

Database

The database was an updated version of that previously published in Kober et al. (2008), Lindquist et al. (2012; 2016), and Wager et al. (2008). The most recent database (from Lindquist et al. 2016) included papers published through the end of 2011. We updated the present database to include papers from January 2012-December 2014. To do so, we searched the tables of contents of journals that publish neuroimaging research for titles, abstracts, or keywords that indicated a paper reported a neuroimaging results related to emotion or affect. As in our prior work, these studies were characterized along numerous dimensions (see Kober et al. 2008; Wager et al. 2008; Lindquist et al. 2012 for more information on search criteria and coding of the database) by 2 to 3 independent raters. Disputes between raters regarding specific study features were resolved through discussion.

During this initial process of assessment, many studies were disqualified from inclusion in the database. Studies were excluded on the basis of topic if they were not straightforwardly related to emotion or affect, including studies that are related to emotion and affect but which use painful stimuli, “fear conditioning”, empathy and other forms of vicarious affect, or explicit emotion regulation. This also includes studies that are ostensibly related to emotion or affect (e.g. studies that used stimuli from the International Affective Picture System; Lang et al. 2008 or a mood induction) but which had contrasts isolating neural activity related to a different, unrelated aspect of the task (e.g. high cognitive load vs. low cognitive load, between-groups measures). Studies were excluded if they did not scan healthy adult participants. This includes fMRI and PET studies that only used children, adolescents, or aging populations, psychiatric populations, or drug interventions (including placebos). For studies that used clinical populations, only contrasts and findings for healthy adult participants were used. Studies were

also disqualified if the neuroimaging analysis method used was not a subtraction analysis. This includes ANOVAs, conjunction, correlation, parametric, multivariate, and connectivity-based analyses. Additionally, we only included studies that had a clear perception or experience task. Studies that had a combination of the two were classified as “mixed” and not included in our analyses. The final database used for analyses include 386 studies, 7333 participants and 876 contrasts.

Table 1.

Studies included in the *emotion words present* > *gender words present* contrast that contained either (or both) an emotion or gender judge task.

First Author and Year	Journal	N	Scan	Task	stimuli
Almeida 2010	Biological Psychiatry	15	fMRI	emotion judge	faces
Bhanji 2012	Social Cognitive and Affective Neuroscience	17	fMRI	emotion judge	auditory words
Critchley 2000*	Human Brain Mapping	9	fMRI	emotion judge	faces
Dolan 2001	Proceedings of the National Academy of Sciences	12	fMRI	emotion judge	voices
Escoffier 2013	Human Brain Mapping	16	fMRI	emotion judge	music, voices
Fan 2011	NeuroImage	25	fMRI	emotion judge	faces
Fruhholz 2012	Cerebral Cortex	17	fMRI	emotion judge	voice
Habel 2007	Neuropsychologia	29	fMRI	emotion judge	faces
Ihme 2014	Neuropsychologia	50	fMRI	emotion judge	faces
Imaizumi 1997	NeuroReport	6	PET	emotion judge	voice
Jimura 2009	Neuroscience Letters	34	fMRI	emotion judge	faces
Kana 2011	Social Cognitive and Affective Neuroscience	26	fMRI	emotion judge	pictures
Keightly 2007	Social Cognitive and Affective Neuroscience	10	fMRI	emotion judge	faces
Lieberman 2007	Psychological Science	30	fMRI	emotion judge	faces
Loughead 2008	Brain Research	17	fMRI	emotion judge	faces
Malhi 2007	Bipolar Disorders	10	fMRI	emotion judge	faces
Mériaux 2006*	NeuroImage	23	fMRI	emotion judge	faces
Mizuno 2007*	NeuroReport	18	fMRI	emotion judge	music
Nomura 2004*	NeuroImage	9	fMRI	emotion judge	faces
Perry 2012	Social, Cognitive, and Affective Neuroscience	21	fMRI	emotion judge	auditory sentences
Pichon 2009	NeuroImage	16	fMRI	emotion judge	film
Thielscher 2007*	The Journal of Neuroscience	25	fMRI	emotion judge	faces
van de Riet 2009	Social Neuroscience	17	fMRI	emotion judge	faces, bodies
Blair 1999	Brain	13	PET	gender judge	faces
Cremers 2010	NeuroImage	56	fMRI	gender judge	faces
Deeley 2006	British Journal of Psychiatry	9	fMRI	gender judge	faces
Demeneşcu 2011	Psychological Medicine	56	fMRI	gender judge	faces
Ethofer 2009	Journal of Cognitive Neuroscience	24	fMRI	gender judge	auditory words
Ethofer 2012	Cerebral Cortex	22	fMRI	gender judge	voices
Fecteau 2005	Journal of Neurophysiology	15	fMRI	gender judge	sound
Fecteau 2007	NeuroImage	14	fMRI	gender judge	sound
Haas 2009	Social Neuroscience	29	fMRI	gender judge	faces
Jehna 2011	Brain Research	30	fMRI	gender judge	faces

