Supplementary Materials

Table S1. Pearson's correlations between the baseline measures and cognitive task performance (all groups included, n = 61)

	Age	MADRS	RRS	ARS	T1rum	T1arousal	T1valence	T1domin	T1happy	T1sad	T1angry	K	K_ver	K_vis	corRT
MADRS	-0.14														
RRS	-0.17	**0.69**													
ARS	0.05	**0.34**	**0.51**												
T1rum	-0.13	**0.55**	**0.60**	**0.39**											
T1arousal	0.08	-0.20	-0.04	0.16	0.01										
T1valence	**0.30**	**-0.50**	**-0.43**	**-0.25**	**-0.53**	0.19									
T1dominance	-0.01	**-0.44**	**-0.33**	-0.01	**-0.27**	**0.31**	**0.39**								
T1happy	**0.35**	**-0.56**	**-0.47**	-0.24	**-0.55**	0.08	**0.61**	**0.26**							
T1sad	**-0.26**	**0.56**	**0.65**	**0.33**	**0.63**	-0.06	**-0.73**	**-0.31**	**-0.66**						
T1angry	0.05	0.09	-0.01	0.17	0.23	0.18	**-0.34**	0.19	**-0.27**	**0.36**					
K	0.04	0.07	-0.04	-0.13	-0.19	-0.01	0.01	-0.05	-0.07	-0.07	-0.14				
K_ver	-0.07	0.04	-0.05	-0.10	-0.20	-0.05	-0.09	-0.08	-0.09	0.04	-0.09	**0.86**			
K_vis	0.16	0.10	0.03	-0.06	-0.09	0.10	0.13	-0.01	-0.03	-0.16	-0.20	**0.73**	**0.31**		
corRT	**0.31**	0.05	0.08	0.11	0.02	-0.22	0.04	-0.17	0.09	-0.03	-0.23	-0.13	-0.19	0.02	
RumResp	0.03	**-0.50**	**-0.42**	-0.21	**-0.62**	-0.06	**0.48**	0.25	**0.40**	**-0.54**	-0.14	0.17	0.18	0.09	0.01

Notes. **Bold** indicates statistically a significant correlation with $p < .05$. RumResp – experimental induction related ruminative responsiveness (T2 rumination minus T1 rumination).

Table S2. Bayesian mixed model outcomes

Effects	Standardized estimate	SE	95% interval (lower bound)	95% interval (upper bound)	R-hat	Bulk ESS	Tail ESS
Intercept	0.53	0.22	0.09	0.96	1	2989	2717
CT vs rumination	-0.51	0.25	-1.01	-0.03	1	2625	2788
Sad vs Angry	0.1	0.21	-0.31	0.51	1	2696	2370
Metacognition	0.11	0.09	-0.07	0.29	1	2793	2615
Modality (Visual)	-1.09	0.13	-1.34	-0.83	1	6049	2591
Depression	0.05	0.09	-0.13	0.24	1	2538	2213
Induction responsiveness	0.02	0.24	-0.46	0.49	1	2741	2386

Notes. Family: Gaussian, Identity links: mu and sigma, draws: 4 chains with 2000 iterations, warmup = 1000, total post-warmup draws = 4000. Random effect variable: Subject. Model convergence and reliability: It is recommended running at least four chains and only using the sample if R-hat is less than 1.05. Here, all R-hats were less than 1.05, which indicates a good convergence. Bulk-ESS and tail-ESS should be at least 100 (per Markov Chain) in order to be reliable and indicate that estimates of respective posterior quantiles are reliable. Here, all Bulk Effective Sample Size and Tail Effective Sample Size indices were above 100, which indicates good reliability.

Likelihood tests

Table S2A. What is the likelihood of the null-effect of rumination on WM capacity?

Hypothesis	Estimate	Est.Error	CI.Lower	CI.Upper	Evid.Ratio	Post.Prob	Star
Effect = 0	-0.5	0.25	-1	0.01	**0.58**	0.37	

Table S2B. What is the likelihood of the enhancement effect of rumination on WM capacity (negative estimate)?

Hypothesis	Estimate	Est.Error	CI.Lower	CI.Upper	Evid.Ratio	Post.Prob	Star
Effect < 0	-0.5	0.25	-0.91	-0.07	**35.04**	0.97	*

Table S2C. What is the likelihood of the impairment effect of rumination on WM capacity (positive estimate)?

