

# QUESTION 8

## How Do Emotion and Cognition Interact?

### 8.1 THE INTERPLAY OF EMOTION AND COGNITION

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Until the twentieth century, the study of emotion and cognition was largely a philosophical matter. Although contemporary theoretical perspectives on the mind and its disorders remain heavily influenced by the introspective measures that defined this earlier era of scholarship, the last several decades have witnessed the emergence of **powerful** new tools for objectively assaying emotion and brain function, yielding important new insights into the interplay of emotion and cognition. Here we consider ways in which this rapidly growing body of research begins to address more specific questions about how emotional and cognitive processes interact, how they are integrated in the brain, and the implications for understanding neuropsychiatric disease.

#### EMOTION INFLUENCES COGNITION

Emotion—including emotional cues, emotional states, and emotional traits—can profoundly influence key elements of cognition in both adaptive and maladaptive ways.

#### Emotional Stimuli Grab Attention

Emotionally salient cues—snakes, spiders, angry faces, and erotica, to name a few—strongly influence attention. Attention is a fundamental property of perception and cognition. “Attention is necessary because . . . the environment presents far more perceptual information than can be effectively processed, one’s memory contains more competing traces than can be recalled, and the available choices, tasks, or motor responses are far greater than one can handle” (Chun,

Golomb, & Turk-Browne, 2011, p. 75). Attentional mechanisms select the most relevant sources of information while inhibiting or ignoring potential distractions and competing courses of action (Desimone & Duncan, 1995). Once a target is selected from among competing options, attention determines how deeply it is processed, how quickly and accurately a response is executed, and how well it is later remembered.

Remarkably, emotion influences all of these processes. Across a range of tasks, emotionally salient stimuli are more likely to be detected, to capture attention, and to be remembered (Carretie, 2014; Markovic, Anderson, & Todd, 2014; Pool, Brosch, Delplanque, & Sander, 2016). Emotional stimuli are associated with enhanced processing in sensory regions of the brain, and amplified processing is associated with faster and more accurate performance (Carretie, 2014; Kouider, Eger, Dolan, & Henson, 2009; Lim, Padmala, & Pessoa, 2009; Pourtois, Schettino, & Vuilleumier, 2013; Shackman, Kaplan, et al., 2016; Vuilleumier et al., 2002).

Individuals show marked differences in the amount of attention they allocate to emotionally salient information. Such attentional biases are intimately related to emotional traits and disorders. Hypervigilance for threat is a core component of both dispositional and pathological anxiety (Grupe & Nitschke, 2013). Children and adults with a more anxious disposition, like many patients with anxiety disorders, tend to allocate excessive attention to threat-related<sup>1</sup> cues when they are present in the environment, even when they are irrelevant to the task at hand (Abend et al., in press; Bar-Haim, Lamy, Pergamin, Bakermans-Kranenburg, & van IJzendoorn, 2007; Dudeney, Sharpe, & Hunt, 2015; Okon-Singer, Alyagon, Kofman, Tzelgov, & Henik, 2011; Van Bockstaele et al., 2014). On average, anxious individuals are more likely to initially orient their gaze towards threat in free-viewing tasks; they are quicker to fixate threat-related targets in visual search tasks; and they show difficulty disengaging from threat-related distractors in spatial cueing, visual search,

and dot-probe tasks (Armstrong & Olatunji, 2012; Aue & Okon-Singer, 2015; Cisler & Koster, 2010; Rudaizky, Basanovic, & MacLeod, 2014). In some cases, more complex patterns of initial vigilance followed by avoidance have been reported (Armstrong & Olatunji, 2012; Aue & Okon-Singer, 2015; Di Simplicio et al., 2014; Mogg & Bradley, 2016; Onnis, Dadds, & Bryant, 2011; Weierich, Treat, & Hollingworth, 2008; Zvielli, Bernstein, & Koster, 2014).

A range of evidence motivates the hypothesis that attentional biases to threat-related cues contribute to the development and maintenance of extreme anxiety. Attentional biases to threat can promote inflated estimates of threat intensity or likelihood (Aue & Okon-Singer, 2015), a key feature of the anxious phenotype (Grupe & Nitschke, 2013). From a longitudinal perspective, attentional biases to threat-related cues have been shown to moderate the impact of dispositional anxiety and behavioral inhibition on the development of internalizing symptoms in youth (Perez-Edgar, Bar-Haim, et al., 2010; Pérez-Edgar et al., 2011; White et al., 2017). Likewise, there is evidence that clinically effective cognitive-behavioral and pharmacological treatments for anxiety tend to reduce attentional biases to threat-related cues (Murphy et al., 2009; Reinecke et al., 2013; Van Bockstaele et al., 2014), with greater therapeutic gains among patients showing larger reductions in attentional biases (e.g., Legerstee et al., 2010; Lundh & Öst, 2001).

Direct support for the causal hypothesis comes from studies using computer-based interventions targeting attentional biases to threat. In non-clinical samples, attention modification has been shown to reduce distress, behavioral signs of anxiety, and intrusive thoughts elicited during subsequent exposure to cognitive stressors, public speaking challenges, and worry inductions in adults and children (e.g., Bar-Haim, Morag, & Glickman, 2011; Dennis & O'Toole, 2014). In adult clinical samples, medium-to-small treatment effects have been observed compared to placebo training (Linetzky, Pergamin-Hight, Pine, & Bar-Haim, 2015; MacLeod & Clarke, 2015; Price, Wallace, et al., 2016). Not surprisingly, the most promising and consistent effects have been found in studies where the intervention showed evidence of “target engagement,” that is, a demonstrable reduction in attentional biases to threat-related cues (MacLeod & Grafton, 2016; Price, Wallace, et al., 2016). Indeed, Heeren and colleagues recently reported substantial between-study relations ( $k = 8$  studies,  $r = .90$ ) between reductions in attentional

biases and experimentally elicited anxiety (Heeren et al., 2015). Results have been somewhat less consistent in pediatric clinical samples (Lazarov et al., in press; Shackman et al., 2016; White et al., 2017), although here again evidence of target engagement has been variable. On balance, these observations are consistent with the idea that attentional biases to threat represent an “active ingredient” in the etiology of pediatric and adult anxiety disorders, but this remains an area of active research and contentious debate (MacLeod & Grafton, 2016; Mogg et al., 2017; Mogg & Bradley, 2018).

The impact of emotion on attention reflects the coordinated activity of multiple cortical and subcortical brain regions (Arend, Henik, & Okon-Singer, 2015; Shackman, Kaplan et al., 2016). Here, we focus on the role of the amygdala, a heterogeneous collection of nuclei buried beneath the temporal lobe (Fox & Kalin, 2014; Fox & Shackman, in press; Shackman & Fox, 2016). Imaging and single-unit studies performed in humans and monkeys demonstrate that the amygdala is sensitive to a broad range of emotionally and motivationally significant stimuli, including emotional faces and images, erotica, food, and substance cues (Chase, Eickhoff, Laird, & Hogarth, 2011; Costafreda, Brammer, David, & Fu, 2008; Fried, MacDonald, & Wilson, 1997; Fusar-Poli et al., 2009; Gothard, Battaglia, Erickson, Spitler, & Amaral, 2007; Hoffman, Gothard, Schmid, & Logothetis, 2007; Kirby & Robinson, 2017; Kuhn & Gallinat, 2011; Lindquist, Wager, Kober, Bliss-Moreau, & Barrett, 2012; Sabatinelli et al., 2011; Sergerie, Chochol, & Armony, 2008; Sescousse, Caldu, Segura, & Dreher, 2013; Tang, Fellows, Small, & Dagher, 2012; Wang et al., 2014). Mechanistic studies in animals and anatomical tracing studies in nonhuman primates suggest that the amygdala can prioritize the processing of emotional stimuli via at least two mechanisms: directly, via excitatory projections to relevant areas of sensory cortex (e.g., fusiform face area), and indirectly, via projections to ascending neurotransmitter systems in the basal forebrain and brainstem that, in turn, modulate sensory cortex (i.e., increase the neuronal signal-to-noise ratio; Davis & Whalen, 2001; Freese & Amaral, 2009). Imaging research shows that variation in amygdala activation predicts whether degraded emotional stimuli are detected, and that this association with performance is mediated by enhanced activation in sensory cortex (Lim et al., 2009). Manipulations that increase amygdala reactivity also enhance behavioral measures of threat vigilance (Herry et al., 2007). Conversely, disorders (e.g., autism) and manipulations that reduce the

amount of attention allocated to aversive or potentially threat-relevant information lead to decreased amygdala engagement (Dalton et al., 2005; Pessoa, McKenna, Gutierrez, & Ungerleider, 2002; Urry, 2010; van Reekum et al., 2007). Likewise, patients with amygdala damage and monkeys with selective amygdala lesions fail to show enhanced activation to emotional cues in sensory cortex, indicating that the amygdala mechanistically contributes to the attention-grabbing properties of emotional stimuli (Hadj-Bouziane et al., 2012; Rotshtein et al., 2010; Vuilleumier, Richardson, Armony, Driver, & Dolan, 2004).

The amygdala is not a passive recipient of emotional information in the environment. In addition to boosting sustained attention and vigilance, the amygdala plays a key role in redirecting gaze (i.e., overt attention) to the most emotionally salient features of facial expressions (Shackman, Kaplan, et al., 2016). Using a combination of eye tracking and brain imaging, we have demonstrated that humans are biased to reflexively attend the eye region of the face, that this bias is most pronounced for fearful faces, and that individuals showing greater amygdala activation are more likely to shift their gaze to the eyes (Gamer & Buchel, 2009; Scheller, Buchel, & Gamer, 2012). This bias appears to be exaggerated among individuals with a more anxious, neurotic disposition (Perlman et al., 2009). Importantly, individuals with damage to the amygdala do not show reflexive saccades to the eyes (Gamer, Schmitz, Tittgemeyer, & Schilbach, 2013). This observation is consistent with evidence that “Patient SM,” who is characterized by near-complete, bilateral destruction of the amygdala, fixates the mouth rather than the eyes in both real-world social interactions and well-controlled laboratory assessments (Adolphs et al., 2005; Spezio, Huang, Castelli, & Adolphs, 2007). Collectively, these observations indicate that the amygdala is crucial for the rapid detection and reorienting of attention to emotionally and motivationally significant cues.

#### Emotional Cues Hijack Working Memory Capacity

Selective attention is tightly linked with working memory (Ikkai & Curtis, 2011). Working memory is the “blackboard of the mind” (Goldman-Rakic, 1996), a limited-capacity workspace where information is actively maintained, recalled, and manipulated (D’Esposito & Postle, 2015). The transient representation of task-sets, goals, and other kinds of information in working memory plays a crucial role in sustaining goal-directed

attention, biasing behavior in the face of distraction, and regulating emotion (Miller & Cohen, 2001). In short, information transiently held in working memory is a key determinant of our momentary thoughts, feelings, and behavior.

Recent work by our group indicates that emotionally salient information enjoys privileged access to working memory. Using a combination of electrophysiological and behavioral assays, we showed that threat-related distracters infiltrate working memory, and that this effect is exaggerated among individuals with a more anxious disposition (Stout, Shackman, Johnson, & Larson, 2014; Stout, Shackman, & Larson, 2013). More recent imaging work suggests that this reflects a downstream consequence of heightened amygdala reactivity to threat-related cues (Stout et al., 2017). Collectively this work indicates that anxious individuals allocate excess storage capacity to threat, even when it is **completely** irrelevant to the task at hand and no longer present in the external world. This may help to explain anxious individuals’ tendency to experience heightened distress and intrusive thoughts in the absence of clear and immediate danger (Barlow, Sauer-Zavala, Carl, Bullis, & Ellard, 2013; Grupe & Nitschke, 2013; Shackman, Tromp, et al., 2016). Once lodged in working memory, threat-related information is poised to bias the stream of information processing (i.e., attention, memory retrieval, and action) long after it is no longer present in the real world, promoting worry and other maladaptive cognitions (Thiruchselvam, Hajcak, & Gross, 2012). Consistent with this hypothesis, recent work suggests that interventions aimed at strengthening working memory can cause lasting reductions in anxiety (Sari, Koster, Pourtois, & Derakshan, 2016).

#### Emotional States Strengthen Some Cognitive Processes While Weakening Others

Classically, cognition and emotion have been viewed as opposing forces (Shackman, Fox, & Seminowicz, 2015). From this perspective, moods and other emotional states simply short-circuit cognition. But with the ascent of evolutionary theory in the nineteenth century, many scientists adopted the view that emotions are functional and enhance fitness (Darwin, 1872/2009; Schwabe & Wolf, 2013; Todd & Anderson, 2013). In short, emotions are more adaptive than not, and “there is typically more cooperation than strife” between emotion and cognition (Levenson, 1994). Consistent with this more nuanced perspective, there is growing evidence that experimentally

elicited states of stress and anxiety facilitate some kinds of information processing while degrading others. For example, anxiety enhances sustained attention and vigilance, potentiating early sensory cortical responses to innocuous environmental stimuli and increasing the likelihood that emotionally salient information will be detected (Shackman, Maxwell, McMenamin, Greischar, & Davidson, 2011). Other work indicates that stress and anxiety disrupt working memory in human and monkeys (Arnsten, 2009; Arnsten & Goldman-Rakic, 1998; Moran, 2016; Robinson, Vytal, Cornwell, & Grillon, 2013; Shackman et al., 2006).

Recent work suggests that some of these consequences may reflect stress-induced sensitization of the amygdala. Brief exposure to acute stressors (e.g., threat-of-shock, aversive film clips) potentiates defensive reactions elicited by threat-related facial expressions (Grillon & Charney, 2011), promotes sustained increases in spontaneous amygdala activity (Cousijn et al., 2010), and amplifies amygdala reactivity to threat-related faces (Pichon, Miendlarzewska, Eryilmaz, & Vuilleumier, 2015; van Marle, Hermans, Qin, & Fernandez, 2009). Acute stressors produce even longer-lasting changes (minutes to hours) in the functional connectivity of the amygdala (Vaisvaser et al., 2013; van Marle, Hermans, Qin, & Fernandez, 2010). Stress-induced sensitization appears to be elevated in individuals with a more anxious, neurotic disposition (Everaerd, Klumpers, van Wingen, Tendolkar, & Fernandez, 2015).

### COGNITION REGULATES EMOTION

In the first edition of *The Nature of Emotion*, Ekman and Davidson wondered whether we can control our emotions. Two decades later, there is ample affirmative evidence. In fact, we humans frequently regulate our emotions, and we do so using a variety of increasingly well understood cognitive strategies (Gross, 2015a, 2015b; Sheppes, Suri, & Gross, 2015). Work to understand the neurobiological underpinnings of this core human capacity indicates that circuits involved in attention and working memory play a crucial role in the regulation of emotion and other, closely related aspects of motivated behavior, such as temptation and craving (Etkin, Buchel, & Gross, 2015; Hare, Malmaud, & Rangel, 2011; Kelley, Wagner, & Heatherton, 2015).

Perhaps the most basic strategy for reducing distress is attentional avoidance; that is, simply

shifting attention away from the source of distress (Gross, 2015a). Covert or overt attentional redeployment is a potent, relatively effortless means of regulating the engagement of subcortical structures, such as the amygdala, that play a key role in orchestrating emotional states (Dalton et al., 2005; Okon-Singer, Lichtenstein-Vidne, & Cohen, 2013; Okon-Singer, Tzelgov, & Henik, 2007; Pessoa et al., 2002; Urry, 2010; van Reekum et al., 2007).

Other strategies for regulating emotional states, such as cognitive reframing and reappraisal (e.g., Heller et al., 2009), require the effortful maintenance of an explicit regulatory goal or model and depend on a working memory circuit encompassing the lateral prefrontal cortex (PFC) and posterior parietal cortex (PPC) (Buhle et al., 2014; Rolls, 2013). Consistent with this perspective, individual differences in working memory capacity are predictive of reappraisal success (Etkin et al., 2015), and experimentally elicited stress, which is known to degrade working memory, disrupts the regulation of aversive emotional states (Raio, Orederu, Palazzolo, Shurick, & Phelps, 2013). Moreover, recent work using transcranial direct-current stimulation demonstrates that the lateral PFC is crucial for emotion regulation (Feesser, Prehn, Kazzer, Mungee, & Bajbouj, 2014), consistent with work focused on the neurobiology of impulsivity and self-control (Wagner & Heatherton, 2014).

### EMOTION AND COGNITION ARE FUNCTIONALLY AND ANATOMICALLY INTEGRATED

Humans tend to experience cognition and emotion as fundamentally different. Emotion is infused with feelings of pleasure or pain and manifests in readily discerned changes in the body, whereas cognition often appears devoid of substantial hedonic, motivational, or somatic features. These apparent differences in phenomenological experience and peripheral physiology led many classical scholars to treat emotion and cognition as distinct mental faculties (Okon-Singer, Hendler, Pessoa, & Shackman, 2015).

But contemporary theorists have increasingly rejected the claim that emotion and cognition are categorically different (e.g., Barrett & Satpute, 2013; Pessoa, 2013). This perspective reflects four lines of evidence. First, imaging research demonstrates that key emotional and cognitive processes are co-localized in the brain

(Shackman, Salomons, et al., 2011; de la Vega et al., 2016). Second, electrophysiological research shows that prototypical cognitive control signals (e.g., No-Go N2, error-related negativity) systematically co-vary with emotional traits and states (Cavanagh & Shackman, 2015). Third, canonical territories of “the cognitive brain” (e.g., lateral PFC) play a central role in regulating emotion and motivated behavior (Buhle et al., 2014). Fourth, canonical territories of “the emotional” brain (e.g., amygdala) regulate cognition via their influence over the brainstem neurotransmitter systems (Arnsten, 2009; Davis & Whalen, 2001). In this way, the amygdala can transiently assume control over attention, working memory, and behavior in situations that favor immediate responses over slower, more deliberate forms of reasoning. Of course, this can be maladaptive, and there is abundant evidence that stress promotes impulsive, risky behaviors (Kelley et al., 2015; Wagner & Heatherton, 2014) and potentially disrupts volitional forms of emotion regulation (Raio et al., 2013; but see Shermohammed et al., 2017).

## CONCLUSIONS

As described in more detail in the Epilogue to this volume, the past decade has witnessed an explosion of interest in the interplay of emotion and cognition and greater attention to key methodological and inferential pitfalls (Shackman et al., 2015; Shackman et al., 2006). The work we have highlighted illustrates the tremendous advances that have already been made. This body of research demonstrates that emotional cues, states, traits, and disorders can profoundly influence key elements of cognition, including selective attention, working memory, and cognitive control. In turn, circuits involved in attention and working memory contribute to the regulation of emotion. The distinction between “the emotional brain” and “the cognitive brain” is blurry and context-dependent. Indeed, there is compelling evidence that territories (e.g., dlPFC, MCC) and processes (e.g., attention, working memory, cognitive control) conventionally associated with cognition play a central role in emotional states, traits, and disorders. Furthermore, putatively emotional and cognitive regions dynamically influence one another via a complex web of recurrent, often indirect anatomical connections in ways that jointly contribute to adaptive behavior. These observations show that emotion and cognition are deeply interwoven in the fabric of the brain,

suggesting that widely held beliefs about the key constituents of “the emotional brain” or “the cognitive brain” are fundamentally flawed.

Despite this progress, our understanding of the interplay of emotion and cognition remains far from complete, and a number of important challenges remain. Indeed, we are reminded of Ekman and Davidson’s comment in the first edition of *The Nature of Emotion*: “There are many promising findings, many more leads, [and] a variety of theoretical stances” (Ekman & Davidson, 1994). As described in more detail in the Epilogue and elsewhere, addressing these challenges will require a greater emphasis on: (a) assessing the real-world relevance of laboratory assays, including measures of brain activity; (b) characterizing the distributed circuits underlying emotion–cognition interactions, and (c) integrating mechanistic and non-mechanistic research strategies (Fox & Shackman, in press; Okon-Singer et al., 2015; Shackman & Fox, 2016; Shackman, Tromp et al., 2016; Shackman et al., in press).

Developing a deeper understanding of the interplay of emotion and cognition is a matter of theoretical as well as practical importance. Many of the most common, costly, and challenging-to-treat neuropsychiatric disorders—anxiety, depression, schizophrenia, substance abuse, chronic pain, autism, and so on—involve prominent disturbances of both cognition and emotion, suggesting that they can be conceptualized as disorders of the emotional-cognitive brain. These disorders impose a larger burden on public health and the global economy than either cancer or cardiovascular disease (Craske et al., 2017; DiLuca & Olesen, 2014; Global Burden of Disease Collaborators, 2016; Otte et al., 2016), underscoring the need to accelerate efforts to understand the mechanisms underlying the interplay and integration of emotion and cognition.

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AQ: In sent. “The distinction between “the emotional brain” and “the cognitive brain” is . . .” please spell out first occurrence of “dlPFC, MCC”, followed by abbreviation. (p. 12)

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*Fundamental Questions*

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# NOTES

## INTRODUCTION

1. For example, the International Society of Research on Emotion (ISRE); Society for Affective Science (SAS); and Social & Affective Neuroscience Society (SANS).

2. *Cognition and Emotion; Cognitive, Affective, & Behavioral Neuroscience; Emotion; Emotion Review; IEEE Transactions on Affective Computing; Motivation and Emotion; and Social Cognitive and Affective Neuroscience.*

## CHAPTER 1.1

1. All the transcriptions of James's words are drawn from Volume II of *The Principles of Psychology*, in the Dover Edition, 1950. Italicized passages are as published by James.

## CHAPTER 1.5

1. Davidson, D., personal communication, April 16, 1978.

2. Personal communication, November 1, 2014.

## CHAPTER 1.9

1. Ekman and Davidson made a similar point in the first edition of this volume: "Is there a sine qua non for emotion? The answer at this time must be No. The investigator must use multiple methods to study emotion, including, wherever possible, measures of behavior, subjective experience, and physiology" (p. 414).

## CHAPTER 3.3

1. Anatomically, the amygdala is poised to assemble a broad spectrum of emotional reactions via projections to the brain regions that proximally mediate many of the behavioral (e.g., passive and active avoidance), peripheral physiological (e.g., cardiovascular and neuroendocrine activity), and cognitive (e.g., vigilance) features of momentary negative affect (Shackman et al., 2016; Fox & Shackman, in press).

2. Although these findings highlight the contributions of the amygdala to trait-like differences in threat reactivity, it is by no means the only relevant region. Mechanistic and imaging work highlights the important contributions of a distributed circuit encompassing the anterior hippocampus, anterior insula/orbitofrontal cortex, and periaqueductal gray (PAG) (Fox & Kalin, 2014; Fox, Oler, Shackman, et al., 2015; Fox, Oler, Tromp, Fudge, & Kalin, 2015; Fox et al., 2010; Fox, Shelton, Oakes, Davidson, & Kalin, 2008; Kalin, Shelton, & Davidson, 2007; Oler et al., 2010; Shackman et al., 2013). Like the amygdala, activity in each of these regions predicts trait-like individual differences in stressor reactivity.

3. Relations between temperament and resting-state brain activity are not limited to the amygdala—dispositionally negative monkeys, children, and adults also show greater resting-state activity in the electroencephalogram (EEG) over the right compared to the left prefrontal cortex (PFC) (Oler et al., 2016; Wacker, Chavanon, & Stemmler, 2010). Like the negative phenotype, individual differences in resting prefrontal EEG asymmetry emerge early in life and are relatively stable over time, reliable, heritable, and predictive of the intensity of emotional reactions to aversive stimuli (Fox, Henderson, Marshall, Nichols, & Ghera, 2005; Smit, Posthuma, Boomsma, & De Geus, 2007; Towers & Allen, 2009; Wheeler, Davidson, & Tomarken, 1993). Like the dispositional-negativity phenotype, resting prefrontal EEG asymmetry: (a) prospectively predicts the first onset of mood disorders (Nusslock et al., 2011), (b) is exaggerated in patients with anxiety and mood disorders (Thibodeau, Jorgensen, & Kim, 2006; Nusslock et al., 2018), and is normalized by anxiolytic drugs (Oler et al., 2016). Furthermore, direct neurofeedback manipulations of prefrontal EEG attenuate negative affect elicited by subsequent exposure to aversive stimuli (Allen, Harmon-Jones, & Cavender, 2001). With the pharmacological evidence, this suggests that the neural mechanisms responsible for generating this electrophysiological marker causally



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contribute to trait-like individual differences in threat reactivity. Recent efforts to pinpoint the source of the scalp-recorded EEG asymmetry have highlighted the importance of the dorsolateral prefrontal cortex (dlPFC; Shackman, McMenamin, Maxwell, Greischar, & Davidson, 2009), consistent with this region's well-established role in regulating momentary affect (Buhle et al., 2014).

4. Individual differences in BST activity may reflect altered communication with the orbitofrontal cortex (OFC). Large-scale imaging studies in monkeys ( $n = 592$ ) demonstrate that threat-related metabolic activity in the OFC is heritable and predictive of trait-like differences in dispositional negativity (Fox, Oler, Shackman, et al., 2015). Moreover, selective OFC lesions are associated with decreased passive avoidance of uncertain threat and reduced BST activity in monkeys (Fox et al., 2010; Kalin et al., 2007), paralleling the consequences of naturally occurring OFC insults for BST activity in humans (Motzkin et al., 2015).

5. Deficient filtering of threat-related information from fronto-parietal working memory circuits, leading to elevated rumination over the past and increased worry about the future, may also contribute to context-independent negative affect (Stout, Shackman, Johnson, & Larson, 2014; Stout, Shackman, & Larson, 2013; Stout, Shackman, Pedersen, Miskovich, & Larson, 2017).

## CHAPTER 5.3

1. Our friend and colleague, Dr. Jaak Pansepp (June 5, 1943–April 18, 2017), passed away just before this volume was published.

## CHAPTER 5.9

1. This position is reminiscent of Lazarus' suggestion that "Emotion and cognition are each so complex and their mechanisms are spread so widely over the central and peripheral nervous system that, in my opinion, it is difficult to argue convincingly for separate systems as though there were a special brain organ for each" (Lazarus, 1991, p. 357).

## CHAPTER 6.3

1. Note that in this essay I will not discuss the first portion of Wakefield's definition related to cultural factors. Those interested are referred to (Lutz & White, 1986; Markus & Kitayama, 1991)

## CHAPTER 7.4

1. President George W. Bush, war, 2001 Remarks to State Department Employees. URL: <http://www.sourcewatch.org/index.php?title=Evildoers>.

2. <http://www.businessinsider.com/ted-cruz-defunding-obamacare-nazi-germany-filibuster-2013-9>.

3. Thanks to Ben Converse for this formalization.

## CHAPTER 8.1

1. The terms "threat-related" or "threat-relevant" encompass a broad range of stimuli, including clear and immediate dangers (e.g., cues paired with shock), novel situations or individuals, uncertain or diffuse dangers (e.g., darkness), aversive stimuli (e.g., unpleasant images or films), and angry and fearful facial expressions. Angry faces signal a direct threat to the observer and prompt the mobilization of defensive responses, as indexed by potentiation of the startle reflex (Dunning et al., 2010; Hess, Sabourin, & Kleck, 2007; Springer et al., 2007), facilitation of avoidance-related movements (Marsh, Ambady, & Kleck, 2005), and increased fear ratings (Dimberg, 1988). In contrast, fearful faces signal the presence, but not the source of potential threat, and promote heightened vigilance in the absence of defensive mobilization. That is, static images of fearful faces do not amplify the startle reflex (Grillon & Charney, 2011; Springer et al., 2007) or autonomic measures (Dunsmoor, Mitroff, & LaBar, 2009). But they can increase subjective feelings of anxiety (Blairy, Herrera, & Hess, 1999) and are perceived as more threatening and arousing than neutral or happy faces (Grillon & Charney, 2011; Wieser & Keil, 2014).

## CHAPTER 10.1

1. It is worth noting that Darwin (1872) stated that these opposing forms sometimes may not serve any function.

2. Calculated by using 20 facial action coding units, bilaterally where applicable, each of which may contract independently at five different levels of intensity.

3. An immediate physical utility distinguishes itself from the more distant social utility. Expression forms selected for social utility could also be considered "evolutionary" and functionally "ego-centric." However, purely symbolic associated forms for social utility need not have any physical consequences.

## CHAPTER 12.4

1. Surprise may also be considered to contain the fundamental property of unexpectedness that characterizes fear.

## CHAPTER 12.5

1. Such as 2-alternative forced choice (2AFC) stimulus identification procedures: In 2AFC, the participant is asked to indicate a particular property of the stimulus in trials of "invisible" stimulus presentation (even if they claim they did not see the stimulus and thus are guessing)—for example, observers may report on whether a face was upright or upside down; or whether a facial expression was happy vs. fearful. This is in contrast with methods relying on subjective reports, such as when a participant is asked to

say “yes” or “no” to whether they saw a face. Different individuals have different response biases (e.g., different propensities to indicate that a stimulus is present given a particular sensory experience). Therefore, subjective measures may be confounded by response biases and are typically regarded as less conservative than 2AFC procedures (Wiens, 2006).

2. Note that the magnitude of amygdalar activation does not appear to be reliably modulated by conscious access to an emotional stimulus (Costafreda, Brammer, David, & Fu, 2008).

3. Replications cited include those of investigators adopting important procedural variations, such as alterations in the specific awareness manipulation method (including the original backward masking method, as well as interocular suppression and crowding), and the type of neutral target to be rated (originally a Chinese ideograph, and now, in several studies, a neutral face).

4. Note that awareness may not be required when cognitive control is not triggered implicitly but rather *explicitly* (Kunde et al., 2012), such as in the case of slowing down following a stop signal (van Gaal, Lamme, Fahrenfort, & Ridderinkhof, 2011), or switching a task set following a cue (Lau & Passingham, 2007).

5. Indeed, symptoms of degenerative disease to the LPFC are obvious if the patient has a job requiring mental flexibility and decision making, but not if s/he has a routinized job or lifestyle (Knight & D’Esposito, 2003).

#### CHAPTER 13.2

1. Here we use the term *emotion* as a catch-all. There are, of course, many affective states, which range from mood, to arousal, to true emotions. There is every reason to believe that all of these influence rationality and preferences in some way. We use the expression “emotion” in this brief essay as an exemplar for understanding how affective states in general influence decision-making.

2. Of course, if humans do become intransitive in some emotional states, then we need to be more creative in trying to understand the structure of their behavior. Under conditions in which a decision-maker is intransitive, a simple study of preferences will prove unsupportable mathematically. The economist David Laibson’s famous dual-process beta-delta model (Laibson, 1997) is one example of a structural model for dealing meaningfully with intransitive behavior.

3. GARP stands for the “Generalized Axiom of Revealed Preference,” developed by Hendrik Houthakker as a mathematical specification for what is probably the most common definition of full transitivity. For a more detailed explanation of this approach to transitivity, see Chapter 3, pp. 52–70, in Glimcher, 2010.

4. For simplicity, we completely neglect here the fact that apples and oranges, when bundled together in groups, may cause nonlinear utility interactions. This is a hugely important point taught to first-year economics students and called “substitution.” In the references to which we point, this is developed in some detail. But in order to convey the most basic concepts, we neglect it here.

5. For an economist, this is an important distinction because significant differences in the shape of the preference function in the gain and loss domain can imply a specific form of intransitivity, an important point, which we again neglect for simplicity.

6. As pointed out first by Kahneman and Tversky (1979), people in some situations behave according to distorted rather than objectively given probabilities, which we can capture by replacing  $p$  in the *DEU* equation with a probability weighting function  $w(p)$ .

#### CHAPTER 15

1. Naturally, emotion researchers must remain mindful of measurement reliability in choosing between different within- vs. between-subjects designs (cf. Bradford, Starr, Shackman, & Curtin, 2015; Cannon, Cao, Mathalon, Gee, & NAPLS Consortium, 2018; Fox et al., 2012; Hedge, Powell, & Sumner, *in press*; Herting, Gautam, Chen, Mezher, & Vetter, *in press*).

2. From a clinical perspective, categorical approaches to diagnosing emotional disorders pose several critical barriers to discovering the nature and origins of psychopathology: rampant co-morbidity, low symptom specificity (e.g., insomnia), marked symptom heterogeneity, and poor reliability (Chmielewski, Clark, Bagby, & Watson, 2015; Clark, Cuthbert, Lewis-Fernandez, Narrow, & Reed, 2017; Fried, 2015, 2017; Fried & Nesse, 2015; Galatzer-Levy & Bryant, 2013; Goldstein-Piekarski, Williams, & Humphreys, 2016; Hasin et al., 2015; Kessler, Chiu, Demler, & Walters, 2005; Kotov et al., 2017; Krueger et al., *in press*; Olbert, Gala, & Tupler, 2014; Regier et al., 2013; Watson & Stasik, 2014). Addressing these problems requires a different kind of approach—one focused on narrower sets of transdiagnostic symptoms (e.g., anxiety, anhedonia)—as with the Hierarchical Taxonomy of Psychopathology (HiTOP) and Research Domain Criteria (RDoC) approaches (Clark et al., 2017; Kotov et al., 2017; Krueger et al., *in press*; Zald & Lahey, 2017). This ‘symptoms-not-syndromes’ dimensional approach (Fried, 2015) would also more naturally align with animal models (Fox & Kalin, 2014; Fox & Shackman, *in press*; Oler, Fox, Shackman, & Kalin, 2016). **There is compelling evidence that traditional categorical approaches to diagnosing emotional disorders present several significant barriers to understanding the underlying mechanisms, including substantial**

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symptom heterogeneity, frequent co-morbidity, and low inter-rater reliability (i.e., uncertain 'ground truth') (Fried, 2017; Galatzer-Levy & Bryant, 2013; Hasin et al., 2015; Regier et al., 2013). The adoption of narrower dimensional phenotypes is likely to provide useful (Kotov et al., 2017; Krueger et al., in press).

3. *Aggression* can be split on functional and neurobiological grounds into systems involved in defensive, offensive (predatory), and conspecific aggression, with the latter including maternal aggression and resource competition (food, mates, and territory/shelter) (Adams, 2006; Berkowitz,

1993; Nelson & Trainor, 2007). Naturally, researchers must remain mindful of measurement reliability in choosing between different experimental designs (e.g., within- vs. between-subjects); e.g., Bradford, Starr, Shackman, & Curtin, 2015; Cannon et al., 2018; Hedge, Powell, & Sumner, in press; Herting et al., in press; Larson et al., 2000; Shackman et al., 2017).

4. See also <https://www.nimh.nih.gov/research-priorities/rdoc/constructs/potential-threat-anxiety.shtml>; <https://www.nimh.nih.gov/research-priorities/rdoc/negative-valence-systems-workshop-proceedings.shtml>.

# REFERENCES

- Abe, H., & Lee, D. (2011). Distributed coding of actual and hypothetical outcomes in the orbital and dorsolateral prefrontal cortex. *Neuron*, *70*(4), 731–741.
- Abelson, R. P., Dasgupta, N., Park, J., & Banaji, M. R. (1998). Perceptions of the collective other. *Personality & Social Psychology Review*, *2*, 243–250.
- Abend, R., de Voogd, L., Salemink, E., Wiers, R. W., Perez-Edgar, K., Fitzgerald, A., . . . Bar-Haim, Y. (in press). Association between attention bias to threat and anxiety symptoms in children and adolescents. *Depression and Anxiety*.
- Abercrombie, H. C., Schaefer, S. M., Larson, C. L., Oakes, T. R., Lindgren, K. A., Holden, J. E., . . . Davidson, R. J. (1998). Metabolic rate in the right amygdala predicts negative affect in depressed patients. *NeuroReport*, *9*(14), 3301–3307.
- Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, *87*(1), 49–74.
- Ackerl, K., Atzmueller, M., & Grammer, K. (2002). The scent of fear. *Neuro Endocrinology Letters*, *23*(2), 79–84.
- Ackerly, S. S., & Benton, A. L. (1947). Report of case of bilateral frontal lobe defect. *Research Publications—Association for Research in Nervous & Mental Disease*, *27*, 479–504.
- Acosta, A., Adams, R. B., Albohn, D. N., Allard, E. S., Beek, T., Benning, S. D., . . . Zwaan, R. A. (2016). Registered replication report: Strack, Martin, & Stepper (1988). *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, *11*(6), 917–928.
- Adams, R. A., Shipp, S., & Friston, K. J. (2013). Predictions not commands: Active inference in the motor system. *Brain Structure & Function*, *218*(3), 611–643.
- Adams, R. A., Stephan, K. E., Brown, H. R., Frith, C. D., & Friston, K. J. (2013). The computational anatomy of psychosis. *Frontiers in Psychiatry*, *4*, 47.
- Admon, R., Lubin, G., Stern, O., Rosenberg, K., Sela, L., Ben-Ami, H., & Hendler, T. (2009). Human vulnerability to stress depends on amygdala's predisposition and hippocampal plasticity. *Proceedings of the National Academy of Sciences of the United States of America*, *106*, 14120–14125.
- Adolphs, R. (2002). Neural systems for recognizing emotion. *Current Opinion in Neurobiology*, *12*, 169–177.
- Adolphs, R. (2004). Emotional vision. *Nature Neuroscience*, *7*(11), 1167–1168.
- Adolphs, R. (2009). The social brain: Neural basis of social knowledge. *Annual Review of Psychology*, *60*, 693–716.
- Adolphs, R. (2010). What does the amygdala contribute to social cognition. *Annals of the New York Academy of Sciences*, *1191*, 42–61.
- Adolphs, R. (2013). The biology of fear. *Current Biology*, *23*, R79–R93.
- Adolphs, R. (2016). Human lesion studies in the 21st century. *Neuron*, *90*, 1151–1153.
- Adolphs, R. (2017a). How should neuroscience study emotions? By distinguishing emotion states, concepts, and experiences. *Social Cognitive & Affective Neuroscience*, *12*, 24–31.
- Adolphs, R. (2017b). Reply to Barrett: Affective neuroscience needs objective criteria for emotions. *Social Cognitive & Affective Neuroscience*, *12*, 32–33.
- Amaral, D. G., & Adolphs, R. (Eds.) (2016). *Living without an amygdala*. New York, NY: Guilford.
- Adolphs, R., & Anderson, D. J. (2018). *The Neuroscience of Emotion: A New Synthesis*. Princeton, NJ: Princeton University Press.
- Adolphs, R., & Andler, D. (2018). Investigating emotions as functional states distinct from feelings. *Emotion Review* (in press).
- Adolphs, R., Gosselin, F., Buchanan, T. W., Tranel, D., Schyns, P., & Damasio, A. R. (2005). A mechanism for impaired fear recognition after amygdala damage. *Nature*, *433*(7021), 68–72.