Kanske 2011a	Cerebral Cortex	22	fMRI	gender judge	auditory words
Killgore 2004	NeuroImage	12	fMRI	gender judge	faces
Lange 2003	Biological Psychiatry	9	fMRI	gender judge	faces
Lepage 2011	Psychological Medicine	26	fMRI	gender judge	faces
Minzenberg 2007	Psychiatry Research: Neuroimaging	12	fMRI	gender judge	faces
Morris 1996	Nature	5	PET	gender judge	faces
Morris 1998	Brain	5	PET	gender judge	faces
Morris 1999	Neuropsychologia	6	PET	gender judge	voices
Mothes-Lasch 2011	The Journal of Neuroscience	24	fMRI	gender judge	auditory words
Pessoa 2002	Proceedings of the National Academy of Sciences	21	fMRI	gender judge	faces
Phillips 1997	Nature	7	fMRI	gender judge	faces
Phillips 1998a	Proceedings of the Royal Society London Series B Cortex	6	fMRI	gender judge	faces
Pourtois 2005	Cortex	8	PET	gender judge	faces, voice
Sato 2004	NeuroImage	10	fMRI	gender judge	faces
Schroeder 2004	Human Brain Mapping	20	fMRI	gender judge	faces
Simon 2006	Pain	17	fMRI	gender judge	faces
Sprengelmeyer 1998	Proceedings of the Royal Society London Series B	6	fMRI	gender judge	faces
Straube 2010	NeuroImage	12	fMRI	gender judge	faces
Vandewalle 2010	Proceedings of the National Academy of Sciences	17	fMRI	gender judge	sound
von dem Hagen 2009	Social Cognitive and Affective Neuroscience	27	fMRI	gender judge	faces
Vrticka 2014	Emotion	20	fMRI	gender judge	faces
Williams LM 2001	NeuroImage	11	fMRI	gender judge	faces
Williams LM 2004	Cognitive Brain Research	22	fMRI	gender judge	faces
Williams LM 2005	NeuroReport	13	fMRI	gender judge	faces

Note: Studies contained an explicit emotion or gender judge task. Three studies were not included in this analysis: George (1993) was not included, since the emotion judge task used faces only and no words. Narumoto (2000) and Palm (2011) had participants complete both emotion and gender judgments, therefore conceptual priming for emotion could have influenced the gender contrasts and vice versa, so these are not included in this analysis.

Table 2.
Studies with and without emotion words present throughout experimental tasks.

First Author and Year	N	Scan	Conceptual Knowledge	Mode	valence of emotion categories	Affect Words	Task	Stimuli
Adams 2003	11	fMRI	Level 0	per	neg	Level 0	passive	faces
Anders 2008	40	fMRI	Level 0	exp	pos, neg, mixed	Level 0	passive	pictures, sounds
Asghar 2008	16	fMRI	Level 0	per	neg	Level 0	face matching	faces
Ashwin 2007	13	fMRI	Level 0	per	neg	Level 0	button press	faces
Ashworth 2011	16	fMRI	Level 0	per	neg	Level 0	face matching	faces
Atique 2011	24	fMRI	Level 0	per	pos	Level 0	mentalizing	cartoon strips
Bado 2014	15	fMRI	Level 0	exp	pos	Level 0	memory recall	personal event
Baeken 2009	40	fMRI	Level 0	per	pos, neg	Level 0	sustain emotion	faces
Barrós-Loscertales 2010	45	fMRI	Level 0	exp	pos, neg	Level 0	letter discrimination task	pictures
Beauregard 1998	7	fMRI	Level 0	exp	neg	Level 0	passive	film
Blair 1999	13	PET	Level 0	per	neg	Level 0	gender judge	faces
Brassen 2010	23	fMRI	Level 0	per	neg	Level 0	spatial task	faces
Breiter 1996	10	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
Britton 2006a	12	fMRI	Level 0	per/exp*	pos, neg, mixed	Level 0	button press	faces
Bryant 2008	15	fMRI	Level 0	per	neg	Level 0	memory task	faces
Calder 2007	12	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Canli 1998	14	fMRI	Level 0	exp	pos, neg	Level 0	passive	pictures
Carlson 2009	12	fMRI	Level 0	exp	neg	Level 0	dot probe task	faces
Carré 2012	103	fMRI	Level 0	per	neg	Level 0	face matching	pictures
Carter 2008	10	fMRI	Level 0	per	pos, neg	Level 0	passive	film
Citron 2014	16	fMRI	Level 0	exp	pos, neg, mixed	Level 0	lexical decision task	words
Coombes 2012	15	fMRI	Level 0	exp	pos, neg	Level 0	passive	pictures
Costa 2010	29	fMRI	Level 0	exp	pos, neg	Level 0	reading task & imagery	sentences
Cremers 2010	56	fMRI	Level 0	per	mixed	Level 0	gender judge	faces
Crosson 1999	17	fMRI	Level 0	exp	mixed	Level 0	word generation	words
Dannowski 2007	23	fMRI	Level 0	per	neg	Level 0	working memory	faces
Das 2005	28	fMRI	Level 0	per	neg	Level 0	memory encoding	faces
Deeley 2006	9	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Demescu 2011	56	fMRI	Level 0	per	pos, neg, mixed	Level 0	gender judge	faces
Dichter 2008	22	fMRI	Level 0	exp	mixed	Level 0	reaction time task	pictures
Dietrich 2007	16	fMRI	Level 0	per	mixed	Level 0	communicative sound task	sound
Dima 2011	40	fMRI	Level 0	per	neg	Level 0	emotional face judge	faces
Dolcos 2008	14	fMRI	Level 0	exp	mixed	Level 0	working memory	pictures
Duan 2010	18	fMRI	Level 0	per	pos	Level 0	passive	faces
Eippert 2007	24	fMRI	Level 0	exp	neg	Level 0	sustain emotion	pictures
Eldaief 2011	20	fMRI	Level 0	exp	neg	Level 0	reasoning task	sentences