Hypothesis	Estimate	Est.Error	CI.Lower	CI.Upper	Evid.Ratio	Post.Prob	Star
Effect > 0	-0.5	0.25	-0.91	-0.07	**0.03**	0.03	

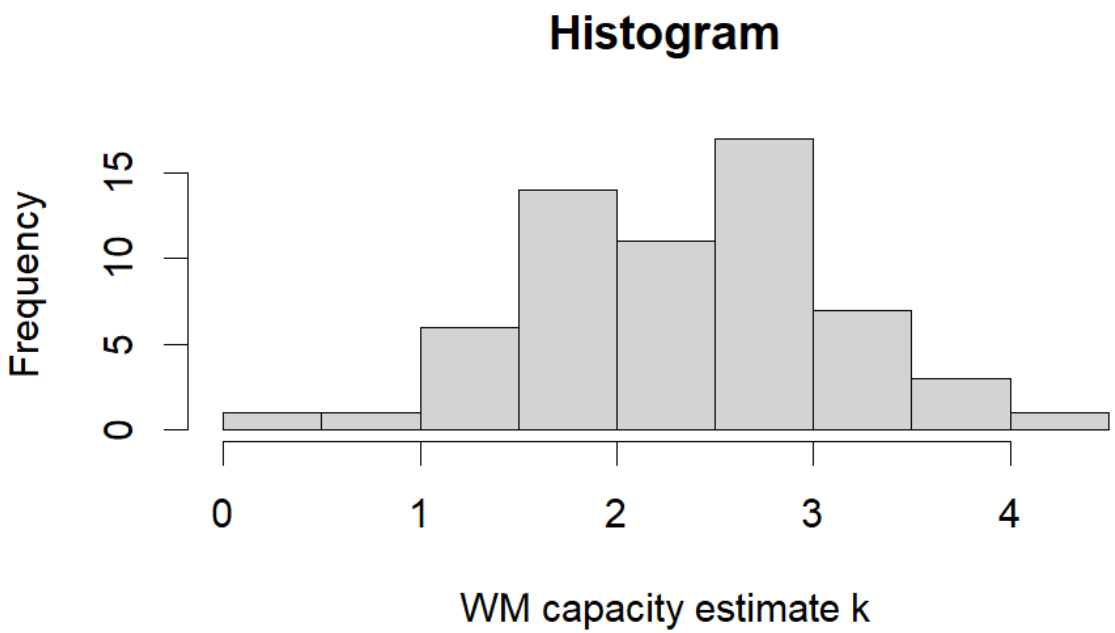

Figure S1. Distribution of the working memory capacity estimate (*k*), n=61

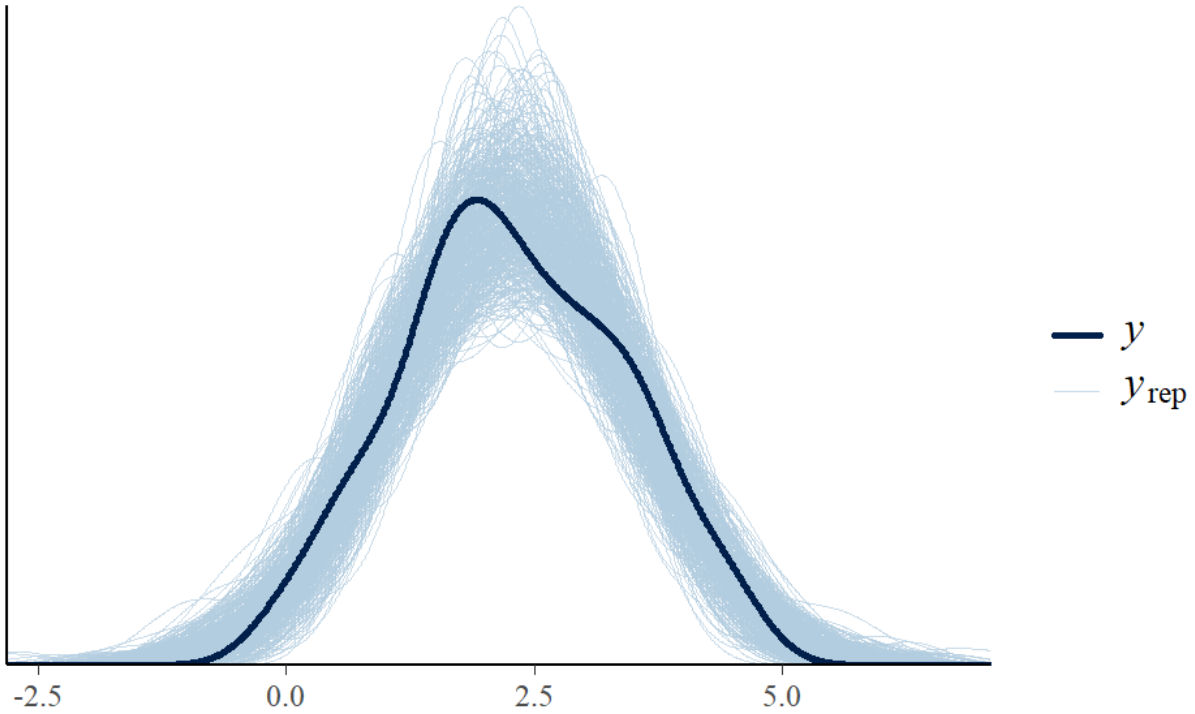

Figure S2. Posterior distribution check for the Bayesian prediction model for k with 500 posterior draws

