

Supplementary Materials

R code to run and derive ICCs from cross-categorized multilevel models

The below can be fully copy and pasted into R. Comments are denoted with a '#', and anything without a '#' should be run as code.

```
#Downloading and installing lme4, an R package for multilevel modeling
```

```
install.packages("lme4")  
library(lme4)
```

```
#Building the cross-classified model
```

```
#First we present a basic model
```

```
#In which: m = the created model, dv = dependent variable, c1 = cluster 1, c2 = cluster 2,
```

```
# and dataset = dataset name
```

```
#Thus, dv is cross-categorized by both c1 and c2.
```

```
m <- lmer(dv ~ 1 + (1 | c1) + (1 | c2), data=dataset)
```

```
#Here is an example model in the context of Hehman Sutherland Flake and Slepian to illustrate
```

```
#Friendly is cross-categorized by both rater and target
```

```
m <- lmer(friendly ~ 1 + (1 | rater) + (1 | target), data=dataset)
```

```
#Analyses for calculating ICCs
```

```
#The below command will return, in part, a section labeled 'random effects'. We provide an example
```

```
summary(m)
```

```
#Random effects:
```

#Groups	Name	Variance	Std.Dev.
#rater	(Intercept)	0.5868	0.7660
#target	(Intercept)	0.2038	0.4514
#Residual		1.7427	1.3201

```
#The first two bolded numbers above represent the taus ( $\tau$ ) for rater and target, respectively. The bottom  
#bolded value (labeled residual) is sigma squared ( $\sigma^2$ ) in the ICC equation in the paper.
```

```
#To calculate rater ICC
```

```
#ICC = rater tau / (sigma squared + rater tau + target tau)
```

```
#To calculate target ICC
```

```
#ICC = target tau / (sigma squared + rater tau + target tau)
```

```
#The resulting numbers represent the percentage of variance from between-rater (rater-ICC) or between-
```

```
#target (target-ICC), respectively.
```

```
#To run models that can estimate interactions between clusters use the below code
```

```
#A minimum of two observations per c1 and c2 is required for this model to run
```

```
m <- lmer(dv ~ 1 + (1 | c1) + (1 | c2) + (1 | c1:c2), data=dataset)
```

Supplementary Figure 1



Supplementary Figure 1. Examples of five levels of emotional display in stimuli using in Analysis 4, ranging from subtly angry to subtly happy. These five levels were recoded into three levels of neutral to most extreme.

Correlation Matrix

Correlations between trait ratings (averaged across all participants for each stimulus) used to form dimensions in Analysis 2.

Thus, N reflects number the number of stimuli for which the two traits were each collected. The large degree of variability in N is due to different trait ratings and different stimuli being included across different studies.