Eldar 2007	12	fMRI	Level 0	exp	pos, neg	Level 0	passive	film, music
Erk 2006	14	fMRI	Level 0	exp	neg	Level 0	n-back task	pictures
Ethofer 2009	24	fMRI	Level 0	per	neg	Level 0	gender judge	words
Ethofer 2012	22	fMRI	Level 0	per	mixed	Level 0	gender judge	voice
Eugene 2003	20	fMRI	Level 0	exp	neg	Level 0	passive	film
Fecteau 2005	15	fMRI	Level 0	per	mixed	Level 0	gender judge	sound
Fecteau 2007	14	fMRI	Level 0	exp	pos, neg, mixed	Level 0	gender judge	sound
Fehr 2014	20	fMRI	Level 0	neg, pos	mixed	Level 0	video immersion	film
Ferri 2013	41	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Fischer 2004	24	fMRI	Level 0	per	neg	Level 0	passive	faces
Fitzgerald 2006	20	fMRI	Level 0	per	pos, neg	Level 0	button press	faces
Francis 1999	4	fMRI	Level 0	exp	pos	Level 0	passive	food
Frey 2000	11	PET	Level 0	exp	neg	Level 0	passive	sound
Geday 2007	12	PET	Level 0	exp	neg, mixed	Level 0	passive	pictures
George 1993	9	PET	Level 0	per	mixed	Level 0	emotion judge	faces
Gillath 2012	39	fMRI	Level 0	exp	pos	Level 0	like/dislike judge	pictures
Glascher 2007	23	fMRI	Level 0	exp	neg	Level 0	n-back task	pictures
Goldin 2008	17	fMRI	Level 0	exp	neg	Level 0	focus on stimuli	film
Gottfried 2002	15	fMRI	Level 0	exp	pos, neg	Level 0	smell, classical conditioning task	odor
Grandjean 2005	15	fMRI	Level 0	per	neg	Level 0	dichotic listening task	voice
Grezes 2007	16	fMRI	Level 0	per	neg	Level 0	button press	bodies
Grosbras 2006	20	fMRI	Level 0	per	neg	Level 0	passive	faces, bodies
Haas 2009	29	fMRI	Level 0	per	pos, neg	Level 0	gender judge	faces
Han 2014	14	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Harenski 2006	10	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Hariri 2002	12	fMRI	Level 0	per/exp*	neg	Level 0	image matching	pictures, faces
Hariri 2003	11	fMRI	Level 0	exp	neg	Level 0	picture mathing and labeling	pictures
Hart 2010	14	fMRI	Level 0	exp	neg	Level 0	emotion stroop task	pictures
Herbert 2011	22	fMRI	Level 0	exp	pos, neg	Level 0	silently repeat words	words
Hermans 2006	12	fMRI	Level 0	per	neg	Level 0	passive	faces
Herpetz 2001	6	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Holt 2006	16	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
Hua 2007	12	fMRI	Level 0	exp	pos, neg	Level 0	passive	touch
Iidaka 2001	12	fMRI	Level 0	per	pos, neg	Level 0	gender and shape judge	faces
Immordino-Yang 2009	13	fMRI	Level 0	exp	pos	Level 0	mood induction	film
Jehna 2011	30	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Jeong 2011	15	fMRI	Level 0	exp	pos, neg, mixed	Level 0	passive	music, faces
Joseph 2009	20	fMRI	Level 0	exp	pos, neg, mixed	Level 0	button press	pictures
Junghofer 2006	18	fMRI	Level 0	exp	mixed	Level 0	passive	pictures
Kanske 2011a	22	fMRI	Level 0	per	neg	Level 0	gender judge	words

Karremans 2011	15	fMRI	Level 0	exp	neg	Level 0	cyberbullying task	cyberball
Kensinger 2006	21	fMRI	Level 0	exp	pos, neg	Level 0	animacy and commonality judge	pictures, words
KeslerWest 2001	21	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
Kienast 2008	13	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Killgore 2004	12	fMRI	Level 0	per	pos, neg	Level 0	gender judge	faces
Kilts 2003	13	PET	Level 0	per	pos, neg	Level 0	affect and spatial orientation judge	faces
Kim 2007	10	fMRI	Level 0	exp	pos, neg	Level 0	passive	pictures
Kim 2009	20	fMRI	Level 0	per	neg	Level 0	passive	faces
Kim 2008	23	fMRI	Level 0	exp	neg	Level 0	imagery	sentences
Kim 2010	27	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
Kitada 2010	20	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
Klein 2003	10	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Kleinhans 2010	25	fMRI	Level 0	per	neg	Level 0	face, space matching	faces
Klumpp 2012	21	fMRI	Level 0	per	mixed	Level 0	face matching	faces, shapes
Kosslyn 1996	7	PET	Level 0	exp	neg	Level 0	passive	pictures
Krämer 2010	16	fMRI	Level 0	exp	neg	Level 0	visual discrimination task	pictures
Kret 2011	28	fMRI	Level 0	per	neg	Level 0	oddball task	film
Kross 2007	20	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Kuchinke 2005	20	fMRI	Level 0	exp	pos, neg, mixed	Level 0	word judgment	words
Lakis 2011	37	fMRI	Level 0	exp	pos, neg	Level 0	person judgment	pictures
Lane 1999	6	PET	Level 0	exp	pos, neg, mixed	Level 0	passive & memory encoding	pictures
Lang 1998	20	fMRI	Level 0	exp	pos, neg, mixed	Level 0	bite task	pictures
Lange 2003	9	fMRI	Level 0	per	neg	Level 0, Level 1 **	passive & gender judge	faces
Leclerc 2008	17	fMRI	Level 0	exp	pos, neg	Level 0	object discrimination	pictures
Lee 2004	10	fMRI	Level 0	exp	pos, neg	Level 0	emotion intensity judgment	pictures
Lee 2006	18	fMRI	Level 0	per/exp*	pos, neg	Level 0	passive, simulate expressions	faces
Lee 2007	15	fMRI	Level 0	per	neg	Level 0	passive	pictures
Lepage 2011	26	fMRI	Level 0	per	mixed	Level 0	gender judge	faces
Lerner 2012	11	fMRI	Level 0	per	neg	Level 0	binocular rivalry	faces, houses
Liddell 2005	22	fMRI	Level 0	per	neg	Level 0	button press	faces
Lorberbaum 1999	4	fMRI	Level 0	exp	neg	Level 0	passive	sound
Luo 2007	14	fMRI	Level 0	exp	neg	Level 0	lexical decision task	words
Luo 2014	15	fMRI	Level 0	exp	neg	Level 0	face encoding	faces
McCullough 2005	10	fMRI	Level 0	per	mixed	Level 0	face discrimination, gender judge	faces
Mercadillo 2011	24	fMRI	Level 0	exp	pos	Level 0	button press	pictures
Meseguier 2007	14	fMRI	Level 0	exp	pos, neg	Level 0	button press	pictures
Mickey 2011	93	fMRI	Level 0	exp	neg	Level 0	button press	words

