and apes share an ancient ancestor.
5. I think that humans evolve.
6. I think that humans do not evolve; they can only change their behavior.

7. I think the many characteristics that humans share with other primates (i.e., chimpanzees, gorillas) can be best explained by our sharing a common ancestor.
8. I think physical variations in humans (i.e. eye color, skin color) were derived from the same processes that produce variation in other groups of organisms.

Religious Affiliation

I most closely identify as:

- Agnostic (does not have a definite belief about whether God exists or not) Christian
- Atheist (believes that God does not exist)
- Buddhist
- Christian- Catholic
- Christian- The Church of Jesus Christ of Latter-Day Saints
- Christian-Protestant
- Christian- Other (please describe) _____
- Hindu
- Jewish
- Muslim
- Nothing in particular
- Other faith (please describe) _____
- Decline to state

If “Christian – Protestant” or “Christian – other” is chosen:

Do you identify as evangelical Christian?

- Yes
- No
- I’m not sure

Religiosity

Please indicate how much you agree or disagree with the following statements: (5-pt Likert-scale)

1. I attend religious services regularly (when they are available)
2. I believe in God
3. I consider myself a religious person
4. I consider myself a spiritual person

Perceived Conflict between Religion and Evolution (PCoRE)

If students chose “Buddhist”, “Christian- Catholic”, “Christian- The Church of Jesus Christ of Latter-Day Saints”, “Christian-Protestant”, “Christian – Other”, “Hindu”, “Jewish”, “Muslim”, “Nothing in particular”, “Other faith” they were then asked to respond to each of the following items on a 5-pt Likert scale from strongly disagree – strongly agree.

Perceived conflict between evolution and belief in God:

1. My belief in God makes it harder to believe that all of life on Earth evolved from ancient microscopic life.
2. My belief in God makes it harder to believe that humans evolved from ancient ape ancestors.
3. My belief in God makes it harder to believe that non-human life evolved from previous different species.
4. My belief in God makes it harder to believe that humans have changed over time due to evolution.
5. My belief in God makes it harder to believe that non-human life has changed over time due to evolution.

Perceived conflict between evolution and religious teachings:

1. The teachings of my religion contradict that all of life on Earth evolved from ancient microscopic life.
2. The teachings of my religion contradict that humans evolved from ancient ape ancestors.
3. The teachings of my religion contradict that non-human life evolved from previous different species.
4. The teachings of my religion contradict that humans have changed over time due to evolution.
5. The teachings of my religion contradict that non-human life has changed over time due to evolution.

Perceived conflict with evolution among religious community:

1. My religious community does not believe that all of life on Earth evolved from ancient microscopic life.
2. My religious community does not believe that humans evolved from ancient ape ancestors.
3. My religious community does not believe that non-human life evolved from previous different species.
4. My religious community does not believe that humans have changed over time due to evolution.
5. My religious community does not believe that non-human life has changed over time due to evolution.

Perceived conflict between evolution and religious beliefs:

1. My personal religious beliefs make it harder to believe that all of life on Earth evolved from ancient microscopic life.
2. My personal religious beliefs make it harder to believe that humans evolved from ancient ape ancestors.
3. My personal religious beliefs make it harder to believe that non-human life evolved from previous different species.
4. My personal religious beliefs make it harder to believe that humans have changed over time due to evolution.
5. My personal religious beliefs make it harder to believe that non-human life has changed over time due to evolution.

Age:

How old are you? _____

Parent education level:

What is your parents' highest completed level of education? If you have more than one parent with differing levels of education, choose the higher of the two.

- Less than high school completed
- High school diploma or GED
- Some college but no degree
- Associate degree (for example: AA, AS)
- Bachelor's degree (for example: BA, AB, BS)
- Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)
- Higher than a Master's degree (for example: PhD, MD, JD)
- Decline to state

Gender

I most closely identify as:

- Female
- Male
- Nonbinary
- Decline to state
- Please describe your gender identity if the best option is not listed: _____

Race/ethnicity:

What is your ethnicity? Please select all that apply.

- American Indian, Native American, or Alaskan Native
- Asian or Asian American
- Black or African American
- Hispanic or Latino/Latina
- Native Hawaiian or Other Pacific Islander
- White or European American
- Decline to state
- Other not listed: _____