## 428 REFERENCES

- Adolphs, R., Tranel, D., & Damasio, A. R. (1998). The human amygdala in social judgment. *Nature*, 393(6684), 470–474.
- Adolphs, R., Tranel, D., Damasio, H., & Damasio, A. (1994). Impaired recognition of emotion in facial expressions following bilateral damage to the human amygdala. *Nature*, 372, 669–672.
- Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies*, 52(2), 649–661. <http://doi.org/10.1016/j.ijnurstu.2014.11.004>
- Aertsen, A., & Preissl, H. (1991). Dynamics of activity and connectivity in physiological neuronal networks. In H. G. Schuster (Ed.), *Nonlinear dynamics and neuronal networks* (pp. 281–302). New York: Wiley-VCH Verlag GmbH.
- Aertsen, A., Gerstein, G. L., Habib, M. K., & Palm, G. (1989). Dynamics of neuronal firing correlation: Modulation of “effective connectivity.” *Journal of Neurophysiology*, 61(5), 900–917.
- Agetsuma, M., Aizawa, H., Aoki, T., Nakayama, R., Takahoko, M., Goto, M., . . . Okamoto, H. (2010). The habenula is crucial for experience-dependent modification of fear responses in zebrafish. *Nature Neuroscience*, 13(11), 1354–1356.
- Aggleton, J. P. (2000). *The amygdala: A functional analysis*. New York: Oxford University Press.
- Aggleton, J. P., & Passingham, R. E. (1981). Syndrome produced by lesions of the amygdala in monkeys (*Macaca mulatta*). *Journal of Comparative & Physiological Psychology*, 95, 961–977.
- Agren, T. (2014). Human reconsolidation: A reactivation and update. *Brain Research Bulletin*, 105, 70–82.
- Aguinis, H., Ramani, R. S., & Alabduljader, N. (2018). What you see is what you get? Enhancing methodological transparency in management research. *Academy of Management Annals*, 12, 83–110.
- Aharon, I., Etcoff, N., Ariely, D., Chabris, C. F., O'Connor, E., & Breiter, H. C. (2001). Beautiful faces have variable reward value: fMRI and behavioral evidence. *Neuron*, 32(3), 537–551.
- Åhs, F., Frick, A., Furmark, T., & Fredrikson, M. (2015). Human serotonin transporter availability predicts fear conditioning. *International Journal of Psychophysiology*, 98(3), 515–519.
- Ai, M., Min, S., Grosjean, Y., Leblanc, C., Bell, R., Benton, R., & Suh, G. S. B. (2010). Acid sensing by the *Drosophila* olfactory system. *Nature*, 468(7324), 691–695.
- Albers, C., & Lakens, D. (2018). When power analyses based on pilot data are biased: Inaccurate effect size estimators and follow-up bias. *Journal of Experimental Social Psychology*, 74, 187–195.
- Alcaro, A., Panksepp, J., Witzak, J., Hayes, D. J., & Northoff, G. (2010). Is subcortical-cortical midline activity in depression mediated by glutamate and GABA? A cross-species translational approach. *Neuroscience & Biobehavioral Reviews*, 34, 592–605.
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychological Review*, 30(2), 217–237.
- Alexander, G. E., DeLong, M. R., & Strick, P. L. (1986). Parallel organization of functionally segregated circuits linking basal ganglia and cortex. *Annual Review of Neuroscience*, 9, 357–381.
- Alexander, W. H., & Brown, J. W. (2011). Medial prefrontal cortex as an action-outcome predictor. *Nature Neuroscience*, 14(10), 1338–1344.
- Alisch, R. S., Chopra, P., Fox, A. S., Chen, K., White, A. T., Roseboom, P. H., . . . Kalin, N. H. (2014). Differentially methylated plasticity genes in the amygdala of young primates are linked to anxious temperament, an at risk phenotype for anxiety and depressive disorders. *Journal of Neuroscience*, 34, 15548–15556.
- Alisch, R. S., Van Hulle, C., Chopra, P., Bhattacharyya, A., Zhang, S. C., Davidson, R. J., . . . Goldsmith, H. H. (2017). A multi-dimensional characterization of anxiety in monozygotic twin pairs reveals susceptibility loci in humans. *Transl Psychiatry*, 7, 1282.
- Algoe, S. B., Haidt, J., & Gable, S. L. (2008). Beyond reciprocity: Gratitude and relationships in everyday life. *Emotion*, 8(3), 425–429.
- Allen, B. P., & Potkay, C. R. (1981). On the arbitrary distinction between states and traits. *Journal of Personality & Social Psychology*, 41, 916–928.
- Allport, G. W., & Odbert, H. S. (1936). Trait-names: A psycho-lexical study. *Psychological Monographs*, 47(211), 1–171.
- Almeida, J., Pajtas, P. E., Mahon, B. Z., Nakayama, K., & Caramazza, A. (2013). Affect of the unconscious: Visually suppressed angry faces modulate our decisions. *Cognitive, Affective & Behavioral Neuroscience*, 13(1), 94–101.
- Alvarez, R. P., Kirlic, N., Misaki, M., Bodurka, J., Rhudy, J. L., Paulus, M. P., & Drevets, W. C. (2015). Increased anterior insula activity in anxious individuals is linked to diminished perceived control. *Translational Psychiatry*, 5, e591.
- Amaral, D. G., & Bennett, J. (2000). Development of amygdalo-cortical connection in the macaque monkey. *Society for Neuroscience Abstract*, 26, 17–26.
- Amaral, D. G., & Price, J. L. (1984). Amygdalo-cortical projections in the monkey (*Macaca fascicularis*). *Journal of Comparative Neurology*, 230(4), 465–496.

- Amaral, D. G., Behniea, H., & Kelly, J. L. (2003). Topographic organization of projections from the amygdala to the visual cortex in the macaque monkey. *Neuroscience*, *118*(4), 1099–1120.
- Amaral, D. G., Price, J. L., Pitkanen, A., & Carmichael, S. T. (1992). *Anatomical organization of the primate amygdaloid complex*. New York: Wiley-Liss.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Amir, N., & Taylor, C. T. (2012). Interpretation training in individuals with generalized social anxiety disorder: A randomized controlled trial. *Journal of Consulting & Clinical Psychology*, *80*(3), 497–511.
- Amir, N., Beard, C., Burns, M., & Bomyea, J. (2009). Attention modification program in individuals with generalized anxiety disorder. *Journal of Abnormal Psychology*, *118*(1), 28–33.
- Amir, N., Beard, C., Taylor, C. T., Klumpp, H., Elias, J., Burns, M., & Chen, X. (2009). Attention training in individuals with generalized social phobia: A randomized controlled trial. *Journal of Consulting & Clinical Psychology*, *77*(5), 961–973.
- Amir, N., Bomyea, J., & Beard, C. (2010). The effect of single-session interpretation modification on attention bias in socially anxious individuals. *Journal of Anxiety Disorders*, *24*(2), 178–182.
- Amir, N., Taylor, C. T., & Donohue, M. C. (2011). Predictors of response to an attention modification program in generalized social phobia. *Journal of Consulting & Clinical Psychology*, *79*(4), 533–541.
- Amir, N., Weber, G., Beard, C., Bomyea, J., & Taylor, C. T. (2008). The effect of a single-session attention modification program on response to a public-speaking challenge in socially anxious individuals. *Journal of Abnormal Psychology*, *117*, 860–868.
- An, X., Bandler, R., Ongür, D., & Price, J. L. (1998). Prefrontal cortical projections to longitudinal columns in the midbrain periaqueductal gray in macaque monkeys. *Journal of Comparative Neurology*, *401*(4), 455–479.
- Anda, R. F., Butchart, A., Felitti, V. J., & Brown, D. W. (2010). Building a framework for global surveillance of the public health implications of adverse childhood experiences. *American Journal of Preventive Medicine*, *39*(1), 93–98.
- Anders, S., Birbaumer, N., and Sadowski, B. (2004). Parietal somatosensory association cortex mediates affective blindsight. *Nature Neuroscience*, *7*, 339–340.
- Anders, S., Eippert, F., Wiens, S., and Birbaumer, N. (2009). When seeing outweighs feeling: A role for prefrontal cortex in passive control of negative affect in blindsight. *Brain: A Journal of Neurology*, *132*, 3021–3031.
- Andersen, S., Harrison, G. W., Lau, M. I., & Rutstrom, E. (2008). Eliciting risk and time preferences. *Econometrica*, *76*(3), 583–618.
- Anderson, A. K. (2005). Affective influences on the attentional dynamics supporting awareness. *Journal of Experimental Psychology: General*, *134*, 258–281.
- Anderson, A. K., & Phelps, E. A. (2001). Lesions of the human amygdala impair enhanced perception of emotionally salient events. *Nature*, *411*(6835), 305–309.
- Anderson, A. K., Christoff, K., Panitz, D. A., De Rosa, E., & Gabrieli, J. D. E. (2003). Neural correlates of the automatic processing of threat facial signals. *Journal of Neuroscience*, *23*, 5627–5633.
- Anderson, M. L. (2014). *After phrenology: Neural reuse and the interactive brain*. Cambridge, MA: MIT Press.
- Anderson, D. J., & Adolphs, R. (2014). A framework for studying emotions across species. *Cell*, *157*, 187–200.
- Anderson, E., Siegel, E. H., Bliss-Moreau, E., & Barrett, L. F. (2011). The visual impact of gossip. *Science*, *332*(6036), 1446–1448.
- Anderson, E., Siegel, E., White, D., & Barrett, L. F. (2012). Out of sight but not out of mind: Unseen affective faces influence evaluations and social impressions. *Emotion*, *12*(6), 1210–1221.
- Anderson, M. L., Kinnison, J., & Pessoa, L. (2013). Describing functional diversity of brain regions and brain networks. *NeuroImage*, *73*, 50–58.
- Anderson, M. S., Martinson, B. C., & De Vries, R. E. (2007). Normative dissonance in science: Results from a national survey of U. S. scientists. *Journal of Empirical Research on Human Research Ethics*, *2*, 3–14.
- Anderson, C. L., Monroy, M., & Keltner, D. (in press). Emotion in the wilds of nature: The coherence and contagion of fear during threatening group-based outdoors experiences. *Emotion*.
- Anderson, S. W., Barrash, J., Bechara, A., & Tranel, D. (2006). Impairments of emotion and real-world complex behavior following childhood-or adult-onset damage to ventromedial prefrontal cortex. *Journal of the International Neuropsychological Society*, *12*(02), 224–235.
- Anderson, S. W., Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1999). Impairment of social and moral behavior related to early damage in human prefrontal cortex. *Nature Neuroscience*, *2*(11), 1032–1037.
- Anderson, S. W., Damasio, H., Jones, R. D., & Tranel, D. (1991). Wisconsin Card Sorting Test performance as a measure of frontal lobe damage. *Journal of Clinical & Experimental Neuropsychology*, *13*(6), 909–922.

## 430 REFERENCES

- Anderson, S. W., Damasio, H., Tranel, D., & Damasio, A. R. (2000). Long-term sequelae of prefrontal cortex damage acquired in early childhood. *Developmental Neuropsychology*, *18*(3), 281–296.
- Andrew, R. J. (1963). Evolution of facial expression. *Science*, *142*, 1034–1041.
- Andrews-Hanna, J. R., Reidler, J. S., Huang, C., & Buckner, R. L. (2010). Evidence for the default network's role in spontaneous cognition. *Journal of Neurophysiology*, *104*(1), 322–322.
- Andrews-Hanna, J. R., Smallwood, J., & Spreng, R. N. (2014). The default network and self-generated thought: Component processes, dynamic control, and clinical relevance. *Annals of the New York Academy of Sciences*, *1316*(1), 29–52.
- Ansari, T. L., & Derakshan, N. (2011). The neural correlates of cognitive effort in anxiety: Effects on processing efficiency. *Biological Psychology*, *86*, 337–348.
- Ansari, T. L., Derakshan, N., & Richards, A. (2008). Effects of anxiety on task switching: Evidence from the mixed saccade task. *Cognitive, Affective, & Behavioral Neuroscience*, *8*, 229–238.
- Apkarian, A. V., Bushnell, M. C., Treede, R.-D., & Zubieta, J.-K. (2005). Human brain mechanisms of pain perception and regulation in health and disease. *European Journal of Pain*, *London, England*, *9*, 463–484.
- App, B., McIntosh, D. N., Reed, C. L., & Hertenstein, M. J. (2011). Nonverbal channel use in communication of emotion: How may depend on why. *Emotion*, *11*(3), 603–617.
- Arakawa, H., Cruz, S., & Deak, T. (2011). From models to mechanisms: Odorant communication as a key determinant of social behavior in rodents during illness-associated states. *Neuroscience & Biobehavioral Reviews*, *35*(9), 1916–1928.
- Arend, L., Henik, A., & Okon-Singer, H. (2015). Dissociating emotion and attention functions in the pulvinar nucleus of the thalamus. *Neuropsychology*, *29*, 191–196.
- Ariely, D., & Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making*, *19*(2), 87–98.
- Arkes, H. R., Herren, L. T., & Isen, A. M. (1988). The role of potential loss in the influence of affect on risk-taking behavior. *Organizational Behavior & Human Decision Processes*, *42*(2), 181–193.
- Armony, J. L., & Dolan, R. J. (2002). Modulation of spatial attention by fear-conditioned stimuli: An event-related fMRI study. *Neuropsychologia*, *40*(7), 817–826.
- Armstrong, T., & Olatunji, B. O. (2012). Eye tracking of attention in the affective disorders: A meta-analytic review and synthesis. *Clinical Psychology Review*, *32*, 704–723.
- Arnett, J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, *54*, 317–326.
- Arnett, J. J. (2004). *Adolescence and emerging adulthood: A cultural approach*. Boston, MA: Pearson.
- Arnold, M. B. (1960). *Emotion and personality: Vol. 1. Psychological aspects*. New York: Columbia University Press.
- Arnsten, A. F. (1998). The biology of being frazzled. *Science*, *280*, 1711–1712.
- Arnsten, A. F. (2009). Stress signaling pathways that impair prefrontal cortex structure and function. *Nature Reviews Neuroscience*, *10*(6), 410–422.
- Arnsten, A. F., & Goldman-Rakic, P. S. (1998). Noise stress impairs prefrontal cortical cognitive function in monkeys: Evidence for a hyperdopaminergic mechanism. *Archives of General Psychiatry*, *55*, 362–368.
- Arnsten, A. F., & Li, B. M. (2005). Neurobiology of executive functions: Catecholamine influences on prefrontal cortical functions. *Biological Psychiatry*, *57*(11), 1377–1384.
- Aron, A. R., Robbins, T. W., & Poldrack, R. A. (2014). Inhibition and the right inferior frontal cortex: One decade on. *Trends in Cognitive Sciences*, *18*(4), 177–185.
- Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological Monographs: General & Applied*, *70*(9), 1–70.
- Ashar, Y. K., Chang, L. J., & Wager, T. D. (2017). Brain mechanisms of the placebo effect: An affective appraisal account. *Annual Review of Clinical Psychology*, *13*, 73–98.
- Ashburner, J., & Friston, K. J. (2000). Voxel-based morphometry—the methods. *NeuroImage*, *11*, 805–821.
- Asnaani, A., Richey, J. A., Dimaite, R., Hinton, D. E., & Hofmann, S. G. (2010). A cross-ethnic comparison of lifetime prevalence rates of anxiety disorders. *Journal of Nervous & Mental Disease*, *98*(8), 551–555.
- Assareh, N., Sarrami, M., Carrive, P., & McNally, G. P. (2016). The organization of defensive behavior elicited by optogenetic excitation of rat lateral or ventrolateral periaqueductal gray. *Behavioral Neuroscience*, *130*, 406–414.
- Atkinson, A. P. (2013). Bodily expressions of emotion: Visual cues and neural mechanisms. In J. A. P. Vuilleumier (Ed.), *The Cambridge handbook of human affective neuroscience* (pp. 198–222). New York: Cambridge University Press.
- Atladóttir, H. Ó., Thorsen, P., Østergaard, L., Schendel, D. E., Lemcke, S., Abdallah, M., & Parner, E. T. (2010). Maternal infection requiring hospitalization during pregnancy and autism spectrum disorders. *Journal of Autism & Developmental Disorders*, *40*(12), 1423–1430.

- Atlas, L. Y., & Wager, T. D. (2012). How expectations shape pain. *Neuroscience Letters*, *520*(2), 140–148.
- Atlas, L. Y., Bolger, N., Lindquist, M. A., & Wager, T. D. (2010). Brain mediators of predictive cue effects on perceived pain. *Journal of Neuroscience*, *30*(39), 12964–12977.
- Atlas, L. Y., Doll, B. B., Li, J., Daw, N. D., & Phelps, E. A. (2016). Instructed knowledge shapes feedback-driven aversive learning in striatum and orbitofrontal cortex, but not the amygdala. *Elife*, *5*, e15192.
- Atlas, L. Y., Whittington, R. A., Lindquist, M. A., Wielgosz, J., Sonty, N., & Wager, T. D. (2012). Dissociable influences of opiates and expectations on pain. *Journal of Neuroscience*, *32*(23), 8053–8064.
- Atlas, L. Y., Wielgosz, J., Whittington, R. A., & Wager, T. D. (2013). Specifying the non-specific factors underlying opioid analgesia: Expectancy, attention, and affect. *Psychopharmacology*, *231*(5), 813–823.
- Aue, T., & Okon-Singer, H. (2015). Expectancy biases in fear and anxiety and their link to biases in attention. *Clinical Psychology Review*, *42*, 83–95.
- Averbeck, B. B., & Seo, M. (2008). The statistical neuroanatomy of frontal networks in the macaque. *PLoS Computational Biology*, *4*(4), e1000050.
- Averill, J. (1982). *Anger and aggression: An essay on emotion*. New York: Springer-Verlag.
- Averill, J. R. (1983). Studies on anger and aggression. Implications for theories of emotion. *American Psychologist*, *38*, 1145–1160.
- Avery, J. A., Drevets, W. C., Moseman, S. E., Bodurka, J., Barcalow, J. C., & Simmons, W. K. (2014). Major depressive disorder is associated with abnormal interoceptive activity and functional connectivity in the insula. *Biological Psychiatry*, *76*(3), 258–266.
- Aviezer, H., Hassin, R. R., Bentin, S., & Trope, Y. (2008a). Putting facial expressions back in context. In N. Ambady & J. J. Skowronsky (Eds.), *First impressions* (pp. 255–286). New York: Guilford Press.
- Aviezer, H., Hassin, R. R., Ryan, J., Grady, C., Susskind, J., Anderson, A., . . . Bentin, S. (2008b). Angry, disgusted, or afraid? Studies of the malleability of emotion perception. *Psychological Science*, *19*, 724–732.
- Ayduk, O., Mischel, W., & Downey, G. (2002). Attentional mechanisms linking rejection to hostile reactivity: The role of “hot” versus “cool” focus. *Psychological Science*, *13*(5), 443–448.
- Ayre, D. J., & Grosberg, R. K. (1995). Aggression, habituation and clonal coexistence in the sea anemone *Antopleura elegantissima*. *The American Naturalist*, *146*, 427–453.
- Babri, S., Doosti, M.-H., & Salari, A.-A. (2014). Tumor necrosis factor-alpha during neonatal brain development affects anxiety- and depression-related behaviors in adult male and female mice. *Behavioural Brain Research*, *261*, 305–314.
- Babyak, M., Blumenthal, J. A., Herman, S., Khatri, P., Doraiswamy, M., Moore, K., . . . Krishnan, K. R. (2000). Exercise treatment for major depression: Maintenance of therapeutic benefit at 10 months. *Psychosomatic medicine*, *62*(5), 633–638.
- Bach, D. R., & Dayan, P. (2017). Algorithms for survival: A comparative perspective on emotions. *Nature Reviews Neuroscience*, *18*, 311–319.
- Bach, D. R., Hurlmann, R., & Dolan, R. J. (2014). Impaired threat prioritization after selective bilateral amygdala lesions. *Cortex*, *63C*, 206–213.
- Bach, D. R., Talmi, D., Hurlmann, R., Patin, A., & Dolan, R. J. (2011). Automatic relevance detection in the absence of a functional amygdala. *Neuropsychologia*, *49*(5), 1302–1305.
- Bäckhed, F., Roswall, J., Peng, Y., Feng, Q., Jia, H., Kovatcheva-Datchary, P., . . . Khan, M. T. (2015). Dynamics and stabilization of the human gut microbiome during the first year of life. *Cell Host & Microbe*, *17*(5), 690–703.
- Badiani, A., Belin, D., Epstein, D., Calu, D., & Shaham, Y. (2011). Opiate versus psychostimulant addiction: The differences do matter. *Nature Reviews Neuroscience*, *12*(11), 685–700.
- Badre, D., & D’Esposito, M. (2009). Is the rostro-caudal axis of the frontal lobe hierarchical? *Nature Reviews Neuroscience*, *10*(9), 659–669. doi:10.1038/nrn2667.
- Badre, D., & Wagner, A. D. (2007). Left ventrolateral prefrontal cortex and the cognitive control of memory. *Neuropsychologia*, *45*(13), 2883–2901. doi:10.1016/j.neuropsychologia.2007.06.015.
- Baeyens, F., Díaz, E., & Ruiz, G. (2005). Resistance to extinction of human evaluative conditioning using a between-subjects design. *Cognition & Emotion*, *19*(2), 245–268. doi:10.1080/02699930441000300.
- Bailey, I. L., & Lovie, J. E. (1976). New design principles for visual acuity letter charts. *American Journal of Optometry & Physiological Optics*, *53*, 740–745.
- Bailey, P., & Davis, E. W. (1942). Effects of lesions of the periaqueductal gray matter in the cat. *Proceedings of the Society for Experimental Biology & Medicine*, *351*, 305–306.
- Bailey, P., & Davis, E. W. (1943). Effects of lesions of the periaqueductal gray matter on the Macaca Mulatta. *Journal of Neuropathology & Experimental Neurology*, *3*, 69–72.
- Baker, M. (2016). Is there a reproducibility crisis? *Nature*, *533*, 452–454.
- Bakker, M., Hartgerink, C. H., Wicherts, J. M., & van der Maas, H. L. (2016). Researchers’ intuitions about power in psychological research. *Psychological Science*, *27*, 1069–1077.
- Baldassano, C., Chen, J., Zadbood, A., Pillow, J., Hasson, U., & Norman, K. A. (2017). Discovering



## 432 REFERENCES

- Event Structure in Continuous Narrative Perception and Memory. *Neuron*, 95, 709–721.
- Ball, T. M., Ramsawh, H. J., Campbell-Sills, L., Paulus, M. P., & Stein, M. B. (2013). Prefrontal dysfunction during emotion regulation in generalized anxiety and panic disorders. *Psychological Medicine*, 43(07), 1475–1486. <http://doi.org/10.1017/S0033291712002383>.
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). New York: Cambridge University Press.
- Bandler, R., & Shipley, M. T. (1994). Columnar organization in the midbrain periaqueductal gray: Modules for emotional expression? *Trends in Neurosciences*, 17(9), 379–389.
- Bandler, R., Keay, K. A., Floyd, N., & Price, J. (2000). Central circuits mediating patterned autonomic activity during active vs. passive emotional coping. *Brain Research Bulletin*, 53(1), 95–104.
- Banich, M. T., Mackiewicz, K. L., Depue, B. E., Whitmer, A. J., Miller, G. A., & Heller, W. (2009). Cognitive control mechanisms, emotion and memory: A neural perspective with implications for psychopathology. *Neuroscience & Biobehavioral Reviews*, 33(5), 613–630. doi:10.1016/j.neubiorev.2008.09.010.
- Banse, R., & Scherer, K. R. (1996). Acoustic profiles in vocal emotion expression. *Journal of Personality & Social Psychology*, 70, 614–636.
- Bar, M. (2004). Visual objects in context. *Nature Reviews Neuroscience*, 5, 617–629.
- Bar, K. J., de la Cruz, F., Schumann, A., et al. (2016). Functional connectivity and network analysis of midbrain and brainstem nuclei. *NeuroImage*, 134, 53–63.
- Bar, M., & Neta, M. (2006). Humans prefer curved visual objects. *Psychological Science*, 17(8), 645–648. <http://doi.org/10.1111/j.1467-9280.2006.01759.x>.
- Bar, M., & Neta, M. (2007). Visual elements of subjective preference modulate amygdala activation. *Neuropsychologia*, 45(10), 2191–2200. doi:10.1016/j.neuropsychologia.2007.03.008.
- Barazzone, N., & Davey, G. C. L. (2009). Anger potentiates the reporting of threatening interpretations: An experimental study. *Journal of Anxiety Disorders*, 23(4), 489–495. doi:10.1016/j.janxdis.2008.10.007.
- Barbas, H. (2015). General cortical and special prefrontal connections: principles from structure to function. *Annual Review of Neuroscience*, 38, 269–289.
- Barbas, H., & Pandya, D. N. (1989). Architecture and intrinsic connections of the prefrontal cortex in the rhesus monkey. *Journal of Comparative Neurology*, 286(3), 353–375.
- Barbas, H., & Rempel-Clower, N. (1997). Cortical structure predicts the pattern of corticocortical connections. *Cerebral Cortex*, 7(7), 635–646.
- Barber, A. (2017). Francis Bacon. In M. Cameron, B. Hill, & R. J. Stainton (Eds.), *Sourcebook in the history of philosophy of language*. Primary source texts from the pre-Socratics to Mill (pp. 497–502). New York: Springer.
- Barch, D. M., Treadway, M. T., & Schoen, N. (2014). Effort, anhedonia, and function in schizophrenia: Reduced effort allocation predicts amotivation and functional impairment. *Journal of Abnormal Psychology*, 123(2), 387–397.
- Bard, P. (1928). A diencephalic mechanism for the expression of rage with special reference to the sympathetic nervous system. *American Journal of Physiology*, 84(3), 490–515.
- Bard, P. (1929). The central representation of the sympathetic system: As indicated by certain physiologic observations. *Archives of Neurology & Psychiatry*, 22(2), 230–246. doi:10.1001/archneurpsyc.1929.02220020046002.
- Bard, P. (1934a). On emotional expression after decortication with some remarks on certain theoretical views: Part I. *Psychological Review*, 41(4), 309–329.
- Bard, P. (1934b). The neuro-humoral basis of emotional reactions. In C. Murchinson (Ed.), *Handbook of general experimental psychology* (pp. 264–311). Worcester, MA: Clark University Press.
- Bardeen, J. R., & Read, J. P. (2010). Attentional control, trauma, and affect regulation: A preliminary investigation. *Traumatology*, 16, 11–18.
- Bargh, J. A. (2005). Bypassing the will: Towards demystifying the nonconscious control of social behavior. In R. Hassin, J. Uleman, & J. Bargh (Eds.), *The new unconscious* (pp. 37–58). New York: Oxford.
- Bar-Haim, Y. (2010). Research review: Attention bias modification (ABM): A novel treatment for anxiety disorders. *Journal of Child Psychology & Psychiatry*, 51, 859–870. doi:10.1111/j.1469-7610.2010.02251.x.
- Bar-Haim, Y., Holoshitz, Y., Eldar, S., Frenkel, T. I., Muller, D., Charney, D. S., . . . Wald, I. (2010). Life-threatening danger and suppression of attention bias to threat. *American Journal of Psychiatry*, 167(6), 694–698.
- Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin*, 133, 1–24.
- Bar-Haim, Y., Morag, I., & Glickman, S. (2011). Training anxious children to disengage attention

- from threat: A randomized controlled trial. *Journal of Child Psychology & Psychiatry*, 52, 861–869. doi:10.1111/j.1469-7610.2011.02368.x.
- Barker, T. V., Reeb-Sutherland, B. C., & Fox, N. A. (2014). Individual differences in fear potentiated startle in behaviorally inhibited children. *Developmental Psychobiology*, 56(1), 133–141.
- Barkow, J., Cosmides, L., & Tooby, J. (Eds.) (1992). *The adapted mind: Evolutionary psychology and the generation of culture*. New York: Oxford University Press.
- Barlow, D. H. (2000). Unraveling the mysteries of anxiety and its disorders from the perspective of emotion theory. *American Psychologist*, 55, 1247–1263.
- Barlow, D. H., Allen, L. B., & Choate, M. L. (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy*, 35(2), 205–230.
- Barlow, D. H., Ellard, K. K., Sauer-Zavala, S., Bullis, J. R., & Carl, J. R. (2014). The origins of neuroticism. *Perspectives on Psychological Science*, 9(5), 481–496.
- Barlow, D. H., Sauer-Zavala, S., Carl, J. R., Bullis, J. R., & Ellard, K. K. (2014). The nature, diagnosis, and treatment of neuroticism: Back to the future. *Clinical Psychological Science*, 2(3), 344–365.
- Barlow, D. H., Farchione, T. J., Bullis, J. R., Gallagher, M. W., Murray-Latin, H., Sauer-Zavala, S., . . . Cassiello-Robbins, C. (2017). The unified protocol for transdiagnostic treatment of emotional disorders compared with diagnosis-specific protocols for anxiety disorders: A randomized clinical trial. *JAMA Psychiatry*, 74, 875–884.
- Barnes, G. M., Hoffman, J. H., Welte, J. W., Farrell, M. P., & Dintcheff, B. A. (2007). Adolescents' time use: Effects of substance use, delinquency and sexual activity. *Journal of Youth & Adolescence*, 36, 697–710.
- Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a “theory of mind”? *Cognition*, 21, 37–46.
- Baron-Cohen, S., Wheelwright, S., & Jolliffe, T. (1997). Is there a “language of the eyes”? Evidence from normal adults, and adults with autism or Asperger syndrome. *Visual Cognition*, 4, 311–331.
- Baron-Cohen, S., Wheelwright, S., Hill, J., Raste, Y., & Plumb, I. (2001). The “reading the mind in the eyes” test revised version: A study with normal adults, and adults with Asperger syndrome or high-functioning autism. *Journal of Child Psychology & Psychiatry*, 42, 241–251.
- Barr, C. L., & Kleck, R. E. (1995). Self-perception of the intensity of facial expressions of emotion - Do we know what we show. *Journal of Personality & Social Psychology*, 68, 608–618.
- Barracough, D. J., Conroy, M. L., & Lee, D. (2004). Prefrontal cortex and decision making in a mixed-strategy game. *Nature Neuroscience*, 7(4), 404–410. doi:10.1038/nn1209.
- Barrash, J., Tranel, D., & Anderson, S. (1994). Assessment of dramatic personality changes after ventromedial frontal lesions. *Journal of Clinical & Experimental Neuropsychology*, 16, 66–78.
- Barrett, L. F. (2006). Are emotions natural kinds? *Perspectives on Psychological Science*, 1(1), 28–58.
- Barrett, L. F. (2006a). Solving the emotion paradox: Categorization and the experience of emotion. *Personality & Social Psychology Review*, 10(1), 20–46.
- Barrett, L. F., Batja, M., Oshsner, K. N., & Gross, J. J. (2007). The Experience of Emotion. *Annual Review of Psychology*, 58, 373–403. doi:10.1146/annurev.psych.58.110405.085709
- Barrett, L. F. (2009). The future of psychology: Connecting mind to brain. *Perspectives on Psychological Science*, 4, 326–339.
- Barrett, L. F. (2009). Variety is the spice of life: A psychological construction approach to understanding variability in emotion. *Cognition & Emotion*, 23(7), 1284–1306.
- Barrett, L. F. (2011). Was Darwin wrong about emotional expressions? *Current Directions in Psychological Science*, 20(6), 400–406.
- Barrett, L. F. (2012). Emotions are real. *Emotion*, 12(3), 413–429.
- Barrett, L. F. (2013). Identification of discrete functional subregions of the human periaqueductal gray. *Proceedings of the National Academy of Sciences of the United States of America*, 110(42), 17101–17106.
- Barrett, L. F. (2013). Psychological construction: A Darwinian approach to the science of emotion. *Emotion Review*, 5, 379–389.
- Barrett, L. F. (2014). The Conceptual Act Theory: A precis. *Emotion Review*, 6(4), 292–297.
- Barrett, L. F. (2015). Ten common misconceptions about the psychological construction of emotion. Chapter in L. F. Barrett and J. A. Russell (Eds.), *The Psychological Construction of Emotion* (pp. 45–79). New York: Guilford.
- Barrett, L. F. (2016). Navigating the science of emotion. In H. Meiselman (Ed.), *Emotion measurement* (pp. 31–63). Oxford, England: Elsevier.
- Barrett, L. F. (2017a). Categories and their role in the science of emotion. *Psychological Inquiry*, 28, 20–26.
- Barrett, L. F. (2017b). *How emotions are made: The secret life of the brain*. New York: Houghton-Mifflin-Harcourt.
- Barrett, L. F. (2017c). The theory of constructed emotion: An active inference account of interoception and categorization. *Social Cognitive and Affective Neuroscience*, 12, 1–23. <https://doi.org/10.1093/scan/nsw154>

## 434 REFERENCES

- Barrett, L. F. (2017a). The theory of constructed emotion: An active inference account of interoception and categorization. *Social Cognitive & Affective Neuroscience*, *12*, 1–23.
- Barrett, L. F. (2017b). Functionalism cannot save the classical view of emotion. *Social Cognitive & Affective Neuroscience*, *12*, 34–36.
- Barrett, L. F., & Bar, M. (2009). See it with feeling: Affective predictions during object perception. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, *364*(1521), 1325–1334.
- Barrett, L. F., & Bliss-Moreau, E. (2009). Affect as a psychological primitive. *Advances in Experimental Social Psychology*, *41*, 167–218.
- Barrett, L. F., & Satpute, A. B. (2013). Large-scale brain networks in affective and social neuroscience: Towards an integrative functional architecture of the brain. *Current Opinion in Neurobiology*, *23*(3), 361–372.
- Barrett, L. F., & Satpute, A. B. (2017). Historical pitfalls and new directions in the neuroscience of emotion. *Neuroscience Letters*.
- Barrett, L. F., & Simmons, W. K. (2015). Interoceptive predictions in the brain. *Nature Reviews Neuroscience*, *16*, 419–429.
- Barrett, L. F., Batja, M., Oshsner, K. N., & Gross, J. J. (2007). The experience of emotion. *Annual Review of Psychology*, *58*, 373–403.
- Barrett, L. F., Lewis, M., & Haviland-Jones, J. M. (Eds.). (2016). *Handbook of emotions* (4th ed.). New York: Guilford Press.
- Barrett, L. F., Lindquist, K. A., & Gendron, M. (2007). Language as context for the perception of emotion. *Trends in Cognitive Sciences*, *11*(8), 327–332. doi:10.1016/j.tics.2007.06.003.
- Barrett, L. F., Lindquist, K. A., Bliss-Moreau, E., Duncan, S., Gendron, M., Mize, J., & Brennan, L. (2007). Of mice and men: Natural kinds of emotions in the mammalian brain? A response to Panksepp and Izard. *Perspectives in Psychological Science*, *2*(3), 297–297.
- Barrett, L. F., Mesquita, B., & Gendron, M. (2011). Context in emotion perception. *Current Directions in Psychological Science*, *20*(5), 286–290.
- Barrett, L. F., Mesquita, B., Ochsner, K. N., & Gross, J. J. (2007). The experience of emotion. *Annual Review of Psychology*, *58*, 373–403.
- Barrett, L. F., Ochsner, K. N., & Gross, J. J. (2007). On the automaticity of emotion. *Social Psychology & the Unconscious: The Automaticity of Higher Mental Processes*, *173*, 217.
- Barrett, L. F., Tugade, M. M., & Engle, R. W. (2004). Individual differences in working memory capacity and dual-process theories of the mind. *Psychological Bulletin*, *130*, 553–573.
- Barrett, L. F., Wilson-Mendenhall, C. D., & Barsalou, L. W. (2015). The conceptual act theory: A road map. Chapter in L. F. Barrett and J. A. Russell (Eds.), *The psychological construction of emotion* (pp. 83–110). New York: Guilford.
- Barron, H. C., Dolan, R. J., & Behrens, T. E. (2013). Online evaluation of novel choices by simultaneous representation of multiple memories. *Nature Neuroscience*, *16*(10), 1492–1498.
- Barsade, S. G., & Gibson, D. E. (2012). Group affect: Its influence on individual and group outcomes. *Current Directions in Psychological Science*, *21*(2), 119–123.
- Barsade, S. G., & Knight, A. P. (2015). Group affect. *Annual Review of Organizational Psychology & Organizational Behavior*, *2*, 21–46.
- Barsalou, L. W. (1983). Ad hoc categories. *Memory & Cognition*, *11*, 211–227.
- Barsalou, L. W. (2003). Situated simulation in the human conceptual system. *Language and Cognitive Processes*, *18*, 513–562.
- Barsalou, L. W. (2008). Grounding cognition. *Annual Review of Psychology*, *59*, 617–645.
- Barsalou, L. W. (2012). The human conceptual system. In M. Spivey, M. Joannisse, & K. McRae (Eds.), *The Cambridge handbook of psycholinguistics* (pp. 239–258). Cambridge, UK: Cambridge University Press.
- Barsalou, L. W., Simmons, W. K., Barbey, A. K., & Wilson, C. D. (2003). Grounding conceptual knowledge in modality-specific systems. *Trends in Cognitive Sciences*, *7*, 84–91.
- Bartal, I. B. A., Decety, J., & Mason, P. (2011). Empathy and pro-social behavior in rats. *Science*, *334*(6061), 1427–1430.
- Bartlett, M. Y., & DeSteno, D. (2006). Gratitude and pro-social behavior: Helping when it costs you. *Psychological Science*, *17*(4), 319–325.
- Bartra, O., McGuire, J. T., & Kable, J. W. (2013). The valuation system: A coordinate-based meta-analysis of BOLD fMRI experiments examining neural correlates of subjective value. *NeuroImage*, *76*, 412–427.
- Basbaum, A. I., Bautista, D. M., Scherrer, G., & Julius, D. (2009). Cellular and molecular mechanisms of pain. *Cell*, *139*, 267–284.
- Basser, P. J., Mattiello, J., & LeBihan, D. (1994). MR diffusion tensor spectroscopy and imaging. *Biophysical Journal*, *66*, 259–267.
- Bassi, A., Colacito, R., & Fulghieri, P. (2013). “O sole mio”: An experimental analysis of weather and risk attitudes in financial decisions. *Review of Financial Studies* *26*(7), 1824–1852.
- Bastiaansen, J. A., Servaas, M. N., Marsman, J. B. C., Ormel, J., Nolte, I. M., Riese, H., & Aleman, A. (2014). Filling the gap: Relationship between