Minzenberg 2007	12	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Mitchell RL 2006	28	fMRI	Level 0	exp	mixed	Level 0	prosody judge	sentences
Mitchell DG 2007	15	fMRI	Level 0	per	neg	Level 0	gender judge, syllable count	faces
Moll 2002	7	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Moll 2005	13	fMRI	Level 0	exp	neg	Level 0	passive	sentences
Morris 1996	5	PET	Level 0	per	pos, neg	Level 0	gender judge	faces
Morris 1998	5	PET	Level 0	per	mixed	Level 0	gender judge	faces
Morris 1999	6	PET	Level 0	per	neg, mixed	Level 0	gender judge	voice
Mothes-Lasch 2011	24	fMRI	Level 0	per	neg	Level 0	gender judge	auditory words
Mühlberger 2011	16	fMRI	Level 0	per	pos, neg	Level 0	passive	faces
N'Diaye 2009	22	fMRI	Level 0	per	mixed	Level 0	emotion level judge	faces
Nielen 2009	23	fMRI	Level 0	exp	pos, neg	Level 0	indoor judge	pictures
Ochsner 2009	20	fMRI	Level 0	exp	neg	Level 0	detection task	pictures
O'Doherty 2002	8	fMRI	Level 0	exp	pos, neg	Level 0	anticipation task	food
OkonSinger 2014	19	fMRI	Level 0	exp	neg	Level 0	visual search task	pictures
Onoda 2008	18	fMRI	Level 0	exp	mixed	Level 0	emotion judge	pictures
Osaka 2005	13	fMRI	Level 0	exp	pos	Level 0	imagery	sound
Parent 2011	14	fMRI	Level 0	exp	neg	Level 0	focus on stimuli	pictures
Park 2013	12	fMRI	Level 0	exp	pos, neg	Level 0	passive	music
Pereira 2010	11	fMRI	Level 0	exp	neg	Level 0	target detection task	pictures
Pessoa 2002	21	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Phan 2004	7	fMRI	Level 0	exp	neg	Level 0	picture identification	pictures
Phillips 1997	7	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Phillips 1998a	6	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Phillips 2004	8	fMRI	Level 0	per	neg	Level 0	passive	faces
Pietrini 2000	15	PET	Level 0	exp	neg	Level 0	imagery	personal event
Pourtois 2005	8	PET	Level 0	per	pos, neg	Level 0	gender judge	faces, voice
Pourtois 2006	15	fMRI	Level 0	per	mixed	Level 0	spatial orientation task	faces
Pujol 2009	22	fMRI	Level 0	per	pos, neg, mixed	Level 0	face matching	faces
Quintana 2011	15	fMRI	Level 0	per	mixed	Level 0	face matching	faces
Rademacher 2010	28	fMRI	Level 0	per	pos	Level 0	med task	faces
Redoute 2000	9	PET	Level 0	exp	pos	Level 0	passive	film
Reeck 2012	23	fMRI	Level 0	exp	neg	Level 0	spatial curing task	faces
Reinders 2005	15	fMRI	Level 0	per	neg	Level 0	identification task	faces
Ritchey 2011	21	fMRI	Level 0	exp	pos, neg, mixed	Level 0	memory task	pictures
Sabatinelli 2007a	22	fMRI	Level 0	exp	pos, neg	Level 0	passive	pictures
Sagaspe 2011	12	fMRI	Level 0	per	neg	Level 0	stop signal task	faces
Salloum 2007	11	fMRI	Level 0	per	pos, neg	Level 0	intensity judge	faces
Sambataro 2006	24	fMRI	Level 0	per	neg	Level 0	spatial orientation task	faces
Sanjuan 2007	10	fMRI	Level 0	exp	mixed	Level 0	passive	words

