Supplemental Table 1. Additional whole brain results. Clusters significant at a whole-brain corrected false probability rate of $p < .05$. Direction of effects noted. The following contrasts yielded no significant clusters and thus are not included in the table: Emotion x Intensity-Quadratic; Emotion x Intensity-Cubic; Age Group x Intensity-Linear, -Quadratic, -Cubic; Intensity-Quadratic, -Cubic.

Age Group main effect

k	$F_{1,42}$	x	y	z	Atlas	BA	Adult vs Adolescent?
454	32.57	-21	-11	41	Anterior cingulate/Post- & pre-central Gyrus	32, 24	Adolescent > Adult
213	29.97	34	36	36	Dorsolateral prefrontal cortex	9, 8	Adolescent > Adult
204	35.11	24	-74	1	Calcarine gyrus, Posterior cingulate cortex	18	Adolescent > Adult
172	32.73	-39	-41	-21	Fusiform Gyrus	20, 37	Adult > Adolescent
138	22.65	-54	9	19	Inferior frontal gyrus	9, 6	Adult > Adolescent
125	38.52	36	-86	1	Superior/Middle occipital gyrus	18	Adult > Adolescent
122	44.15	-11	-96	6	Superior/Middle occipital gyrus	17, 18	Adult > Adolescent
82	29.23	-24	-64	21	Middle/Superior occipital gyrus	7	Adolescent > Adult
69	21.96	49	-6	-14	Superior temporal sulcus	21	Adult > Adolescent
67	24.13	-39	-81	1	Middle occipital gyrus	18	Adult > Adolescent
62	22.12	-36	-76	21	Middle occipital gyrus	19	Adult > Adolescent
60	40.88	34	-81	24	Middle occipital gyrus	19	Adult > Adolescent
56	23.05	-16	-51	39	Superior parietal lobule	7	Adolescent > Adult
55	27.65	-6	-71	14	Calcarine gyrus, Cuneus	18, 30	Adult > Adolescent
55	23.31	-24	31	36	Dorsolateral prefrontal cortex	8	Adolescent > Adult
51	29.61	34	-14	-31	Fusiform gyrus	20, 28	Adolescent > Adult
49	33.63	-4	6	44	Supplementary motor area, Middle cingulate cortex	32	Adolescent > Adult
48	26.35	-44	-69	-14	Fusiform Gyrus, Inferior occipital gyrus	19	Adult > Adolescent
45	23.42	16	-4	61	Dorsal prefrontal cortex	6	Adolescent > Adult
41	28.37	41	-34	-14	Fusiform gyrus	20	Adult > Adolescent
39	32.26	-31	41	24	Lateral prefrontal cortex	10	Adolescent > Adult
39	24.51	9	14	31	Middle/Anterior cingulate cortex	24, 32	Adolescent > Adult
39	23.40	36	-11	49	Dorsal prefrontal cortex	6,4	Adult > Adolescent

Emotion main effect

k	$F_{2,462}$	x	y	z	Atlas	BA	Happy vs Fearful vs Angry?
1521	50.30	-21	-76	-6	Inferior/middle occipital gyrus	18	Fearful > Angry > Happy
779	17.27	-41	9	29	Ventrolateral prefrontal cortex	9	Angry > Fearful > Happy
248	16.28	44	-34	-14	Inferior temporal/Fusiform gyrus	37	Angry > Fearful > Happy
180	12.06	44	19	24	Ventrolateral prefrontal cortex	45, 46	Angry > Fearful > Happy
152	12.55	24	-84	-9	Inferior/middle occipital gyrus	18	Fearful > Angry > Happy
120	20.46	-46	-19	41	Postcentral gyrus	3, 4	Angry > Fearful > Happy
81	14.28	16	-74	-6	Lingual gyrus	18	Happy > Fearful > Angry
70	14.35	44	-41	14	Superior temporal sulcus	13	Fearful > Angry > Happy
70	11.46	51	-39	44	Inferior parietal lobule	40	Happy > Angry > Fearful
55	9.79	14	-61	29	Precuneus	7	Fearful > Angry > Happy
44	9.86	39	1	34	Lateral prefrontal cortex	6	Angry > Fearful > Happy
40	9.08	-6	19	41	Medial prefrontal cortex	32	Angry > Fearful > Happy

Intensity-Linear

k	$F_{1,462}$	x	y	z	Atlas	BA	Direction of Relationship?
59	17.34	-44	-24	54	Pre/postcentral gyrus	4, 3	Negative

Emotion x Intensity-Linear

k	$F_{2,462}$	x	y	z	Atlas	BA	Strength of Linear Relationship by Emotion?
67	14.14	-19	-76	-6	Lingual/Fusiform gyrus	18	Fearful > Angry > Happy

Supplemental Table 2. Additional results from bilateral amygdalae linear mixed effects ROI analysis. Significant effects ($p < .05$) in bold.

	F	df	p
Intercept	14.39	1, 462	<.001
Emotion	0.47	2, 462	0.623
Age Group	0.42	1, 42	0.518
Intensity-Linear	2.17	1, 462	0.141
Intensity-Quadratic	0.02	1, 462	0.881
Intensity-Cubic	2.94	1, 462	0.087
Age Group x Emotion	0.87	2, 462	0.419
Age Group x Intensity-Linear	1.09	1, 462	0.297
Age Group x Intensity-Quadratic	1.21	1, 462	0.272
Age Group x Intensity-Cubic	0.14	1, 462	0.713
Emotion x Intensity-Linear	1.12	2, 462	0.328
Emotion x Intensity-Quadratic	0.65	2, 462	0.525
Emotion x Intensity-Cubic	**4.72**	**2, 462**	**0.009**
Age Group x Emotion x Intensity-Linear	0.66	2, 462	0.519
Age Group x Emotion x Intensity-Quadratic	0.24	2, 462	0.783
Age Group x Emotion x Intensity-Cubic	2.05	2, 462	0.130

Supplemental Results

Age as a Continuous Variable

Separating the participants into two groups, adolescents and adults, allows us to be consistent with, and facilitate comparisons with, many prior papers that used this dichotomous variable approach (e.g., Grill-Spector *et al.*, 2008; Thomas *et al.*, 2011; Somerville *et al.*, 2013). Additionally, the dichotomous approach is more appropriate for our data because there were relatively fewer participants at the oldest end of the scale; using a dichotomous approach limits the influence these few oldest participants have on the analysis.

Nevertheless, we reran the analyses with age as a continuous variable. At a lower threshold, the clusters from the Age Group x Emotion x Intensity-Quadratic main finding were still identified: superior temporal sulcus (xyz = -44, -29, 4; $F_{2,462} = 7.58$, $p < .05$ uncorrected), ventrolateral prefrontal cortex (xyz = -46, 24, -1; $F_{2,462} = 4.33$, $p < .05$ uncorrected), middle temporal gyrus (xyz = -56, -59, 14; $F_{2,462} = 4.75$, $p < .05$ uncorrected). Additionally, the clusters from the Age Group x Emotion finding were still identified when age was used as a continuous variable: inferior/middle occipital gyrus (xyz = -21, -91, -4; $F_{1,462} = 8.31$, $p < .05$ uncorrected) and inferior parietal lobule (xyz = 51, -51, 44; $F_{1,462} = 4.16$, $p < .05$ uncorrected). As noted above, these attenuated effects may be due to the few participants on the oldest end of the scale (i.e., only two participants over 40 years old), who may have had a disproportionate influence on the dimensional analysis.