- the serotonin-transporter-linked polymorphic region and amygdala activation. *Psychological Science*, 25(11), 2058–2066.
- Bastian, B., Jetten, J., & Ferris, L. J. (2014). Pain as social glue: Shared pain increases cooperation. *Psychological Science*, 25(11), 2079–2085. doi:10.1177/0956797614545886.
- Bastos, A. M., Usrey, W. M., Adams, R. A., Mangun, G. R., Fries, P., & Friston, K. J. (2012). Canonical microcircuits for predictive coding. *Neuron*, 76(4), 695–711.
- Bates, J. E., Schermerhorn, A. C., & Goodnight, J. A. (2010). Temperament and personality through the lifespan. In R. M. Lerner, M. E. Lamb, & A. M. Freund (Eds.), *The handbook of life-span development: Vol. 2. Social and emotional development* (pp. 208–253). Hoboken, NJ: Wiley.
- Bates, J. E., Schermerhorn, A. C., & Petersen, I. T. (2012). Temperament and parenting in developmental perspective. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 425–441). New York: Guilford.
- Bateson, P., & Laland, K. N. (2013). Tinbergen's four questions: An appreciation and an update. *Trends in Ecology & Evolution*, 28, 712–718.
- Bateson, P., Barker, D., Clutton-Brock, T., Deb, D., D'Udine, B., Foley, R. A., . . . Lahr, M. M. (2004). Developmental plasticity and human health. *Nature*, 430(6998), 419–421.
- Batson, C. D. (2009). These things called empathy: Eight related but distinct phenomena. In *The social neuroscience of empathy* (pp. 3–16). Boston, MA: The MIT Press. doi:10.7551/mitpress/9780262012973.003.0002.
- Battigalli, P., & Dufwenberg, M. (2007). Guilt in games. *American Economic Review*, 97(2), 170–176.
- Battigalli, P., & Dufwenberg, M. (2009). Dynamic psychological games. *Journal of Economic Theory*, 144(1), 1–35. doi:10.1016/J.Jet.2008.01.004. PubMed PMID: ISI:000262945700001.
- Baucom, D. H., Belus, J. M., Adelman, C. B., Fischer, M. S., & Paprocki, C. (2014). Couple-based interventions for psychopathology: A renewed direction for the field. *Family Process*, 53, 445–461.
- Bauer, P. J., Stennes, L., & Haight, J. C. (2003). Representations of the inner self in autobiography. *Memory*, 11, 27–42.
- Baumann, J., & DeSteno, D. (2010). Emotion guided threat detection: Expecting guns where there are none. *Journal of Personality & Social Psychology*, 99(4), 595–610.
- Baumann, J., & DeSteno, D. (2012). Context explains divergent effects of anger on risk taking. *Emotion*, 12(6), 1196–1199.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529. doi:10.1037/0033-2909.117.3.497.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, 115(2), 243–267.
- Baumeister, R. F., Stillwell, A. M., & Wotman, S. R. (1990). Victim and perpetrator accounts of interpersonal conflict: Autobiographical narratives about anger. *Journal of Personality & Social Psychology*, 59(5), 994.
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2006). Emotional influences on decision making. In J. Forgas (Ed.), *Affect in social thinking and behavior* (pp. 143–159). New York: Cambridge.
- Baumeister, R. F., Vohs, K. D., DeWall, C. N., & Zhang, L. (2007). How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personality & Social Psychology Review*, 11(2), 167–203.
- Baumgartner, T., Heinrichs, M., Vonlanthen, A., Fischbacher, U., & Fehr, E. (2008). Oxytocin shapes the neural circuitry of trust and trust adaptation in humans. *Neuron*, 58, 639–650.
- Bavelier, D., Levi, D. M., Li, R. W., Dan, Y., & Hensch, T. K. (2010). Removing brakes on adult brain plasticity: From molecular to behavioral interventions. *Journal of Neuroscience*, 30(45), 14964–14971.
- Baxter, M. G., Parker, A., Lindner, C. C., Izquierdo, A. D., & Murray, E. A. (2000). Control of response selection by reinforcer value requires interaction of amygdala and orbital prefrontal cortex. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 20(11), 4311–4319.
- Beaver, J. D., Mogg, K., & Bradley, B. P. (2005). Emotional conditioning to masked stimuli and modulation of visuospatial attention. *Emotion*, 5(1), 67–79.
- Bechara, A., & Damasio, A. R. (2005). The somatic marker hypothesis: A neural theory of economic decision. *Games & Economic Behavior*, 52(2), 336–372.
- Bechara, A., & Martin, E. M. (2004). Impaired decision-making related to working memory deficits in individuals with substance addictions. *Neuropsychology*, 18(1), 152–162. doi:10.1037/0894-4105.18.1.152.
- Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition*, 50(1), 7–15.
- Bechara, A., Damasio, H., & Damasio, A. R. (2000). *Emotion*, decision making and the orbitofrontal cortex. *Cerebral Cortex*, 10(3), 295–307.
- Bechara, A., Damasio, H., Damasio, A. R., & Lee, G. P. (1999). Different contributions of the human

## 436 REFERENCES

- amygdala and ventromedial prefrontal cortex to decision-making. *Journal of Neuroscience*, 19(13), 5473–5481. PubMed PMID: 10377356.
- Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1997). Deciding advantageously before knowing the advantageous strategy. *Science*, 275(5304), 1293–1295.
- Bechara, A., Tranel, D., Damasio, H., & Damasio, A. R. (1996). Failure to respond autonomically to anticipated future outcomes following damage to prefrontal cortex. *Cerebral Cortex*, 6(2), 215–225.
- Bechtel, W., & Richardson, R. C. (2010). *Discovering complexity: Decomposition and localization as strategies in scientific research* (2nd ed.). Cambridge, MA: MIT Press.
- Beck, A. T. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- Beck, D. M., Rees, G., Frith, C. D., & Lavie, N. (2001). Neural correlates of change detection and change blindness. *Nature Neuroscience*, 4, 645–650.
- Becker, D. V., Kenrick, D. T., Neuberg, S. L., Blackwell, K. C., & Smith, D. M. (2007). The confounded nature of angry men and happy women. *Journal of Personality & Social Psychology*, 92, 179–190.
- Becker, M. W. (2009). Panic search: Fear produces efficient visual search for nonthreatening objects. *Psychological Science*, 20, 435–437.
- Beckes, L., & Coan, J. A. (2011). Social baseline theory: The role of social proximity in emotion and economy of action. *Social & Personality Psychology Compass*, 5, 976–988. doi: 10.1111/j.1751-9004.2011.00400.x.
- Beckes, L., Coan, J. A., & Hasselmo, K. (2013). Familiarity promotes the blurring of self and other in the neural representation of threat. *Social Cognitive & Affective Neuroscience*, 8(6), 670–677.
- Beedie, C. J., Terry, P. C., & Lane, A. M. (2005). Distinctions between emotion and mood. *Cognition & Emotion*, 19, 847–878.
- Beer, J. S., Heerey, E. A., Keltner, D., Scabini, D., & Knight, R. T. (2003). The regulatory function of self-conscious emotion: Insights from patients with orbitofrontal damage. *Journal of Personality & Social Psychology*, 85, 594–604.
- Beilock, S. L., & Carr, T. H. (2005). When high-powered people fail: Working memory and “choking under pressure” in math. *Psychological Science*, 16, 101–105.
- Belin, P., Zatorre, R. J., Lafaille, P., Ahad, P., & Pike, B. (2000). Voice-selective areas in human auditory cortex. *Nature*, 403(6767), 309–312. doi:10.1038/35002078.
- Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30(5), 961–981.
- Bell, M. A., & Deater-Deckard, K. (2007). Biological systems and the development of self-regulation: Integrating behavior, genetics, and psychophysiology. *Journal of Developmental & Behavioral Pediatrics*, 28, 409–420.
- Bell-Dolan, D. J. (1995). Social cue interpretation of anxious children. *Journal of Clinical Child Psychology*, 24, 1–10.
- Bellebaum, C., & Daum, I. (2004). Effects of age and awareness on eyeblink conditional discrimination learning. *Behavioral Neuroscience*, 118(6), 1157–1165.
- Bellucci, G., Chernyak, S. V., Goodyear, K., Eickhoff, S. B., & Krueger, F. (2017). Neural signatures of trust in reciprocity: A coordinate-based meta-analysis. *Human Brain Mapping*, 38, 1233–1248.
- Bencan, Z., Sledge, D., & Levin, E. D. (2009). Buspirone, chlordiazepoxide and diazepam effects in a zebrafish model of anxiety. *Pharmacology, Biochemistry, & Behavior*, 94(1), 75–80.
- Benedetti, F. (2014). Placebo effects: From the neurobiological paradigm to translational implications. *Neuron*, 84(3), 623–637. doi:10.1016/j.neuron.2014.10.023.
- Benedetti, F., Amanzio, M., Vighetti, S., & Asteggiano, G. (2006). The biochemical and neuroendocrine bases of the hyperalgesic nocebo effect. *Journal of Neuroscience*, 26(46), 12014–12022.
- Benedetti, F., Colloca, L., Torre, E., Lanotte, M., Melcarne, A., Pesare, M., . . . Lopiano, L. (2004). Placebo-responsive Parkinson patients show decreased activity in single neurons of subthalamic nucleus. *Nature Neuroscience*, 7(6), 587–588.
- Benedetti, F., Lanotte, M., Lopiano, L., & Colloca, L. (2007). When words are painful: Unraveling the mechanisms of the nocebo effect. *Neuroscience*, 147(2), 260–271. doi:10.1016/j.neuroscience.2007.02.020.
- Benedetti, F., Pollo, A., Lopiano, L., Lanotte, M., Vighetti, S., & Rainero, I. (2003). Conscious expectation and unconscious conditioning in analgesic, motor, and hormonal placebo/nocebo responses. *The Journal of Neuroscience*, 23(10), 4315–4323.
- Bentley, K. H., Boettcher, H., Bullis, J. R., Carl, J. R., Conklin, L. R., Sauer-Zavala, S., . . . Barlow, D. H. (2017). Development of a single-session, transdiagnostic preventive intervention for young adults at risk for emotional disorders. *Behavior Modification*, 145445517734354.
- Bentin, S., Allison, T., Puce, A., Perez, E., & McCarthy, G. (1996). Electrophysiological studies of face perception in humans. *Journal of Cognitive Neuroscience*, 8(6), 551–565. doi:10.1162/jocn.1996.8.6.551.
- Berenbaum, H., Raghavan, C., Le, H. N., Vernon, L. L., & Gomez, J. J. (2003). A taxonomy of emotional disturbances. *Clinical Psychology: Science & Practice*, 10(2), 206–226.

- Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games & Economic Behavior*, *10*, 122–142.
- Berger, M., Gray, J. A., & Roth, B. L. (2009). The expanded biology of serotonin. *Annual Review of Medicine*, *60*, 355–366. <https://doi.org/10.1146/annurev.med.60.042307.110802>.
- Berggren, N., & Derakshan, N. (2013). Blinded by fear? Prior exposure to fearful faces enhances attentional processing of task-irrelevant stimuli. *Quarterly Journal of Experimental Psychology*, *66*, 2204–2218.
- Berggren, N., & Derakshan, N. (2014). Inhibitory deficits in trait anxiety: Increased stimulus-based or response-based interference? *Psychonomic Bulletin & Review*, *21*, 1339–1345.
- Berggren, N., Blonievsky, T., & Derakshan, N. (2015). Enhanced visual detection in trait anxiety. *Emotion*, *15*(4), 477–483.
- Berggren, N., Koster, E. W. H., & Derakshan, N. (2012). The effect of cognitive load in emotional attention and trait anxiety: An eye movement study. *Journal of Cognitive Psychology*, *24*, 79–91.
- Berggren, N., Richards, A., Taylor, J., & Derakshan, N. (2013). Affective attention under cognitive load: Reduced emotional biases but emergent anxiety-related costs to inhibitory control. *Frontiers in Human Neuroscience*, *7*, 188.
- Bergsieker, H. B., Leslie, L. M., Constantine, V. S., & Fiske, S. T. (2012). Stereotyping by omission: Eliminate the negative, accentuate the positive. *Journal of Personality & Social Psychology*, *102*, 1214–1238.
- Berkel, C., Knight, G. P., Zeiders, K. H., Tein, J. Y., Roosa, M. W., Gonzales, N. A., & Saenz, D. (2010). Discrimination and adjustment for Mexican American adolescents: A prospective examination of the benefits of culturally-related values. *Journal of Research on Adolescence*, *20*, 893–915. doi:10.1111/j.1532-7795.2010.00668.x.
- Berkman, E. T., & Falk, E. B. (2013). Beyond brain mapping: Using neural measures to predict real-world outcomes. *Current Directions in Psychological Science*, *22*, 45–50.
- Berkowitz, L. (1999). Anger. In T. Dalgleish & M. J. Power (Eds.), *Handbook of cognition and emotion* (pp. 411–428). New York: John Wiley & Sons.
- Berman, M. G., Nee, D. E., Casement, M., Kim, H. S., Deldin, P., Kross, E., . . . Joormann, J. (2011). Neural and behavioral effects of interference resolution in depression and rumination. *Cognitive, Affective, & Behavioral Neuroscience*, *11*(1), 85–96. doi:10.3758/s13415-010-0014-x
- Bermejo, B. G., Mateos, P. M., & Sánchez-Mateos, J. D. (2014). The emotional experience of people with intellectual disability: An analysis using the International Affective Pictures System. *American Journal on Intellectual & Developmental Disabilities*, *119*, 371–384. doi:10.1352/1944-7558-119.4.371.
- Bermond, B., Nieuwenhuysedr, B., Fasotti, L., & Schuerman, J. (1991). Spinal cord lesions, peripheral feedback, and intensities of emotional feelings. *Cognition & Emotion*, *5*(3), 201–220.
- Bernard, C. E. (1865). *Introduction à l'étude de la médecine expérimentale*. Paris: J. B. Baillere et fils.
- Berns, G. S., & Moore, S. E. (2012). A neural predictor of cultural popularity. *Journal of Consumer Psychology*, *22*(1), 154–160.
- Berntson, G. G., & Cacioppo, J. T. (2000). From homeostasis to alldynamic regulation. *Handbook of Psychophysiology*, *2*, 459–481.
- Berntson, G. G., & Micco, D. J. (1976). Organization of brainstem behavioral systems. *Brain Research Bulletin*, *1*(5), 471–483.
- Berridge, C. W., & Waterhouse, B. D. (2003). The locus coeruleus-noradrenergic system: Modulation of behavioral state and state-dependent cognitive processes. *Brain Research Reviews*, *42*(1), 33–84.
- Berridge, K. C., & Grill, H. J. (1984). Isohedonic tastes support a two-dimensional hypothesis of palatability. *Appetite*, *5*(3), 221–231.
- Berridge, K. C., & Kringelbach, M. L. (2013). Neuroscience of affect: Brain mechanisms of pleasure and displeasure. *Current Opinion in Neurobiology*, *23*(3), 294–303.
- Berridge, K. C., & Kringelbach, M. L. (2015). Pleasure systems in the brain. *Neuron*, *86*, 646–664.
- Berridge, K. C., & Robinson, T. E. (1998). What is the role of dopamine in reward: Hedonic impact, reward learning, or incentive salience? *Brain Research Reviews*, *28*(3), 309–369.
- Berridge, K. C., & Robinson, T. E. (2011). Drug addiction as incentive sensitization. In J. Poland & G. Graham (Eds.), *Addiction and responsibility* (pp. 21–54). Cambridge, MA.: MIT Press.
- Berridge, K. C., & Robinson, T. E. (2016). Liking, wanting, and the incentive-sensitization theory of addiction. *American Psychologist*, *71*, 670–679.
- Berridge, K. C., & Valenstein, E. S. (1991). What psychological process mediates feeding evoked by electrical stimulation of the lateral hypothalamus? *Behavioral Neuroscience*, *105*(1), 3–14.
- Berridge, K. C., Robinson, T. E., & Aldridge, J. W. (2009). Dissecting components of reward: “liking,” “wanting,” and learning. *Current Opinion in Pharmacology*, *9*, 65–73.
- Berridge, K. C., Venier, I. L., & Robinson, T. E. (1989). Taste reactivity analysis of 6-hydroxydopamine-induced aphagia: Implications for arousal and anhedonia hypotheses of dopamine function. *Behavioral Neuroscience*, *103*(1), 36–45.

## 438 REFERENCES

- Berry, D. S., Willingham, J. K., & Thayer, C. A. (2000). Affect and personality as predictors of conflict and closeness in young adults' friendships. *Journal of Research in Personality, 34*, 84–107.
- Berthoz, S., Armony, J. L., Blair, R. J. R., & Dolan, R. J. (2002). An fMRI study of intentional and unintentional (embarrassing) violations of social norms. *Brain, 125*, 1696–1708.
- Bertini, C., Cecere, R., & Làdavas, E. (2013). I am blind, but I “see” fear. *Cortex, 49*, 985–993.
- Besharati, S., Forkel, S. J., Kopelman, M., Solms, M., Jenkinson, P. M., & Fotopoulou, A. (2014). The affective modulation of motor awareness in anosognosia for hemiplegia: Behavioural and lesion evidence. *Cortex, 61*, 127–140.
- Bessou, P., & Perl, E. R. (1969). Response of cutaneous sensory units with unmyelinated fibers to noxious stimuli. *Journal of Neurophysiology, 32*, 1025–1043.
- Beyeler, A., Chang, C.-J., Silverstre, M., Leveque, C., Namburi, P., Wildes, C. P., & Tye, K. M. (2018). Organization of valence-encoding and projection-defined neurons in the basolateral amygdala. *Cell Reports, 22*, 905–918.
- Bezo, B., & Maggi, S. (2015). Living in “survival mode:” Intergenerational transmission of trauma from the Holodomor genocide of 1932–1933 in Ukraine. *Social Science & Medicine, 134*, 87–94. doi:10.1016/j.socscimed.2015.04.009.
- Bhatt, M. A., Lohrenz, T., Camerer, C. F., & Montague, P. R. (2012). Distinct contributions of the amygdala and parahippocampal gyrus to suspicion in a repeated bargaining game. *Proceedings of the National Academy of Sciences of the United States of America, 109*, 8728–8733.
- Bickart, K. C., Hollenbeck, M. C., Barrett, L. F., & Dickerson, B. C. (2012). Intrinsic amygdala-cortical functional connectivity predicts social network size in humans. *Journal of Neuroscience, 32*, 14729–14741.
- Biehl, M., Matsumoto, D., Ekman, P., Hearn, V., Heider, K., Kudoh, T., & Ton, V. (1997). Matsumoto and Ekman's Japanese and Caucasian Facial Expressions of Emotion (JACFEE): Reliability data and cross-national differences. *Journal of Nonverbal Behavior, 21*, 3–21.
- Bijleveld, E., Custers, R., & Aarts, H. (2010). Unconscious reward cues increase invested effort, but do not change speed—accuracy tradeoffs. *Cognition, 115*(2), 330–335. doi:10.1016/j.cognition.2009.12.012.
- Bilbo, S. D., & Schwarz, J. M. (2012). The immune system and developmental programming of brain and behavior. *Frontiers in Neuroendocrinology, 33*(3), 267–286. http://doi.org/10.1016/j.yfrne.2012.08.006.
- Bilbo, S. D., Barrientos, R. M., Eads, A. S., Northcutt, A., Watkins, L. R., Rudy, J. W., & Maier, S. F. (2008). Early-life infection leads to altered BDNF and IL-1 $\beta$  mRNA expression in rat hippocampus following learning in adulthood. *Brain, Behavior, & Immunity, 22*(4), 451–455. http://doi.org/10.1016/j.bbi.2007.10.003.
- Binder, J. R., Desai, R. H., W. W. Graves & Conant, L. L. (2009). Where is the semantic system? A critical review and meta-analysis of 120 functional neuroimaging studies. *Cerebral Cortex, 19*(12), 2767–2796.
- Bird, A. (2007). Perceptions of epigenetics. *Nature, 447*(7143), 396–398.
- Bird, G., Silani, G., Brindley, R., White, S., Frith, U., & Singer, T. (2010). Empathic brain responses in insula are modulated by levels of alexithymia but not autism. *Brain: A Journal of Neurology, 133*(5), 1515–1525. http://doi.org/10.1093/brain/awq060.
- Birditt, K. S., & Fingerma, K. L. (2003). Age and gender differences in adults' descriptions of emotional reactions to interpersonal problems. *Journals of Gerontology: Series B: Psychological Sciences & Social Sciences, 58*(4), 237–245.
- Birditt, K. S., Fingerma, K. L., & Almeida, D. M. (2005). Age differences in exposure and reactions to interpersonal tensions: A daily diary study. *Psychology & Aging, 20*(2), 330–340.
- Birn, R. M., Diamond, J. B., Smith, M. A., & Bandettini, P. A. (2006). Separating respiratory-variation-related fluctuations from neuronal-activity-related fluctuations in fMRI. *NeuroImage, 31*(4), 1536–1548.
- Birn, R. M., Shackman, A. J., Oler, J. A., Williams, L. E., McFarlin, D. R., Rogers, G. M., . . . Davidson, R. J. (2014). Evolutionarily conserved prefrontal-amygdala dysfunction in early-life anxiety. *Molecular Psychiatry, 19*(8), 915–922.
- Bishop, S. (2007). Neurocognitive mechanisms of anxiety: An integrative account. *Trends in Cognitive Sciences, 11*(7), 307–316.
- Bishop, S. J. (2008). Trait anxiety and impoverished prefrontal control of attention. *Nature Neuroscience, 12*(1), 92–98. http://doi.org/10.1038/nn.2242.
- Bishop, S. J., Duncan, J., & Lawrence, A. D. (2004). State anxiety modulation of the amygdala response to unattended threat-related stimuli. *The Journal of Neuroscience, 24*, 10364–10368.
- Bissière, S., Humeau, Y., & Luthi, A. (2003). Dopamine gates LTP induction in lateral amygdala by suppressing feedforward inhibition. *Nature Neuroscience, 6*, 587–592.
- Bjork, J. M., Knutson, B., Fong, G. W., Caggiano, D. M., Bennett, S. M., & Hommer, D. W. (2004). Incentive-elicited brain activation in adolescents: Similarities and differences from young adults. *Journal of Neuroscience, 24*(8), 1793–1802.

- Bjork, J. M., Smith, A. R., Chen, G., & Hommer, D. W. (2010). Adolescents, adults and rewards: Comparing motivational neurocircuitry recruitment using fMRI. *PLoS One*, *5*(7), e11440. doi:10.1371/journal.pone.0011440.
- Black, P. H., & Garbutt, L. D. (2002). Stress, inflammation and cardiovascular disease. *Journal of Psychosomatic Research*, *52*(1), 1–23. http://doi.org/10.1016/S0022-3999(01)00302-6.
- Blackford, J. U. (2014). Structural and functional bases of inhibited temperament. *Social Cognitive & Affective Neuroscience*, *9*, 2049–2058.
- Blackford, J. U., & Pine, D. S. (2012). Neural substrates of childhood anxiety disorders: a review of neuroimaging findings. *Child and Adolescent Psychiatric Clinics of North America*, *21*, 501–525.
- Blackford, J. U., Allen, A. H., Cowan, R. L., & Avery, S. N. (2013). Amygdala and hippocampus fail to habituate to faces in individuals with an inhibited temperament. *Social Cognitive & Affective Neuroscience*, *8*, 143–150.
- Blackford, J. U., Avery, S. N., Cowan, R. L., Shelton, R. C., & Zald, D. H. (2011). Sustained amygdala response to both novel and newly familiar faces characterizes inhibited temperament. *Social Cognitive & Affective Neuroscience*, *6*, 621–629.
- Blackford, J. U., Avery, S. N., Shelton, R. C., & Zald, D. H. (2009). Amygdala temporal dynamics: Temperamental differences in the timing of amygdala response to familiar and novel faces. *BMC Neuroscience*, *10*, 145.
- Blackford, J. U., Clauss, J. A., Avery, S. N., Cowan, R. L., Benningfield, M. M., & Vanderklok, R. M. (2014). Amygdala-cingulate intrinsic connectivity is associated with degree of social inhibition. *Biological Psychology*, *99*, 15–25.
- Blair, B. L., Perry, N. B., O'Brien, M., Calkins, S. D., Keane, S. P., & Shanahan, L. (2014). The indirect effects of maternal emotion socialization on friendship quality in middle childhood. *Developmental Psychology*, *50*, 566–576. doi:10.1037/a0033532.
- Blair, R. J. (2001). Neurocognitive models of aggression, the antisocial personality disorders, and psychopathy. *Journal of Neurology, Neurosurgery, & Psychiatry*, *71*, 727–731.
- Blair, R. J. R. (2007). The amygdala and ventromedial prefrontal cortex in morality and psychopathy. *Trends in Cognitive Sciences*, *11*(9), 387–392.
- Blairy, S., Herrera, P., & Hess, U. (1999). Mimicry and the judgment of emotional facial expressions. *Journal of Nonverbal Behavior*, *23*, 5–41.
- Blakemore, S. J., & Decety, J. (2001). From the perception of action to the understanding of intention. *Nature Reviews Neuroscience*, *2*(8), 561–567. https://doi.org/10.1038/35086023.
- Blakemore, S. J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annual Review of Psychology*, *65*, 187–207.
- Blanchard, D. C., Griebel, G., & Blanchard, R. J. (2001). Mouse defensive behaviors: Pharmacological and behavioral assays for anxiety and panic. *Neuroscience & Biobehavioral Reviews*, *25*, 205–218.
- Blanchard, R. J., & Blanchard, D. C. (1969). Passive and active reactions to fear-eliciting stimuli. *Journal of Comparative & Physiological Psychology*, *68*, 129–135.
- Blanchard, R. J., & Blanchard, D. C. (1989). Attack and defense in rodents as ethoexperimental models for the study of emotion. *Progressive Neuro-Psychopharmacological & Biological Psychiatry*, *13*, 3–14.
- Blanchard-Fields, F. (2007). Everyday problem solving and emotion an adult developmental perspective. *Current Directions in Psychological Science*, *16*, 26–31.
- Blanchette, I. (2006). Snakes, spiders, guns, and syringes: How specific are evolutionary constraints on the detection of threatening stimuli? *Quarterly Journal of Experimental Psychology (Colchester)*, *59*(8), 1484–1504.
- Blanchflower, D. G., & Oswald, A. J. (2008). Is well-being U-shaped over the life cycle? *Social Science & Medicine*, *66*(8), 1733–1749. doi:10.1016/j.socscimed.2008.01.030.
- Blaney, P. H. (1986). Affect and memory: A review. *Psychological Bulletin*, *99*, 229–246.
- Blaser, R. E., Chadwick, L., & McGinnis, G. C. (2010). Behavioral measures of anxiety in zebrafish (*Danio rerio*). *Behavioural Brain Research*, *208*(1), 56–62. https://doi.org/10.1016/j.bbr.2009.11.009.
- Blasi, Z. D., Harkness, E., Ernst, E., Georgiou, A., & Kleijnen, J. (2001). Influence of context effects on health outcomes: A systematic review. *The Lancet*, *357*(9258), 757–762. doi:10.1016/S0140-6736(00)04169-6.
- Blazer, D. G., & Hybels, C. F. (2014). Depression in later life: Epidemiology, assessment, impact, and treatment. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (3rd ed., pp. 429–447). New York: Guilford Press.
- Bleidorn, W., Hopwood, C. J., & Lucas, R. E. (in press). Life events and personality trait change. *Journal of Personality*.
- Block, J. (1995). A contrarian view of the five-factor approach to personality description. *Psychological Bulletin*, *117*, 187–215.
- Block, N. (2005). Two neural correlates of consciousness. *Trends in Cognitive Sciences*, *9*(2), 46–52. doi:10.1016/j.tics.2004.12.006.
- Bloom, H. (2000). *How to read and why*. New York: Scribner.



## 440 REFERENCES

- Bloom, P. (2000). *How children learn the meanings of words*. Cambridge, MA: MIT Press.
- Blote, A. W., Kint, M. J., Miers, A. C., & Westenberg, P. M. (2009). The relation between public speaking anxiety and social anxiety: A review. *Journal of Anxiety Disorders*, 23(3), 305–313. doi:10.1016/j.janxdis.2008.11.007.
- Bocanegra, B. R., & Zeelenberg, R. (2011). Emotional cues enhance the attentional effects on spatial and temporal resolution. *Psychon Bull Rev*, 18(6), 1071–1076.
- Bock, J., Wainstock, T., Braun, K., & Segal, M. (2015). Stress in utero: Prenatal programming of brain plasticity and cognition. *Biological Psychiatry*, 78(5), 315–326.
- Bodenhausen, G. V. (1993). Emotions, arousal, and stereotypic judgments: A heuristic model of affect and stereotyping. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 13–37). San Diego: Academic Press.
- Boes, A. D., Bechara, A., Tranel, D., Anderson, S. W., Richman, L., & Nopoulos, P. (2009). Right ventromedial prefrontal cortex: A neuroanatomical correlate of impulse control in boys. *Social Cognitive and Affective Neuroscience*, 4, 1–9.
- Boes, A. D., Grafft, A. H., Joshi, C., Chuang, N. A., Nopoulos, P., & Anderson, S. W. (2011). Behavioral effects of congenital ventromedial prefrontal cortex malformation. *BMC Neurology*, 11(1), 151.
- Boileau, I., Payer, D., Chugani, B., Lobo, D. S. S., Houle, S., Wilson, A. A., . . . Zack, M. (2014). In vivo evidence for greater amphetamine-induced dopamine release in pathological gambling: A positron emission tomography study with [11C]-(+)-PHNO. *Molecular Psychiatry*, 19(12), 1305–1313.
- Boissy, A. (1995). Fear and fearfulness in animals. *Quarterly Review of Biology*, 70, 165–191.
- Bolger, N., & Eckenrode, J. (1991). Social relationships, personality, and anxiety during a major stressful event. *Journal of Personality & Social Psychology*, 61, 440–449.
- Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, 59, 355–386.
- Bonanno, G. A., & Burton, C. L. (2013). Regulatory flexibility: An individual differences perspective on coping and emotion regulation. *Perspectives on Psychological Science*, 8(6), 591–612.
- Bordi, F., & LeDoux, J. (1992). Sensory tuning beyond the sensory system: An initial analysis of auditory response properties of neurons in the lateral amygdaloid nucleus and overlying areas of the striatum. *Journal of Neuroscience*, 12, 2493–2503.
- Borghuis, J., Denissen, J. J., Oberski, D., Sijsma, K., Meeus, W. H., Branje, S., . . . Bleidorn, W. (2017). Big Five personality stability, change, and codevelopment across adolescence and early adulthood. *Journal of Personality & Social Psychology*, 113, 641–657.
- Bornstein, A. M., & Daw, N. D. (2013). Cortical and hippocampal correlates of deliberation during model-based decisions for rewards in humans. *PLoS Computational Biology*, 9(12), E1003387.
- Bornstein, M. H., Hahn, C. S., & Haynes, O. M. (2010). Social competence, externalizing, and internalizing behavioral adjustment from early childhood through early adolescence: Developmental cascades. *Development & Psychopathology*, 22, 717–735. doi: 10.1017/S0954579410000416.
- Bornstein, M. H., Putnick, D. L., Hahn, C.-S., Gartstein, M. A., Auestad, N., & O'Connor, D. L. (2015). Infant temperament: Stability by age, gender, birth order, term status, and socioeconomic status. *Child Development*, 86(3), 844–863.
- Borsboom, D., & Cramer, A. O. (2013). Network analysis: An integrative approach to the structure of psychopathology. *Annual Review of Clinical Psychology*, 9, 91–121.
- Borsook, D., Becerra, L., & Hargreaves, R. (2006). A role for fMRI in optimizing CNS drug development. *Nature Reviews. Drug Discovery*, 5, 411–424.
- Boscarino, J. A., Erlich, P. M., Hoffman, S. N., & Zhang, X. (2012). Higher FKBP5, COMT, CHRNA5, and CRHR1 allele burdens are associated with PTSD and interact with trauma exposure: Implications for neuropsychiatric research and treatment. *Neuropsychiatric Disease & Treatment*, 8, 131–139.
- Botvinick, M. M., Cohen, J. D., & Carter, C. S. (2004). Conflict monitoring and anterior cingulate cortex: An update. *Trends in Cognitive Sciences*, 8(12), 539–546. doi:10.1016/J.Tics.2004.10.003.
- Botvinick, M., Braver, T., Barch, D., Carter, C., & Cohen, J. (2001). Conflict monitoring and cognitive control. *Psychological Review*, 108, 624–652.
- Botvinick, M., Jha, A. P., Bylsma, L. M., Fabian, S. A., Solomon, P. E., & Prkachin, K. M. (2005). Viewing facial expressions of pain engages cortical areas involved in the direct experience of pain. *NeuroImage*, 25(1), 312–319.
- Boucsein, W. (2012). *Electrodermal activity. Techniques in psychophysiology* (2nd ed.). New York: Springer-Verlag.
- Boureau, Y.-L., & Dayan, P. (2011). Opponency revisited: Competition and cooperation between dopamine and serotonin. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 36, 74–97.
- Bouton, M. E., Mineka, S., & Barlow, D. H. (2001). A modern learning theory perspective on the

- etiology of panic disorder. *Psychological Review*, 108(1), 4.
- Bower, G. H., Monteiro, K. P., & Gilligan, S. G. (1978). Emotional mood as a context of learning and recall. *Journal of Verbal Learning & Verbal Behavior*, 17, 573–585.
- Bowlby, J. (1969). *Attachment and loss, Volume I: Attachment*. New York: Basic Books.
- Bowler, J. O., Mackintosh, B., Dunn, B. D., Mathews, A., Dalgleish, T., & Hoppitt, L. (2012). A comparison of cognitive bias modification for interpretation and computerized cognitive behavior therapy: Effects on anxiety, depression, attentional control, and interpretive bias. *Journal of Consulting & Clinical Psychology*, 80(6), 1021–1033.
- Bowles, S. (2012). Warriors, levelers, and the role of conflict in human social evolution. *Science*, 336(6083), 876–879. <https://doi.org/10.1126/science.1217336>.
- Bowling, M., Burch, N., Johanson, M., & Tammelin, O. (2015). Computer science. Heads-up limit hold 'em poker is solved. *Science*, 347(6218), 145–149. doi:10.1126/science.1259433. PubMed PMID: 25574016.
- AQ: Please update reference Bowman, L. C., Degnan, K. A., Henderon, H., Sussman, A., & Fox, N. A. (in preparation). *Temperament and social-cognitive contributions to the development of children's social competence*.
- Boyce, W. T., Quas, J. A., Abbey, A., Smider, N. A., Essex, M. J., & Kupfer, D. J. (2001). Autonomic reactivity and psychopathology in middle childhood. *British Journal of Psychiatry*, 179, 144–150.
- Boyle, P. A., Buchman, A. S., Barnes, L. L., & Bennett, D. A. (2010). Effect of a purpose in life on risk of incident Alzheimer disease and mild cognitive impairment in community-dwelling older persons. *Archives of General Psychiatry*, 67(3), 304–310. PubMed PMID: 20194831. Pubmed Central PMCID: 2897172. Epub 2010/03/03. eng.
- Bozeat, S., Gregory, C. A., Ralph, M. A., & Hodges, J. R. (2000). Which neuropsychiatric and behavioural features distinguish frontal and temporal variants of frontotemporal dementia from Alzheimer's disease? *Journal of Neurology, Neurosurgery & Psychiatry*, 69, 178–186.
- Braams, B. R., Guroglu, B., de Water, E., Meuwese, R., Koolschijn, P. C., Peper, J. S., & Crone, E. A. (2014). Reward-related neural responses are dependent on the beneficiary. *Social Cognitive & Affective Neuroscience*, 9(7), 1030–1037. doi:10.1093/scan/nst077.
- Braams, B. R., Peters, S., Peper, J. S., Guroglu, B., & Crone, E. A. (2014). Gambling for self, friends, and antagonists: Differential contributions of affective and social brain regions on adolescent reward processing. *NeuroImage*, 100, 281–289. doi:10.1016/j.neuroimage.2014.06.020.
- Bradford, D. E., Shapiro, B. L., & Curtin, J. J. (2013). How bad could it be? Alcohol dampens stress responses to threat of uncertain intensity. *Psychological Science*, 24, 2541–2549.
- Bradford, D. E., Starr, M. J., Shackman, A. J., & Curtin, J. J. (2015). Empirically based comparisons of the reliability and validity of common quantification approaches for eyeblink startle potentiation in humans. *Psychophysiology*, 52, 1669–1681.
- Bradley, M. M. (2000). Emotion and motivation. In J. T. Cacioppo, L. T. Tassinary, & G. Berntson (Eds.), *Handbook of psychophysiology* (pp. 602–642). New York: Cambridge University Press.
- Bradley, M. M. (2009). Natural selective attention: Orienting and emotion. *Psychophysiology*, 46, 1–11.
- Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: The self-assessment manikin and the semantic differential. *Journal of Behavioral Therapy & Experimental Psychiatry*, 25, 49–59.
- Bradley, M. M., & Lang, P. J. (1999a). *International affective digitized sounds (IADS): Stimuli, instruction manual and affective ratings*. Technical Report No. B-2. Gainesville, FL: The Center for Research in Psychophysiology, University of Florida.
- Bradley, M. M., & Lang, P. J. (1999b). *Affective norms for English words (ANEW): Stimuli, instruction manual and affective ratings*. Technical Report No. C-1. Gainesville, FL: The Center for Research in Psychophysiology, University of Florida.
- Bradley, M. M., & Lang, P. J. (2000). Measuring emotion: Behavior, feeling, and physiology. In R. D. Lane & L. Nadel (Eds.), *Cognitive neuroscience of emotion* (pp. 242–276). New York: Oxford University Press.
- Bradley, M. M., & Lang, P. J. (2007). Emotion and motivation. In J. T. Cacioppo, L. G. Tassinary, & G. Berntson (Eds.), *Handbook of psychophysiology* (3rd ed., pp. 581–607). New York: Cambridge University Press.
- Bradley, M. M., & Lang, P. J. (2007). The International Affective Picture System (IAPS) in the study of emotion and attention. In J. A. Coan & J. J. B. Allen (Eds.), *Handbook of emotion elicitation and assessment* (pp. 29–46). New York: Oxford University Press.
- Bradley, M. M., & Lang, P. J. (2007a). *Affective norms for English text (ANET): Affective ratings of text and instruction manual*. Technical Report No. D-1. Gainesville, FL: The Center for Research in Psychophysiology, University of Florida.
- Bradley, M. M., & Lang, P. J. (2007b). The International Affective Picture System (IAPS) in the study of emotion and attention. In J. A. Coan and J. J. B. Allen (Eds.), *Handbook of Emotion Elicitation and Assessment* (pp. 29–46). New York: Oxford University Press.