Santos 2011	21	fMRI	Level 0	per	pos, neg, mixed	Level 0	visual search	faces
Sato 2004	10	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Sato 2011	11	fMRI	Level 0	per	neg	Level 0	focus on stimuli	faces
Schacher 2006	17	fMRI	Level 0	per	neg	Level 0	passive	faces
Schäfer 2005	20	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Schienle 2006	12	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Schienle 2007	25	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Schienle 2009a	19	fMRI	Level 0	exp	neg	Level 0	imagery	pictures
Schienle 2010	30	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Schirmer 2008	14	fMRI	Level 0	per	neg	Level 0	passive	voice
Schroeder 2004	20	fMRI	Level 0	per	pos, neg	Level 0	gender judge	faces
Schultheiss 2008	24	fMRI	Level 0	per	pos, neg, mixed	Level 0	button press	faces
Schwarz 2013	24	fMRI	Level 0	exp	pos	Level 0	passive	sentences
Shin 2005	13	fMRI	Level 0	per	neg	Level 0	passive	faces
Shirao 2005	13	fMRI	Level 0	exp	neg	Level 0	word judge	words
Silvert 2007	10	fMRI	Level 0	per	neg	Level 0	face matching	faces
Simon 2006	17	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Simon 2010	14	fMRI	Level 0	exp	neg	Level 0	focus on stimuli	pictures
Simpson 2000	17	fMRI	Level 0	exp	neg	Level 0	counting picture task	pictures
Small 2003	9	fMRI	Level 0	exp	pos, neg	Level 0	passive	food
Somerville 2004	16	fMRI	Level 0	per	pos	Level 0	passive	faces
Sprengelmeyer 1998	6	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Stark 2003	19	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Straube 2010a	12	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Straube 2010b	40	fMRI	Level 0	exp	neg	Level 0	passive	film
Sung 2007	12	fMRI	Level 0	exp	pos	Level 0	passive	thermal
Taylor 1998	8	PET	Level 0	exp	neg	Level 0	like/dislike judge and recognition task	pictures
Teasdale 1999	6	fMRI	Level 0	exp	pos, neg	Level 0	passive	pictures, sentences
Tessitore 2005	12	fMRI	Level 0	per	neg	Level 0	face, shape matching	faces
Trautmann 2009	16	fMRI	Level 0	per	pos, neg	Level 0	focus on stimuli	faces
Vandewalle 2010	17	fMRI	Level 0	per	neg	Level 0	passive	pictures
Veldhuizen 2010	19	fMRI	Level 0	exp	pos	Level 0	passive	food, odor
von dem Hagen 2009	27	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Vrticka 2014	20	fMRI	Level 0	per	pos, mixed	Level 0	gender judge	faces
Vuilleumier 2001	12	fMRI	Level 0	per	neg	Level 0	similarity judge	faces
Wang 2005	12	fMRI	Level 0	per	neg	Level 0	visual oddball task	faces
Warren 2006	20	fMRI	Level 0	per/exp*	pos, mixed	Level 0	passive, smile when cued	voice
Watson 2007	16	fMRI	Level 0	exp	pos	Level 0	funny rating	pictures
Wendt 2008	13	fMRI	Level 0	exp	pos	Level 0	attentive viewing	pictures
Whalen 1998a	8	fMRI	Level 0	per	neg	Level 0	passive	faces

Whalen 1998b	9	fMRI	Level 0	exp	neg	Level 0	emotion stroop task	words
Whalen 2001	8	fMRI	Level 0	per	neg	Level 0	passive	faces
Wicker 2003	14	fMRI	Level 0	per/exp*	pos, neg	Level 0	passive	odor, faces
Wiethoff 2008	24	fMRI	Level 0	per	mixed	Level 0	passive	voice
Wiethoff 2009	24	fMRI	Level 0	per	pos, neg, mixed	Level 0	passive	sound
Willems 2011	15	fMRI	Level 0	exp	neg	Level 0	focus on stimuli	pictures, sentences
Williams LM 2001	11	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Williams LM 2004	22	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Williams LM 2005	13	fMRI	Level 0	per	neg	Level 0	gender judge	faces
Williams MA 2005	13	fMRI	Level 0	per	mixed	Level 0	attention task	faces
Williams, LM 2006a	15	fMRI	Level 0	per	neg	Level 0	focus on faces	faces
Williams LM 2006b	13	fMRI	Level 0	per	neg	Level 0	passive	faces
Williams LM 2006c	15	fMRI	Level 0	per	neg	Level 0	gender, age judge	faces
Wrase 2003	10	fMRI	Level 0	exp	pos	Level 0	passive	pictures
Wright P 2006	12	fMRI	Level 0	per	mixed	Level 0	emotion judge	faces
Wright C 2006	18	fMRI	Level 0	per	neg	Level 0	focus on eyes	faces
Wright P 2004	8	fMRI	Level 0	exp	neg	Level 0	passive	pictures
Yamasaki 2002	10	fMRI	Level 0	exp	neg	Level 0	visual detection task	pictures
Blood 2001	10	PET	Level 0	exp	pos	Level 1	passive	music
Colibazzi 2010	10	fMRI	Level 0	exp	neg, mixed	Level 1	introspection	sentences
de Araujo 2003	11	fMRI	Level 0	exp	pos	Level 1	taste and smell ratings	food, odor
Dolcos 2004	16	fMRI	Level 0	exp	pos, neg	Level 1	affect judge	pictures
Ethofer 2006	24	fMRI	Level 0	exp	mixed	Level 1	affect judge	words, voice
Fulbright 1998	13	fMRI	Level 0	exp	pos, neg	Level 1	smell ratings	odor
Grabenhorst 2007	14	fMRI	Level 0	exp	neg	Level 1	affect judge	odor
Grabenhorst 2010	14	fMRI	Level 0	exp	mixed	Level 1	affect judge	thermal, food
Heinzel 2005	13	fMRI	Level 0	exp	mixed	Level 1	affect, spatial orientation judge	pictures
Kringelbach 2004	38	fMRI	Level 0	exp	mixed	Level 1	taste	food
Koelsch 2006	11	fMRI	Level 0	exp	pos, neg	Level 1	finger tapping	music
Lemogne 2011	45	fMRI	Level 0	exp	pos, neg	Level 1	affect judge	pictures
Liberzon 2003	10	PET	Level 0	exp	pos, neg	Level 1	sustain emotion	pictures
Lindgren 2012	18	fMRI	Level 0	exp	pos	Level 1	tactile	touch
Matsunaga 2009	12	PET	Level 0	exp	pos	Level 1	passive	film
Nitschke 2006	21	fMRI	Level 0	exp	neg	Level 1	passive	pictures
Northoff 2004	13	fMRI	Level 0	exp	mixed	Level 1	affect judge	pictures
Paradiso 1999	17	PET	Level 0	exp	pos, neg	Level 1	affect judge	pictures
Phan 2006	15	PET	Level 0	exp	neg	Level 1	passive	pictures
Reker 2010	33	fMRI	Level 0	per	pos, neg	Level 1	affect judge	faces
Rolls 2003a	11	fMRI	Level 0	exp	pos, neg	Level 1	affect judge	odor

