

Data Supplement for Viding et al., “Association of Amygdala Response to Preattentive Masked Fear With Callous-Unemotional Traits in Children With Conduct Problems,” Am J Psychiatry (doi: 10.1176/appi.ajp.2012.12020191)

**TABLE S1. Combined parent and teacher ratings for the Strengths and Difficulties Questionnaire, taken during participant screening**

Strengths and Difficulties Questionnaire	Group						Analysis	
	1) Control group (N=16)		2) Conduct problems/Low callous unemotional traits (N=15)		3) Conduct problems/High callous unemotional traits (N=15)			
	Mean	SD	Mean	SD	Mean	SD	p	Post hoc*
Conduct problems	1.06	1.24	5.93	1.39	8.20	1.47	0.001	1<2<3
Hyperactivity/Inattention	3.81	2.20	7.53	2.17	8.80	1.42	0.001	1<(2,3)
Peer Relationship Problems	2.31	1.25	3.27	2.96	4.67	2.97	0.041	1<3
Emotional symptoms	2.25	1.57	4.00	3.21	4.73	2.69	0.028	1<3
Prosocial behavior	9.56	0.63	7.47	1.81	6.40	2.16	0.001	1<(2,3)
Total difficulties	9.44	3.69	20.73	6.24	26.80	6.34	0.001	1<2<3

\*p<0.05, Bonferroni corrected

**TABLE S2. The effect of controlling for participant symptom counts on the cluster reported in the main text in right amygdala showing the pattern: conduct problems with low callous-unemotional traits>controls>conduct problems with low callous-unemotional traits. Voxels displayed survive familywise error correction at p<0.05 within a bilateral amygdala mask.**

Covariate (symptom counts, N=46)	Peak amygdala voxel			t	z	k
No Covariate	20	-2	-22	3.85	3.55	9
Conduct Disorder	20	-2	-22	3.97	3.65	9
Attention Deficit Hyperactivity Disorder	20	-2	-22	4.24	3.85	16
Generalized Anxiety Disorder	20	-2	-22	4.05	3.70	14
Major Depressive Episode <sup>a</sup>	20	-2	-22	3.60	3.34	4

<sup>a</sup>Missing data from one participant with conduct problems  
x y z=peak voxel MNI coordinates; k=cluster size (2×2×2 mm voxels).

**TABLE S3. Significant cluster at  $p < 0.001$ , uncorrected,  $k \geq 5$ , showing the pattern conduct problems with low callous-unemotional trait > controls > conduct problems with low callous-unemotional traits, and the reverse, for Fear-Calm.**

Brain Region	BA	L/R	x	y	z	peak t	peak z	k
conduct problems/low callousunemotional traits > Controls > Coduct problems/high callousunemotional trait								
Cerebellum, posterior lobe		L	-28	-70	-22	4.34	3.94	1.42
Amygdala		R	20	-2	-22	3.85	3.55	9
Occipital cortex	18	R	18	-84	-16	3.62	3.36	6
Dorsolateral prefrontal cortex	46	R	48	38	26	3.37	3.16	5
Middle frontal gyrus	8	L	-40	24	44	3.37	3.16	5
Conduct problems/low callousunemotional traits < Controls < Conduct problems/high callous-unemotional traits								
Middle temporal gyrus	20	R	40	-18	-20	4.55	4.10	31
Precentral gyrus	6	L	-38	-12	40	4.21	3.84	73
Uncus	20	R	30	-10	-32	3.95	3.64	33
Cerebellum, anterior lobe		R	14	-40	-30	3.65	3.39	10
Superior frontal gyrus	9	L	-16	34	40	3.63	3.37	16
Midcingulate gyrus	24	R	12	8	34	3.61	3.36	8
Fusiform gyrus	20	L	-36	-8	28	3.61	3.36	9

BA=Brodman Area; L/R=Left/Right; x y z=peak voxel MNI coordinates; k=cluster size (2x2x2mm voxels).

**TABLE S4. Significant clusters at  $p < 0.001$ , uncorrected,  $k \geq 5$ , showing a correlation between callous-unemotional trait scores and neural responses to Fear-Calm in children with conduct problems.**

Brain Region	BA	L/R	x	y	z	peak t	peak z	k
Negative Relationship								
Caudate tail	—	R	22	-44	12	5.21	4.32	32
Middle frontal gyrus	46	R	46	38	28	4.14	3.62	34
Occipital cortex	19	L	-36	-82	-4	4.12	3.61	73
			-24	-88	-12	4.09	3.59	
Occipital cortex	17	L	-20	-82	4	4.02	3.54	7
Clastrum	—	L	-34	-24	-6	3.82	3.40	9
Cerebellum, posterior lobe	—	L	-30	-70	-22	3.78	3.37	44
			-38	-72	-18	3.56	3.20	
Positive Relationship								
Parahippocampal gyrus	28	R	28	-10	-32	4.10	3.60	14
Inferior temporal gyrus	21	R	42	-8	-34	4.00	3.53	11

BA=Brodman Area; L/R = Left/Right; x y z = peal voxel MNI coordinates; k = cluster size (2x2x2 mm voxels).