## 442 REFERENCES

- Bradley, M. M., & Lang, P. J. (2007c). Emotion and motivation. In J. T. Cacioppo, L. G. Tassinary & G. Berntson (Eds.), *Handbook of Psychophysiology* (3rd ed., pp. 581–607). New York: Cambridge University Press.
- Bradley, M. M., Codispoti, M., Cuthbert, B. N., & Lang, P. J. (2001). Emotion and motivation I: Defensive and appetitive reactions in picture processing. *Emotion, 1*, 276–298.
- Bradley, M. M., Keil, A., & Lang, P. J. (2012). Orienting and emotional perception: Facilitation, attenuation and interference. *Frontiers in Psychology, 3*, 00493.
- Bradley, M. M., Miccoli, L., Escrig, M. A., & Lang, P. J. (2008). The pupil as a measure of emotional arousal and autonomic activation. *Psychophysiology, 45*, 602–607.
- Braesicke, K. (2005). Autonomic arousal in an appetitive context in primates: A behavioural and neural analysis. *European Journal of Neuroscience, 21*, 1733–1740.
- Branje, S. J., Hale, W. W. III, Frijns, T., & Meeus, W. H. (2010). Longitudinal associations between perceived parent-child relationship quality and depressive symptoms in adolescence. *Journal of Abnormal Child Psychology, 38*, 751–763. doi:10.1007/s10802-010-9401-6.
- Bransford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning & Verbal Behavior, 11*, 717–726.
- Brazdil, M., Roman, R., Urbanek, T., Chladek, J., Spok, D., Marecek, R., . . . Rektor, I. (2009). Neural correlates of affective picture processing—a depth ERP study. *NeuroImage, 47*(1), 376–383. doi:10.1016/j.neuroimage.2009.03.081.
- Breiter, H. C., Etcoff, N. L., Whalen, P. J., Kennedy, W. A., Rauch, S. L., Buckner, R. L., . . . Rosen, B. R. (1996). Response and habituation of the human amygdala during visual processing of facial expression. *Neuron, 17*(5), 875–887.
- Breland, K., & Breland, M. (1961). The misbehavior of organisms. *American Psychologist, 16*, 681–684.
- Brent, L. J. N., Chang, S. W. C., Gariépy, J.-F., & Platt, M. L. (2014). The neuroethology of friendship. *Annals of the New York Academy of Sciences, 1316*, 1–17. doi:10.1111/nyas.12315.
- Bressler, S. L., & Menon, V. (2010). Large-scale brain networks in cognition: Emerging methods and principles. *Trends in Cognitive Sciences, 14*(6), 277–290.
- Bretherton, I., & Ainsworth, M. D. S. (1974). Responses of one-year-olds to a stranger in a strange situation. In M. Lewis & L. A. Rosenblum (Eds.), *The origin of fear* (pp. 131–164). New York: Wiley.
- Brickman, P., Coates, D., & Janoff-Bulman, R. (1978). Lottery winners and accident victims: Is happiness relative? *Journal of Personality & Social Psychology, 36*(8), 917.
- Brickner, R. M. (1932). An interpretation of frontal lobe function based upon the study of a case of partial bilateral frontal lobectomy. Localization of function in the cerebral cortex. *Proceedings of the Association for Research in Nervous & Mental Disease (Baltimore), 13*, 259–351.
- Bridgett, D. J., Burt, N. M., Edwards, E. S., & Deater-Deckard, K. (2015). Intergenerational transmission of self-regulation: A multidisciplinary review and integrative conceptual framework. *Psychological Bulletin, 141*(3), 602. doi: 10.1037/a0038662.
- Bridgett, D. J., Laake, L. M., Gartstein, M. A., & Dorn, D. (2013). Development of infant positive emotionality: The contribution of maternal characteristics and effects on subsequent parenting. *Infant & Child Development, 22*, 362–382. doi:10.1002/icd.1795.
- Brinkmann, L., Buff, C., Feldker, K., Neumeister, P., Heitmann, C. Y., Hofmann, D., . . . Straube, T. (2018). Inter-individual differences in trait anxiety shape the functional connectivity between the bed nucleus of the stria terminalis and the amygdala during brief threat processing. *NeuroImage, 166*, 110–116.
- Britt, J. P., Benaliouad, F., McDevitt, R. A., Stuber, G. D., Wise, R. A., and Bonci, A. (2012). Synaptic and Behavioral Profile of Multiple Glutamatergic Inputs to the Nucleus Accumbens. *Neuron, 76*, 790–803.
- Broca, P. (1861). Remarques sur le siège de la faculté du langage articulé, suivies d'une observation d'aphémie (perte de la parole). *Bulletin de la Société Anatomique, 6*, 330–357.
- Broca, P. (1878). Anatomic comparée des circonvolutions cérébrales. Le grand lobe limbique et la scissure limbique dans la série des mammifères. *Annual Review of Anthropology, 1*, 456–498.
- Brodal, A. (1981). *Neurological anatomy*. New York: Oxford University Press.
- Brody, L. R., & Hall, J. A. (2000). Gender, emotion, and expression. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (2nd ed., pp. 447–460). New York: Guilford Press.
- Brooker, R. J., Buss, K. A., Lemery-Chalfant, K., Aksan, N., Davidson, R. J., & Goldsmith, H. H. (2013). The development of stranger fear in infancy and toddlerhood: Normative development, individual differences, antecedents, and outcomes. *Developmental Science, 16*, 864–878.
- Brooks, B. R., Crumpacker, D., Fellus, J., Kantor, D., & Kaye, R. E. (2013). PRISM: A novel research tool to assess the prevalence of pseudobulbar affect symptoms across neurological conditions. *PLoS One, 8*, e72232.

- Brooks, J. C., Beckmann, C. F., Miller, K. L., Wise, R. G., Porro, C. A., Tracey, I., & Jenkinson, M. (2008). Physiological noise modelling for spinal functional magnetic resonance imaging studies. *NeuroImage*, 39(2), 680–692.
- Brooks, S. J., Savov, V., Allzén, E., Benedict, C., Fredriksson, R., & Schiöth, H. B. (2012). Exposure to subliminal arousing stimuli induces robust activation in the amygdala, hippocampus, anterior cingulate, insular cortex and primary visual cortex: A systematic meta-analysis of fMRI studies. *NeuroImage*, 59(3), 2962–2973.
- Brookshire, G., & Casasanto, D. (2012). Motivation and motor control: Hemispheric specialization for approach motivation reverses with handedness. *PLoS One*, 7(4), E36036.
- Brosnan, S. F., & de Waal, F. B. M. (2003). Monkeys reject unequal pay. *Nature*, 425, 297–299.
- Brown, A. S., Cohen, P., Harkavy-Friedman, J., Babulas, V., Malaspina, D., Gorman, J. M., & Susser, E. S. (2001). Prenatal rubella, premorbid abnormalities, and adult schizophrenia. *Biological Psychiatry*, 49(6), 473–486.
- Brown, A. S., Hooton, J., Schaefer, C. A., Zhang, H., Petkova, E., Babulas, V., . . . Susser, E. S. (2004). Elevated maternal interleukin-8 levels and risk of schizophrenia in adult offspring. *American Journal of Psychiatry*, 161(5), 889–895.
- Brown, A. S., Vinogradov, S., Kremen, W. S., Poole, J. H., Deicken, R. F., Penner, J. D., . . . Schaefer, C. A. (2009). Prenatal exposure to maternal infection and executive dysfunction in adult schizophrenia. *American Journal of Psychiatry*, 166(6), 683–690.
- Brown, C. M., & Ling, W. (2012). Ethnic-racial socialization has an indirect effect on self-esteem for Asian American emerging adults. *Psychology*, 3, 78–81. doi:10.4236/psych.2012.31013.
- Brown, H., & Friston, K. (2012). Dynamic causal modelling of precision and synaptic gain in visual perception - an EEG study. *NeuroImage* 63(1), 223–231.
- Brown, K. W., Goodman, R., & Inzlicht, M. (2013). Dispositional mindfulness and the attenuation of neural responses to emotional stimuli. *Social Cognitive & Affective Neuroscience*, 8, 93–99.
- Brown, S., & Schäfer, E. (1888). An investigation into the functions of the occipital and temporal lobes of the monkey's brain. *Philosophical Transactions of the Royal Society of London, Series B*, 179, 303–327.
- Bruce, V., & Young, A. (1986). Understanding face recognition. *British Journal of Psychology*, 77, 305–327.
- Bruneau, E. G., & Saxe, R. (2010). Attitudes toward the outgroup are predicted by activity in the precuneus in Arabs and Israelis. *NeuroImage*, 52, 1704–1711.
- Bruner, J. S., & Tagiuri, R. (1954). The perception of people. In G. Lindzey (Ed.), *Handbook of social psychology* (Vol. 2, pp. 634–655). Cambridge, MA: Addison-Wesley Publishing.
- Brunson, J. A., Øverup, C. S., & Mehta, P. D. (2016). A social relations examination of neuroticism and emotional support. *Journal of Research in Personality*, 63, 67–71.
- Brydon, L., Harrison, N., Walker, C., Steptoe, A., & Critchley, H. D. (2008). Peripheral inflammation is associated with altered substantia nigra activity and psychomotor slowing in humans. *Biological Psychiatry*, 63(11), 1022–1029.
- Buck, R. (1984). Nonverbal receiving ability. In R. Buck (Ed.), *The communication of emotion* (pp. 209–242). New York: Guilford Press.
- Buck, R., Losow, J. I., Murphy, M. M., & Costanzo, P. (1992). Social facilitation and inhibition of emotional expression and communication. *Journal of Personality & Social Psychology*, 63(6), 962.
- Buckalew, L. W., & Coffield, K. E. (1982). An investigation of drug expectancy as a function of capsule color and size and preparation form. *Journal of Clinical Psychopharmacology*, 2(4), 245–248.
- Buckholdt, K. E., Parra, G. R., & Jobe-Shields, L. (2014). Intergenerational transmission of emotion dysregulation through parental invalidation of emotions: Implications for adolescent internalizing and externalizing behaviors. *Journal of Child & Family Studies*, 23, 324–332. doi:10.1007/s10826-013-9768-4.
- Buckner, R. L. (2012). The serendipitous discovery of the brain's default network. *NeuroImage*, 62(2), 1137–1145.
- Buckner, R. L. (2013). The brain's default network: Origins and implications for the study of psychosis. *Dialogues in Clinical Neuroscience*, 15(3), 351–358.
- Buhle, J. T., Kober, H., Ochsner, K. N., Mende-Siedlecki, P., Weber, J., Hughes, B. L., . . . Wager, T. D. (2012). Common representation of pain and negative emotion in the midbrain periaqueductal gray. *Social Cognitive & Affective Neuroscience*, 8(6), 609–616.
- Buhle, J. T., Silvers, J. A., Wager, T. D., Lopez, R., Onyemekwu, C., Kober, H., . . . Ochsner, K. N. (2014). Cognitive reappraisal of emotion: A meta-analysis of human neuroimaging studies. *Cerebral Cortex*, 24(11), 2981–2990.
- Buka, S. L., Tsuang, M. T., Torrey, E. F., Klebanoff, M. A., Wagner, R. L., & Yolken, R. H. (2001). Maternal cytokine levels during pregnancy and adult psychosis. *Brain, Behavior, & Immunity*, 15(4), 411–420. http://doi.org/10.1006/brbi.2001.0644.
- Burgess, P. R., & Perl, E. R. (1967). Myelinated afferent fibres responding specifically to noxious

## 444 REFERENCES

- stimulation of the skin. *Journal of Physiology*, *190*, 541–562.
- Burghart, D. R., Glimcher, P. W., & Lazzaro, S. C. (2013). An expected utility maximizer walks into a bar. . . . *Journal of Risk & Uncertainty*, *46* (3), 215–246.
- Burklund, L. J., Craske, M. G., Tayler, S. E., & Lieberman, M. D. (2015). Altered emotion regulation capacity in social phobia as a function of comorbidity. *Social Cognitive & Affective Neuroscience*, *10*, 199–208.
- Burklund, L. J., Creswell, J. D., Irwin, M., & Lieberman, M. D. (2014). The common and distinct neural bases of affect labeling and reappraisal in healthy adults. *Frontiers in Psychology*, *5*, 221.
- Burnett, S., Bault, N., Coricelli, G., & Blakemore, S. J. (2010). Adolescents' heightened risk-seeking in a probabilistic gambling task. *Cognitive Development*, *25*(2), 183–196.
- Burgos-Robles, A., Kimchi, E. Y., Izadmehr, E. M., Porzenheim, M. J., Ramos-Guasp, W. A., Nieh, E. H., . . . Tye, K. M. (2017). Amygdala inputs to prefrontal cortex guide behavior amid conflicting cues of reward and punishment. *Nature Neuroscience*, *20*(6), 824–835. doi:10.1038/nn.4553. Epub 2017 Apr 24.
- Bush, P., & Sejnowski, T. (1996). Inhibition synchronizes sparsely connected cortical neurons within and between columns in realistic models. *Journal of Computational Neuroscience*, *3*, 91–110.
- Bushdid, C., Magnasco, M. O., Vosshall, L. B., & Keller, A. (2014). Humans can discriminate more than 1 trillion olfactory stimuli. *Science*, *343*(6177), 1370–1372. doi:10.1126/science.1249168.
- Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people aggress to improve their mood? Catharsis beliefs, affect regulation opportunity, and aggressive responding. *Journal of Personality & Social Psychology*, *81*(1), 17.
- Buss, K. A. (2011). Which fearful toddlers should we worry about? Context, fear regulation, and anxiety risk. *Developmental Psychology*, *47*, 804–819.
- Buss, K. A., Davis, E. L., Ram, N., & Coccia, M. (in press). Dysregulated fear, social inhibition, and respiratory sinus arrhythmia: A replication and extension. *Child Development*.
- Buttelmann, D., Call, J., & Tomasello, M. (2009). Do great apes use emotional expressions to infer desires?? *Developmental Science*, *12*(5), 688–698. doi:10.1111/j.1467-7687.2008.00802.x.
- Button, K. S., Ioannidis, J. P., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S., & Munafo, M. R. (2013a). Confidence and precision increase with high statistical power. *Nature Reviews Neuroscience*, *14*, 585–586.
- Button, K. S., Ioannidis, J. P., Mokrysz, C., Nosek, B. A., Flint, J., Robinson, E. S., & Munafo, M. R. (2013b). Power failure: Why small sample size undermines the reliability of neuroscience. *Nature Reviews Neuroscience*, *14*, 365–376.
- Bzdok, D., & Meyer-Lindberg, A. (in press). Machine learning for precision psychiatry: Opportunities and challenges. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.
- Cabanac, M. (1971). Physiological role of pleasure. *Science*, *173*(4002), 1103–1107.
- Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin*, *115*, 401–423.
- Cacioppo, J. T., & Cacioppo, S. (2012). The phenotype of loneliness. *The European Journal of Developmental Psychology*, *9*(4), 446–452. doi:10.1080/17405629.2012.690510.
- Cacioppo, J. T., & Hawkley, L. C. (2003). Social isolation and health, with an emphasis on underlying mechanisms. *Perspectives in Biology & Medicine*, *46*(3x), S39–S52. doi:10.1353/pbm.2003.0063.
- Cacioppo, J. T., & Hawkley, L. C. (2009). Perceived social isolation and cognition. *Trends in Cognitive Sciences*, *13*(10), 447–454. doi:10.1016/j.tics.2009.06.005.
- Cacioppo, J. T., & Tassinari, L. G. (1990a). Centenary of William James's Principles of Psychology: From the chaos of mental life to the science of psychology. *Personality & Social Psychology Bulletin*, *16*, 601–611.
- Cacioppo, J. T., & Tassinari, L. G. (1990b). Inferring psychological significance from physiological signals. *American Psychologist*, *45*(1), 16–28.
- Cacioppo, J. T., Berntson, G. G., Larsen, J. T., Poehlmann, K. M., & Ito, T. A. (2000). The psychophysiology of emotion. In R. Lewis & J. M. Haviland-Jones (Eds.), *The handbook of emotion* (2nd ed., pp. 173–191). New York: Guilford.
- Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1997). Beyond bipolar conceptualizations and measures: The case of attitudes and evaluative space. *Personality & Social Psychology Review*, *1*(1), 3–25.
- Cacioppo, J. T., Hawkley, L. C., Kalil, A., Hughes, M. E., Waite, L., & Thisted, R. A. (2008). Happiness and the invisible threads of social connection: The Chicago Health, Aging, and Social Relations Study. In M. Eid & R. J. Larsen (Eds.), *The science of subjective well-being* (pp. 195–219). New York: Guilford Press.
- Cacioppo, S., Grippo, A. J., London, S., Goossens, L., & Cacioppo, J. T. (2015). Loneliness: Clinical import and interventions. *Perspectives in Psychological Science*, *10*, 238–249.

- Cacioppo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C., & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. *Psychology and Aging, 21*(1), 140–151.
- Cahill, L., & McGaugh, J. L. (1998). Mechanisms of emotional arousal and lasting declarative memory. *Trends in Neurosciences, 21*, 294–299.
- Cai, X., & Padoa-Schioppa, C. (2014). Contributions of orbitofrontal and lateral prefrontal cortices to economic choice and the good-to-action transformation. *Neuron, 81*, 1140–1151.
- Cairns, R. B., Leung, M.-C., Buchanan, L., & Cairns, B. D. (1995). Friendships and social networks in childhood and adolescence: Fluidity, reliability, and interrelations. *Child Development, 66*, 1330–1345.
- Calder, A. J., & Young, A. W. (2005). Understanding the recognition of facial identity and facial expression. *Nature Reviews Neuroscience, 6*(8), 641–651. doi:10.1038/nrn1724.
- Calder, A. J., Ewbank, M. P., & Passamonti, L. (2011). Personality influences the neural responses to viewing facial expressions of emotion. *Philosophical Transactions of the Royal Society B: Biological Sciences, 366*, 1684–1701.
- Calder, A. J., Keane, J., Manes, F., Antoun, N., & Young, A. W. (2000). Impaired recognition and experience of disgust following brain injury. *Nature Neuroscience, 3*(11), 1077–1078. doi:10.1038/80586.
- Calder, A. J., Lawrence, A. D., & Young, A. W. (2001). Neuropsychology of fear and loathing. *Nature Reviews Neuroscience, 2*, 352–363.
- Caldji, C., Tannenbaum, B., Sharma, S., Francis, D., Plotsky, P. M., & Meaney, M. J. (1998). Maternal care during infancy regulates the development of neural systems mediating the expression of fearfulness in the rat. *Proceedings of the National Academy of Sciences, 95*, 5335–5340.
- Calhoun, G. G., & Tye, K. M. (2015). Resolving the neural circuits of anxiety. *Nature Neuroscience, 18*, 1394–1404.
- Calkins, S. D., & Fox, N. A. (1992). The relations among infant temperament, security of attachment, and behavioral inhibition at twenty-four months. *Child Development, 63*, 1456–1472.
- Calkins, S. D., Fox, N. A., & Marshall, T. R. (1996). Behavioral and physiological antecedents of inhibited and uninhibited behavior. *Child Development, 67*, 523–540.
- Callen, M., Isaqzadeh, M., Long, J. D., & Sprenger, C. (2014). Violence and Risk Preference: Experimental Evidence from Afghanistan. *American Economic Review, 104*(1), 123–148.
- Cameron, C. D., Lindquist, K. A., & Gray, K. (2015). A constructionist review of morality and emotions: No evidence for specific links between moral content and discrete emotions. *Personality & Social Psychology Review, 19*(4), 371–394.
- Camille, N., Coricelli, G., Sallet, J., Pradat-Diehl, P., Duhamel, J. R., & Sirigu, A. (2004). The involvement of the orbitofrontal cortex in the experience of regret. *Science, 304*(5674), 1167–1170. PubMed PMID: 15155951.
- Campanella, S., & Belin, P. (2007). Integrating face and voice in person perception. *Trends in Cognitive Sciences, 11*(12), 535–543. doi:10.1016/j.tics.2007.10.001.
- Campbell, A. (2010). Oxytocin and human social behavior. *Personality & Social Psychology Review, 14*(3), 281–295. doi:10.1177/1088868310363594.
- Campbell, B. A., Wood, G., & McBride, T. (1997). Origins of orienting and defense responses: An evolutionary perspective. In P. J. Lang, R. F. Simmons, & M. T. Balaban (Eds.), *Attention and orienting: Sensory and motivational processes* (pp. 41–67). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Campbell, M. W., & de Waal, F. B. M. (2014). Chimpanzees empathize with group mates and humans, but not with baboons or unfamiliar chimpanzees. *Proceedings of the Royal Society B: Biological Sciences, 281*(1782), 20140013–20140013. doi:10.1098/rspb.2014.0013.
- Campel, P., & Petermann, F. (2005). Age and gender effects on coping in children and adolescents. *Journal of Youth & Adolescence, 34*, 73–83.
- Campos, B., Shiota, M., Keltner, D., Gonzaga, G., & Goetz, J. (2013). What is shared, what is different? Core relational themes and expressive displays of eight positive emotions. *Cognition & Emotion, 27*, 37–52.
- Campos, J. I., Barrett, K., Lamb, M. E., Goldsmith, H. H., & Stenberg, C. (1983). Socioemotional development. In M. M. Haith & J. J. Campos (Eds.), *Handbook of child psychology: Vol. 2. Infancy and developmental psychobiology* (pp. 783–915). New York, NY: Wiley.
- Canli, T., & Lesch, K.-P. (2007). Long story short: The serotonin transporter in emotion regulation and social cognition. *Nature Neuroscience, 10*(9), 1103–1109. https://doi.org/10.1038/nn1964.
- Canli, T., Qiu, M., Omura, K., Congdon, E., Haas, B. W., Amin, Z., . . . Lesch, K. P. (2006). Neural correlates of epigenesis. *Proceedings of the National Academy of Sciences of the United States of America, 103*(43), 16033–16038.
- Cannon, W. (1927). The James-Lange theory of emotions: A critical examination and an alternative theory. *The American Journal of Psychology, 100*, 567–586.
- Cannon, W. B. (1929). *Bodily changes in pain, hunger, fear and rage* (2nd ed.). New York: D. Appleton and Company.

## 446 REFERENCES

- Cannon, W. B. (1939). *The wisdom of the body* (2nd ed.). Oxford, England: Norton & Co.
- Cannon, W. B., & Britton, S. W. (1925). Studies on the conditions of activity in endocrine glands: XV. Pseudoaffective medullary adrenal secretion. *American Journal of Physiology—Legacy Content*, 72(2), 283–294.
- Cannon, T. D., Cao, H., Mathalon, D. H., Gee, D. G., & NAPLS Consortium. (2018). Reliability of an fMRI paradigm for emotional processing in a multisite longitudinal study: Clarification and implications for statistical power. *Human Brain Mapping*, 39, 599–601.
- Caplin, A., & Leahy, J. (2001). Psychological expected utility theory and anticipatory feelings. *The Quarterly Journal of Economics*, 116(1), 55–79.
- Capra, C. M., Jiang, B., Engelmann, J. B., & Berns, G. S. (2013). Can personality type explain heterogeneity in probability distortions? *Journal of Neuroscience, Psychology, & Economics*, 6(3), 151–166. doi:10.1037/a0033708.
- Capuron, L., Pagnoni, G., Drake, D. F., Woolwine, B. J., Spivey, J. R., Crowe, R. J., . . . Miller, A. H. (2012). Dopaminergic mechanisms of reduced basal ganglia responses to hedonic reward during interferon alfa administration. *Archives of General Psychiatry*, 69(10), 1044–1053.
- Card, J. P., Swanson, L. W., & Moore, R. Y. (2008). The Hypothalamus: An overview of regulatory systems. In L. R. Squire (Ed.), *Fundamental neuroscience* (pp. 795–806). Cambridge, MA: Academic Press.
- Cardinal, N., Parkinson, J. A., Hall, J., & Everitt, B. J. (2002). Emotion and motivation: The role of the amygdala, ventral striatum, and prefrontal cortex. *Neuroscience & Biobehavioural Reviews*, 26, 321–352.
- Carew, T. J., Hawkins, R. D., & Kandel, E. R. (1983). Differential classical conditioning of a defensive withdrawal reflex in *Aplysia californica*. *Science*, 219(4583), 397–400. <https://doi.org/10.1126/science.6681571>.
- Carew, T. J., Pinsker, H. M., & Kandel, E. R. (1972). Long-term habituation of a defensive withdrawal reflex in *aplysia*. *Science*, 175(4020), 451–454. <https://doi.org/10.1126/science.175.4020.451>.
- Carlson, J. M., & Mujica-Parodi, L. R. (2015). Facilitated attentional orienting and delayed disengagement to conscious and nonconscious fearful faces. *Journal of Nonverbal Behavior*, 39(1), 69–77. doi:10.1007/s10919-014-0185-1.
- Carlson, J. M., & Reinke, K. S. (2008). Masked fearful faces modulate the orienting of covert spatial attention. *Emotion*, 8(4), 522–529. doi:2008-09984-008 [pii]10.1037/a0012653.
- Carlson, J. M., & Reinke, K. S. (2010). Spatial attention-related modulation of the N170 by backward masked fearful faces. *Brain & Cognition*, 73(1), 20–27. doi:S0278-2626(10)00017-5 [pii]10.1016/j.bandc.2010.01.007.
- Carlson, J. M., & Reinke, K. S. (2014). Attending to the fear in your eyes: Facilitated orienting and delayed disengagement. *Cognition & Emotion*, 28(8), 1398–1406. doi:10.1080/02699931.2014.885410.
- Carlson, J. M., Beacher, F., Reinke, K. S., Habib, R., Harmon-Jones, E., Mujica-Parodi, L. R., & Hajcak, G. (2012). Nonconscious attention bias to threat is correlated with anterior cingulate cortex gray matter volume: A voxel-based morphometry result and replication. *NeuroImage*, 59(2), 1713–1718. doi:10.1016/j.NeuroImage.2011.09.040.
- Carlson, J. M., Cha, J., & Mujica-Parodi, L. R. (2013). Functional and structural amygdala - Anterior cingulate connectivity correlates with attentional bias to masked fearful faces. *Cortex*, 49(9), 2595–2600. doi:10.1016/j.cortex.2013.07.008.
- Carlson, J. M., Cha, J., Harmon-Jones, E., Mujica-Parodi, L. R., & Hajcak, G. (2014). Influence of the BDNF genotype on amygdalo-prefrontal white matter microstructure is linked to nonconscious attention bias to threat. *Cerebral Cortex*, 24(9), 2249–2257. doi:10.1093/cercor/bht089.
- Carlson, J. M., Fee, A. L., & Reinke, K. S. (2009). Backward masked snakes and guns modulate spatial attention. *Evolutionary Psychology*, 7(4), 527–537.
- Carlson, J. M., Reinke, K. S., & Habib, R. (2009). A left amygdala mediated network for rapid orienting to masked fearful faces. *Neuropsychologia*, 47(5), 1386–1389. doi:S0028-3932(09)00028-1 [pii]10.1016/j.neuropsychologia.2009.01.026.
- Carlson, J. M., Torrence, R. D., & Vander Hyde, M. R. (2016). Beware the eyes behind the mask: The capture and hold of selective attention by backward masked fearful eyes. *Motivation and Emotion*, 40(3), 498–505. doi:10.1007/s11031-016-9542-1
- Carlson, J. M., Reinke, K. S., LaMontagne, P. J., & Habib, R. (2011). Backward masked fearful faces enhance contralateral occipital cortical activity for visual targets within the spotlight of attention. *Social Cognitive & Affective Neuroscience*, 6(5), 639–645. doi:10.1093/Scan/Nsq076.
- Carlson, M. C., Erickson, K. I., Kramer, A. F., Voss, M. W., Bolea, N., Mielke, M., . . . Fried, L. P. (2009). Evidence for neurocognitive plasticity in at-risk older adults: The experience corps program. *Journals of Gerontology Series A: Biomedical Sciences & Medical Sciences*, 64(12), 1275–1282.
- Carmichael, S. T., & Price, J. L. (1996). Connectional networks within the orbital and medial prefrontal cortex of macaque monkeys. *Journal of Comparative Neurology*, 371, 179–207.

- Carmichael, S. T., Clugnet, M. C., & Price, J. L. (1994). Central olfactory connections in the macaque monkey. *Journal of Comparative Neurology*, *346*(3), 403–434. doi:10.1002/cne.903460306.
- Carney, D. R., Cuddy, A. J., & Yap, A. J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological Science*, *21*, 1363–1368.
- Carpinella, C. M., Chen, J. M., Hamilton, D. L., & Johnson, K. L. (2015). Gendered facial cues influence race categorizations. *Personality & Social Psychology Bulletin*, *41*(3), 405–419.
- Carr, E., & Winkielman, P. (2014). When mirroring is both simple and “smart”: How mimicry can be embodied, adaptive, and non-representational. *Frontiers in Human Neuroscience*, *8*, 1–7. doi:10.3389/fnhum.2014.00505.
- Carretie, L. (2014). Exogenous (automatic) attention to emotional stimuli: A review. *Cognitive, Affective, & Behavioral Neuroscience*, *14*, 1228–1258.
- Carroll, J. M., & Russell, J. A. (1996). Do facial expressions signal specific emotions? Judging the emotion from the face in context. *Journal of Personality & Social Psychology*, *70*, 205–218.
- Carruthers, P. (1996). *Language, thought and consciousness*. Cambridge University Press, Cambridge.
- Carstensen, L. L. (1993). Motivation for social contact across the life span: A theory of socioemotional selectivity. In J. E. Jacobs (Ed.) *Nebraska symposium on motivation: 1992, Developmental perspectives on motivation* (Vol. 40, pp. 209–254). Lincoln: University of Nebraska Press.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, *312*, 1913–1915. doi:10.1126/science.1127488.
- Carstensen, L. L., Gottman, J. M., & Levenson, R. W. (1995). Emotional behavior in long-term marriage. *Psychology & Aging*, *10*, 140–149.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181.
- Carstensen, L. L., Pasupathi, M., Mayr, U., & Nesselroade, J. (2000). Emotional experience in everyday life across the adult life span. *Journal of Personality & Social Psychology*, *79*, 644–655. doi:10.1037/0022-3514.79.4.644.
- Carstensen, L. L., Turan, B., Scheibe, S., Ram, N., Ersner-Hershfield, H., Samanez-Larkin, G. R., . . . Nesselroade, J. R. (2011). Emotional experience improves with age: Evidence based on over 10 years of experience sampling. *Psychology & Aging*, *26*, 21–33. doi:10.1037/a0021285.
- Carter, R. M., Bowling, D. L., Reeck, C., & Huettel, S. A. (2012). A distinct role of the temporal-parietal junction in predicting socially guided decisions. *Science*, *337*, 109–111.
- Carthy, T., Horesh, N., Apter, A., Edge, M. D., & Gross, J. J. (2010). Emotional reactivity and cognitive regulation in anxious children. *Behaviour Research & Therapy*, *48*, 384–393.
- Caruso, E. M., Mead, N. L., & Balcetis, E. (2009). Political partisanship influences perception of biracial candidates’ skin tone. *Proceedings of the National Academy of Sciences*, *106*(48), 20168–20173.
- Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin*, *135*(2), 183.
- Casasanto, D. (2009). Embodiment of abstract concepts: Good and bad in right- and left-handers. *Journal of Experimental Psychology: General*, *138*(3), 351–367.
- Casasanto, D. (2014). Bodily relativity. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 108–117). Oxford, UK: Routledge Philosophy.
- Case, T. I., Repacholi, B. M., & Stevenson, R. J. (2006). My baby doesn’t smell as bad as yours. *Evolution & Human Behavior*, *27*(5), 357–365. doi:10.1016/j.evolhumbehav.2006.03.003.
- Casey, B. J., & Caudle, K. (2013). The teenage brain: Self control. *Current Directions in Psychological Science*, *22*(2), 82–87.
- Casey, B. J., Craddock, N., Cuthbert, B. N., Hyman, S. E., Lee, F. S., & Ressler, K. J. (2013). DSM-5 and RDoC: Progress in psychiatry research? *Nature Reviews Neuroscience*, *14*, 810–814.
- Casey, B., Jones, R. M., & Somerville, L. H. (2011). Braking and accelerating of the adolescent brain. *Journal of Research on Adolescence*, *21*(1), 21–33.
- Caspi, A., & Shiner, R. L. (2006). Personality development. In W. Damon & R. Lerner (Series Eds.) & N. Eisenberg (Vol. ed.), *Handbook of child psychology, Vol. 3. Social, emotional, and personality development* (6th edition, pp. 300–365). New York: Wiley.
- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology*, *56*, 453–484.
- Castren, E., & Rantamaki, T. (2010). The role of BDNF and its receptors in depression and antidepressant drug action: Reactivation of developmental plasticity. *Developmental Neurobiology*, *70*(5), 289–297. PubMed PMID: 20186711. Epub 2010/02/27. eng.
- Castro, V. L., Halberstadt, A. G., Lozada, F. T., & Craig, A. B. (2015). Parents’ emotion-related beliefs, behaviours, and skills predict children’s recognition of emotion. *Infant & Child Development*, *24*(1), 1–22. doi: 10.1002/icd.1868.
- Catalino, L. I., & Fredrickson, B. L. (2011). **A Tuesday in the life of a flourisher**: The role of positive



## 448 REFERENCES

- emotional reactivity in optimal mental health. *Emotion*, 11(4), 938–950.
- Catalino, L. I., Algoe, S. B., & Fredrickson, B. L. (2014). Prioritizing positivity: An effective approach to pursuing happiness? *Emotion*, 14, 1155–1161.
- Catani, M., Jones, D. K., Donato, R., & Ffytche, D. H. (2003). Occipito-temporal connections in the human brain. *Brain*, 126, 2093–2107.
- Cavanagh, J. F., & Shackman, A. J. (2015). Frontal midline theta reflects anxiety and cognitive control: Meta-analytic evidence. *Journal of Physiology, Paris*, 109, 3–15.
- Cavanagh, J. F., Meyer, A., & Hajcak, G. (2017). Error-specific cognitive control alterations in Generalized Anxiety Disorder. *Biol Psychiatry Cogn Neurosci Neuroimaging*, 2, 413–420.
- Cavanagh, J. F., Eisenberg, I., Guitart-Masip, M., Huys, Q., & Frank, M. J. (2013). Frontal theta overrides Pavlovian learning biases. *Journal of Neuroscience: Official Journal of the Society of Neuroscience*, 33, 8541–8548.
- Cavanaugh, D. J., Lee, H., Lo, L., Shields, S. D., Zylka, M. J., Basbaum, A. I., & Anderson, D. J. (2009). Distinct subsets of unmyelinated primary sensory fibers mediate behavioral responses to noxious thermal and mechanical stimuli. *Proceedings of the National Academy of Sciences*, 106(22), 9075–9080.
- Cecere, R., Bertini, C., Maier, M. E., & Làdavas, E. (2014). Unseen fearful faces influence face encoding: Evidence from ERPs in hemianopic patients. *Journal of Cognitive Neuroscience*, 26, 2564–2577.
- Celeghin, A., de Gelder, B., & Tamietto, M. (2015). From affective blindsight to emotional consciousness. *Consciousness & Cognition*, 36, 414–425.
- Ceulemans, E., Kuppens, P., & Mechelen, I. V. (2012). Capturing the structure of distinct types of individual differences in the situation-specific experience of emotions: The case of anger. *European Journal of Personality*, 26(5), 484–495.
- Chambers, C. (2017). *The seven deadly sins of psychology: A manifesto for reforming the culture of scientific practice*. Princeton, NJ: Princeton University Press.
- Chanes, L., & Barrett, L. F. (2016). Redefining the role of limbic areas in cortical processing. *Trends in Cognitive Sciences*, 20, 96–106. PMC4780414.
- Chang, L. J. (2017). *The science of trust*. [White paper]. Commission on Trust, Media and American Democracy. The Aspen Institute.
- Chang, L. J., & Sanfey, A. G. (2008). Emotions, decision-making, and the brain. In D. Houser & K. McCabe, K. (Eds.), *Neuroeconomics* (pp. 31–53). New York: Elsevier.
- Chang L. J., & Sanfey, A. G. (2013). Great expectations: Neural computations underlying the use of social norms in decision-making. *Social, Cognitive, & Affective Neuroscience*, 8(3), 277–284. doi:10.1093/scan/nsr094. PubMed PMID: 22198968; PubMed Central PMCID: PMC3594719.
- Chang L. J., Smith, A., Dufwenberg, M., & Sanfey, A. G. (2011). Triangulating the neural, psychological, and economic bases of guilt aversion. *Neuron*, 70(3), 560–572. doi:10.1016/j.neuron.2011.02.056. PubMed PMID: 21555080; PubMed Central PMCID: PMC3114404.
- Chang L. J., Yarkoni, T., Khaw, M. W., & Sanfey, A. G. (2013). Decoding the role of the insula in human cognition: Functional parcellation and large-scale reverse inference. *Cerebral Cortex*, 23(3), 739–749. doi:10.1093/cercor/bhs065. PubMed PMID: 22437053; PubMed Central PMCID: PMC3563343.
- Chang, L. J., Doll, B. B., van't Wout, M., Frank, M. J., & Sanfey, A. G. (2010). Seeing is believing: Trustworthiness as a dynamic belief. *Cognitive Psychology*, 61, 87–105.
- Chang, L. J., Gianaros, P. J., Manuck, S. B., Krishnan, A., & Wager, T. D. (2015). A sensitive and specific neural signature for picture-induced negative affect. *PLoS Biology*, 13(6), e1002180.
- Chaplin, W. F., John, O. P., & Goldberg, L. R. (1988). Conceptions of states and traits: Dimensional attributes with ideals as prototypes. *Journal of Personality & Social Psychology*, 54, 541–557.
- Chapman, H. A., & Anderson, A. K. (2012). Understanding disgust. *Annals of the New York Academy of Sciences: The Year in Cognitive Neuroscience*, 1251, 62–76.
- Chapman, H. A., & Anderson, A. K. (2013). Things rank and gross in nature: A review and synthesis of moral disgust. *Psychological Bulletin*, 139, 300–327.
- Chapman, H. A., Kim, D. A., Susskind, J. M., & Anderson, A. K. (2009). In bad taste: Evidence for the oral origins of moral disgust. *Science*, 323, 1222–1226.
- Chareyron, L. J., Banta Lavenex, P., Amaral, D. G., & Lavenex, P. (2011). Stereological analysis of the rat and monkey amygdala. *The Journal of Comparative Neurology*, 519(16), 3218–3239. <https://doi.org/10.1002/cne.22677>.
- Charles, S. T., & Carstensen, L. L. (2008). Unpleasant situations elicit different emotional responses in younger and older adults. *Psychology & Aging*, 23, 495–504. doi:10.1037/a0013284.
- Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality & Social Psychology*, 80, 136–151.
- Charness, G., & Dufwenberg, M. (2006). Promises and partnership. *Econometrica*, 74(6), 1579–1601.

- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception-action link and social interaction. *Journal of Personality & Social Psychology*, 76, 893–910.
- Chase, H. W., Eickhoff, S. B., Laird, A. R., & Hogarth, L. (2011). The neural basis of drug stimulus processing and craving: An activation likelihood estimation meta-analysis. *Biological Psychiatry*, 70, 785–793.
- Cheesman, J., & Merikle, P. M. (1986). Distinguishing conscious from unconscious perceptual processes. *Canadian Journal of Psychology*, 40, 343–367.
- Chen, J., Albert, D., O'Brien, L., Uckert, K., & Steinberg, L. (2011). Peers increase adolescent risk taking by enhancing activity in the brain's reward circuitry. *Developmental Science*, 14(2), F1–F10.
- Chen, D., & Haviland-Jones, J. (2000). Human olfactory communication of emotion. *Perceptual & Motor Skills*, 91(3 Pt 1), 771–781. doi:10.2466/pms.2000.91.3.771.
- Chen, J., & Houser, D. (2012). Non-human primate studies inform the foundations of fair and just human institutions. *Social Justice Research*, 25, 277–297.
- Chen, X., & Schmidt, L. (2015). Temperament and personality. In R. Lerner (Series ed.) & M. Lamb (Vol. ed.), *Handbook of child psychology and developmental science, Vol. 3. Socioemotional processes* (7th ed., pp. 152–200). New York: Wiley.
- Chen, Z., Williams, K. D., Fitness, J., & Newton, N. (2008). When hurt won't heal: Exploring the capacity to relive social and physical pain. *Psychological Science*, 46, 612–618.
- Cheng, D. T., Faulkner, M. L., Disterhoft, J. F., & Desmond, J. E. (2010). The effects of aging in delay and trace human eyeblink conditioning. *Psychology of Aging*, 25(3), 684–690.
- Cheng, J. S., Ottati, V. S. C., & Price, E. (2013). The arousal model of moral condemnation. *Journal of Experimental Social Psychology*, 49, 1012–1018.
- Cheng, W., Rolls, E. T., Qiu, J., Liu, W., Tang, Y., Huang, C. C., . . . Feng, J. (2016). Medial reward and lateral non-reward orbitofrontal cortex circuits change in opposite directions in depression. *Brain*, 139, 3296–3309.
- Cheng, Y., Chen, C., Lin, C. P., Chou, K. H., & Decety, J. (2010). Love hurts: An fMRI study. *NeuroImage*, 51(2), 923–929.
- Cheon, B. K., Im, D. M., Harada, T., Kim, J. S., Mathur, V. A., Scimica, J. M., . . . Chiao, J. Y. (2013). Cultural modulation of the neural correlates of emotional pain perception: The role of other-focusedness. *Neuropsychologia*, 51(7), 1177–1186.
- Cheon, B. K., Im, D. M., Harada, T., Kim, J. S., Mathur, V. A., Scimica, J. M., . . . Chiao, J. Y. (2011). Cultural influences on neural basis of intergroup empathy. *NeuroImage* 57(2), 642–650.
- Cheon, B. K., Mrazek, A. J., Pornpattananangkul, N., Blizinsky, K. D., & Chiao, J. Y. (2013). Constraints, catalysts and coevolution in cultural neuroscience: Reply to commentaries. *Psychological Inquiry*, 24(1), 71–79.
- Chiao, J. Y., & Ambady, N. (2007). Cultural neuroscience: Parsing universality and diversity across levels of analysis. In S. Kitayama & D. Cohen (Eds.), *Handbook of cultural psychology* (pp. 237–254). New York: Guilford Press.
- Chiao, J. Y., & Blizinsky, K. D. (2010). Culture-gene coevolution of individualism-collectivism and the serotonin transporter gene (5-HTTLPR). *Proceedings of the Royal Society B: Biological Sciences*, 277(1681), 529–537.
- Chiao, J. Y., & Blizinsky, K. D. (2013). Population disparities in mental health: Insights from cultural neuroscience. *American Journal of Public Health*, 103, S122–S132.
- Chiao, J. Y., Cheon, B. K., Pornpattananangkul, N., Mrazek, A. J., & Blizinsky, K. D. (2013). Cultural neuroscience: Progress and promise. *Psychological Inquiry*, 24(1), 1–19.
- Chiao, J. Y., Iidaka, T., Gordon, H. L., Nogawa, J., Bar, M., Aminoff, E., Sadato, N., & Ambady, N. (2008). Cultural specificity in amygdala response to fear faces. *Journal of Cognitive Neuroscience*, 20(12), 2167–2174.
- Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: A quantitative review of prospective observational studies. *Psychosomatic Medicine*, 70, 741–756.
- Chikazoe, J., Lee, D. H., Kriegeskorte, N., & Anderson, A. K. (2014). Population coding of affect across stimuli, modalities and individuals. *Nature Neuroscience*, 17(8), 1114–1122.
- Chisholm, D., Sweeny, K., Sheehan, P., Rasmussen, B., Smit, F., Cuijpers, P., & Saxena, S. (2016). Scaling-up treatment of depression and anxiety: a global return on investment analysis. *Lancet Psychiatry*, 3, 415–424.
- Chmiel, A., Sienkiewicz, J., Thelwall, M., Paltoglou, G., Buckley, K., Kappas, A., & Holyst, J. A. (2011). Collective emotions online and their influence on community life. *PLoS One*, 6(7), e22207. <https://doi.org/10.1371/journal.pone.0022207>.
- Chmielewski, M., Clark, L. A., Bagby, R. M., & Watson, D. (2015). Method matters: Understanding diagnostic reliability in DSM-IV and DSM-5. *Journal of Abnormal Psychology*, 124, 764–769.
- Cho, K. (2001). Chronic “jet lag” produces temporal lobe atrophy and spatial cognitive deficits. *Nature Neuroscience*, 4, 567–568.
- Choi, J. K., & Bowles, S. (2007). The coevolution of parochial altruism and war. *Science*, 318(5850), 636–640. <https://doi.org/10.1126/science.1144237>.

## 450 REFERENCES

- Choi, J. M., Padmala, S., & Pessoa, L. (2012). Impact of state anxiety on the interaction between threat monitoring and cognition. *NeuroImage*, 59(2), 1912–1923. doi:10.1016/j.neuroimage.2011.08.102.
- Chollet, F., Tardy, J., Albucher, J. F., Thalamos, C., Berard, E., Lamy, C., . . . Guillon, B. (2011). Fluoxetine for motor recovery after acute ischaemic stroke (FLAME): A randomised placebo-controlled trial. *The Lancet Neurology*, 10(2), 123–130.
- Chong, J. S. X., Ng, G. J. P., Lee, S. C., & Zhou, J. (2016). Salience network connectivity in the insula is associated with individual differences in interoceptive accuracy. *Brain Structure & Function*, 222(4), 1635–1644.
- Christian, B. M., Parkinson, C., Macrae, C. N., Miles, L. K., & Wheatley, T. P. (2014). When imagining yourself in pain, visual perspective matters: The neural and behavioral correlates of simulated sensory experiences. *Journal of Cognitive Neuroscience*, 27(5), 866–875. doi:10.1162/jocn\_a\_00754.
- Christianson, S.-Å., & Loftus, E. F. (1991). Remembering emotional events: The fate of detailed information. *Cognition & Emotion* 5(2), 81–108.
- Christie, I. C., & Friedman, B. H. (2004). Autonomic specificity of discrete emotion and dimensions of affective space: A multivariate approach. *International Journal of Psychophysiology*, 51(2), 143–153.
- Chronis-Tuscano, A., Rubin, K. H., O'Brien, K. A., Coplan, R. J., Thomas, S. R., Dougherty, L. R., . . . Wimsatt, M. (2015). Preliminary evaluation of a multimodal early intervention program for behaviorally inhibited preschoolers. *Journal of Consulting & Clinical Psychology*, 83, 534–540.
- Chua, E. F., & Bliss-Moreau, E. (2016). Knowing your heart and your mind: The relationships between metamemory and interoception. *Consciousness & Cognition*, 45, 146–158. http://doi.org/10.1016/j.concog.2016.08.015.
- Chudal, R., Sourander, A., Polo-Kantola, P., Hinkka-Yli-Salomäki, S., Lehti, V., Sucksdorff, D., . . . Brown, A. S. (2014). Perinatal factors and the risk of bipolar disorder in Finland. *Journal of Affective Disorders*, 155, 75–80.
- Chun, M. M., Golomb, J. D., & Turk-Browne, N. B. (2011). A taxonomy of external and internal attention. *Annual Review of Psychology*, 62, 73–101.
- Chung, D., Christopoulos, G. I., King-Casas, B., Ball, S. B., & Chiu, P. H. (2015). Social signals of safety and risk confer utility and have asymmetric effects on observers' choices. *Nature Neuroscience*, 18(6), 912–916.
- Churchland, P. M. (1989). Folk psychology and the explanation of human behavior. *Philosophical Perspectives*, 3, 225–241.
- Chwalisz, K., Diener, E., & Gallagher, D. (1988). Autonomic arousal feedback and emotional experience: Evidence from the spinal cord injured. *Journal of Personality & Social Psychology*, 54, 820–828.
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, 55, 591–621. https://doi.org/10.1146/annurev.psych.55.090902.142015.
- Cialdini, R. B., Darby, B. L., & Vincent, J. E. (1973). Transgression and altruism: A case for hedonism. *Journal of Experimental Social Psychology*, 9(6), 502–516.
- Cicchetti, D., & Ng, R. (2014). Emotional development in maltreated children. In K. H. Lagattuta (Ed.), *Children and emotion: New insights into developmental affective science* (Vol. 26, pp. 29–41). Basel, Switzerland: Karger.
- Cicchetti, D., & Rogosch, F. A. . (2001). Diverse patterns of neuroendocrine activity in maltreated children. *Development & Psychopathology*, 13, 677–693. doi:10.1017/S0954579401003145.
- Cikara, M., & Fiske, S. T. (2012). Stereotypes and schadenfreude: Affective and physiological markers of pleasure at outgroup misfortunes. *Social Psychology & Personality Science*, 3(1), 63–71. doi:10.1177/1948550611409245.
- Cikara, M., & Fiske, S. T. (2013). Their pain, our pleasure: Stereotype content and schadenfreude. *Annals of the New York Academy of Sciences*, 1299(1), 52–59. doi:10.1111/nyas.12179.
- Cisler, J. M., & Koster, E. H. W. (2010). Mechanisms of attentional biases towards threat in anxiety disorders: An integrative review. *Clinical Psychology Review*, 30, 203–216.
- Clark, A. (2013a). The many faces of precision. *Frontiers in Psychology*, 4, 270.
- Clark, A. (2013b). Whatever next? Predictive brains, situated agents, and the future of cognitive science. *Behavioral & Brain Sciences*, 36(3), 181–204. doi:10.1017/s0140525x12000477.
- Clark, L. A., & Watson, D. (2008). Temperament: An organizing paradigm for trait psychology. In O. P. John, R. W. Robins, & Pervin, L. A. (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 265–286). New York: Guilford Press.
- Clark, L. A., Kochanska, G., & Ready, R. (2000). Mothers' personality and its interaction with child temperament as predictors of parenting behavior. *Journal of Personality & Social Psychology*, 79, 274–285.
- Clark, L. A., Cuthbert, B., Lewis-Fernandez, R., Narrow, W. E., & Reed, G. M. (2017). Three approaches to understanding and classifying mental disorder: ICD-11, DSM-5, and the National Institute of Mental Health's Research Domain Criteria (RDoC). *Psychol Sci Public Interest*, 18, 72–145. doi:10.1177/1529100617727266

- Clark, M. S., & Finkel, E. J. (2005). Willingness to express emotion: The impact of relationship type, communal orientation, and their interaction. *Personal Relationships*, *12*(2), 169–180.
- Clark, M. S., Ouellette, R., Powell, M. C., & Milberg, S. (1987). Recipient's mood, relationship type, and helping. *Journal of Personality & Social Psychology*, *53*(1), 94–103.
- Clark, T. F., Winkelman, P., & McIntosh, D. N. (2008). Autism and the extraction of emotion from briefly presented facial expressions: Stumbling at the first step of empathy. *Emotion*, *8*(6), 803.
- Clark-Polner, E., Johnson, T. D., & Barrett, L. F. (2017). Multivoxel pattern analysis does not provide evidence to support the existence of basic emotions. *Cerebral Cortex*, *27*, 1944–1948.
- Clark-Polner, E., Wager, T. D., Satpute, A. B., & Barrett, L. F. (2016). Neural fingerprinting? Meta-analysis, variation and the search for brain-based essences in the science of emotion. Chapter in L.F. Barrett, M. Lewis, and J. M. Haviland-Jones (Eds.), *The handbook of emotion*, 4th Edition (pp. 146–165). New York: Guilford.
- Clarke, R. J., & Johnstone, T. (2013). Prefrontal inhibition of threat processing reduces working memory interference. *Frontiers in Human Neuroscience*, *7*, 228. <http://doi.org/10.3389/fnhum.2013.00228>.
- Clarke, T.-K., Navrady, L., Zeng, Y., Xia, C., Haley, C., Campbell, A., . . . McIntosh, A. (2017). Genetic and environmental determinants of stressful life events and their overlap with depression and neuroticism. *bioRxiv*.
- Clauss, J. A., Avery, S. N., & Blackford, J. U. (2015). The nature of individual differences in inhibited temperament and risk for psychiatric disease: A review and meta-analysis. *Progress in Neurobiology*, *127*, 23–45.
- Clauss, J. A., Avery, S. N., VanDerKlok, R. M., Rogers, B. P., Cowan, R. L., Benningfield, M. M., & Blackford, J. U. (2014). Neurocircuitry underlying risk and resilience to social anxiety disorder. *Depression & Anxiety*, *31*(10), 822–833.
- Clauss, J. A., Cowan, R. L., & Blackford, J. U. (2011). Expectation and temperament moderate amygdala and dorsal anterior cingulate cortex responses to fear faces. *Cognitive, Affective & Behavioral Neuroscience*, *11*, 13–21.
- Clauss, J. A., Seay, A. L., VanDerKlok, R. M., Avery, S. N., Cao, A., Cowan, R. L., . . . Blackford, J. U. (2014). Structural and functional bases of inhibited temperament. *Social Cognitive & Affective Neuroscience*, *9*(12), 2049–2058.
- Clem, R. L., & Haganir, R. L. (2010). Calcium-permeable AMPA receptor dynamics mediate fear memory erasure. *Science*, *330*, 1108–1112.
- Clifford, S., Lemery-Chalfant, K., & Goldsmith, H. H. (2015). The unique and shared genetic and environmental contributions to fear, anger, and sadness in childhood. *Child Development*, *86*(5), 1538–1556.
- Clithero, J. A., & Rangel, A. (2014). Informatic parcellation of the network involved in the computation of subjective value. *Social, Cognitive, & Affective Neuroscience*, *9*, 1289–1302.
- Clore, G. L. (1994a). Why emotions are never unconscious. In E. Paul & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 285–290). New York: Oxford University Press.
- Clore, G. L. (1994b). Why emotions require cognition. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 181–191). New York: Oxford University Press.
- Clore, G. L. (1994c). Why emotions vary in intensity. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 386–393). New York: Oxford University Press.
- Clore, G. L., & Huntsinger, J. R. (2007). How emotions inform judgment and regulate thought. *Trends in Cognitive Sciences*, *11*, 393–399.
- Clore, G. L., & Ortony, A. (2008). Appraisal theories: How cognition shapes affect into emotion. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (3rd ed., pp. 628–642). New York: Guilford Press.
- Clore, G. L., & Ortony, A. (2013). Psychological construction in the OCC model of emotion. *Emotion Review*, *5*, 335–343. doi:10.1177/1754073913489751.
- Clore, G. L., & Robinson, M. D. (2012). Five new ideas about emotion and their implications for social-personality psychology. In K. Deaux & M. Snyder (Eds.), *Oxford handbook of personality and social psychology* (pp. 315–336). Oxford, UK: Oxford University Press.
- Clore, G. L., & Schiller, A. J. (2016). New light on the affect-cognition connection. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), *The handbook of emotions* (4th ed., pp. 532–546). New York: Guilford Press.
- Clore, G. L., & Storbeck, J. (2006). Affect as information about liking, efficacy, and importance. In J. Forgas (Ed.), *Affect in social thinking and behavior* (pp. 123–142). New York: Psychology Press.
- Clore, G. L., Gasper, K., & Garvin, E. (2001). Affect as information. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 121–144). London: LEA Publishers.
- Clore, G. L., Ortony, A., & Foss, M. A. (1987). The psychological foundations of the affective lexicon. *Journal of Personality & Social Psychology*, *53*, 751–766.

## 452 REFERENCES

- Clore, G. L., Wyer, R. S., Dienes, B., Gasper, K., Gohm, C., & Isbell, L. M. (2001). Affective feelings as feedback: Some cognitive consequences. In L. L. Martin & G. L. Clore (Eds.), *Theories of mood and cognition: A user's guidebook* (pp. 27–62). Mahwah, NJ: Erlbaum.
- Coan, J. A., & Allen, J. J. B. (2007). *Handbook of emotion elicitation and assessment*. New York: Oxford University Press.
- Coan, J. A., & Sbarra, D. A. (2015). Social baseline theory: The social regulation of risk and effort. *Current Opinion in Psychology*, *1*, 87–91.
- Coan, J. A., Allen, J. J. B., & Harmon-Jones, E. (2001). Voluntary facial expression and hemispheric asymmetry over the frontal cortex. *Psychophysiology*, *38*, 912–925.
- Coan, J. A., Allen, J. J. B., & McKnight, P. E. (2006). A capability model of individual differences in frontal EEG asymmetry. *Biological Psychology*, *72*, 198–207.
- Coan, J. A., Schaefer, H. S., & Davidson, R. J. (2006). Lending a hand: Social regulation of the neural response to threat. *Psychological Science*, *17*(12), 1032–1039. doi:10.1111/j.1467-9280.2006.01832.x.
- Cobos, P., Sanchez, M., Garcia, C., Nieves Vera, M., & Vila, J. (2002). Revisiting the James versus Cannon debate on emotion: Startle and autonomic modulation in patients with spinal cord injuries. *Biological Psychology*, *61*, 251–269.
- Coenen, V. A., Panksepp, J., Hurwitz, T. A., Urbach, H., & Mädlar, B. (2012). Human medial fore-brain bundle (MFB) and anterior thalamic radiation (ATR): Diffusion tensor imaging of two major subcortical pathways that may promote a dynamic balance of opposite affects relevant for understanding depression. *The Journal of Neuropsychiatry & Clinical Neurosciences*, *24*, 223–236.
- Cohen, G. L., Aronson, J., & Steele, C. M. (2000). When beliefs yield to evidence: Reducing biased evaluation by affirming the self. *Personality & Social Psychology Bulletin*, *26*, 1151–1164.
- Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, *313*, 1307–1310.
- Cohen, J. (1962). The statistical power of abnormal-social psychological research: A review. *Journal of Abnormal Social Psychology*, *65*, 145–153.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*, 155–159.
- Cohen, J. R., Asarnow, R. F., Sabb, F. W., Bilder, R. M., Bookheimer, S. Y., Knowlton, B. J., & Poldrack, R. A. (2010). A unique adolescent response to reward prediction errors. *Nature Neuroscience*, *13*(6), 669–671.
- Cohen, N., Henik, A., & Mor, N. (2011). Can emotion modulate attention? Evidence for reciprocal links in the attentional networks test. *Experimental Psychology*, *58*, 171–179.
- Cohen, S., Alper, C. M., Doyle, W. J., Treanor, J. J., & Turner, R. B. (2006). Positive emotional style predicts resistance to illness after experimental exposure to rhinovirus or influenza A virus. *Psychosomatic Medicine*, *68*(6), 809–815. http://doi.org/10.1097/01.psy.0000245867.92364.3c.
- Cohen, S., Doyle, W. J., Turner, R., Alper, C. M., & Skoner, D. P. (2003). Sociability and susceptibility to the common cold. *Psychological Science*, *14*(5), 389–395.
- Cohn, A., Engelmann, J., Fehr, E., & Maréchal, M. A. (2015). Evidence for countercyclical risk aversion: An experiment with financial professionals. *American Economic Review*, *105*(2), 860–885. doi:10.1257/aer.20131314.
- Cohn, M. A., & Fredrickson, B. L. (2010). In search of durable positive psychology interventions: Predictors and consequences of long-term positive behavior change. *The Journal of Positive Psychology*, *5*(5), 355–366.
- Colcombe, S. J., Kramer, A. F., Erickson, K. I., Scalf, P., McAuley, E., Cohen, N. J., . . . Elavsky, S. (2004). Cardiovascular fitness, cortical plasticity, and aging. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(9), 3316–3321.
- Cole, D. A., Martin, N. C., & Steiger, J. H. (2005). Empirical and conceptual problems with longitudinal trait-state models: Introducing a trait-state-occasion model. *Psychological Methods*, *10*, 3–20.
- Cole, M. W., Reynolds, J. R., Power, J. D., Repovs, G., Anticevic, A., & Braver, T. S. (2013). Multi-task connectivity reveals flexible hubs for adaptive task control. *Nature Neuroscience*, *16*(9), 1348–1355. doi:10.1038/nn.3470.
- Cole, P. M., & Deater-Deckard, K. (2009). Emotion regulation, risk, and psychopathology. *Journal of Child Psychology & Psychiatry*, *50*, 1327–1330.
- Cole, P. M., Michel, M. K., & Teti, L. O. D. (1994). The development of emotion regulation and dysregulation: A clinical perspective. *Monographs of the Society for Research in Child Development*, *59*, 73–102.
- Cole, P. M., Tamang, B. L., & Shrestha, S. (2006). Cultural variations in the socialization of young children's anger and shame. *Child Development*, *77*, 1237–1251. doi:10.1111/j.1467-8624.2006.00931.x.
- Cole, P. M., Tan, P. Z., Hall, S. E., Zhang, Y., Crnic, K. A., Blair, C. B., & Runze, L. (2011). Developmental changes in anger expression and attention focus: Learning to wait. *Developmental Psychology*, *47*(4), 1078–1089.

- Collet, C., Vernet-Maury, E., Delhomme, G., & Dittmar, A. (1997). Autonomic nervous system response patterns specificity to basic emotions. *Journal of the Autonomic Nervous System*, 62(1–2), 45–57.
- Collignon, O., Girard, S., Gosselin, F., Roy, S., Saint-Amour, D., Lassonde, M., & Lepore, F. (2008). Audio-visual integration of emotion expression. *Brain Research*, 1242, 126–135.
- Collins, N. L., & Feeney, B. C. (2000). A safe haven: An attachment theory perspective on support seeking and caregiving in intimate relationships. *Journal of Personality & Social Psychology*, 78(6), 1053–1073.
- Collins, P. Y., Patel, V., Joestl, S. S., March, D., Insel, T. R., Daar, A. S., . . . Stein, D. J. (2011). Grand challenges in global mental health. *Nature*, 475, 27–30.
- Collins, S. M., Kassam, Z., & Bercik, P. (2013). The adoptive transfer of behavioral phenotype via the intestinal microbiota: Experimental evidence and clinical implications. *Current Opinion in Microbiology*, 16(3), 240–245. <http://doi.org/10.1016/j.mib.2013.06.004>.
- Collins, S. M., Surette, M., & Bercik, P. (2012). The interplay between the intestinal microbiota and the brain. *Nature Reviews Microbiology*, 10(11), 735–742. <http://doi.org/10.1038/nrmicro2876>.
- Colloca, L., Lopiano, L., Lanotte, M., & Benedetti, F. (2004). Overt versus covert treatment for pain, anxiety, and Parkinson's disease. *The Lancet Neurology*, 3(11), 679–684. doi:10.1016/S1474-4422(04)00908-1.
- Coltheart, M. (2006). What has functional neuroimaging told us about the mind (so far)? *Cortex*, 42(3), 323–331.
- Coltheart, M. (2013). How can functional neuroimaging inform cognitive theories? *Perspectives on Psychological Science*, 8, 98–103.
- Comoli, E., Coizet, V., Boyes, J., Bolam, J. P., Canteras, N. S., Quirk, R. H., . . . Redgrave, P. (2003). A direct projection from superior colliculus to substantia nigra for detecting salient visual events. *Nature Neuroscience*, 6(9), 974–980.
- Condon, P., & Feldman Barrett, L. (2013). Conceptualizing and experiencing compassion. *Emotion*, 13(5), 817–821. doi:10.1037/a0033747.
- Conger, R. D., Ge, X., Elder, G. H., Lorenz, F. O., & Simons, R. L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development*, 65, 541–561. doi:10.2307/1131401.
- Conger, R. D., Wallace, L. E., Sun, Y., Simons, R. L., McLoyd, V. C., & Brody, G. H. (2002). Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology*, 38, 179–193. doi:10.1037/0012-1649.38.2.179.
- Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin*, 136, 1092–1122.
- Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, 11(6), 212–216.
- Connolly, J. J., Kavanagh, E. J., & Viswesvaran, C. (2007). The convergent validity between self and observer ratings of personality: A meta-analytic review. *International Journal of Selection and Assessment*, 15, 110–117.
- Conrad, M. S., Harasim, S., Rhodes, J. S., Van Alstine, W. G., & Johnson, R. W. (2015). Early postnatal respiratory viral infection alters hippocampal neurogenesis, cell fate, and neuron morphology in the neonatal piglet. *Brain, Behavior, & Immunity*, 44, 82–90. <http://doi.org/10.1016/j.bbi.2014.08.009>.
- Conrad, M. S., Sutton, B. P., Larsen, R., Van Alstine, W. G., & Johnson, R. W. (2015). Early postnatal respiratory viral infection induces structural and neurochemical changes in the neonatal piglet brain. *Brain, Behavior, & Immunity*, 48, 326–335. <http://doi.org/10.1016/j.bbi.2015.05.001>.
- Constans, J. I., McCloskey, M. S., Vasterling, J. J., Brailey, K., & Mathews, A. (2004). Suppression of attentional bias in PTSD. *Journal of Abnormal Psychology*, 113(2), 315–323.
- Constantinou, E., Van Den Houte, M., Bogaerts, K., Van Diest, I., & Van den Bergh, O. (2014). Can words heal? Using affect labeling to reduce the effects of unpleasant cues on symptom reporting. *Frontiers in Psychology*, 5, 807.
- Convit, A., Wolf, O. T., Tarshish, C., de & Leon, M. J. (2003). Reduced glucose tolerance is associated with poor memory performance and hippocampal atrophy among normal elderly. *Proceedings of the National Academy of Sciences of the United States of America*, 100, 2019–2022.
- Cools, R., Blackwell, A., Clark, L., Menzies, L., Cox, S., & Robbins, T. W. (2005). Tryptophan depletion disrupts the motivational guidance of goal-directed behavior as a function of trait impulsivity. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 30, 1362–1373.
- Cools, R., Nakamura, K., & Daw, N. D. (2011). Serotonin and dopamine: Unifying affective, motivational, and decision functions. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 36, 98–113.
- Cooney, R. E., Joormann, J., Eugène, F., Dennis, E. L., & Gotlib, I. H. (2010). Neural correlates of rumination in depression. *Cognitive, Affective, & Behavioral Neuroscience*, 10(4), 470–478. <http://doi.org/10.3758/CABN.10.4.470>.

## 454 REFERENCES

- Cooper, R. M., & Langton, S. R. (2006). Attentional bias to angry faces using the dot-probe task? It depends when you look for it. *Behaviour Research & Therapy*, *44*(9), 1321–1329.
- Cootes, T., Edwards, G., & Taylor, C. (2001). Active appearance models. *IEEE Transactions on Pattern Analysis & Machine Intelligence*, *23*, 681–685.
- Corbetta, M., & Shulman, G. L. (2002). Control of goal-directed and stimulus-driven attention in the brain. *Nature Reviews Neuroscience*, *3*(3), 201–215.
- Corbetta, M., Patel, G., & Shulman, G. L. (2008). The reorienting system of the human brain: From environment to theory of mind. *Neuron*, *58*(3), 306–324.
- Cordaro, D. T., Sun, R., Keltner, D., Kamble, S., Huddar, N., & McNeil, G. (2018). Universals and cultural variations in 22 emotional expressions across five cultures. *Emotion*, *18*, 75–93.
- Coricelli, G., Critchley, H. D., Joffily, M., O'Doherty, J. P., Sirigu, A., & Dolan, R. J. (2005). Regret and its avoidance: A neuroimaging study of choice behavior. *Nature Neuroscience*, *8*(9), 1255–1262. PubMed PMID: 16116457.
- Coricelli, G., Dolan, R. J., & Sirigu, A. (2007). Brain, emotion and decision making: The paradigmatic example of regret. *Trends in Cognitive Sciences*, *11*(6), 258–265. PubMed PMID: 17475537.
- Coss, R. G., & Owings, D. H. (1978). Snake-directed behavior by snake naive and experienced California ground squirrels in a simulated burrow. *Zeitschrift Fur Tierpsychologie—Journal of Comparative Ethology*, *48*(4), 421–435.
- Costafreda, S. G., Brammer, M. J., David, A. S., & Fu, C. H. (2008). Predictors of amygdala activation during the processing of emotional stimuli: A meta-analysis of 385 PET and fMRI studies. *Brain Research Reviews*, *58*, 57–70.
- Cottrell, C., & Neuberg, S. (2005). Different emotional reactions to different groups: A sociofunctional threat-based approach to “prejudice.” *Journal of Personality & Social Psychology*, *88*, 770–789. doi:10.1037/0022-3514.88.5.770.
- Cousijn, H., Rijpkema, M., Qin, S., van Marle, H. J., Franke, B., Hermans, E. J., . . . Fernandez, G. (2010). Acute stress modulates genotype effects on amygdala processing in humans. *Proceedings of the National Academy of Sciences of the United States of America*, *107*, 9867–9872.
- Cowdrey, F. A., Finlayson, G., & Park, R. J. (2013). Liking compared with wanting for high- and low-calorie foods in anorexia nervosa: Aberrant food reward even after weight restoration. *The American Journal of Clinical Nutrition*, *97*(3), 463–470.
- Cowen, A. S., & Keltner, D. (2017). Self-report captures 27 distinct categories of emotion bridged by continuous gradients. *Proceedings of the National Academy of Sciences of the United States of America*, *114*, E7900–E7909.
- Cowen, A. S., & Keltner, D. (in press). Clarifying the conceptualization, dimensionality, and structure of emotion: Response to Barrett and colleagues. *Trends Cogn Sci*.
- Cox, J. (2004). How to identify trust and reciprocity. *Games & Economic Behavior*, *46*, 260–281.
- Cox, R. W., Chen, G., Glen, D. R., Reynolds, R. C., & Taylor, P. A. (2017). fMRI clustering and false-positive rates. *Proceedings of the National Academy of Sciences of the United States of America*, *114*, E3370–E3371.
- Craig, A. D. (1996). An ascending general homeostatic afferent pathway originating in lamina I. *Progress in Brain Research*, *107*, 225–242.
- Craig, A. D. (2002). How do you feel? Interoception: The sense of the physiological condition of the body. *Nature Reviews Neuroscience*, *3*, 655–666. doi:10.1038/nrn894.
- Craig, A. D. (2003a). A new view of pain as a homeostatic emotion. *Trends in Neurosciences*, *26*, 303–307.
- Craig, A. D. (2003b). Pain mechanisms: Labeled lines versus convergence in central processing. *Annual Review of Neuroscience*, *26*, 1–30.
- Craig, A. D. (2008). Interoception and emotion: A neuroanatomical perspective. *Handbook of Emotions*, *3*, 272–288.
- Craig, A. D. (2009). How do you feel—now? The anterior insula and human awareness. *Nature Reviews Neuroscience*, *10*, 59–70.
- Craig, A. D. (2015). *How Do You Feel?: An Interoceptive Moment with Your Neurobiological Self*. Princeton: Princeton University Press.
- Craig, A. D., Chen, K., Bandy, D., & Reiman, E. M. (2000). Thermosensory activation of insular cortex. *Nature Neuroscience*, *3*(2), 184–190. doi:10.1038/72131.
- Cramer, A. O. J., van der Sluis, S., Noordhof, A., Wichers, M., Geschwind, N., Aggen, S. H., . . . Borsboom, D. (2012a). Dimensions of normal personality as networks in search of equilibrium: You can't like parties if you don't like people. *European Journal of Personality*, *26*, 414–431.
- Cramer, A. O. J., van der Sluis, S., Noordhof, A., Wichers, M., Geschwind, N., Aggen, S. H., . . . Borsboom, D. (2012b). Measurable like temperature or mereological like flocking? On the nature of personality traits. *European Journal of Personality*, *26*, 451–459.
- Crapse, T. B., & Sommer, M. A. (2008). Corollary discharge across the animal kingdom. *Nature Reviews Neuroscience*, *9*, 587–600.
- Craske, M. G., Stein, M. B., Eley, T. C., Milad, M. R., Holmes, A., Rapee, R. M., & Wittchen, H. U.