Rolls 2003b	9	fMRI	Level 0	exp	pos	Level 1	affect judge	touch
Rolls 2007	16	fMRI	Level 0	exp	pos	Level 1	affect judge	food
Royet 2000	12	PET	Level 0	exp	mixed	Level 1	multimodal emotion ratings	sound, odor, pictures
Royet 2001	12	PET	Level 0	exp	mixed	Level 1	smell ratings	odor
Satpute 2012	20	fMRI	Level 0	exp	neg, mixed	Level 1	affect judge, visual discrimination	pictures
Schienle 2009b	8	fMRI	Level 0	exp	neg	Level 1	affect rating and imagery	pictures
Schmitz 2009	16	fMRI	Level 0	exp	pos, neg, mixed	Level 1	passive	pictures
Schweizer 2013	34	fMRI	Level 0	exp	neg	Level 1	passive	film
Sergent 1994	8	PET	Level 0	per	mixed	Level 1	affect judge	faces
St Jacques 2009	15	fMRI	Level 0	exp	neg	Level 1	affect judge	pictures
Straube 2011	16	fMRI	Level 0	exp	neg	Level 1	attention task	pictures
Ursu 2011	20	fMRI	Level 0	exp	pos, neg	Level 1	passive	pictures
Waugh 2010	24	fMRI	Level 0	exp	pos, neg	Level 1	passive	pictures
Wright 2008	15	fMRI	Level 0	exp	pos, neg	Level 1	image judgments	pictures
Zald 1997	10	PET	Level 0	exp	neg	Level 1	smell	odor
Zald 1998	9	PET	Level 0	exp	pos, neg	Level 1	taste	food
Fastenrath 2014	586	fMRI	Level 0	exp	mixed	Level 2	affect judge	pictures
Heller 2014	26	fMRI	Level 0	exp	neg	Level 2	affect judge	pictures
Jacob 2012	20	fMRI	Level 0	per	mixed	Level 2	affect judge	film
Jacob 2014	24	fMRI	Level 0	per	mixed	Level 2	affect judge	film
Kanske 2011b	30	fMRI	Level 0	exp	mixed	Level 2	emotion induction and math task	pictures
Paret 2014	20	fMRI	Level 0	exp	neg	Level 2	affect judge	pictures
Suslow 2009	51	fMRI	Level 0	per	pos, neg	Level 2	passive	faces
Taylor 2000	14	PET	Level 0	exp	neg	Level 2	affect judge	pictures
Van Dillen 2009	17	fMRI	Level 0	exp	neg	Level 2	passive	pictures
Zaki 2012	16	fMRI	Level 0	exp	mixed	Level 2	affect judge	film
Zald 2002	9	PET	Level 0	exp	pos, neg	Level 2	affect judge	food
O'Doherty 2001	7	fMRI	Level 0	exp	pos, neg	In scanner	passive	food
Otto 2014	26	fMRI	Level 0	exp	neg	In scanner	passive	faces, sentences
Aron 2005	17	fMRI	Level 0	exp	pos	Out of scanner	memory recall	pictures
D'Argembeau 2008	12	fMRI	Level 0	exp	pos	Out of scanner	imagery	personal event
Mériaux 2009	23	fMRI	Level 0	exp	neg	Out of scanner	passive	pictures
Aalto 2002	11	PET	Level 1	exp	pos, neg	Level 0	passive	film
Aalto 2005	11	PET	Level 1	exp	pos, neg	Level 0	passive	film
Beaucousin 2007	23	fMRI	Level 1	per	mixed	Level 0	emotion, grammar classification	voice
Beauregard 2001	10	fMRI	Level 1	exp	pos	Level 0	passive	film
Boll 2011	28	fMRI	Level 1	exp	neg	Level 0	watching insults	faces
Britton 2006b	12	fMRI	Level 1	exp	pos, neg, mixed	Level 0	sustain emotion	film
Brück 2011	24	fMRI	Level 1	per	pos, neg, mixed	Level 0	prosody task	words