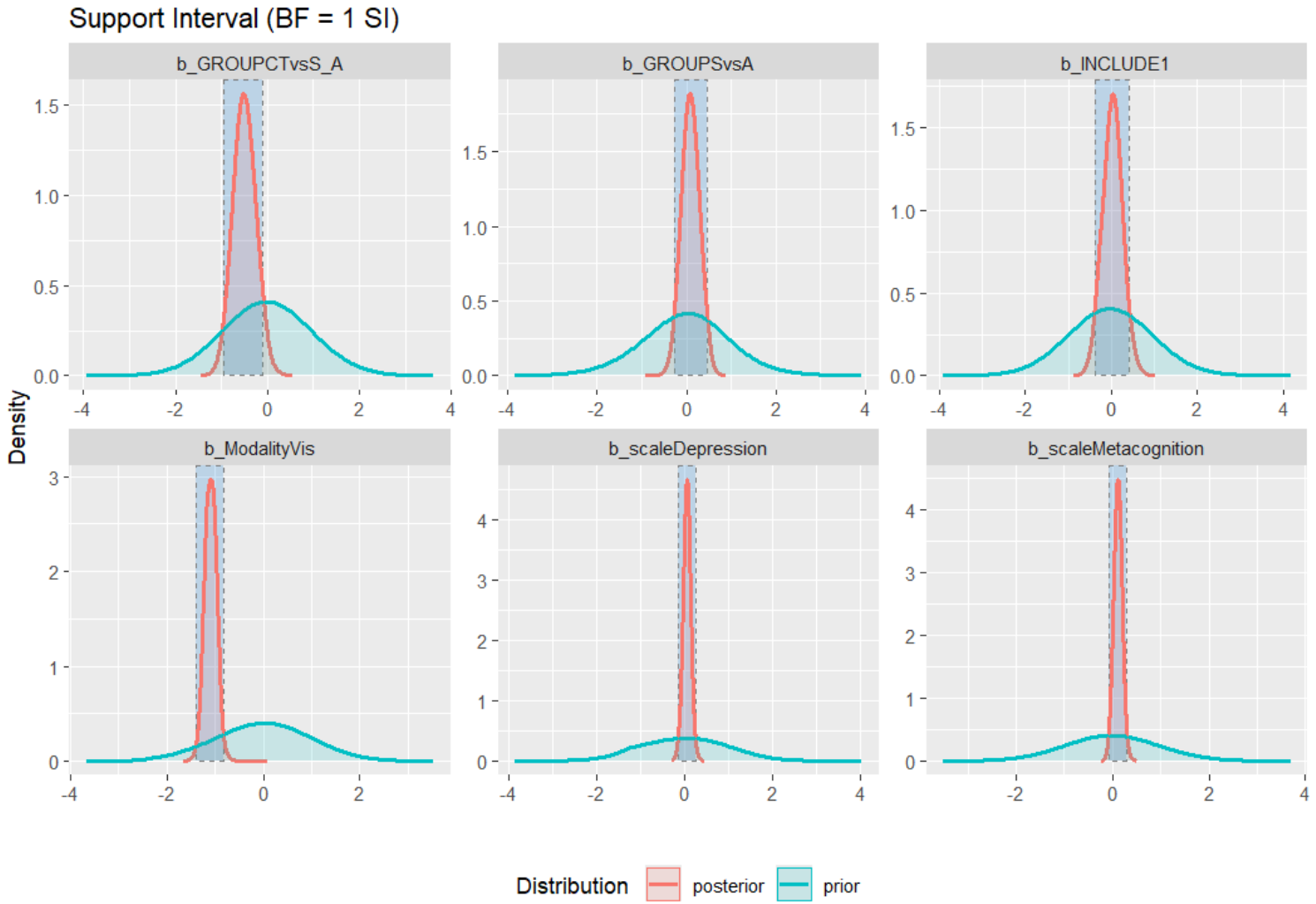

Figure S3. Prior and posterior distributions of the fixed effect coefficients

Notes. GROUPSvsA is a contast for sad vs angry comparison. GROUPCTvsS_A is a contrast for control vs rumination comparison, INCLUDE refers to the rumination induction responsiveness coded as 1 = responive and 0 = nonresponsive.

Prior quality was checked with the check_prior() from brms package with the „gelman“ method in a model in which draws from priors were not drawn additionally to the posterior draws. This resulted in the following quality estimates (as recommended by Gelman et al. 2017), suggesting that the priors for the key variables were informative:

Parameter	Prior_Quality
b_Intercept	**informative**
b_GROUPCTvsS_A	**informative**
b_GROUPSvsA	**informative**
b_Metacognition	uninformative
b_ModalityVis	**informative**
b_Depression	uninformative
b_INCLUDE	**informative**

For an additional robustness check, and to consider the flat default distribution, we tested the same model with flat uninformative priors. This did not affect the key findings.