- (2017). Anxiety disorders. *Nat Rev Dis Primers*, 3, 17024.
- Craske, M. G., Wolitzky-Taylor, K. B., Mineka, S., Zinbarg, R., Waters, A. M., Vrshek-Schallhorn, S., . . . Ornitz, E. (2012). Elevated responding to safe conditions as a specific risk factor for anxiety versus depressive disorders: Evidence from a longitudinal investigation. *Journal of Abnormal Psychology*, 121(2), 315–324.
- Crawley, J. N., & Davis, L. G. (1982). Baseline exploratory activity predicts anxiolytic responsiveness to diazepam in five mouse strains. *Brain Research Bulletin*, 8(6), 609–612.
- Creed, A. T., & Funder, D. C. (1998). Social anxiety: From the inside and outside. *Personality & Individual Differences*, 25, 19–33.
- Cremers, H. R., Wager, T. D., & Yarkoni, T. (2017). The relation between statistical power and inference in fMRI. *PLoS ONE*, 12, e0184923.
- Creswell, J. D., Taren, A. A., Lindsay, E. K., Greco, C. M., Gianaros, P. J., Fairgrieve, A., . . . Ferris, J. L. (2016). Alterations in resting-state functional connectivity link mindfulness meditation with reduced interleukin-6: A randomized controlled trial. *Biological Psychiatry*, 80(1), 53–61.
- Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social-information-processing mechanisms in children's social adjustment. *Psychological Bulletin*, 115, 74–101.
- Critchley, H. D. (2002). Electrodermal responses: What happens in the brain. *The Neuroscientist*, 8(2), 132–142.
- Critchley, H. D. (2005). Neural mechanisms of autonomic, affective, and cognitive integration. *The Journal of Comparative Neurology*, 493, 154–166.
- Critchley, H. D., Mathias, C. J., and Dolan, R. (2002). Fear conditioning in humans: The influences of awareness and autonomic arousal on functional neuroanatomy. *Neuron*, 33, 653–663.
- Critchley, H. D., Wiens, S., Rotshtein, P., Öhman, A., & Dolan, R. J. (2004). Neural systems supporting interoceptive awareness. *Nature Neuroscience*, 7(2), 189–195. <http://doi.org/10.1038/nn1176>.
- Crockett, M. J., Clark, L., & Robbins, T. W. (2009). Reconciling the role of serotonin in behavioral inhibition and aversion: Acute tryptophan depletion abolishes punishment-induced inhibition in humans. *Journal of Neuroscience: Official Journal of the Society of Neuroscience*, 29, 11993–11999.
- Crockett, M. J., Clark, L., Apergis-Schoute, A. M., Morein-Zamir, S., & Robbins, T. W. (2012). Serotonin modulates the effects of Pavlovian aversive predictions on response vigor. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 37, 2244–2252.
- Crockett, M. J., Clark, L., Roiser, J. P., Robinson, O. J., Cools, R., Chase, H. W., . . . Sahakian, B. J. (2012). Converging evidence for central 5-HT effects in acute tryptophan depletion. *Molecular Psychiatry*, 17(2), 121.
- Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin*, 52, 281–302.
- Crone, E. A., & Dahl, R. E. (2012). Understanding adolescence as a period of social-affective engagement and goal flexibility. *Nature Reviews Neuroscience*, 13(9), 636–650. doi:10.1038/nrn3313.
- Crone, E. A., van Duijvenvoorde, A. C. K., & Peper, J. S. (2016). Neural contributions to risk-taking in adolescence—developmental changes and individual differences. *Journal of Child Psychology & Psychiatry*, 57(3), 353–368.
- Crumevolle-Arias, M., Jaglin, M., Bruneau, A., Vancassel, S., Cardona, A., Daugé, V., . . . Rabot, S. (2014). Absence of the gut microbiota enhances anxiety-like behavior and neuroendocrine response to acute stress in rats. *Psychoneuroendocrinology*, 42, 207–217.
- Crutzen, R., & Peters, G. Y. (2017). Targeting next generations to change the common practice of underpowered research. *Frontiers in Psychology*, 8, 1184.
- Cryan, J. F., & Dinan, T. G. (2012). Mind-altering microorganisms: The impact of the gut microbiota on brain and behaviour. *Nature Reviews Neuroscience*, 13(10), 701–712. <http://doi.org/10.1038/nrn3346>.
- Cryan, J. F., & Sweeney, F. F. (2011). The age of anxiety: role of animal models of anxiolytic action in drug discovery. *British Journal of Pharmacology*, 164, 1129–1161.
- Csikszentmihalyi, M., & Larson, R. (1984). *Being adolescent*. New York: Basic Books.
- Culverhouse, R. C., Saccone, N. L., Horton, A. C., Ma, Y., Anstey, K. J., Banaschewski, T., . . . Bierut, L. J. (2018). Collaborative meta-analysis finds no evidence of a strong interaction between stress and 5-HTTLPR genotype contributing to the development of depression. *Molecular Psychiatry*, 23, 133–142.
- Cumming, E., & Henry, W. E. (1961). *Growing older: The process of disengagement*. New York: Basic Books.
- Cunningham, W. A., & Zelazo, P. D. (2007). Attitudes and evaluations: A social cognitive neuroscience perspective. *Trends in Cognitive Sciences*, 11, 97–104.
- Curran, E. A., Cryan, J. F., Kenny, L. C., Dinan, T. G., Kearney, P. M., & Khashan, A. S. (2015). Obstetrical mode of delivery and childhood behavior and psychological development in a British cohort. *Journal of Autism & Developmental Disorders*, 46(2), 603–614. <http://doi.org/10.1007/s10803-015-2616-1>.



## 456 REFERENCES

- Curran, E. A., Dalman, C., Kearney, P. M., Kenny, L. C., Cryan, J. F., Dinan, T. G., & Khashan, A. S. (2015). Association between obstetric mode of delivery and autism spectrum disorder: A population-based sibling design study. *Journal of the American Medical Association Psychiatry*, 72(9), 935–942. <http://doi.org/10.1001/jamapsychiatry.2015.0846>.
- Curran, E. A., O'Neill, S. M., Cryan, J. F., Kenny, L. C., Dinan, T. G., Khashan, A. S., & Kearney, P. M. (2015). Research Review: Birth by caesarean section and development of autism spectrum disorder and attention-deficit/hyperactivity disorder: A systematic review and meta-analysis. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 56(5), 500–508. <http://doi.org/10.1111/jcpp.12351>.
- Curtis, V., Aunger, R., & Rabie, T. (2004). Evidence that disgust evolved to protect from risk of disease. *Proceedings of the Royal Society of London, Series B: Biological Sciences*, 271(Suppl), S131–S133.
- Cuthbert, B. N., & Insel, T. R. (2013). Toward the future of psychiatric diagnosis: The seven pillars of RDoC. *BMC Medicine*, 11(126), 1–8.
- d'Espagnat, B. (2006). *On physics and philosophy*. Princeton, NJ: Princeton University Press.
- D'Esposito, M., & Postle, B. R. (2015). The cognitive neuroscience of working memory. *Annual Review of Psychology*, 66, 115–142.
- D'Mello, R., & Dickenson, A. H. (2008). Spinal cord mechanisms of pain. *British Journal of Anaesthesiology*, 101, 8–16.
- Dael, N., Mortillaro, M., & Scherer, K. R. (2012). Emotion expression in body action and posture. *Emotion*, 12(5), 1085.
- Dahl, R. E. (2004). Adolescent brain development: A period of vulnerabilities and opportunities. *Annals of the New York Academy of Sciences*, 1021, 1–22.
- Dahl, R. E., & Gunnar, M. R. (2009). Heightened stress responsiveness and emotional reactivity during pubertal maturation: Implications for psychopathology. *Developmental Psychopathology*, 21(1), 1–6.
- Dailey, M. N., Cottrell, G. W., Padgett, C., & Adolphs, R. (2002). EMPATH: A neural network that categorizes facial expressions. *Journal of Cognitive Neuroscience*, 14(8), 1158–1173.
- Dalai Lama & Ekman, P. (2009). *Emotional awareness: Overcoming the obstacles to psychological balance and compassion*. New York: Holt.
- Dale, A. M., Fischl, B., & Sereno, M. I. (1999). Cortical surface-based analysis. I. Segmentation and surface reconstruction. *NeuroImage*, 9, 179–194.
- Dalton, K. M., Nacewicz, B. M., Johnstone, T., Schaefer, H. S., Gernsbacher, M. A., Goldsmith, H. H., . . . Davidson, R. J. (2005). Gaze fixation and the neural circuitry of face processing in autism. *Nature Neuroscience*, 8, 519–526.
- Damasio, A. (2018). *The strange order of things: Life, feeling, and the making of cultures*. New York: Pantheon.
- Damasio, A. R. (1991). *Somatic markers and the guidance of behavior*. Oxford, UK: Oxford University Press.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Grosset/ Putnam.
- Damasio, A. R. (1995). Toward a neurobiology of emotion and feeling: Operational concepts and hypotheses. *The Neuroscientist*, 1, 19–25.
- Damasio, A. R. (1996). The somatic marker hypothesis and the possible functions of the prefrontal cortex. *Philosophical Transactions of the Royal Society of London, Section B*, 351, 1413–1420.
- Damasio, A. R. (1997). Neuropsychology: Towards a neuropathology of emotion and mood. *Nature*, 386, 769–770.
- Damasio, A. R. (1999). *The feeling of what happens: Body and emotion in the making of consciousness*. New York: Harcourt.
- Damasio, A. R. (2003). *Looking for Spinoza: Joy, sorrow, and the feeling brain*. New York: Random House.
- Damasio, A. (2008). *Descartes' Error: Emotion, Reason and the Human Brain*. Random House.
- Damasio, A. R. (2010). *Self comes to mind: Constructing the conscious brain*. New York: Pantheon/Vintage.
- Damasio, A. R., & Carvalho, G. B. (2013). The nature of feelings: Evolutionary and neurobiological origins. *Nature Reviews Neuroscience*, 14(2), 143–152.
- Damasio, A. R., Damasio, H., & Tranel, D. (2012). Persistence of feelings and sentience after bilateral damage of the insula. *Cerebral Cortex*, 23(4), 833–846. doi:10.1093/cercor/bhs077.
- Damasio, A. R., Grabowski, T. J., Bechara, A., Damasio, H., Ponto, L. L., Parvizi, J., & Hichwa, R. D. (2000). Subcortical and cortical brain activity during the feeling of self-generated emotions. *Nature Neuroscience*, 3(10), 1049–1056. doi:10.1038/79871.
- Damasio, A. R., Tranel, D., & Damasio, H. (1990). Individuals with sociopathic behavior caused by frontal damage fail to respond autonomically to social stimuli. *Behavioural Brain Research*, 41(2), 81–94.
- Damasio, H., Grabowski, T., Frank, R., Galaburda, A. M., & Damasio, A. R. (1994). The return of Phineas Gage: Clues about the brain from the skull of a famous patient. *Science*, 264, 1102–1105.
- Dandeneau, S. D., Baldwin, M. W., Baccus, J. R., Sakellaropoulos, M., & Pruessner, J. C. (2007). Cutting stress off at the pass: Reducing vigilance and responsiveness to social threat by

- manipulating attention. *Journal of Personality & Social Psychology*, 93(4), 651–666.
- Dan-Glauser, E. S., & Scherer, K. R. (2011). The Geneva affective picture database (GAPED): A new 730-picture database focusing on valence and normative significance. *Behavior Research Methods*, 43, 468–477.
- Danieli, Y. (1998). *International handbook of multigenerational legacies of trauma*. New York: Plenum Press.
- Danner, D. D., Snowdon, D. A., & Friesen, W. V. (2001). Positive emotions in early life and longevity: Findings from the Nun Study. *Journal of Personality & Social Psychology*, 80(5), 804–813. <http://doi.org/10.1037//0022-3514.80.5.804>.
- Dannowski, U., Stuhmann, A., Beutelmann, V., Zwanzger, P., Lenzen, T., Grotegerd, D., . . . Kugel, H. (2012). Limbic scars: Long-term consequences of childhood maltreatment revealed by functional and structural magnetic resonance imaging. *Biological Psychiatry*, 71, 286–293.
- Dantzer, R. (2001). Cytokine-induced sickness behavior: Where do we stand? *Brain, Behavior, & Immunity*, 15(1), 7–24.
- Dantzer, R., O'Connor, J. C., Freund, G. G., Johnson, R. W., & Kelley, K. W. (2008). From inflammation to sickness and depression: When the immune system subjugates the brain. *Nature Reviews Neuroscience*, 9(1), 46–56.
- Darwin, C. (1872/1965). *The Expression of the Emotions in Man and Animals*. Chicago: University of Chicago Press.
- Darwin, C. (1872/2009). *The expression of the emotions in man and animals* (4th ed.) (With an introduction, afterword, and commentary by P. Ekman). New York: Oxford University Press.
- David, S., Hareli, S., & Hess, U. (2015). The influence on perceptions of truthfulness of the emotional expressions shown when talking about failure. *Europe's Journal of Psychology*, 11(1), 125–138.
- Davidson, M. C., Amso, D., Anderson, L. A., & Diamond, A. (2006). Development of cognitive control and executive functions from 4 to 13 years: Evidence from manipulations of memory, inhibition, and task switching. *Neuropsychologia*, 44, 2037–2078.
- Davidson, R. J. (1984). Hemispheric asymmetry and emotion. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 39–57). Hillsdale, NJ: Lawrence Erlbaum.
- Davidson, R. J. (1994a). Complexities in the search for emotion-specific physiology. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 237–242). New York: Oxford University Press.
- Davidson, R. J. (1994b). On emotion, mood, and related affective constructs. In P. Ekman & R. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 51–55). New York: Oxford University Press.
- Davidson, R. J. (1998a). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition & Emotion*, 12(3), 307–330.
- Davidson, R. J. (1998b). Metabolic rate in the right amygdala predicts negative affect in depressed patients. *NeuroReport*, 9(14), 3301–3307.
- Davidson, R. J. (2001). Toward a biology of personality and emotion. *Annals of the New York Academy of Sciences*, 935, 191–207.
- Davidson, R. J., & Begley, S. (2012). *The emotional life of your brain: How its unique patterns affect the way you think, feel, and live—and how you can change them*. New York: Hudson Street Press.
- Davidson, R. J., & Ekman, P. (1994). Afterword: Is there emotion-specific physiology? In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 261–262). New York: Oxford University Press.
- Davidson, R. J., & Fox, N. A. (1982). Asymmetrical brain activity discriminates between positive and negative affective stimuli in human infants. *Science*, 218(4578), 1235–1237.
- Davidson, R. J., & Harrington, A. (Eds.) (2001). *Visions of compassion: Western scientists and Tibetan Buddhists examine human nature*. New York: Oxford University Press.
- Davidson, R. J., & Irwin, W. (1999). The functional neuroanatomy of emotion and affective style. *Trends in Cognitive Sciences*, 3(1), 11–21.
- Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: Stress and interventions to promote well-being. *Nature Neuroscience*, 15(5), 689–695.
- Davidson, R. J., Jackson, D. C., & Kalin, N. H. (2000). *Emotion, plasticity, context, and regulation: Perspectives from affective neuroscience*. *Psychological Bulletin*, 126(6), 890–909.
- Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., . . . Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65(4), 564–570.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, 116, 387–411. [doi:10.1037/0033-2909.116.3.387](http://doi.org/10.1037/0033-2909.116.3.387).
- Davis, C. A., Levitan, R. D., Reid, C., Carter, J. C., Kaplan, A. S., Patte, K. A., . . . Kennedy, J. L. (2009). Dopamine for “wanting” and opioids for “liking”: A comparison of obese adults with and without binge eating. *Obesity*, 17(6), 1220–1225.

## 458 REFERENCES

- Davis, J. I., & Markman, A. B. (2012). Embodied cognition as a practical paradigm: Introduction to the topic, the future of embodied cognition. *Topics in Cognitive Science*, 4(4), 685–691. <http://doi.org/10.1111/j.1756-8765.2012.01227.x>.
- Davis, K. D., Wood, M. L., Crawley, A. P., & Mikulis, D. J. (1995). fMRI of human somatosensory and cingulate cortex during painful electrical nerve stimulation. *NeuroReport*, 7, 321–325.
- Davis, K. L., & Panksepp, J. (2011). The brain's emotional foundations of human personality and the Affective Neuroscience Personality Scales. *Neuroscience & Biobehavioral Reviews*, 35, 1946–1958.
- Davis, M. (1992). The role of the amygdala in fear and anxiety. *Annual Review of Neuroscience*, 15, 353–375. <https://doi.org/10.1146/annurev.ne.15.030192.002033>.
- Davis, M. (2000). The role of the amygdala in conditioned and unconditioned fear and anxiety. In J. P. Aggleton (Ed.), *The amygdala* (Vol. 2, pp. 213–287). Oxford, UK: Oxford University Press.
- Davis, M., & Lang, P. J. (2003). Emotion. In M. Gallagher & R. J. Nelson (Eds.), *Handbook of psychology, Vol. 3: Biological psychology* (pp. 405–439). New York: Wiley.
- Davis, M., & Whalen, P. J. (2001). The amygdala: Vigilance and emotion. *Molecular Psychiatry*, 6(1), 13–34. <http://doi.org/11244481>.
- Davis, M., Walker, D. L., Miles, L., & Grillon, C. (2010). Phasic vs sustained fear in rats and humans: Role of the extended amygdala in fear vs anxiety. *Neuropsychopharmacology*, 35, 105–135.
- Davis, R. N., & Nolen-Hoeksema, S. (2000). Cognitive inflexibility among ruminators and nonruminators. *Cognitive Therapy & Research*, 24(6), 699–711. <http://doi.org/10.1023/A:1005591412406>.
- Daw, N. D., Niv, Y., & Dayan, P. (2005). Uncertainty-based competition between prefrontal and dorsolateral striatal systems for behavioral control. *Nature Neuroscience*, 8(12), 1704–1711.
- Dawson, G., Carver, L., Meltzoff, A. N., Panagiotides, H., McPartland, J., & Webb, S. J. (2002). Neural correlates of face and object recognition in young children with autism spectrum disorder, developmental delay, and typical development. *Child Development*, 73(3), 700–717.
- Dayan, P., & Balleine, B. W. (2002). Reward, motivation, and reinforcement learning. *Neuron*, 36, 285–298.
- Dayan, P., & Huys, Q. J. (2008). Serotonin, inhibition, and negative mood. *PLoS Computational Biology*, 4(2), e4.
- Dayan, P., & Huys, Q. J. M. (2009). Serotonin in affective control. *Annual Review of Neuroscience*, 32, 95–126.
- Dayan, P., & Niv, Y. (2008). Reinforcement learning: The good, the bad and the ugly. *Current Opinion in Neurobiology*, 18(2), 185–196. [doi:10.1016/j.conb.2008.08.003](https://doi.org/10.1016/j.conb.2008.08.003).
- Dayan, P., Niv, Y., Seymour, B., & Daw, N. D. (2006). The misbehavior of value and the discipline of the will. *Neural Networks: Official Journal of the International Neural Network Society*, 19, 1153–1160.
- de Angelis, M., Piccolo, M., Vannini, L., Siragusa, S., De Giacomo, A., Serrazzanetti, D. I., . . . Francavilla, R. (2013). Fecal microbiota and metabolome of children with autism and pervasive developmental disorder not otherwise specified. *PLoS One*, 8(10), e76993.
- de Cesarei, A., & Codispoti, M. (2011). Affective modulation of the LPP - ERD during picture viewing. *Psychophysiology*, 48, 1397–1404.
- de Craen, A. J., Roos, P. J., Leonard de Vries, A., & Kleijnen, J. (1996). Effect of colour of drugs: Systematic review of perceived effect of drugs and of their effectiveness. *British Medical Journal*, 313(7072), 1624–1626.
- de Craen, A. J., Tijssen, J. G., de Gans, J., & Kleijnen, J. (2000). Placebo effect in the acute treatment of migraine: Subcutaneous placebos are better than oral placebos. *Journal of Neurology* 247(3), 183–188.
- de Fruyt, F., Bartels, M., Van Leeuwen, K. G., De Clercq, B., Decuyper, M., & Mervielde, I. (2008). Five types of personality continuity in childhood and adolescence. *Journal of Personality & Social Psychology*, 91(2), 538–552.
- de Gardelle, V., Waszczuk, M., Eegner, T., & Summerfield, C. (2013). Concurrent repetition enhancement and suppression responses in extrastriate visual cortex. *Cerebral Cortex*, 23(9), 2235–2244.
- de Gelder, B. (2006). Towards the neurobiology of emotional body language. *Nature Reviews Neuroscience*, 7(3), 242–249.
- de Gelder, B. (2010). Uncanny sight in the blind. *Scientific American*, 302(5), 60–65.
- de Gelder, B., & Hadjikhani, N. (2006). Non-conscious recognition of emotional body language. *NeuroReport*, 17, 583–586.
- de Gelder, B., & Tamietto, M. (2011). Faces, bodies, social vision as agent vision and social consciousness. In R. Adams, N. Ambady, K. Nakayama, & S. Shimojo (Eds.), *The science of social vision* (pp. 51–74). New York: Oxford University Press.
- de Gelder, B., Bocker, K. B., Tuomainen, J., Hensen, M., & Vroomen, J. (1999). The combined perception of emotion from voice and face: Early interaction revealed by human electric brain responses. *Neuroscience Letters*, 260, 133–136.

- de Gelder, B., Morris, J. S., & Dolan, R. (2005). Unconscious fear influences emotional awareness of faces and voices. *Proceedings of the National Academy of Sciences*, *102*, 18682–18687.
- de Gelder, B., Pourtois, G., & Weiskrantz, L. (2002). Fear recognition in the voice is modulated by unconsciously recognized facial expressions but not by unconsciously recognized affective pictures. *Proceedings of the National Academy of Sciences of the United States of America*, *99*, 4121–4126.
- de Gelder, B., Pourtois, G., Raamsdonk, M. V., Vroomen, J., & Weiskrantz, L. (2001). Unseen stimuli modulate conscious visual experience: Evidence from inter-hemispheric summation. *NeuroReport*, *12*, 385–391.
- de Gelder, B., Snyder, J., Greve, D., Gerard, G., & Hadjikhani, N. (2004). Fear fosters flight: A mechanism for fear contagion when perceiving emotion expressed by a whole body. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(47), 16701–16706.
- de Gelder, B., Tamietto, M., van Boxtel, G., Goebel, R., Sahraie, A., van den Stock, J., . . . Pegna, A. (2008). Intact navigation skills after bilateral loss of striate cortex. *Current Biology*, *18*, 1128–1129.
- de Gelder, B., Vroomen, J., Pourtois, G., & Weiskrantz, L. (1999). Non-conscious recognition of affect in the absence of striate cortex. *NeuroReport*, *10*, 3759–3763.
- de Groot, J. H., Smeets, M. A., Kaldewaij, A., Duijndam, M. J., & Semin, G. R. (2012). Chemosignals communicate human emotions. *Psychological Science*, *23*(11), 1417–1424. doi:10.1177/0956797612445317.
- de Jonge, J., Le Blanc, P. M., Peeters, M. C. W., & Noordam, H. (2008). Emotional job demands and the role of matching job resources: A cross-sectional survey study among health care workers. *International Journal of Nursing Studies*, *45*(10), 1460–1469. doi:10.1016/j.ijnurstu.2007.11.002.
- de la Fuente-Fernandez, R. (2001). Expectation and dopamine release: Mechanism of the placebo effect in Parkinson's Disease. *Science*, *293*(5532), 1164–1166. doi:10.1126/science.1060937.
- de la Fuente-Fernández, R., Schulzer, M., & Stoessl, A. J. (2004). Placebo mechanisms and reward circuitry: Clues from Parkinson's disease. *Biological Psychiatry*, *56*(2), 67–71. doi:10.1016/j.biopsych.2003.11.019.
- de la Vega, A., Chang, L. J., Banich, M. T., Wager, T. D., & Yarkoni, T. (2016). Large-scale meta-analysis of human medial frontal cortex reveals tripartite functional organization. *Journal of Neuroscience*, *36*, 6553–6562.
- de Lange, F. P., Koers, A., Kalkman, J. S., Bleijenberg, G., Hagoort, P., Van der Meer, J. W., & Toni, I. (2008). Increase in prefrontal cortical volume following cognitive behavioural therapy in patients with chronic fatigue syndrome. *Brain*, *131*(8), 2172–2180.
- de Lange, F. P., Van Gaal, S., Lamme, V. A., & Dehaene, S. (2011). How awareness changes the relative weights of evidence during human decision-making. *PLoS Biology*, *9*(11), e1001203.
- de Luca, C. R., Wood, S. J., Anderson, V., Buchanan, J., Proffitt, T. M., Mahony, K., & Pantelis, C. (2003). Normative data from the CANTAB. I: Development of executive function over the lifespan. *Journal of Clinical & Experimental Neuropsychology*, *25*(2), 242–254.
- de Macks, Z. A. O., Moor, B. G., Overgaauw, S., Güroğlu, B., Dahl, R. E., & Crone, E. A. (2011). Testosterone levels correspond with increased ventral striatum activation in response to monetary rewards in adolescents. *Developmental Cognitive Neuroscience*, *1*(4), 506–516.
- de Martino, B., Camerer, C. F., & Adolphs, R. (2010). Amygdala damage eliminates monetary loss aversion. *Proceedings of the National Academy of Sciences*, *107*(8), 3788–3792.
- de Martino, B., Kumaran, D., Seymour, B., & Dolan, R. J. (2006). Frames, biases, and rational decision-making in the human brain. *Science*, *313*(5787), 684–687.
- de Pauw, S. S. W. (2017). Childhood personality and temperament. In T. A. Widiger (Ed.), *The Oxford handbook of the five-factor model* (pp. 243–280). New York: Oxford University Press.
- de Quervain, D. J., Roozendaal, B., & McGaugh, J. L. (1998). Stress and glucocorticoids impair retrieval of long-term spatial memory. *Nature*, *394*(6695), 787–790. https://doi.org/10.1038/29542.
- de Sousa, R. (2014). Emotion. In E. N. Zalta (Ed.), *Stanford encyclopedia of philosophy*. Stanford, CA: Stanford University. Available at: <http://plato.stanford.edu/entries/emotion/>.
- de Vignemont, F., & Singer, T. (2006). The empathic brain: How, when and why? *Trends in Cognitive Sciences*, *10*(10), 435–441.
- de Waal, F. B. M. (1996). *Good natured* (No. 87). Cambridge, MA: Harvard University Press.
- de Waal, F. B. M. (2000). Primates—a natural heritage of conflict resolution. *Science*, *289*, 586–590.
- de Waal, F. B. M. (2007). The “Russian doll” model of empathy and imitation. In S. Braten (Ed.), *On being moved: From mirror neurons to empathy* (pp. 35–48). Amsterdam: John Benjamins Publishing.
- de Waal, F. B. M. (2008). Putting the altruism back into altruism: The evolution of empathy. *Annual Review of Psychology*, *59*(1), 279–300. doi:10.1146/annurev.psych.59.103006.093625.
- de Waal, F. B. M., & Ferrari, P. F. (2010). Towards a bottom-up perspective on animal and human

## 460 REFERENCES

- cognition. *Trends in Cognitive Sciences*, 14(5), 201–207. doi:10.1016/j.tics.2010.03.003.
- Deady, D. K., North, N. T., Allan, D., Smith, M. J., & O'Carroll, R. E. (2010). Examining the effect of spinal cord injury on emotional awareness, expressivity and memory for emotional material. *Psychology, Health & Medicine*, 15, 406–419.
- Deakin J. F. W., & Graeff, F. G. (1991). 5-HT and mechanisms of defence. *Journal of Psychopharmacology*, 5, 305–315.
- Deaner, R. O., Khera, A. V., & Platt, M. L. (2005). Monkeys pay per view: Adaptive valuation of social images by rhesus macaques. *Current Biology*, 15(6), 543–548. https://doi.org/10.1016/j.cub.2005.01.044.
- Deater-Deckard, K., & Wang, Z. (2012). Anger and irritability. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 124–144). New York: Guilford Press.
- Decety, J. (2010). To what extent is the experience of empathy mediated by shared neural circuits? *Emotion Review*, 2(3), 204–207.
- Decety, J., & Sommerville, J. A. (2003). Shared representations between self and other: A social cognitive neuroscience view. *Trends in Cognitive Sciences*, 7, 527–533.
- Decety, J., Yang, C. Y., & Cheng, Y. (2010). Physicians down-regulate their pain empathy response: An event-related brain potential study. *NeuroImage*, 50(4), 1676–1682.
- Deco, G., Jirsa, V. K., & McIntosh, A. R. (2010). Emerging concepts for the dynamical organization of resting-state activity in the brain. *Nature Reviews Neuroscience*, 12(1), 43–56.
- Deco, G., Rolls, E. T., & Romo, R. (2009). Stochastic dynamics as a principle of brain function. *Progress in Neurobiology*, 88, 1–16.
- Deco, G., Rolls, E. T., Albantakis, L., & Romo, R. (2013). Brain mechanisms for perceptual and reward-related decision-making. *Progress in Neurobiology*, 103, 194–213.
- Deen, B., Pitskel, N. B., & Pelphrey, K. A. (2011). Three systems of insular functional connectivity identified with cluster analysis. *Cerebral Cortex*, 21(7), 1498–1506. http://doi.org/10.1093/cercor/bhq186.
- Degnan, K. A., & Fox, N. A. (2007). Behavioral inhibition and anxiety disorders: Multiple levels of a resilience process. *Development & Psychopathology*, 19, 729–746.
- Degnan, K. A., Almas, A. N., Henderson, H. A., Hane, A. A., Walker, O. L., & Fox, N. A. (2014). Longitudinal trajectories of social reticence with unfamiliar peers across early childhood. *Developmental Psychology*, 50, 2311–2323. doi:dx.doi.org/10.1037/a0037751.
- Degnan, K. A., Hane, A. A., Henderson, H. A., Moas, O. L., Reeb-Sutherland, B. C., & Fox, N. A. (2011). Longitudinal stability of temperamental exuberance and social-emotional outcomes in early childhood. *Developmental Psychology*, 47, 765–780.
- Dehaene, S., & Changeux, J.-P. (2011). Experimental and theoretical approaches to conscious processing. *Neuron*, 70(2), 200–227. doi:10.1016/j.neuron.2011.03.018.
- Dehaene, S., Changeux, J. P., Naccache, L., Sackur, J., & Sergent, C. (2006). Conscious, preconscious, and subliminal processing: A testable taxonomy. *Trends in Cognitive Sciences*, 10, 204–211.
- Del Cul, A., Dehaene, S., Reyes, P., Bravo, E., & Slachevsky, A. (2009). Causal role of prefrontal cortex in the threshold for access to consciousness. *Brain*, 132(9), 2531–2540. doi:10.1093/brain/awp111.
- Delgado, M. R. (2007). Reward-related responses in the human striatum. *Annals of the New York Academy of Sciences*, 1104, 70–88.
- Delgado, M. R., Frank, R., & Phelps, E. A. (2005). Perceptions of moral character modulate the neural systems of reward during the trust game. *Nature Neuroscience*, 8, 1611–1618.
- Delplanque, S., Chrea, C., Grandjean, D., Ferdenzi, C., Cayeux, I., Porcherot, C., . . . Scherer, K. R. (2012). How to map the affective semantic space of scents. *Cognition & Emotion*, 26(5), 885–898.
- Dematte, M. L., Sanabria, D., Sugarman, R., & Spence, C. (2006). Cross-modal interactions between olfaction and touch. *Chemical Senses*, 31(4), 291–300. doi:10.1093/chemse/bjj031.
- Den Ouden, H. E. M., Swart, J. C., Schmidt, K., Fekkes, D., Geurts, D. E. M., & Cools, R. (2015). Acute serotonin depletion releases motivated inhibition of response vigour. *Psychopharmacology (Berlin)*, 232, 1303–1312.
- Denham, A. R. (2008). Rethinking historical trauma: Narratives of resilience. *Transcultural Psychiatry*, 45(3), 391–414.
- Denham, S. A., Bassett, H. H., Mincic, M., Kalb, S., Way, E., Wyatt, T., & Segal, Y. (2012). Social-emotional learning profiles of preschoolers' early school success: A person-centered approach. *Learning & Individual Differences*, 22, 178–189. doi:10.1016/j.lindif.2011.05.001.
- Denissen, J. A., Van Aken, M. G., Penke, L., & Wood, D. (2013). Self-regulation underlies temperament and personality: An integrative developmental framework. *Child Development Perspectives*, 7, 255–260.
- Dennett, D. C. (1991). *Consciousness explained*. London: Penguin.
- Dennis, T. A., & O'Toole, L. (2014). Mental health on the go: Effects of a gamified attention bias

- modification mobile application in trait anxious adults. *Clinical Psychological Science*, 2, 576–590.
- Denton, D. (2006). *The primordial emotions: The dawning of consciousness*. New York: Oxford University Press.
- Denton, D. A., McKinley, M. J., Farrell, M., & Egan, G. F. (2009). The role of primordial emotions in the evolutionary origin of consciousness. *Consciousness & Cognition*, 18(2), 500–514.
- Denu, J. M. (2007). Vitamins and aging: Pathways to NAD<sup>+</sup> synthesis. *Cell*, 129(3), 453–454. PubMed PMID: 17482537.
- Derakshan, N., & Eysenck, M. W. (2009). Anxiety, processing efficiency, and cognitive performance: New developments from attentional control theory. *European Psychologist*, 14, 168–176.
- Derakshan, N., Ansari, T. L., Hansard, M., Shoker, L., & Eysenck, M. W. (2009). Anxiety, inhibition, efficiency, and effectiveness: An investigation using the antisaccade task. *Experimental Psychology*, 56, 48–55.
- Derakshan, N., Smyth, S., & Eysenck, M. W. (2009). Effects of state anxiety on performance using a task-switching paradigm: An investigation of attentional control theory. *Psychonomic Bulletin & Review*, 16, 1112–1117.
- DeRosier, M. E., Kupersmidt, J. B., & Patterson, C. J. (1994). Children's academic and behavioral adjustment as a function of the chronicity and proximity of peer rejection. *Child Development*, 65, 1799–1813. doi:10.2307/1131295.
- Desai, M., Kahn, I., Knoblich, U., Bernstein, J., Atallah, H., Yang, A., . . . Boyden, E. S. (2011). Mapping brain networks in awake mice using combined optical neural control and fMRI. *Journal of Neurophysiology*, 105, 1393–1405.
- Desbonnet, L., Clarke, G., Shanahan, F., Dinan, T. G., & Cryan, J. F. (2014). Microbiota is essential for social development in the mouse. *Molecular Psychiatry*, 19(2), 146–148. http://doi.org/10.1038/mp.2013.65.
- Descartes, R. (1650). *The passions of the soule*. London: John Martin and John Ridley.
- Descartes, R., Clerselier, C., LaForge, L., & Schuyt, F. (1664). *L'homme et un traite de la formation du foetus du Mesme Auteur*. Carles Angot.
- Desimone, R. (1998). Visual attention mediated by biased competition in extrastriate visual cortex. *Philosophical Transactions of the Royal Society of London, Series B: Biological Science*, 353(1373), 1245–1255.
- Desimone, R., & Duncan, J. (1995). Neural mechanisms of selective visual attention. *Annual Review of Neuroscience*, 18, 193–222.
- DeSteno, D., Petty, R. E., Rucker, D. D., Wegener, D. T., & Braverman, J. (2004). Discrete emotions and persuasion: The role of emotion-induced expectancies. *Journal of Personality & Social Psychology*, 86(1), 43–56.
- DeSteno, D., Petty, R. E., Wegener, D. T., & Rucker, D. D. (2000). Beyond valence in the perception of likelihood: The role of emotion specificity. *Journal of Personality & Social Psychology*, 78(3), 397–416.
- Deutch, A. Y., & Roth, R. H. (1990). The determinants of stress-induced activation of the prefrontal cortical dopamine system. *Progress in Brain Research*, 85, 367–402; discussion 402–363.
- Deverman, B. E., & Patterson, P. H. (2009). Cytokines and CNS development. *Neuron*, 64(1), 61–78. http://doi.org/10.1016/j.neuron.2009.09.002.
- Devinsky, O., Morrell, M. J., & Vogt, B. A. (1995). Contributions of anterior cingulate cortex to behaviour. *Brain*, 118(Pt 1), 279–306.
- DeYoung, C. G. (2014). Openness/intellect: A dimension of personality reflecting cognitive exploration. In M. Mikulincer, & P. Shaver (Eds.), M. L. Cooper, & R. Larsen (Assoc. Eds.), *APA handbook of personality and social psychology: Vol. 3. Personality processes and individual differences* (pp. 369–399). Washington, DC: American Psychological Association.
- Di Giusto, J. A., Di Giusto, E. L., & King, M. G. (1974). Heart rate and muscle tension correlates of conditioned suppression in humans. *Journal of Experimental Psychology*, 103, 515–521.
- Di Simplicio, M., Doallo, S., Costoloni, G., Rohenkohl, G., Nobre, A. C., & Harmer, C. J. (2014). “Can you look me in the face?” Short-term SSRI administration reverts avoidant ocular face exploration in subjects at risk for psychopathology. *Neuropsychopharmacology*, 39(13), 3059–3066.
- Dias-Ferreira, E., Sousa, J. C., Melo, I., Morgado, P., Mesquita, A. R., Cerqueira, J. J., . . . Sousa, N. (2009). Chronic stress causes frontostriatal reorganization and affects decision-making. *Science*, 325(5940), 621–625.
- Diaz, A., & Eisenberg, N. (2015). The process of emotion regulation is different from individual differences in emotion regulation: Conceptual arguments and a focus on individual differences. *Psychological Inquiry*, 26, 1–11. doi:10.1080/1047840X.2015.959094.
- Dickerson, S. S., & Kemeny, M. E. (2004). Acute stressors and cortisol responses: A theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, 130(3), 355–391. https://doi.org/10.1037/0033-2909.130.3.355.
- Dickinson, A. (1985). Actions and habits: The development of behavioural autonomy. *Philosophical Transactions of the Royal Society of London, B, Biological Sciences*, 308(1135), 67–78.