Bystritsky 2001	6	fMRI	Level 1	exp	neg	Level 0	memory recall, mood induction	personal event
Cooney 2007	14	fMRI	Level 1	exp	neg	Level 0	sustain emotion	film
Damasio 2000	25	PET	Level 1	exp	pos, neg	Level 0	memory recall	personal event
Dolan 2001	12	fMRI	Level 1	per	neg	Level 0	emotion judge	voice
Dougherty 1999	8	PET	Level 1	exp	neg	Level 0	imagery	personal event
Elliott 2000	12	fMRI	Level 1	exp	pos, mixed	Level 0	go no go task	words
Escoffier 2013	16	fMRI	Level 1	per	mixed	Level 0	emotion judge	music, voice
Farb 2011	16	fMRI	Level 1	exp	neg	Level 0	passive	film
Fitzgerald 2004	12	fMRI	Level 1	exp	neg	Level 0	memory recall	pictures
Fischer 1996	6	PET	Level 1	exp	neg	Level 0	autobiographical memory,	film
Flores-Gutierrez 2007	6	fMRI	Level 1	exp	pos, neg	Level 0	passive	music
Fruhholz 2012	17	fMRI	Level 1	per	neg	Level 0	emotion judge	voice
Gemar 1996	11	PET	Level 1	exp	neg	Level 0	mood induction, memory recall	personal event
George 1995	11	PET	Level 1	exp	neg	Level 0	memory recall	personal event
George 1996a	13	PET	Level 1	per	mixed	Level 0	simulate facial expression	voice
George 1996b	10	PET	Level 1	exp	pos, neg	Level 0	emotion judge	pictures
Gorno-Tempini 2001	10	fMRI	Level 1	per	neg	Level 0	emotion, gender judge	faces
Guyer 2008	30	fMRI	Level 1	per	neg	Level 0	passive	faces
Habel 2007	29	fMRI	Level 1	per	mixed	Level 0	emotion, age judge	faces
Hare 2005	10	fMRI	Level 1	per	pos, mixed	Level 0	go no go task	faces
Hariri 2000	16	fMRI	Level 1	per	neg	Level 0	emotion, face labeling	faces
Harrison 2010	12	fMRI	Level 1	exp	neg	Level 0	passive	film
Herbert 2009	15	fMRI	Level 1	exp	pos, neg, mixed	Level 0	passive	words
Hutcherson 2005	28	fMRI	Level 1	exp	pos, neg	Level 0	passive, intensity judge	film
Imaizumi 1997	6	PET	Level 1	per	mixed	Level 0	emotion judge	voice
Kana 2012	26	fMRI	Level 1	per	mixed	Level 0	emotion judge	pictures
Kimbrell 1999	18	PET	Level 1	exp	neg	Level 0	memory recall	personal event
Kross 2011	40	fMRI	Level 1	exp	neg	Level 0	autobiographical memory	faces, sentences
Krüger 2006	9	PET	Level 1	exp	neg	Level 0	emotion rate	personal event
Lane 1997a	12	PET	Level 1	exp	pos, neg	Level 0	passive	pictures
Lieberman 2007	30	fMRI	Level 1	per	mixed	Level 0	emotion judge	faces
Liotti 2000	8	PET	Level 1	exp	neg	Level 0	mood induction	personal event
Marci 2007	10	PET	Level 1	exp	pos, neg	Level 0	mood induction	personal event
Mayberg 1999	8	PET	Level 1	exp	neg	Level 0	mood induction	personal event
Mier 2010	40	fMRI	Level 1	per	mixed	Level 0	matching task	faces, sentences
Mitterschiffthaler 2007	16	fMRI	Level 1	exp	pos, neg	Level 0	passive	music

Narumoto 2000	8	fMRI	Level 1	per	mixed	Level 0	gender, emotion judge	faces
Nitschke 2004	6	fMRI	Level 1	exp	pos	Level 0	passive	pictures
O'CoLevel 0r 2008	11	fMRI	Level 1	exp	neg	Level 0	autobiographical memory	words
Palm 2011	16	fMRI	Level 1	per	pos, neg	Level 0	gender judge	faces
Paradiso 1997	8	PET	Level 1	exp	pos, neg	Level 0	passive	film
Pardo 1993	7	PET	Level 1	exp	neg	Level 0	autobiographical memory	personal event
Partiot 1995	12	PET	Level 1	exp	neg	Level 0	mood induction	sentences
Phillips 1998b	8	fMRI	Level 1	per	pos, neg	Level 0	familiarity judge	faces
Reiman 1997	12	PET	Level 1	exp	mixed	Level 0	mood induction	film
Ruby 2004	10	PET	Level 1	exp	mixed	Level 0	perspective taking	sentences
Schienze 2002	12	fMRI	Level 1	exp	neg	Level 0	passive	pictures
Strange 2000	12	fMRI	Level 1	exp	neg	Level 0	memory encoding	words
Williams 2008	12	fMRI	Level 1	per	neg	Level 0	visual search task	faces
Wittfoth 2010	20	fMRI	Level 1	per	mixed	Level 0	emotion judge	sentences
Baumgartner 2006	9	fMRI	Level 1	per/exp*	mixed	Level 1	passive	pictures, music
Blood 1999	10	PET	Level 1	exp	neg	Level 1	passive	music
Garrett 2006	9	fMRI	Level 1	exp	neg	Level 1	affect judge	pictures
Jung 2006	11	PET	Level 1	exp	pos, neg	Level 1	affect judge	pictures, words
Lane 1997b	10	PET	Level 1	exp	mixed	Level 1	affect judge	pictures
Lane 1997c	12	PET	Level 1	exp	pos, neg	Level 1	passive, mood induction, autobiographical memroy	film, personal event
Rauch 1999	8	PET	Level 1	exp	pos	Level 1	imagery, memory recall	personal event
Shin 2000	8	PET	Level 1	exp	neg	Level 1	mood induction	personal event
Tabert 2001	9	fMRI	Level 1	exp	neg	Level 1	affect judge	words
Taylor 2003	10	PET	Level 1	exp	neg	Level 1	affect judge	pictures
Almeida 2010	15	fMRI	Level 2	per	neg	Level 0	emotion judge	faces
Baumann 2012	30	fMRI	Level 2	exp	pos, neg	Level 0	emotion judge	pictures
Bhanji 2012	17	fMRI	Level 2	exp	neg	Level 0	emotion judge	words
Engels 2007	18	fMRI	Level 2	exp	neg	Level 0	emotion stroop task	words
Fan 2011	25	fMRI	Level 2	per	neg	Level 0	emotion judge	faces
Frewen 2011	20	fMRI	Level 2	exp	neg	Level 0	mood induction	sentences
Frühholz 2012	17	fMRI	Level 1 / 2*	per	neg	Level 0	emotion judge	voice
George 1994	21	PET	Level 2	exp	neg	Level 0	emotion stroop task	words
Gur 2007	17	fMRI	Level 2	per	mixed	Level 0	endorse target	faces
Hariri 2000	16	fMRI	Level 1 / 2*	per	neg	Level 0	emotion judge, face labeling, face matching task	faces
Ihme 2014	50	fMRI	Level 2	per	pos, neg	Level 0	emotion judge	faces
Isenberg 1999	6	PET	Level 2	exp	neg	Level 0	emotion stroop task	words
Jimura 2009	34	fMRI	Level 2	per	mixed	Level 0	emotion judge	faces