		Aggressive	Caring	Friendly	Likeable	Trustworthy	Warm	Wise	Assertive	Competent	Dominant
Aggressive	Pearson Correlation	1	-.711**	-.714**	-.486**	-.630**	-.488**	-.270**	.627**	-.312**	.644**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.003	.000
	N	314	87	146	87	123	219	191	87	87	87
Caring	Pearson Correlation	-.711**	1	.891**	.811**	.819**	.863**	. ^b	-.188	.717**	-.241**
	Sig. (2-tailed)	.000		.000	.000	.000	.000		.080	.000	.024
	N	87	87	87	87	87	87	0	87	87	87
Friendly	Pearson Correlation	-.714**	.891**	1	.789**	.818**	.935**	.478**	-.197	.619**	-.551**
	Sig. (2-tailed)	.000	.000		.000	.000	0.000	.000	.067	.000	.000
	N	146	87	1729	87	977	859	59	87	650	1355
Likeable	Pearson Correlation	-.486**	.811**	.789**	1	.814**	.815**	. ^b	.039	.884**	-.108
	Sig. (2-tailed)	.000	.000	.000		.000	.000		.723	.000	.320
	N	87	87	87	87	87	87	0	87	87	87
Trustworthy	Pearson Correlation	-.630**	.819**	.818**	.814**	1	.838**	. ^b	-.597**	.619**	-.655**
	Sig. (2-tailed)	.000	.000	.000	.000		.000		.000	.000	.000
	N	123	87	977	87	1902	859	0	633	480	1866
Warm	Pearson Correlation	-.488**	.863**	.935**	.815**	.838**	1	.103	-.034	.519**	-.731**
	Sig. (2-tailed)	.000	.000	0.000	.000	.000		.242	.756	.000	.000
	N	219	87	859	87	859	1243	132	87	339	859
Wise	Pearson Correlation	-.270**	. ^b	.478**	. ^b	. ^b	.103	1	. ^b	. ^b	. ^b
	Sig. (2-tailed)	.000		.000			.242				
	N	191	0	59	0	0	132	191	0	0	0
Assertive	Pearson Correlation	.627**	-.188	-.197	.039	-.597**	-.034	. ^b	1	-.024	.819**
	Sig. (2-tailed)	.000	.080	.067	.723	.000	.756			.777	.000
	N	87	87	87	87	633	87	0	633	141	633
Competent	Pearson Correlation	-.312**	.717**	.619**	.884**	.619**	.519**	. ^b	-.024	1	-.131**
	Sig. (2-tailed)	.003	.000	.000	.000	.000	.000		.777		.001
	N	87	87	650	87	480	339	0	141	1371	692
Dominant	Pearson Correlation	.644**	-.241**	-.551**	-.108	-.655**	-.731**	. ^b	.819**	-.131**	1
	Sig. (2-tailed)	.000	.024	.000	.320	.000	.000		.000	.001	
	N	87	87	1355	87	1866	859	0	633	692	2244
Mean	Pearson Correlation	. ^b	. ^b	-.777**	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)			.000							
	N	0	0	60	0	0	0	0	0	0	0
Physically Pow erful	Pearson Correlation	.478**	. ^b	.144	. ^b	. ^b	. ^b	-.043	. ^b	. ^b	. ^b
	Sig. (2-tailed)	.000		.276				.744			
	N	59	0	59	0	0	0	59	0	0	0
Strong	Pearson Correlation	.326**	.001	-.212**	.074	-.411**	-.378**	. ^b	.649**	.281**	.678**
	Sig. (2-tailed)	.002	.995	.000	.499	.000	.000		.000	.000	.000
	N	87	87	1463	87	881	862	0	87	570	1255
Socially Pow erful	Pearson Correlation	.401**	. ^b	.020	. ^b	. ^b	. ^b	.222	. ^b	. ^b	. ^b
	Sig. (2-tailed)	.002		.881				.091			
	N	59	0	59	0	0	0	59	0	0	0
Attractive	Pearson Correlation	-.252**	.572**	.313**	.665**	.412**	.468**	. ^b	-.098	.468**	-.059**
	Sig. (2-tailed)	.019	.000	.000	.000	.000	.000		.013	.000	.025
	N	87	87	872	87	1072	339	0	633	1310	1446
Creative	Pearson Correlation	. ^b	. ^b	.535**	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)			.000							
	N	0	0	60	0	0	0	0	0	0	0
Healthy	Pearson Correlation	-.197	.520**	.493**	.530**	.477**	.538**	. ^b	.292**	.650**	.281**
	Sig. (2-tailed)	.067	.000	.000	.000	.000	.000		.006	.000	.008
	N	87	87	87	87	87	87	0	87	87	87
Intelligent	Pearson Correlation	-.345**	.648**	.510**	.752**	.650**	.492**	. ^b	.179	.771**	.065
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000		.098	.000	.233
	N	87	87	604	87	87	339	0	87	694	336
Smart	Pearson Correlation	-.219*	.618**	.579**	.813**	.682**	.634**	. ^b	.327**	.912**	.165
	Sig. (2-tailed)	.041	.000	.000	.000	.000	.000		.002	.000	.126
	N	87	87	87	87	87	87	0	87	87	87
Youthful	Pearson Correlation	-.247*	.103	.100	.258*	.090	.031	. ^b	-.371**	.004	-.496**
	Sig. (2-tailed)	.021	.340	.357	.016	.406	.775		.000	.971	.000
	N	87	87	87	87	87	87	0	87	87	87