## 462 REFERENCES

- Dickinson, A., & Balleine, B. (1994). Motivational control of goal-directed action. *Animal Learning & Behavior*, 22, 1–18.
- Dickinson, A., & Dearing, F. (1979). Appetitive-aversive interactions between appetitive and aversive stimuli. *Psychological Bulletin*, 84, 690–711.
- Diener, C. I., & Dweck, C. S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. *Journal of Personality & Social Psychology*, 36, 451–462.
- Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13(1), 81–84.
- Dietz, J., Bradley, M. M., Jones, J., Okun, M. S., Perlstein, W. M., & Bowers, D. (2013). The late positive potential, emotion and apathy in Parkinson's disease. *Neuropsychologia*, 51, 960–966.
- Dilgen, J., Tejada, H. A., & O'Donnell, P. (2013). Amygdala inputs drive feedforward inhibition in the medial prefrontal cortex. *Journal of Neurophysiology*, 110, 221–229.
- Dillon, D. G., & LaBar, K. S. (2005). Startle modulation during conscious emotion regulation is arousal-dependent. *Behavioral Neuroscience*, 119(4), 1118.
- DiLuca, M., & Olesen, J. (2014). The cost of brain diseases: A burden or a challenge? *Neuron*, 82, 1205–1208.
- Dimberg, U. (1982). Facial reactions to facial expressions. *Psychophysiology*, 19(6), 643–647.
- Dimberg, U. (1988). Facial electromyography and the experience of emotion. *Journal of Psychophysiology*, 2, 277–282.
- Dimberg, U., & Thunberg, M. (1998). Rapid facial reactions to emotional facial expressions. *Scandinavian Journal of Psychology*, 39(1), 39–45.
- Dimberg, U., Thunberg, M., & Elmehed, K. (2000). Unconscious facial reactions to emotional facial expressions. *Psychological Science*, 11(1), 86–89.
- Dimberg, U., Thunberg, M., & Grunedal, S. (2002). Facial reactions to emotional stimuli: Automatically controlled emotional responses. *Cognition & Emotion*, 16(4), 449–471. <https://doi.org/10.1080/02699930143000356>.
- Dinan, T. G., & Cryan, J. F. (2017). Brain–gut–microbiota axis—mood, metabolism and behaviour. *Nature Reviews Gastroenterology & Hepatology*, 14, 69–70.
- Dinan, T. G., Stilling, R. M., Stanton, C., & Cryan, J. F. (2015). Collective unconscious: How gut microbes shape human behavior. *Journal of Psychiatric Research*, 63, 1–9.
- Diorio, D., Viau, V., & Meaney, M. J. (1993). The role of the medial prefrontal cortex (cingulate gyrus) in the regulation of hypothalamic-pituitary-adrenal responses to stress. *Journal of Neuroscience*, 13(9), 3839–3847.
- Djordjevic, J., Jones-Gotman, M., De Sousa, K., & Chertkow, H. (2008). Olfaction in patients with mild cognitive impairment and Alzheimer's disease. *Neurobiology of Aging*, 29(5), 693–706.
- Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development*, 54, 1386–1399. doi:10.2307/1129802.
- Dodge, K. A. (2006). Translational science in action: Hostile attributional style and the development of aggressive behavior problems. *Development & Psychopathology*, 18, 791–814.
- Dolan, R. J., & Vuilleumier, P. (2003). Amygdala automaticity in emotional processing. *Annals of the New York Academy of Sciences*, 985, 348–355.
- Dolcos, F., & McCarthy, G. (2006). Brain systems mediating cognitive interference by emotional distraction. *Journal of Neuroscience*, 26, 2072–2079.
- Dolcos, F., Iordan, A. D., & Dolcos, S. (2011). Neural correlates of emotion-cognition interactions: A review of evidence from brain imaging investigations. *Journal of Cognitive Psychology*, 23(6), 669–694. doi:10.1080/20445911.2011.594433.
- Dölen, G., Darvishzadeh, A., Huang, K. W., & Malenka, R. C. (2013). Social reward requires coordinated activity of nucleus accumbens oxytocin and serotonin. *Nature*, 501, 179–184.
- Doll, B. B., Jacobs, W. J., Sanfey, A. G., & Frank, M. J. (2009). Instructional control of reinforcement learning: A behavioral and neurocomputational investigation. *Brain Research*, 1299(C), 74–94. doi:10.1016/j.brainres.2009.07.007.
- Do-Monte, F. H., Quinones-Laracuente, K., & Quirk, G. J. (2015). A temporal shift in the circuits mediating retrieval of fear memory. *Nature*, 519(7544), 460–463.
- Doosti, M.-H., Bakhtiari, A., Zare, P., Amani, M., Majidi-Zolbanin, N., Babri, S., & Salari, A.-A. (2013). Impacts of early intervention with fluoxetine following early neonatal immune activation on depression-like behaviors and body weight in mice. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 43, 55–65. <http://doi.org/10.1016/j.pnpbp.2012.12.003>.
- Dosenbach, N. U., Fair, D. A., Cohen, A. L., Schlaggar, B. L., & Petersen, S. E. (2008). A dual-networks architecture of top-down control. *Trends in Cognitive Sciences*, 12(3), 99–105.
- Downar, J., Crawley, A. P., Mikulis, D. J., & Davis, K. D. (2000). A multimodal cortical network for the detection of changes in the sensory environment. *Nature Neuroscience*, 3, 277–283.
- Downar, J., Crawley, A. P., Mikulis, D. J., & Davis, K. D. (2002). A cortical network sensitive to stimulus salience in a neutral behavioral context across multiple sensory modalities. *Journal of Neurophysiology*, 87(1), 615–620.

- Downar, J., Mikulis, D. J., & Davis, K. D. (2003). Neural correlates of the prolonged salience of painful stimulation. *NeuroImage*, *20*, 1540–1551.
- Doyle, J. C., Francis, B. A., & Tannenbaum, A. (1992). *Feedback control theory*. New York: Macmillan Publishing Company.
- Draganski, B., Gaser, C., Kempermann, G., Kuhn, H. G., Winkler, J., Büchel, C., & May, A. (2006). Temporal and spatial dynamics of brain structure changes during extensive learning. *Journal of Neuroscience*, *26*(23), 6314–6317.
- Drake, A. J., & Seckl, J. R. (2011). Transmission of programming effects across generations. *Pediatric Endocrinology Review*, *9*(2), 566–578.
- Drevets, W. C., Price, J. L., Simpson Jr, J. R., Todd, R. D., Reich, T., Vannier, M., & Raichle, M. E. (1997). Subgenual prefrontal cortex abnormalities in mood disorders. *Nature*, *386*(6627), 824.
- Dreyfuss, M., Caudle, K., Drysdale, A. T., Johnston, N. E., Cohen, A. O., Somerville, L. H., . . . Casey, B. J. (2014). Teens impulsively react rather than retreat from threat. *Developmental Neuroscience*, *36*(3–4), 220–227. doi:10.1159/000357755.
- Drichoutis, A. C., & Nayga, R. M. (2013). Eliciting risk and time preferences under induced mood states. *Journal of Socio-Economics*, *45*, 18–27.
- Driver, J., & Noesselt, T. (2008). Multisensory interplay reveals crossmodal influences on “sensory-specific” brain regions, neural responses, and judgments. *Neuron*, *57*(1), 11–23. doi:10.1016/j.neuron.2007.12.013.
- Dror, D. E. (2001). Techniques of the brain and the paradox of emotions. *Science in Context*, *14*, 643–660.
- Drwecki, B. B., Moore, C. F., Ward, S. E., & Prkachin, K. M. (2011). Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. *Pain*, *152*(5), 1001–1006. https://doi.org/10.1016/j.pain.2010.12.005.
- Dubois, A., Bringuier, S., Capdevilla, X., & Pry, R. (2008). Vocal and verbal expression of post-operative pain in preschoolers. *Pain Management Nursing*, *9*(4), 160–165.
- Dubois, J., Oya, H., Tyszka, J. M., Howard, M., 3rd, Eberhardt, F., & Adolphs, R. (in press). Causal mapping of emotion networks in the human brain: Framework and initial findings. *Neuropsychologia*.
- Dudeny, J., Sharpe, L., & Hunt, C. (2015). Attentional bias towards threatening stimuli in children with anxiety: A meta-analysis. *Clinical Psychology Review*, *40*, 66–75.
- Duerden, E. G., & Albanese, M.-C. (2013). Localization of pain-related brain activation: A meta-analysis of neuroimaging data. *Human Brain Mapping*, *34*, 109–149.
- Duff, E. P., Vennart, W., Wise, R. G., Howard, M. A., Harris, R. E., Lee, M., . . . Smith, S. M. (2015). Learning to identify CNS drug action and efficacy using multistudy fMRI data. *Science Translational Medicine*, *7*(274), 274ra16.
- Duffy, K. A., Harris, L. T., Chartrand, T. L., & Stanton, S. J. (2017). Women recovering from social rejection: The effect of the person and the situation on a hormonal mechanism of affiliation. *Psychoneuroendocrinology*, *76*, 174–182.
- Dufwenberg, M. (2002). Marital investments, time consistency and emotions. *Journal of Economic Behavior & Organization*, *48*(1), 57–69.
- Dufwenberg, M., & Gneezy, U. (2000). Measuring beliefs in an experimental lost wallet game. *Games & Economic Behavior*, *30*(2), 163–182.
- Dufwenberg, M., & Kirchsteiger, G. (2004). A theory of sequential reciprocity. *Games & Economic Behavior*, *47*(2), 268–298.
- Duits, P., Cath, D. C., Lissek, S., Hox, J. J., Hamm, A. O., Engelhard, I. M., . . . Baas, J. M. (2015). Updated meta-analysis of classical fear conditioning in the anxiety disorders. *Depression & Anxiety*, *32*, 239–253.
- Duke-Elder, S., & Abrams, D. (1970). Ophthalmic optics and refraction. In S. Duke-Elder (Ed.), *System of ophthalmology* (Vol. 5) (pp. 487–501). London: Henry Kimpton.
- Duman, R. S., & Monteggia, L. M. (2006). A neurotrophic model for stress-related mood disorders. *Biological Psychiatry*, *59*, 1116–1127.
- Dunbar, R. I. M. (2009). The social brain hypothesis and its implications for social evolution. *Annals of Human Biology*, *36*(5), 562–572.
- Dunbar, R. I. M., & Shultz, S. (2007). Evolution in the social brain. *Science*, *317*(5843), 1344–1347. doi:10.1126/science.1145463.
- Duncan, S., & Barrett, L. F. (2007). The role of the amygdala in visual awareness. *Trends in Cognitive Sciences*, *11*(5), 190–192.
- Dunn, B. D., Evans, D., Makarova, D., White, J., & Clark, L. (2012). Gut feelings and the reaction to perceived inequity: The interplay between bodily responses, regulation, and perception shapes the rejection of unfair offers on the ultimatum game. *Cognitive, Affective, & Behavioral Neuroscience*, *12*(3), 419–429.
- Dunning, J. P., Auriemmo, A., Castille, C., & Hajcak, G. (2010). In the face of anger: Startle modulation to graded facial expressions. *Psychophysiology*, *47*, 874–878.
- Dunsmoor, J. E., Mitroff, S. R., & LaBar, K. S. (2009). Generalization of conditioned fear along a dimension of increasing fear intensity. *Learning and Memory*, *16*, 460–469.
- Durnez, J., Blair, R. J., & Poldrack, R. A. (2017). Neurodesign: Optimal experimental design for task fMRI. *bioRxiv*.



## 464 REFERENCES

- Duvarci, S., & Pare, D. (2014). Amygdala microcircuits controlling learned fear. *Neuron*, *82*, 966–980.
- Dyson, M. W., Olino, T. M., Durbin, C. E., Goldsmith, H. H., Bufferd, S. J., Miller, A. R., & Klein, D. N. (2015). The structural and rank-order stability of temperament in young children based on a laboratory-observational measure. *Psychological Assessment*, *27*(4), 1388–1401.
- Eastwood, J. D., Smilek, D., & Merikle, P. M. (2003). Negative facial expression captures attention and disrupts performance. *Perception & Psychophysics*, *65*, 352–358.
- Echterhoff, G., Higgins, E. T., & Levine, J. M. (2009). Shared reality: Experiencing commonality with others' inner states about the world. *Perspectives on Psychological Science*, *4*, 496–521.
- Edelman, G. M. (1992). *Bright air, brilliant fire: On the matter of mind*. New York: Basic Books.
- Edelman, G. M., & Gally, J. A. (2001). Degeneracy and complexity in biological systems. *Proceedings of the National Academy of Sciences of the United States of America*, *98*(24), 13763–13768.
- Edelman, G., M. (1989). *The remembered present: A biological theory of consciousness*. New York: Basic Books.
- Editors, T. P. M. (2010). Social relationships are key to health, and to health policy. *PLoS Medicine*, *7*, 2.
- Edmiston, E. K., McHugo, M., Dukic, M. S., Smith, S. D., Abou-Khalil, B., Eggers, E., & Zald, D. H. (2013). Enhanced visual cortical activation for emotional stimuli is preserved in patients with unilateral amygdala resection. *Journal of Neuroscience*, *33*(27), 11023–11031. doi:10.1523/Jneurosci.0401-13.2013.
- Edmonds, G. W., Jackson, J. J., Fayard, J. V., & Roberts, B. W. (2008). Is character fate, or is there hope to change my personality yet? *Social & Personality Psychology Compass*, *2*(1), 399–413.
- Edney, L. C., Burns, N. R., & Danthiir, V. (2015). Subjective well-being in older adults: Folate and vitamin B 12 independently predict positive affect. *British Journal of Nutrition*, *114*(8), 1321–1328.
- Eglen, S. J., Marwick, B., Halchenko, Y. O., Hanke, M., Sufi, S., Gleeson, P., . . . Poline, J. B. (2017). Toward standard practices for sharing computer code and programs in neuroscience. *Nature Neuroscience*, *20*, 770–773.
- Eibl-Eibesfeldt, I. (1989). *Human ethology*. New York: Aldine De Gruyter.
- Eimer, M., & Holmes, A. (2007). Event-related brain potential correlates of emotional face processing. *Neuropsychologia*, *45*(1), 15–31. doi:10.1016/j.neuropsychologia.2006.04.022.
- Eippert, F., Bingel, U., Schoell, E. D., Yacubian, J., Klinger, R., Lorenz, J., & Büchel, C. (2009). Activation of the opioidergic descending pain control system underlies placebo analgesia. *Neuron*, *63*(4), 533–543. http://doi.org/10.1016/j.neuron.2009.07.014.
- Eippert, F., Veit, R., Weiskopf, N., Erb, M., Birbaumer, N., & Anders, S. (2007). Regulation of emotional responses elicited by threat-related stimuli. *Human Brain Mapping*, *28*(5), 409–423.
- Eisenberg, N., Chang, L., Ma, Y., & Huang, X. (2009). Relations of parenting style to Chinese children's effortful control, ego resilience, and maladjustment. *Development & Psychopathology*, *21*, 455–477. doi:10.1017/S095457940900025X.
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, *9*, 241–273. doi:10.1207/s15327965pli0904\_1.
- Eisenberg, N., Fabes, R. A., & Murphy, B. C. (1996). Parents' reactions to children's negative emotions: Relations to children's social competence and comforting behavior. *Child Development*, *67*, 2227–2247. doi:10.2307/1131620.
- Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology* (6th ed., Vol. 3, pp. 646–718). Hoboken, NJ: John Wiley & Sons.
- Eisenberg, N., Fabes, R. A., Miller, P. A., Fultz, J., Shell, R., Mathy, R. M., & Reno, R. R. (1989). Relation of sympathy and personal distress to prosocial behavior: A multimethod study. *Journal of Personality & Social Psychology*, *57*(1), 55.
- Eisenberg, N., Fabes, R. A., Murphy, B., Maszk, P., Smith, M., & Karbon, M. (1995). The role of emotionality and regulation in children's social functioning: A longitudinal study. *Child Development*, *66*, 1360–1384.
- Eisenberg, N., Fabes, R. A., Nyman, M., Bernzweig, J., & Pinuelas, A. (1994). The relations of emotionality and regulation to children's anger-related reactions. *Child Development*, *65*, 109–128. doi:10.1111/j.1467-8624.1994.tb00738.x.
- Eisenberg, N., Guthrie, I. K., Cumberland, A., Murphy, B. C., Shepard, S. A., Zhou, Q., & Carlo, G. (2002). Prosocial development in early adulthood: A longitudinal study. *Journal of Personality & Social Psychology*, *82*, 993–1006. doi:10.1037/0022-3514.82.6.993.
- Eisenberg, N., Hofer, C., Spinrad, T., Gershoff, E., Valiente, C., Losoya, S. L., . . . Maxon, E. (2008). Understanding parent-adolescent conflict discussions: Concurrent and across-time prediction from youths' dispositions and parenting. *Monographs of the Society for Research in Child Development*, *73*(Serial No. 290, No. 2), 1–160. doi:10.1111/j.1540-5834.2008.00470.x.

- Eisenberg, N., Liew, J., & Pidada, S. U. (2004). The longitudinal relations of regulation and emotionality to quality of Indonesian children's socioemotional functioning. *Developmental Psychology, 40*, 790–804. doi:10.1037/0012-1649.40.5.790.
- Eisenberg, N., Smith, C. L., & Spinrad, T. L. (2011). Effortful control: Relations with emotion regulation, adjustment, and socialization in childhood. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (2nd ed., pp. 263–283). New York: Guilford.
- Eisenberg, N., Vidmar, M., Spinrad, T. L., Eggum, N. D., Edwards, A., Gaertner, B., & Kupfer, A. (2010). Mothers' teaching strategies and children's effortful control: A longitudinal study. *Developmental Psychology, 46*, 1294–1308. doi:10.1037/a0020236.
- Eisenberg, N., Zhou, Q., Spinrad, T. L., Valiente, C., Fabes, R. A., & Liew, J. (2005). Relations among positive parenting, children's effortful control, and externalizing problems: A three-wave longitudinal study. *Child Development, 76*, 1055–1071. doi:10.1111/j.1467-8624.2005.00897.x.
- Eisenberger, N. I. (2015). Social pain and the brain: Controversies, questions, and where to go from here. *Annual Review of Psychology, 66*, 601–629.
- Eisenberger, N. I. (2016). Social pain and social pleasure: Two overlooked but fundamental mammalian emotions. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), *The handbook of emotions* (pp. 440–453). New York: Guilford Press.
- Eisenberger, N. I., & Cole, S. W. (2012). Social neuroscience and health: Neurophysiological mechanisms linking social ties with physical health. *Nature Neuroscience, 15*, 669–674. doi:10.1038/nn.3086.
- Eisenberger, N. I., & Lieberman, M. D. (2004). Why rejection hurts: A common neural alarm system for physical and social pain. *Trends in Cognitive Sciences, 8*, 294–300. doi:10.1016/j.tics.2004.05.010.
- Eisenberger, N. I., Berkman, E. T., Inagaki, T. K., Rameson, L. T., Mashal, N. M., & Irwin, M. R. (2010). Inflammation-induced anhedonia: Endotoxin reduces ventral striatum responses to reward. *Biological Psychiatry, 68*(8), 748–754. http://doi.org/10.1016/j.biopsych.2010.06.010.
- Eisenberger, N. I., Inagaki, T. K., Muscatell, K. A., Haltom, K. E. B., & Leary, M. R. (2011). The neural sociometer: Brain mechanisms underlying state self-esteem. *Journal of Cognitive Neuroscience, 23*(11), 3448–3455.
- Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. Does rejection hurt? (2003). An fMRI study of social exclusion. *Science, 302*, 290–292.
- Eisenberger, N. I., Master, S. L., Inagaki, T. K., Taylor, S. E., Shirinyan, D., Lieberman, M. D., & Naliboff, B. D. (2011). Attachment figures activate a safety signal-related neural region and reduce pain experience. *Proceedings of the National Academy of Sciences of the United States of America, 108*(28), 11721–11726.
- Eisenegger, C., Pedroni, A., Rieskamp, J., Zehnder, C., Ebstein, R., Fehr, E., & Knoch, D. (2013). DAT1 polymorphism determines L-DOPA effects on learning about others' prosociality. *PLoS One, 8*(7), e67820.
- Eklund, A., Nichols, T. E., & Knutsson, H. (2016). Cluster failure: Why fMRI inferences for spatial extent have inflated false-positive rates. *Proceedings of the National Academy of Sciences of the United States of America, 113*, 7900–7905.
- Eklund, A., Nichols, T. E., & Knutsson, H. (2017). Reply to Brown and Behrmann, Cox, et al., and Kessler et al.: Data and code sharing is the way forward for fMRI. *Proceedings of the National Academy of Sciences of the United States of America, 114*, E3374–E3375.
- Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska symposium on motivation* (pp. 207–282). Lincoln, NE: University of Nebraska Press.
- Ekman, P. (1973). *Darwin and facial expression: A century of research in review*. New York: Academic Press.
- Ekman, P. (1977). Biological and cultural contributions to body and facial movement. In J. Blacking (Ed.), *The anthropology of the body* (pp. 39–84). London: Academic Press.
- Ekman, P. (1982). *Emotion in the human face*. Cambridge, UK: Cambridge University Press.
- Ekman, P. (1992a). An argument for basic emotions. *Cognition & Emotion, 6*, 169–200.
- Ekman, P. (1992b). Are there basic emotions? *Psychological Review, 99*, 550–553.
- Ekman, P. (1993). Facial expression and emotion. *American Psychologist, 48*, 384–392.
- Ekman, P. (1994a). All emotions are basic. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 15–19). New York: Oxford University Press.
- Ekman, P. (1994b). Antecedent events and emotion metaphors. In P. Ekman, P., & R. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 146–149). New York: Oxford University Press.
- Ekman, P. (1994c). Moods, emotions, and traits. In P. Ekman, P., & R. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 56–58). New York: Oxford University Press.
- Ekman, P. (1997). What have we learned by measuring facial behavior. In P. Ekman & E. L. Rosenberg (Eds.), *Basic and applied studies of spontaneous expression using the Facial Action Coding*

## 466 REFERENCES

- System (FACS)* (pp. 469–485). New York: Oxford University Press.
- Ekman, P. (1998). Universality of emotional expression? A personal history of the dispute. In P. Ekman (Ed.), *The expression of the emotions in man and animals* (pp. 363–393). New York: Oxford University Press.
- Ekman, P. (1999). Basic emotions. In T. Dalgleish, T. Power (Eds.), *The handbook of cognition and emotion* (pp. 45–60). Sussex, UK: John Wiley & Sons.
- Ekman, P. (2001). *Telling lies*. New York: W. W. Norton.
- Ekman, P. (2003). Darwin, deception, and facial expression. *Annals of the New York Academy of Sciences*, 1000, 205–221.
- Ekman, P. (2007). *Emotions revealed: Recognizing faces and feelings to improve communication and emotional life* (2nd ed.). New York: Times Books.
- Ekman, P. (2009). *Telling lies: Clues to deceit in the marketplace, politics, and marriage* (1st ed.). New York: W. W. Norton.
- Ekman, P. (2016). What scientists who study emotion agree about. *Perspectives in Psychological Science*, 11, 31–34.
- Ekman, P., & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review*, 3, 364–370.
- Ekman, P., & Davidson, R. J. (1994a). Affective science: A research agenda. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 411–430). New York: Oxford University Press.
- Ekman, P., & Davidson, R. J. (1994b). Afterward: Can we control our emotions? In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 280–281). New York: Oxford University Press.
- Ekman, P., & Friesen, W. V. (1969). Nonverbal leakage and clues to deception. *Psychiatry*, 32(1), 88–106.
- Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality & Social Psychology*, 17, 124–129.
- Ekman, P., & Friesen, W. V. (1975). *Unmasking the face: A guide to recognizing emotions from facial cues*. Englewood Cliffs, NJ: Prentice Hall.
- Ekman, P., & Friesen, W. V. (1978). *The Facial Action Coding System (FACS): A technique for the measurement of facial action*. Palo Alto, CA: Consulting Psychologists Press.
- Ekman, P., & O'Sullivan, M. (1988). The role of context in interpreting facial expression: Comment on Russell and Fehr (1987). *Journal of Experimental Psychology: General*, 117, 86–90.
- Ekman, P., & Rosenberg, E. L. (Eds.). (1997). *What the face reveals: Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. New York: Oxford University Press.
- Ekman, P., Davidson, R. J., Ricard, M., & Wallace, B. A. (2005). Buddhist and psychological perspectives on emotions and well-being. *Current Directions in Psychological Science*, 14(2), 59–63. Retrieved from <http://www.jstor.org/stable/20182989>.
- Ekman, P., Friesen, W. V., & Ellsworth, P. (1972). *Emotion in the human face: Guidelines for research and an integration of findings*. New York: Pergamon Press.
- Ekman, P., Friesen, W. V., & Ellsworth, P. (1982). What emotion categories or dimensions can observers judge from facial behavior? In P. Ekman (Ed.), *Emotion in the human face* (pp. 39–55). New York: Cambridge University Press.
- Ekman, P., Friesen, W. V., & Hager, J. C. (1978). *Facial Action Coding System*. Salt Lake City: Research Nexus.
- Ekman, P., Friesen, W. V., & Simons, R. C. (1985). Is the startle reaction an emotion? *Journal of Personality & Social Psychology*, 49, 1416–1426.
- Ekman, P., Levenson, R. W., & Friesen, W. V. (1983). Autonomic nervous system activity distinguishes among emotions. *Science*, 221, 1208–1210.
- Ekman, P., Sorenson, E. R., & Friesen, W. V. (1969). Pan-cultural elements in facial display of emotions. *Science*, 164, 86–88.
- Eldar, S., Apter, A., Lotan, D., Edgar, K. P., Naim, R., Fox, N. A., . . . Bar-Haim, Y. (2012). Attention bias modification treatment for pediatric anxiety disorders: A randomized controlled trial. *American Journal of Psychiatry*, 169, 213–220. doi:10.1176/appi.ajp.2011.11060886.
- Eldar, S., Ricon, T., & Bar-Haim, Y. (2008). Plasticity in attention: Implications for stress response in children. *Behaviour Research & Therapy*, 46, 450–461. doi:10.1016/j.brat.2008.01.012.
- Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion recognition: A meta-analysis. *Psychological Bulletin*, 128(2), 203–235.
- Elfenbein, H. A., Beaupré, M. G., Levesque, M., & Hess, U. (2007). Toward a dialect theory: Cultural differences in the expression and recognition of posed facial expressions. *Emotion*, 7, 131–146. doi:10.1037/1528-3542.7.1.131.
- Ellingsen, T., Johannesson, M., Tjøtta, S., & Torsvik, G. (2010). Testing guilt aversion. *Games & Economic Behavior*, 68(1), 95–107. doi:10.1016/J.Geb.2009.04.021. PubMed PMID: ISI:000273928700008.
- Elliot, A. J., & Covington, M. V. (2001). Approach and avoidance motivation. *Educational Psychology Review*, 13(2), 73–92.

- Ellsworth, P. C. (1994). Levels of thought and levels of emotion. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 192–196). New York: Oxford University Press.
- Ellsworth, P. C. (2014). Basic emotions and the rocks of New Hampshire. *Emotion Review*, 6, 21–26. doi:10.1177/1754073913494897.
- Ellsworth, P. C., & Scherer, K. R. (2003). Appraisal processes in emotion. In R. J. Davidson, H. Goldsmith, & K. R. Scherer (Eds.), *Handbook of affective sciences* (pp. 572–595). New York: Oxford University Press.
- Engber, D. (2016, August 28). Sad face. Another classic finding in psychology—that you can smile your way to happiness—just blew up. Is it time to panic yet? *Slate*. Retrieved from [http://www.slate.com/articles/health\\_and\\_science/cover\\_story/2016/08/can\\_smiling\\_make\\_you\\_happier\\_maybe\\_maybe\\_not\\_we\\_have\\_no\\_idea.html](http://www.slate.com/articles/health_and_science/cover_story/2016/08/can_smiling_make_you_happier_maybe_maybe_not_we_have_no_idea.html).
- Engber, D. (2017). Daryl Bem proved ESP is real. Which means science is broken. *Slate*. <http://redux.slate.com/cover-stories/2017/05/daryl-bem-proved-esp-is-real-showed-science-is-broken.html>.
- Engelen, T., de Graaf, T. A., Sack, A. T., and de Gelder, B. (2015). A causal role for inferior parietal lobule in emotion body perception. *Cortex*, 73, 195–202.
- Engell, A. D., Haxby, J. V., & Todorov, A. (2007). Implicit trustworthiness decisions: Automatic coding of face properties in the human amygdala. *Journal of Cognitive Neuroscience*, 19(9), 1508–1519.
- Engelmann, J. B., & Hein, G. (2013). Contextual and social influences on valuation and choice. *Progress in Brain Research*, 202, 215–237.
- Engelmann, J. B., Meyer, F., Fehr, E., & Ruff, C. C. (2015). Anticipatory anxiety disrupts neural valuation during risky choice. *The Journal of Neuroscience*, 35(7), 3085–3099. <https://doi.org/10.1523/JNEUROSCI.2880-14.2015>.
- Engen, H. G., & Singer, T. (2013). Empathy circuits. *Current Opinion in Neurobiology*, 23(2), 275–282. doi:10.1016/j.conb.2012.11.003.
- Engen, H. G., & Singer, T. (2015). Compassion-based emotion regulation up-regulates experienced positive affect and associated neural networks. *Social Cognitive & Affective Neuroscience*, 10(9), 1291–1301. <http://doi.org/10.1093/scan/nsv008>.
- Engen, H. G., Kanske, P., & Singer, T. (2017). The neural component-process architecture of endogenously generated emotion. *Social Cognitive & Affective Neuroscience*, 12(2), 197–211. <http://doi.org/10.1093/scan/nsw108>.
- English, T., & Carstensen, L. L. (2014). Selective narrowing of social networks across adulthood is associated with improved emotional experience in daily life. *International Journal of Behavioral Development*, 38, 195–202. doi:10.1177/0165025413515404.
- English, T., & Carstensen, L. L. (2015). Does positivity operate when the stakes are high? Health status and decision making among older adults. *Psychology & Aging*, 30(2), 348.
- English, T., & John, O. P. (2013). Understanding the social effects of emotion regulation: The mediating role of authenticity for individual differences in suppression. *Emotion*, 13(2), 314–329. <http://doi.org/10.1037/a0029847>.
- Enns, J. T., & Di Lollo, V. (2000). What's new in visual masking? *Trends in Cognitive Sciences*, 4(9), 345–352. doi:10.1177/1364661300015205 [pii].
- Entringer, S., Epel, E. S., Lin, J., Buss, C., Shahbaba, B., Blackburn, E. H., . . . Wadhwa, P. D. (2013). Maternal psychosocial stress during pregnancy is associated with newborn leukocyte telomere length. *American Journal of Obstetrics & Gynecology*, 208(2), 134–e1.
- Epley, N., Akalis, S., Waytz, A., & Cacioppo, J. T. (2008). Creating social connection through inferential reproduction: Loneliness and perceived agency in gadgets, gods, and greyhounds. *Psychological Science*, 19(2), 114–120. doi:10.1111/j.1467-9280.2008.02056.x.
- Epstein, S. (1994). Trait theory as personality theory: Can a part be as great as the whole? *Psychological Inquiry*, 5, 120–122.
- Erickson, K. I., Prakash, R. S., Voss, M. W., Chaddock, L., Hu, L., Morris, K. S., . . . Kramer, A. F. (2009). Aerobic fitness is associated with hippocampal volume in elderly humans. *Hippocampus*, 19(10), 1030–1039.
- Erickson, K. I., Voss, M. W., Prakash, R. S., Basak, C., Szabo, A., Chaddock, L., . . . Wojcicki, T. R. (2011). Exercise training increases size of hippocampus and improves memory. *Proceedings of the National Academy of Sciences*, 108(7), 3017–3022.
- Erk, S., Mikschl, A., Stier, S., Ciaramidaro, A., Gapp, V., Weber, B., & Walter, H. (2010). Acute and Sustained Effects of Cognitive Emotion Regulation in Major Depression. *Journal of Neuroscience*, 30(47), 15726–15734. <http://doi.org/10.1523/JNEUROSCI.1856-10.2010>.
- Ernst, M., & Fudge, J. L. (2009). A developmental neurobiological model of motivated behavior: Anatomy, connectivity and ontogeny of the triadic nodes. *Neuroscience & Biobehavioral Reviews*, 33(3), 367–382. doi:10.1016/j.neubiorev.2008.10.009.
- Ernst, M., Nelson, E. E., Jazbec, S., McClure, E. B., Monk, C. S., Leibenluft, E., . . . Pine, D. S. (2005). Amygdala and nucleus accumbens in responses to receipt and omission of gains in adults and adolescents. *NeuroImage*, 25(4), 1279–1291.

## 468 REFERENCES

- Ersner-Hershfield, H., Mikels, J. A., Sullivan, S. J., & Carstensen, L. L. (2008). Poignancy: Mixed emotional experience in the face of meaningful endings. *Journal of Personality & Social Psychology*, *94*, 158–167.
- Eskine, K. J., Kacinik, N. A., & Prinz, J. J. (2011). A bad taste in the mouth. *Psychological Science*, *22*, 295–299.
- Eslinger, P. J., & Damasio, A. R. (1985). Severe disturbance of higher cognition after bilateral frontal lobe ablation Patient EVR. *Neurology*, *35*(12), 1731–1731.
- Eslinger, P. J., Flaherty-Craig, C. V., & Benton, A. L. (2004). Developmental outcomes after early prefrontal cortex damage. *Brain & Cognition*, *55*(1), 84–103.
- Estes, W. K. (1948). Discriminative conditioning: effects of a Pavlovian conditioned stimulus upon a subsequently established operant response. *Journal of Experimental Psychology*, *38*, 173–177.
- Esteves, F., Dimberg, U., and Öhman, A. (1994). Automatically elicited fear: Conditioned skin conductance responses to masked facial expressions. *Cognition & Emotion*, *8*, 99–108.
- Ethofer, T., Anders, S., Erb, M., Droll, C., Royen, L., Saur, R., . . . Wildgruber, D. (2006). Impact of voice on emotional judgment of faces: An event-related fMRI study. *Human Brain Mapping*, *27*(9), 707–714. doi:10.1002/hbm.20212.
- Etkin, A., & Wager, T. D. (2007). Functional neuroimaging of anxiety: A meta-analysis of emotional processing in PTSD, social anxiety disorder, and specific phobia. *American Journal of Psychiatry*, *164*, 1476–1488.
- Etkin, A., Buchel, C., & Gross, J. J. (2015). The neural bases of emotion regulation. *Nature Reviews Neuroscience*, *11*, 693–700.
- Etkin, A., Egner, T., Peraza, D. M., Kandel, E. R., & Hirsch, J. (2006). Resolving emotional conflict: A role for the rostral anterior cingulate cortex in modulating activity in the amygdala. *Neuron*, *52*(6), 1121–1121. doi:10.1016/J.Neuron.2006.12.003.
- Evans, K. C., Wright, C. I., Wedig, M. M., Gold, A. L., Pollack, M. H., & Rauch, S. L. (2008). A functional MRI study of amygdala responses to angry schematic faces in social anxiety disorder. *Depression & Anxiety*, *25*(6), 496–505. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17595018>.
- Evans-Campbell, T. (2008). Historical trauma in American Indian/Native Alaska communities a multilevel framework for exploring impacts on individuals, families, and communities. *Journal of Interpersonal Violence*, *23*(3), 316–338.
- Everaerd, D., Klumpers, F., van Wingen, G., Tendolcar, I., & Fernandez, G. (2015). Association between neuroticism and amygdala responsivity emerges under stressful conditions. *NeuroImage*, *112*, 218–224.
- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, *7*(2), 336–353.
- Fabes, R. A., Hanish, L. D., Martin, C. L., & Eisenberg, N. (2002). Young children's negative emotionality and social isolation: A latent growth curve analysis. *Merrill-Palmer Quarterly*, *48*, 284–307. doi:10.1353/mpq.2002.0012.
- Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development*, *72*, 907–920. doi:10.1111/1467-8624.00323.
- Fadok, J. P., Krabbe, S., Markovic, M., Courtin, J., Xu, C., Massi, L., . . . Luthi, A. (2017). A competitive inhibitory circuit for selection of active and passive fear responses. *Nature*, *542*, 96–100.
- Fagan, J. F. 3rd. (1972). Infants' recognition memory for faces. *Journal of Experimental Child Psychology*, *14*(3), 453–476.
- Falk, E. B., Berkman, E. T., & Lieberman, M. D. (2012). From neural responses to population behavior: Neural focus group predicts population-level media effects. *Psychological Science*, *23*(5), 439–445.
- Fanning, J. R., Berman, M. E., Guillot, C. R., Marsic, A., & Mc& Closkey, M. S. (2014). Serotonin (5-HT) augmentation reduces provoked aggression associated with primary psychopathy traits. *Journal of Personality Disorders*, *28*, 449–461.
- Fanselow, M. S. (1994). Neural organization of the defensive behavior system responsible for fear. *Psychonomic Bulletin & Review*, *1*, 429–438.
- Fanselow, M. S. (2018). Emotion, motivation and function. *Current Opinion in Behavioral Sciences*, *19*, 105–109.
- Fanselow, M. S., & LeDoux, J. E. (1999). Why we think plasticity underlying Pavlovian fear conditioning occurs in the basolateral amygdala. *Neuron*, *23*(2), 229–232.
- Fanselow, M. S., & Lester, L. S. (1988). A functional behavioristic approach to aversively motivated behavior: Predatory imminence as a determinant of the topography of defensive behavior. In R. C. Bolles & M. D. Beecher (Eds.), *Evolution and learning* (pp. 185–211). Hillsdale, NJ: Erlbaum.
- Farah, M. J., Wilson, K. D., Drain, M., & Tanaka, J. N. (1998). What is "special" about face perception? *Psychological Review*, *105*(3), 482.
- Farah, M. J., Wilson, K. D., Maxwell Drain, H., & Tanaka, J. R. (1995). The inverted face inversion effect in prosopagnosia: Evidence for mandatory, face-specific perceptual mechanisms. *Vision Research*, *35*(14), 2089–2093.