Keightly 2007	10	fMRI	Level 2	per	pos, mixed	Level 0	emotion judge	faces
Lagopoulos 2007	10	fMRI	Level 2	exp	neg	Level 0	emotion stroop task	words
Loughead 2008	17	fMRI	Level 2	per	mixed	Level 0	emotion judge	faces
Malhi 2007	10	fMRI	Level 2	per	neg	Level 0	emotion judge	faces
Markowitch 2003	13	fMRI	Level 2	exp	pos neg	Level 0	memory recall and imagery	personal event
Mériaux 2006	23	fMRI	Level 2	per	neg	Level 0	emotion judge	faces
Mitterschiffhaller 2008	17	fMRI	Level 2	exp	neg	Level 0	working memory	words
Morris 2009	12	fMRI	Level 2	exp	pos, mixed	Level 0	free labeling	film
Peelen 2007	18	fMRI	Level 2	per	pos, neg, mixed	Level 0	free labeling	bodies, faces, sounds
Perry 2012	21	fMRI	Level 2	exp	neg	Level 0	emotion judge	sentences
Pichon 2009	16	fMRI	Level 2	per	neg	Level 0	emotion judge	film
Pichon 2013	20	fMRI	Level 2	exp	mixed	Level 0	mood induction, prosody production	sentences, words (visual and auditory)
Simon-Thomas 2012	20	fMRI	Level 2	per	pos	Level 0	passive	pictures
Sreenivas 2012	15	fMRI	Level 2	per	pos, neg	Level 0	match face with emotion	faces
Takahashi 2006	11	fMRI	Level 2	exp	neg	Level 0	reading comprehension	sentences
Terasawa 2013	18	fMRI	Level 2	exp	mixed	Level 0	appropriateness judge	sentences
van de Riet 2009	17	fMRI	Level 2	per	pos, neg	Level 0	emotion judge	faces, bodies
Wildgruber et al. 2005	10	fMRI	Level 2	per	mixed	Level 0	emotion judge, phonetic identification	voice
Cikara 2011	18	fMRI	Level 2	exp	pos	Level 2	fictional baseball task	film
Stark 2007	66	fMRI	Level 2	exp	neg	Level 2	affect label, emotion judge and motion detection	pictures
Baker 1997	10	PET	In scanner	exp	neg	Level 0	verbal fluency task	music
Buchanan 2000	10	fMRI	In scanner	per	neg, pos, mixed	Level 0	button press	auditory words
Critchley 2000	9	fMRI	In scanner	per	mixed	Level 0	emotion judge	faces
Cunningham 2011	13	fMRI	In scanner	exp	pos, neg	Level 0	imagery	imagery
Gillihan 2011	30	fMRI	In scanner	exp	neg	Level 0	imagery	personal event
Hofer 2006	38	fMRI	In scanner	exp	pos	Level 0	passive	pictures
Hofer 2007	38	fMRI	In scanner	exp	pos, neg	Level 0	passive	words
Cato 2004	26	fMRI	In scanner	exp	pos, neg	Level 1	word generation	words
Beauregard 1997	10	PET	Out of scanner	exp	mixed	Level 0	passive	words
Denson 2009	20	fMRI	Out of scanner	exp	neg	Level 0	interpersonal interaction	personal event
Jabbi 2007	12	fMRI	Out of scanner	exp	neg	Level 0	imagery	face, food, sentences
Lévesque 2003	20	fMRI	Out of scanner	exp	neg	Level 0	sustain or suppress emotion	film
Liberzon 2000	10	PET	Out of scanner	exp	neg	Level 0	affect	pictures
Mizuno 2007	18	fMRI	Out of	per	pos, neg	Level 0	emotion judge	music

			scanner					
Nakamura 1999	7	PET	Out of scanner	per	mixed	Level 0	color, attractiveness and emotion judge	faces
Nomura 2004	9	fMRI	Out of scanner	per	neg	Level 0	emotion judge	faces
Rauch 2007	20	fMRI	Out of scanner	per	pos, neg	Level 0	passive	faces
Spoont 2010	8	PET	Out of scanner	exp	neg	Level 0	imagery	personal event film
Stark 2005	15	fMRI	Out of scanner	exp	neg	Level 0	passive	faces
Thielscher 2007	25	fMRI	Out of scanner	per	neg	Level 0	emotion judge	faces
Waugh 2008	26	fMRI	Out of scanner	exp	neg	Level 0	passive	pictures
Zink 2010	20	fMRI	Out of scanner	per	neg	Level 0	face matching	faces
Baumgartner 2006	9	fMRI	Out of scanner	exp/per*	mixed	Level 1	passive	pictures

Note: Level 0 studies do not have conceptual priming (emotion words are not present prior to or throughout the task). Level 1 and 2 studies contain conceptual priming. Level 1 studies include verbal or visual instructions containing emotion words occasionally throughout the task. Level 2 studies contain emotion words in every trial of the task. Studies were coded by contrasts, so some studies include multiple levels of conceptual knowledge, depending on the specific contrast reported. These studies are indicated with an asterick (*). Studies that are “in scanner” or “out of scanner” were not included in emotion word analyses because emotion words were only included in the instructions either outside of the scanner prior to the task or once participants were in the scanner prior to starting the task. These studies were however included in the affect word analyses. Additionally, studies that included both conceptual priming and affect priming words within their task were not included in the *emotion words present v. affect words present*.

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