		Mean	Physically Powerful	Strong	Socially Powerful	Attractive	Creative	Healthy	Intelligent	Smart	Youthful
Aggressive	Pearson Correlation	. ^b	.478 ^{**}	.326 ^{**}	.401 ^{**}	-.252 ^{**}	. ^b	-.197	-.345 ^{**}	-.219 ^{**}	-.247 ^{**}
	Sig. (2-tailed)		.000	.002	.002	.019		.067	.001	.041	.021
	N	0	59	87	59	87	0	87	87	87	87
Caring	Pearson Correlation	. ^b	. ^b	.001	. ^b	.572 ^{**}	. ^b	.520 ^{**}	.648 ^{**}	.618 ^{**}	.103
	Sig. (2-tailed)			.995		.000		.000	.000	.000	.340
	N	0	0	87	0	87	0	87	87	87	87
Friendly	Pearson Correlation	-.777 ^{**}	.144	-.212 ^{**}	.020	.313 ^{**}	.535 ^{**}	.493 ^{**}	.510 ^{**}	.579 ^{**}	.100
	Sig. (2-tailed)	.000	.276	.000	.881	.000	.000	.000	.000	.000	.357
	N	60	59	1463	59	872	60	87	604	87	87
Likeable	Pearson Correlation	. ^b	. ^b	.074	. ^b	.665 ^{**}	. ^b	.530 ^{**}	.752 ^{**}	.813 ^{**}	.258
	Sig. (2-tailed)			.499		.000		.000	.000	.000	.016
	N	0	0	87	0	87	0	87	87	87	87
Trustworthy	Pearson Correlation	. ^b	. ^b	-.411 ^{**}	. ^b	.412 ^{**}	. ^b	.477 ^{**}	.650 ^{**}	.682 ^{**}	.090
	Sig. (2-tailed)			.000		.000		.000	.000	.000	.406
	N	0	0	881	0	1072	0	87	87	87	87
Warm	Pearson Correlation	. ^b	. ^b	-.378 ^{**}	. ^b	.468 ^{**}	. ^b	.538 ^{**}	.492 ^{**}	.634 ^{**}	.031
	Sig. (2-tailed)			.000		.000		.000	.000	.000	.775
	N	0	0	862	0	339	0	87	339	87	87
Wise	Pearson Correlation	. ^b	-.043	. ^b	.222	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)		.744		.091						
	N	0	59	0	59	0	0	0	0	0	0
Assertive	Pearson Correlation	. ^b	. ^b	.649 ^{**}	. ^b	-.098 [*]	. ^b	.292 ^{**}	.179	.327 ^{**}	-.371 ^{**}
	Sig. (2-tailed)			.000		.013		.006	.098	.002	.000
	N	0	0	87	0	633	0	87	87	87	87
Competent	Pearson Correlation	. ^b	. ^b	.281 ^{**}	. ^b	.468 ^{**}	. ^b	.650 ^{**}	.771 ^{**}	.912 ^{**}	.004
	Sig. (2-tailed)			.000		.000		.000	.000	.000	.971
	N	0	0	570	0	1310	0	87	694	87	87
Dominant	Pearson Correlation	. ^b	. ^b	.678 ^{**}	. ^b	-.059 [*]	. ^b	.281 ^{**}	.065	.165	-.496 ^{**}
	Sig. (2-tailed)			.000		.025		.008	.233	.126	.000
	N	0	0	1255	0	1446	0	87	336	87	87
Mean	Pearson Correlation	1	. ^b	. ^b	. ^b	-.252	-.302 [*]	. ^b	.935 ^{**}	. ^b	. ^b
	Sig. (2-tailed)					.052	.019		.000		
	N	60	0	0	0	60	60	0	60	0	0
Physically Powerful	Pearson Correlation	. ^b	1	. ^b	.634 ^{**}	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)				.000						
	N	0	59	0	59	0	0	0	0	0	0
Strong	Pearson Correlation	. ^b	. ^b	1	. ^b	.408 ^{**}	. ^b	.613 ^{**}	.083 [*]	.243 [*]	-.261 ^{**}
	Sig. (2-tailed)					.000		.000	.036	.023	.005
	N	0	0	1553	0	699	0	87	634	87	114
Socially Powerful	Pearson Correlation	. ^b	.634 ^{**}	. ^b	1	. ^b	. ^b	. ^b	. ^b	. ^b	. ^b
	Sig. (2-tailed)		.000								
	N	0	59	0	59	0	0	0	0	0	0
Attractive	Pearson Correlation	-.252	. ^b	.408 ^{**}	. ^b	1	.318 [*]	.728 ^{**}	.438 ^{**}	.604 ^{**}	.311 ^{**}
	Sig. (2-tailed)	.052		.000			.013	.000	.000	.000	.001
	N	60	0	699	0	2267	60	87	883	87	114
Creative	Pearson Correlation	-.302 [*]	. ^b	. ^b	. ^b	.318 [*]	1	. ^b	-.252	. ^b	. ^b
	Sig. (2-tailed)	.019				.013			.052		
	N	60	0	0	0	60	60	0	60	0	0
Healthy	Pearson Correlation	. ^b	. ^b	.613 ^{**}	. ^b	.728 ^{**}	. ^b	1	.644 ^{**}	.557 ^{**}	.162
	Sig. (2-tailed)			.000		.000			.000	.000	.134
	N	0	0	87	0	87	0	87	87	87	87
Intelligent	Pearson Correlation	.935 ^{**}	. ^b	.083 [*]	. ^b	.438 ^{**}	-.252	.644 ^{**}	1	.808 ^{**}	.058
	Sig. (2-tailed)	.000		.036		.000	.052	.000		.000	.542
	N	60	0	634	0	883	60	87	943	87	114
Smart	Pearson Correlation	. ^b	. ^b	.243 [*]	. ^b	.604 ^{**}	. ^b	.557 ^{**}	.808 ^{**}	1	-.024
	Sig. (2-tailed)			.023		.000		.000	.000		.827
	N	0	0	87	0	87	0	87	87	87	87
Youthful	Pearson Correlation	. ^b	. ^b	-.261 ^{**}	. ^b	.311 ^{**}	. ^b	.162	.058	-.024	1
	Sig. (2-tailed)			.005		.001		.134	.542	.827	
	N	0	0	114	0	114	0	87	114	87	114

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

b Cannot be computed because at least one of the variables is constant.