- Farchione, T. J., Fairholme, C. P., Ellard, K. K., Boisseau, C. L., Thompson-Hollands, J., Carl, J. R., . . . Barlow, D. H. (2012). Unified protocol for transdiagnostic treatment of emotional disorders: A randomized controlled trial. *Behavior Therapy, 43*(3), 666–678. doi:10.1016/j.beth.2012.01.001.
- Fareri, D. S., & Delgado, M. R. (2013). Differential reward responses during competition against in-and out-of-network others. *Social Cognitive & Affective Neuroscience, 9*(4), 412–420.
- Fareri, D. S., & Delgado, M. R. (2014). The importance of social networks and social rewards in the human brain. *The Neuroscientist, 20*(4), 387–402.
- Fareri, D. S., Chang, L. J., & Delgado, M. R. (2012). Effects of direct social experience on trust decisions and neural reward circuitry. *Frontiers in Neuroscience, 6*, 148–117.
- Fareri, D. S., Chang, L. J., & Delgado, M. R. (2015). Computational substrates of social value in interpersonal collaboration. *Journal of Neuroscience, 35*(21), 8170–8180.
- Fareri, D. S., Niznikiewicz, M. A., Lee, V. K., & Delgado, M. R. (2012). Social network modulation of reward-related signals. *Journal of Neuroscience, 32*(26), 9045–9052. doi:10.1523/JNEUROSCI.0610-12.2012.
- Farrell, M. J., Laird, A. R., & Egan, G. F. (2005). Brain activity associated with painfully hot stimuli applied to the upper limb: A meta-analysis. *Human Brain Mapping, 25*, 129–139.
- Farroni, T., Johnson, M. H., Menon, E., Zulian, L., Faraguna, D., & Csibra, G. (2005). Newborns' preference for face-relevant stimuli: Effects of contrast polarity. *Proceedings of the National Academy of Sciences of the United States of America, 102*(47), 17245–17250. https://doi.org/10.1073/pnas.0502205102.
- Faull, O. K., & Pattinson, K. T. (2017). The cortical connectivity of the periaqueductal gray and the conditioned response to the threat of breathlessness. *Elife, 6*, e21749. doi: 10.7554/eLife.21749.
- Fayard, J. V., Roberts, B. W., Robins, R. W., & Watson, D. (2012). Uncovering the affective core of conscientiousness: The role of self-conscious emotions. *Journal of Personality, 80*, 1–32.
- Fecteau, J. H., & Munoz, D. P. (2006). Saliency, relevance, and firing: A priority map for target selection. *Trends in Cognitive Sciences, 10*(8), 382–390.
- Feesser, M., Prehn, K., Kazzner, P., Mungee, A., & Bajbouj, M. (2014). Transcranial direct current stimulation enhances cognitive control during emotion regulation. *Brain Stimulation, 7*, 105–112.
- Fehr, B., Baldwin, M., Collins, L., Patterson, S., & Benditt, R. (1999). Anger in close relationships: An interpersonal script analysis. *Personality & Social Psychology Bulletin, 25*(3), 299–312. http://dx.doi.org/10.1177/0146167299025003003.
- Fehr, E., & Camerer, C. F. (2007). Social neuroeconomics: The neural circuitry of social preferences. *Trends in Cognitive Sciences, 11*, 419–427.
- Fehr, E., & Fischbacher, U. (2003). The nature of human altruism. *Nature, 425*(6960), 785–791. doi:10.1038/nature02043.
- Fehr, E., & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *Quarterly Journal of Economics, 114*, 817–868.
- Fehr, E., Fischbacher, U., & Gächter, S. (2002). Strong reciprocity, human cooperation, and the enforcement of social norms. *Human Nature, 13*, 1–25.
- Fehr-Duda, H., Epper, T., Bruhin, A., & Schubert, R. (2011). Risk and rationality: The effects of mood and decision rules on probability weighting. *Journal of Economic Behavior & Organization, 78*(1–2), 14–24.
- Feinberg, M., Willer, R., & Keltner, D. (2012). Flustered and faithful: Embarrassment as a signal of prosociality. *Journal of Personality & Social Psychology, 102*(1), 81.
- Feinman, S., Roberts, D., Hsieh, K., Sawyer, D., & Swanson, D. (1992). A critical review of social referencing in infancy. In S. Feinman (Ed.), *Social referencing and the social construction of reality in infancy* (pp. 15–54). New York: Plenum.
- Feinstein, J. S., Adolphs, R., & Tranel, D. (2016). A tale of survival from the world of Patient S.M. In D. G. Amaral & R. Adolphs (Eds.), *Living without an amygdala*. New York: Guilford.
- Feinstein, J. S., Adolphs, R., Damasio, A., & Tranel, D. (2011). The human amygdala and the induction and experience of fear. *Current Biology: CB, 21*(1), 34–38. https://doi.org/10.1016/j.cub.2010.11.042.
- Feinstein, J. S., Buzza, C., Hurlemann, R., Follmer, R. L., Dahdaleh, N. S., Coryell, W. H., . . . Wemmie, J. A. (2013). Fear and panic in humans with bilateral amygdala damage. *Nature Neuroscience, 16*, 270–272.
- Feinstein, J. S., Duff, M. C., & Tranel, D. (2010). Sustained experience of emotion after loss of memory in patients with amnesia. *Proceedings of the National Academy of Sciences of the United States of America, 107*(17), 7674–7679. doi:10.1073/pnas.0914054107.
- Feinstein, J. S., Khalsa, S. S., Salomons, T. V., Prkachin, K. M., Frey-Law, L. A., Lee, J. E., . . . Rudrauf, D. (2016). Preserved emotional awareness of pain in a patient with extensive bilateral damage to the insula, anterior cingulate, and amygdala. *Brain Structure & Function, 221*(3), 1499–1511.
- Feinstein, J. S., Khalsa, S. S., Salomons, T. V., Prkachin, K. M., Frey-Law, L. A., Lee, J. E., . . . Rudrauf, D. (2016). Preserved emotional awareness of pain

## 470 REFERENCES

- in a patient with extensive bilateral damage to the insula, anterior cingulate, and amygdala. *Brain Structure & Function*, 221, 1499–1511.
- Feinstein, J. S., Rudrauf, D., Khalsa, S. S., Cassell, M. D., Bruss, J., Grabowski, T. J., & Tranel, D. (2010). Bilateral limbic system destruction in man. *Journal of Clinical & Experimental Neuropsychology*, 32(1), 88–106.
- Feldman, B. L., & Russell, J. A. (1999). Structure of current affect. *Current Directions in Psychological Science*, 8, 10–14.
- Feldman, B. L., Niedenthal, P. M., & Winkielman, P. (2007). *Emotion and consciousness*. New York: Guilford Press.
- Feldman, H., & Friston, K. J. (2010). Attention, uncertainty, and free-energy. *Frontiers in Human Neuroscience*, 4, 215.
- Feldman, R. S., & White, J. B. (1980). Detecting deception in children. *The Journal of Communication*, 30(2), 121–128.
- Feldman, R. S., Gordon, I., & Zagoory-Sharon, O. (2010). The cross-generational transmission of oxytocin in humans. *Hormones & Behavior*, 58, 669–676.
- Feldman, R. S., Jenkins, L., & Popoola, O. (1979). Detection of deception in adults and children via facial expressions. *Child Development*, 50(2), 350–355. <https://doi.org/10.2307/1129409>.
- Feldman-Barrett, L., Mesquita, B., Ochsner, K. N., & Gross, J. J. (2007). The experience of emotion. *Annual Review of Psychology*, 58, 373–403.
- Felger, J. C., Li, Z., Haroon, E., Woolwine, B. J., Jung, M. Y., Hu, X., & Miller, A. H. (2015). Inflammation is associated with decreased functional connectivity within corticostriatal reward circuitry in depression. *Molecular Psychiatry* (July), 1–8. <http://doi.org/10.1038/mp.2015.168>.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245–258.
- Felix-Ortiz, A. C., & Tye, K. M. (2014). Amygdala inputs to the ventral hippocampus bidirectionally modulate social behavior. *Journal of Neuroscience: Official Journal of the Society of Neuroscience*, 34, 586–595.
- Felix-Ortiz, A. C., Beyeler, A., Seo, C., Leppla, C. A., Wildes, C. P., & Tye, K. M. (2013). BLA to vHPC Inputs Modulate Anxiety-Related Behaviors. *Neuron*, 79, 658–664.
- Felmingham, K. L., Bryant, R. A., & Gordon, E. (2003). Processing angry and neutral faces in post-traumatic stress disorder: An event-related potentials study. *NeuroReport*, 14(5), 777–780.
- Fer Ferenczi, E. A., Zalocusky, K. A., Liston, C., Grosenick, L., Warden, M. R., Amatya, D., . . . Kalanithi, P. (2016). Prefrontal cortical regulation of brainwide circuit dynamics and reward-related behavior. *Science*, 351(6268), aac9698.
- Ferguson, C. J., & Heene, M. (2012). A vast graveyard of undead theories publication bias and psychological science's aversion to the null. *Perspectives on Psychological Science*, 7, 555–561.
- Ferguson, M. J., Bargh, J. A., & Nayak, D. A. (2005). After-affects: How automatic evaluations influence the interpretation of subsequent, unrelated stimuli. *Journal of Experimental Social Psychology*, 41, 182–191.
- Ferrari, V., Bradley, M. M., Codispoti, M., & Lang, P. J. (2011). Repetitive exposure: Brain and reflex measures of emotion and attention. *Psychophysiology*, 48, 515–522.
- Feynman, R. P. (1974). Cargo cult science [1974 CalTech Commencement Address]. *Engineering & Science*, 37, 10–13.
- Fiedler, K. (2001). Affective states trigger processes of assimilation and accommodation. In L. L. Martin & G. L. Clore (Eds.), *Theories of mood and cognition: A user's guidebook* (pp. 85–98). Mahwah, NJ: Erlbaum.
- Field, T. M., Woodson, R., Greenberg, R., & Cohen, D. (1982). Discrimination and imitation of facial expression by neonates. *Science*, 218(4568), 179–181.
- Fields, H. L. (1999). Pain: An unpleasant topic. *Pain Supplement*, 6, S61–S69.
- Fields, H. L. (2004). State-dependent opioid control of pain. *Nature Reviews Neuroscience*, 5(7), 565–575. [doi:10.1038/nrn1431](https://doi.org/10.1038/nrn1431).
- Figner, B., Knoch, D., Johnson, E. J., Krosch, A. R., Lisanby, S. H., Fehr, E., & Weber, E. U. (2010). Lateral prefrontal cortex and self-control in intertemporal choice. *Nature Neuroscience*, 13(5), 538–539. [doi:10.1038/nn.2516](https://doi.org/10.1038/nn.2516).
- Figner, B., Mackinlay, R. J., Wilkening, F., & Weber, E. U. (2009). Affective and deliberative processes in risky choice: Age differences in risk taking in the Columbia Card Task. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 35, 709–730.
- Filmer, H. L., & Monsell, S. (2013). TMS to V1 spares discrimination of emotive relative to neutral body postures. *Neuropsychologia*, 51, 2485–2491.
- Fincher, C. L., Thornhill, R., Murray, D. R., & Schaller, M. (2009). Pathogen prevalence predicts human cross-cultural variability in individualism-collectivism. *Proceedings of the Royal Society of London, B: Biological Sciences*, 275(1640), 1279–1285.
- Finucane, M. L., Alhakami, A., Slovic, P., & Johnson, S. M. (2000). The affect heuristic in judgments of

- risks and benefits. *Journal of Behavioral Decision Making*, 13(1), 1.
- Fischer, A. H., & Roseman, I. J. (2007). Beat them or ban them: The characteristics and social functions of anger and contempt. *Journal of Personality & Social Psychology*, 93(1), 103–115. <http://dx.doi.org/10.1037/0022-3514.93.1.103>.
- Fischer, H., Sandblom, J., Gavazzeni, J., Fransson, P., Wright, C. I., & Bäckman, L. (2005). Age-differential patterns of brain activation during perception of angry faces. *Neuroscience Letters*, 386(2), 99–104.
- Fischer, H., Sandblom, J., Gavazzeni, J., Fransson, P., Wright, C. I., & Bäckman, L. (2005). Age-differential patterns of brain activation during perception of angry faces. *Neuroscience Letters*, 386(2), 99–104.
- Fischl, B., Sereno, M. I., & Dale, A. M. (1999). Cortical surface-based analysis. II: Inflation, flattening, and a surface-based coordinate system. *Neuroscience Letters*, 9, 195–207.
- Fischman, M. W. (1989). Relationship between self-reported drug effects and their reinforcing effects: Studies with stimulant drugs. *NIDA Research Monographs*, 92, 211–230.
- Fischman, M. W., & Foltin, R. W. (1992). Self-administration of cocaine by humans: A laboratory perspective. In G. R. Bock & J. Whelan (Eds.), *Cocaine: Scientific and social dimensions*, CIBA Foundation symposium No. 166 (Vol. 166, pp. 165–180). Chichester, UK: Wiley.
- Fishbach, A., Friedman, R. S., & Kruglanski, A. W. (2003). Leading us not into temptation: Momentary allurements elicit overriding goal activation. *Journal of Personality & Social Psychology*, 84(2), 296.
- Fiske, S. T., & Taylor, S. E. (2013). *Social cognition: From brains to culture* (2nd ed.). New York: McGraw Hill.
- Fitness, J. (2000). Anger in the workplace: An emotion script approach to anger episodes between workers and their superiors, co-workers and subordinates. *Journal of Organizational Behavior*, 21(2), 147–162.
- Fitzsimons, G. M., & Bargh, J. A. (2002). Automatic self-regulation. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation* (pp. 151–170). New York: Guilford.
- Fiuzat, E. C., Rhodes, S. E., & Murray, E. A. (2017). The role of orbitofrontal-amygdala interactions in updating action-outcome valuations in macaques. *Journal of Neuroscience*, 37, 2463–2470.
- Flack, W. (2006). Peripheral feedback effects of facial expressions, bodily postures, and vocal expressions on emotional feelings. *Cognition & Emotion*, 20(2), 177–195.
- Flaisch, T., & Schupp, H. T. (2013). Tracing the time course of emotion perception: The impact of stimulus physics and semantics on gesture processing. *Social Cognitive & Affective Neuroscience*, 8(7), 820–827.
- Flannery, J. E., Giuliani, N. R., Flournoy, J. C., & Pfeifer, J. H. (2017). Neurodevelopmental changes across adolescence in viewing and labeling dynamic peer emotions. *Dev Cogn Neuroscience*, 25, 113–127.
- Flaten, M. A. (2014). *Pain-related negative emotions and placebo analgesia* (Vol. 225, pp. 81–96). Berlin; Heidelberg: Springer Berlin Heidelberg.
- Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality & Social Psychology*, 80, 1011–1027.
- Fleeson, W., & Gallagher, P. (2009). The implications of Big Five standing for the distribution of trait manifestation in behavior: Fifteen experience-sampling studies and a meta-analysis. *Journal of Personality & Social Psychology*, 97, 1097–1114.
- Fletcher, G. E. (2008). Attending to the outcome of others: Disadvantageous inequity aversion in male capuchin monkeys (*Cebus apella*). *American Journal of Primatology*, 70, 901–905.
- Flood, A. B., Lorence, D. P., Ding, J., McPherson, K., & Black, N. A. (1993). The role of expectations in patients' reports of post-operative outcomes and improvement following therapy. *Medical Care*, 31(11), 1043–1056.
- Flournoy, J. C., Pfeifer, J. H., Moore, W. E., Tackman, A. M., Masten, C. L., Mazziotta, J. C., . . . Dapretto, M. (2016). Neural reactivity to emotional faces may mediate the relationship between childhood empathy and adolescent prosocial behavior. *Child Development*, 87(6), 1691–1702.
- Foa, E., & Rauch, S. A. (2004). Cognitive changes during prolonged exposure versus prolonged exposure plus cognitive restructuring in female assault survivors with posttraumatic stress disorder. *Journal of Consulting & Clinical Psychology*, 72(5), 879–884.
- Foa, E., Hembree, E., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences therapist guide*. New York: Oxford University Press.
- Fodero-Tavoletti, M. T., Okamura, N., Furumoto, S., Mulligan, R. S., Connor, A. R., McLean, C. A., . . . Villemagne, V. L. (2011). 18F-THK523: A novel in vivo tau imaging ligand for Alzheimer's disease. *Brain*, 134, 1089–1100.
- Foland-Ross, L. C., Bookheimer, S. Y., Lieberman, M. D., Sugar, C. A., Townsend, J., Fischer, J., . . . Altshuler, L. (2012). Normal amygdala activation but deficient ventrolateral prefrontal activation in adults with bipolar disorder during euthymia. *NeuroImage*, 59, 738–744.



## 472 REFERENCES

- Fontanini, A., Grossman, S. E., Figueroa, J. A., & Katz, D. B. (2009). Distinct subtypes of basolateral amygdala taste neurons reflect palatability and reward. *Journal of Neuroscience*, *29*, 2486–2495.
- Forbes, E. E., & Dahl, R. E. (2010). Pubertal development and behavior: Hormonal activation of social and motivational tendencies. *Brain & Cognition*, *72*, 66–72.
- Forbes, E. E., Hariri, A. R., Martin, S. L., Silk, J. S., Moyles, D. L., Fisher, P. M., . . . Dahl, R. E. (2009). Altered striatal activation predicting real-world positive affect in adolescent major depressive disorder. *American Journal of Psychiatry*, *166*, 64–73.
- Ford, B. Q., & Mauss, I. B. (2014). The paradoxical effects of pursuing positive emotion. In J. Gruber & J. T. Moskowitz (Eds.), *Positive emotion: Integrating the light sides and dark sides* (pp. 363–381). New York: Oxford University Press.
- Ford, B. Q., & Tamir, M. (2012). When getting angry is smart: Emotional preferences and emotional intelligence. *Emotion*, *12*(4), 685–689. doi:10.1037/a0027149.
- Forgas, J. P. (1995). Mood and judgment: The affect infusion model (AIM). *Psychological Bulletin*, *117*(1), 39–66. doi:10.1037/0033-2909.117.1.39.
- Forgas, J. P. (2008). Affect and cognition. *Perspectives on Psychological Science*, *3*(2), 94–101.
- Forgas, J. P., Laham, S., & Vargas, P. (2005). Mood effects on eyewitness memory: Affective influences on susceptibility to misinformation. *Journal of Experimental Social Psychology*, *41*, 574–588.
- Forscher, E. C., & Li, W. (2012). Hemispheric asymmetry and visuo-olfactory integration in perceiving subthreshold (micro) fearful expressions. *The Journal of Neuroscience*, *32*(6), 2159–2165.
- Foster, J. A., & McVey Neufeld, K. A. (2013). Gut-brain axis: How the microbiome influences anxiety and depression. *Trends in Neurosciences*, *36*(5), 305–312. http://doi.org/10.1016/j.tins.2013.01.00.
- Fouragnan, E., Chierchia, G., Greiner, S., Neveu, R., Avesani, P., & Coricelli, G. (2013). Reputational priors magnify striatal responses to violations of trust. *Journal of Neuroscience*, *33*(8), 3602–3611.
- Fowler, J. H., & Christakis, N. A. (2008). Dynamic spread of happiness in a large social network: Longitudinal analysis over 20 years in the Framingham Heart Study. *British Medical Journal*, *337*, a2338. doi:10.1136/bmj.a2338.
- Fowles, D. C., Christie, M. J., Edelberg, R., Grings, W. W., Lykken, D. T., & Venables, P. H. (1981). Publication recommendations for electrodermal measurements. *Psychophysiology*, *18*(3), 232–239. doi:10.1111/j.1469-8986.1981.tb03024.x.
- Fox, A. S., & Kalin, N. H. (2014). A translational neuroscience approach to understanding the development of social anxiety disorder and its pathophysiology. *American Journal of Psychiatry*, *171*, 1162–1173.
- Fox, A. S., & Shackman, A. J. (in press). The central extended amygdala in fear and anxiety: Closing the gap between mechanistic and neuroimaging research. *Neuroscience Letters*.
- Fox, A. S., Oler, J. A., Shackman, A. J., Shelton, S. E., Raveendran, M., McKay, D. R., . . . Kalin, N. H. (2015). Intergenerational neural mediators of early-life anxious temperament. *Proceedings of the National Academy of Sciences of the United States of America*, *112*, 9118–9122.
- Fox, A. S., Oler, J. A., Shelton, S. E., Nanda, S. A., Davidson, R. J., Roseboom, P. H., & Kalin, N. H. (2012). Central amygdala nucleus (Ce) gene expression linked to increased trait-like Ce metabolism and anxious temperament in young primates. *Proceedings of the National Academy of Sciences of the United States of America*, *109*, 18108–18113.
- Fox, A. S., Oler, J. A., Tromp, D. P. M., Fudge, J. L., & Kalin, N. H. (2015). Extending the amygdala in theories of threat processing. *Trends in Neurosciences*, *38*(5), 319–329. https://doi.org/10.1016/j.tins.2015.03.002.
- Fox, A. S., Shelton, S. E., Oakes, T. R., Converse, A. K., Davidson, R. J., & Kalin, N. H. (2010). Orbitofrontal cortex lesions alter anxiety-related activity in the primate bed nucleus of stria terminalis. *Journal of Neuroscience*, *30*, 7023–7027.
- Fox, A. S., Shelton, S. E., Oakes, T. R., Davidson, R. J., & Kalin, N. H. (2008). Trait-like brain activity during adolescence predicts anxious temperament in primates. *PLoS One*, *3*(7), e2570.
- Fox, E. (2002). Processing emotional facial expressions: The role of anxiety and awareness. *Cognitive, Affective, & Behavioral Neuroscience*, *2*(1), 52–63.
- Fox, E., & Damjanovic, L. (2006). The eyes are sufficient to produce a threat superiority effect. *Emotion*, *6*(3), 534–539.
- Fox, E., Russo, R., & Dutton, K. (2001). Attentional bias for threat: Evidence for delayed disengagement from emotional faces. *Cognition & Emotion*, *16*, 355–379.
- Fox, N. A., & Davidson, R. J. (1984). Hemispheric substrates of affect: A developmental model. In N. A. Fox & R. Davidson (Eds.), *The psychology of affective development* (pp. 353–381). New York: Oxford University Press.
- Fox, N. A., & Davidson, R. J. (1986). Taste-elicited changes in facial signs of emotion and the asymmetry of brain electrical activity in human newborns. *Neuropsychologia*, *24*(3), 417–422.
- Fox, N. A., Henderson, H. A., Marshall, P. J., Nichols, K. E., & Ghera, M. M. (2005). Behavioral inhibition: Linking biology and behavior within a

AQ: Please update reference

- developmental framework. *Annual Review of Psychology*, 56, 235–262.
- Fox, N. A., Henderson, H. A., Rubin, K. H., Calkins, S. D., & Schmidt, L. A. (2001). Continuity and discontinuity of behavioral inhibition and exuberance: Psychophysiological and behavioral influences across the first four years of life. *Child Development*, 72, 1–21.
- Fox, N. A., Snidman, N., Haas, S. A., Degnan, K. A., & Kagan, J. (2015). The relations between reactivity at 4 months and behavioral inhibition in the second year: Replication across three independent samples. *Infancy*, 20(1), 98–114. doi:10.1111/inf.12063.
- Fox, P. T., & Friston, K. J. (2012). Distributed processing; distributed functions? *NeuroImage*, 61(2), 407–426. doi:10.1016/j.neuroimage.2011.12.051.
- Fraga, M. F., Ballestar, E., Paz, M. F., Ropero, S., Setien, F., Ballestar, M. L., . . . Boix-Chornet, M. (2005). Epigenetic differences arise during the lifetime of monozygotic twins. *Proceedings of the National Academy of Sciences of the United States of America*, 102(30), 10604–10609.
- Fraley, R. C., & Roberts, B. W. (2005). Patterns of continuity: A dynamic model for conceptualizing the stability of individual differences in psychological constructs across the life course. *Psychological Review*, 112, 60–74.
- Francis, D. D., Diorio, J., Plotsky, P. M., & Meaney, M. J. (2002). Environmental enrichment reverses the effects of maternal separation on stress reactivity. *Journal of Neuroscience*, 22(18), 7840–7843.
- Frank, D. W., Dewitt, M., Hudgens-Haney, M., Schaeffer, D. J., Ball, B. H., Schwarz, N. F., . . . Sabatinelli, D. (2014). Emotion regulation: Quantitative meta-analysis of functional activation and deactivation. *Neuroscience & Biobehavioral Reviews*, 45, 202–211.
- Frank, M. G., Ekman, P., & Friesen, W. V. (1993). Behavioral markers and recognizability of the smile of enjoyment. *Journal of Personality & Social Psychology*, 64, 83–93.
- Fratraroli, J. (2006). Experimental disclosure and its moderators: A meta-analysis. *Psychological Bulletin*, 132, 823–865.
- Fredrickson, B. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359, 1367–1378.
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, 2(3), 300–319.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226. doi: 10.1037//0003-066X.56.3.218.
- Fredrickson, B. L. (2013a). *Love 2.0*. New York: Plume.
- Fredrickson, B. L. (2013b). Positive emotions broaden and build. *Advances in Experimental Psychology*, 47, 1–53.
- Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition & Emotion*, 19, 313–332.
- Fredrickson, B. L., & Carstensen, L. L. (1990). Choosing social partners: How old age and anticipated endings make people more selective. *Psychology & Aging*, 5(3), 335–347.
- Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Journal of Personality & Social Psychology*, 65(1), 45–55.
- Fredrickson, B. L., & Levenson, R. W. (1998). Positive emotions speed recovery from the cardiovascular sequelae of negative emotions. *Cognition & Emotion*, 12(2), 191–220.
- Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality & Social Psychology*, 95(5), 1045–1062. doi:10.1037/a0013262.
- Fredrickson, B. L., Mancuso, R. A., Branigan, C., & Tugade, M. M. (2000). The undoing effect of positive emotions. *Motivation & Emotion*, 24(4), 237–258.
- Fredrickson, B. L., Tugade, M. M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality & Social Psychology*, 84(2), 365–376.
- Fredrickson, B. L., Boulton, A. J., Firestone, A. M., Van Cappellen, P., Algoe, S. B., Brantley, M. M., Kim, S.L., Brantley, J., & Salzberg, S. (2017). Positive emotion correlates of meditation practice: A comparison of mindfulness meditation and loving-kindness meditation. *Mindfulness*. Advance online publication. <http://rdcu.be/s416> doi:10.1007/s12671-017-0735-9
- Freedman, L. P., Cockburn, I. M., & Simcoe, T. S. (2015). The economics of reproducibility in pre-clinical research. *PLoS Biol*, 13, e1002165.
- Freeman, J. B., & Ambady, N. (2011a). A dynamic interactive theory of person construal. *Psychological Review*, 118, 247–279.
- Freeman, J. B., & Ambady, N. (2011b). Hand movements reveal the time-course of shape and pigmentation processing in social categorization. *Psychonomic Bulletin & Review*, 18, 705–712.

## 474 REFERENCES

- Freeman, J. B., Ambady, N., Midgley, K. J., & Holcomb, P. J. (2011). The real-time link between person perception and action: Brain potential evidence for dynamic continuity. *Social Neuroscience*, 6, 139–155.
- Freeman, J. B., Ma, Y., Barth, M., Young, S. G., Han, S., & Ambady, N. (2015). The neural basis of contextual influences on face categorization. *Cerebral Cortex*, 25, 415–422.
- Freeman, J. B., Pauker, K., & Sanchez, D. T. (2016). A perceptual pathway to bias: Interracial exposure reduces abrupt shifts in real-time race perception that predict mixed-race bias. *Psychological Science*, 27(4), 502–517.
- Freeman, J. B., Pauker, K., Apfelbaum, E. P., & Ambady, N. (2010). Continuous dynamics in the real-time perception of race. *Journal of Experimental Social Psychology*, 46, 179–185. doi:10.1016/j.jesp.2009.10.002.
- Freeman, J. B., Penner, A. M., Saperstein, A., Scheutz, M., & Ambady, N. (2011). Looking the part: Social status cues shape race perception. *PLoS One*, 6, e25107.
- Freeman, J. B., Rule, N. O., Adams, R. B., & Ambady, N. (2010). The neural basis of categorical face perception: Graded representations of face gender in fusiform and orbitofrontal cortices. *Cerebral Cortex*, 20, 1314–1322. doi:10.1093/cercor/bhp195.
- Freeman, J. B., Schiller, D., Rule, N. O., & Ambady, N. (2010). The neural origins of superficial and individuated judgments about ingroup and outgroup members. *Human Brain Mapping*, 31, 150–159. doi:10.1002/hbm.20852.
- Freeman, J. B., Stolier, R. M., Ingbreetsen, Z. A., & Hehman, E. A. (2014). Amygdala responsivity to high-level social information from unseen faces. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 34(32), 10573–10581. https://doi.org/10.1523/JNEUROSCI.5063-13.2014.
- Freese, J. L., & Amaral, D. G. (2005). The organization of projections from the amygdala to visual cortical areas TE and V1 in the macaque monkey. *Journal of Comparative Neurology*, 486(4), 295–317.
- Freese, J. L., & Amaral, D. G. (2009). Neuroanatomy of the human amygdala. In P. J. Whalen & E. A. Phelps (Eds.), *The human amygdala* (pp. 3–42). New York: Guilford Press.
- Freese, S. A., & Mills, D. A. (2015). Birth of the infant gut microbiome: Moms deliver twice! *Cell Host & Microbe*, 17(5), 543–544. http://doi.org/10.1016/j.chom.2015.04.014.
- Freud, S. (1894). The defence neuro-psychoses. *Collected Papers*, 1, 59–75.
- Freud, S. (1913). *The interpretation of dreams*. London: George Allen.
- Freud, S. (1923). *Das Ich Und Das Es (The Ego and the Id)*. The standard edition of the complete psychological works of Sigmund Freud. New York: W. W. Norton and Company.
- Freud, S. (1962). *The ego and the id*. New York: W.W. Norton & Company.
- Freund, J., Brandmaier, A. M., Lewejohann, L., Kirste, I., Kritzler, M., Krüger, A., . . . Kempermann, G. (2013). Emergence of individuality in genetically identical mice. *Science*, 340(6133), 756–759.
- Fridhandler, B. M. (1986). Conceptual note on state, trait, and the state-trait distinction. *Journal of Personality & Social Psychology*, 50, 169–174.
- Fridlund, A. J. (1992). Darwin's anti-Darwinism and the expression of the emotions in man and animals. In K. T. Strongman (Ed.), *International review of emotion* (Vol. 2, pp. 117–137). New York: Wiley.
- Fridlund, A. J. (1994). *Human facial expression: An evolutionary view*. New York: Academic Press.
- Fried, E. I. (2015). Problematic assumptions have slowed down depression research: why symptoms, not syndromes are the way forward. *Front Psychol*, 6, 309.
- Fried, E. I. (2017). Moving forward: how depression heterogeneity hinders progress in treatment and research. *Expert Rev Neurother*, 17, 423–425.
- Fried, E., & Cramer, A. O. J. (2017). Moving forward: Challenges and directions for psychopathological network theory and methodology. *Perspectives on Psychological Science*, 12, 999–1020.
- Fried, E. I., & Nesse, R. M. (2015). Depression is not a consistent syndrome: An investigation of unique symptom patterns in the STAR\*D study. *Journal of Affective Disorders*, 172, 96–102.
- Fried, I., MacDonald, K. A., & Wilson, C. L. (1997). Single neuron activity in human hippocampus and amygdala during recognition of faces and objects. *Neuron*, 18, 753–765.
- Fried, I., Wilson, C. L., MacDonald, K. A., & Behnke, E. J. (1998). Electric current stimulates laughter. *Nature*, 391, 650.
- Fried, L. P., Carlson, M. C., Freedman, M., Frick, K. D., Glass, T. A., Hill, J., . . . Wasik, B. A. (2004). A social model for health promotion for an aging population: Initial evidence on the Experience Corps model. *Journal of Urban Health*, 81(1), 64–78.
- Friedman, B. H. (2010). Feelings and the body: The Jamesian perspective on autonomic specificity of emotion. *Biological Psychology*, 84(3), 383–393.
- Frijda, N. (1994). Universal antecedents exist, and are interesting. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 155–162). New York: Oxford University Press.

- Frijda, N. H. (1986). *The emotions*. Cambridge University Press.
- Frijda, N. H. (1988). The laws of emotion. *American Psychologist*, 43(5), 349–358.
- Frijda, N. H. (1993). Moods, emotion episodes, and emotions. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 381–403). New York: Guilford Press.
- Frijda, N. H. (1993). The place of appraisal in emotion. *Cognition & Emotion*, 7(3–4), 357–387.
- Frijda, N. H. (1994b). Emotions require cognitions, even if simple ones. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 197–202). New York: Oxford University Press.
- Frijda, N. H. (1994c). Universal antecedents exist, and are interesting. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 155–162). New York: Oxford University Press.
- Frijda, N. H. (2007). *The laws of emotion*. Mahwah, NH: Lawrence Erlbaum Associates.
- Frijda, N. H., & Tcherkassof, A. (1997). Facial expressions as modes of action readiness. In J. A. Russell & J. M. Fernández-Dols (Eds.), *The psychology of facial expression* (pp. 78–102). New York: Cambridge University Press.
- Frijda, N. H., Kuipers, P., & ter Schure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality & Social Psychology*, 57(2), 212–228. <http://dx.doi.org/10.1037/0022-3514.57.2.212>.
- Frijda, N. H., Ortony, A., Sonnemans, J., & Clore, G. (1992). The complexity of intensity: Issues concerning the structure of emotion intensity. In M. Clark (Ed.), *Emotion. Review of personality and social psychology* (Vol. 13, pp. 60–89). Newbury Park, CA: Sage.
- Friston, K. (2010). The free-energy principle: A unified brain theory? *Nature Reviews Neuroscience*, 11, 127–138.
- Friston, K. J., Buechel, C., Fink, G. R., Morris, J., Rolls, E., & Dolan, R. J. (1997). Psychophysiological and modulatory interactions in neuroimaging. *NeuroImage*, 6(3), 218–229.
- Friston, K., Adams, R. A., Perrinet, L., & Breakspear, M. (2012). Perceptions as hypotheses: Saccades as experiments. *Frontiers in Psychology*, 3, 151.
- Friston, K., Schwartenbeck, P., FitzGerald, T., Moutoussis, M., Behrens, T. & Dolan, R. J. (2014). The anatomy of choice: Dopamine and decision-making. *Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences*, 369(1655), 20130481. doi: 10.1098/rstb.2013.0481.
- Frith, C. D., & Frith, U. (1999). Interacting minds—a biological basis. *Science*, 286(5445), 1692–1695.
- Frith, C. D., & Wolpert, D. M. (Eds.). (2004). *The neuroscience of social interaction: Decoding, imitating, and influencing the actions of others*. New York: Oxford.
- Frith, U., & Frith, C. D. (2003). Development and neurophysiology of mentalizing. *Philosophical Transactions of the Royal Society B—Biological Sciences*, 358(1431), 459–473. doi:10.1098/rstb.2002.1218.
- Fritz, T., Jentschke, S., Gosselin, N., Sammler, D., Peretz, I., Turner, R., . . . Koelsch, S. (2009). Universal recognition of three basic emotions in music. *Current Biology*, 19(7), 573–576.
- Frot, M., Faillenot, I., & Mauguière, F. (2014). Processing of nociceptive input from posterior to anterior insula in humans. *Human Brain Mapping*, 35, 5486–5499.
- Frot, M., Mauguière, F., Magnin, M., & Garcia-Larrea, L. (2008). Parallel processing of nociceptive A-delta inputs in SII and midcingulate cortex in humans. *Journal of Neuroscience: Official Journal of the Society of Neuroscience*, 28, 944–952.
- Fullston, T., Teague, E. M. C. O., Palmer, N. O., DeBlasio, M. J., Mitchell, M., Corbett, M., . . . Lane, M. (2013). Paternal obesity initiates metabolic disturbances in two generations of mice with incomplete penetrance to the F2 generation and alters the transcriptional profile of testis and sperm microRNA content. *The FASEB Journal*, 27(10), 4226–4243.
- Funder, D. C. (1994). Explaining traits. *Psychological Inquiry*, 5, 125–127.
- Fung, H. H., & Carstensen, L. L. (2003). Sending memorable messages to the old: Age differences in preferences and memory for advertisements. *Journal of Personality & Social Psychology*, 85(1), 163–178. doi:10.1037/0022-3514.85.1.163.
- Fung, H. H., & Carstensen, L. L. (2006). Goals change when life's fragility is primed: Lessons learned from older adults, the September 11 attacks and SARS. *Social Cognition*, 24(3), 248–278.
- Fung, H. H., Carstensen, L. L., & Lutz, A. M. (1999). Influence of time on social preferences: Implications for life-span development. *Psychology & Aging*, 14(4), 595–604.
- Fung, T. C., Olson, C. A., & Hsiao, E. Y. (2017). Interactions between the microbiota, immune and nervous systems in health and disease. *Nature Neuroscience*, 20, 145–155.
- Furmark, T., Tillfors, M., Marteinsdottir, I., Fischer, H., Pissiota, A., Langstrom, B., & Fredrikson, M. (2002). Common changes in cerebral blood flow in patients with social phobia treated with citalopram or cognitive-behavioral therapy. *Archives of General Psychiatry*, 59, 425–433.

## 476 REFERENCES

- Furukawa, E., Tangney, J., & Higashibara, F. (2012). Cross-cultural continuities and discontinuities in shame, guilt, and pride: A study of Children residing in Japan, Korea and the USA. *Self & Identity, 11*, 90–113. doi:10.1080/15298868.2010.512748.
- Fusar-Poli, P., Placentino, A., Carletti, F., Landi, P., Allen, P., Surguladze, S., . . . Politi, P. (2009). Functional atlas of emotional faces processing: A voxel-based meta-analysis of 105 functional magnetic resonance imaging studies. *Journal of Psychiatry & Neuroscience, 34*(6), 418–432.
- Gable, S. L., & Reis, H. T. (2010). Good news! Capitalizing on positive events in an interpersonal context. *Advances in Experimental Social Psychology, 42*, 195–257. doi:10.1016/S0065-2601(10)42004-3.
- Gabrielsson, A., & Juslin, P. N. (2003). *Emotional expression in music*. New York: Oxford University Press.
- Gaensbauer, T., Mrazek, D., & Harmon, R. (1981). Emotional expression in abused and/or neglected infants. In N. Frude (Ed.), *Psychological approaches to child abuse* (pp. 120–135). Totowa, NJ: Rowman and Littlefield.
- Gaertner, B. M., Spinrad, T. L., & Eisenberg, N. (2008). Focused attention in toddlers: Measurement, stability, and relations to negative emotion and parenting. *Infant & Child Development, 17*, 339–363. doi:10.1002/icd.580.
- Galatzer-Levy, I. R., & Bryant, R. A. (2013). 636,120 ways to have Posttraumatic Stress Disorder. *Perspect Psychol Science, 8*(6), 651–662.
- Galinsky, A. D., Hall, E. V., & Cuddy, A. J. (2013). Gendered races: Implications for interracial marriage, leadership selection, and athletic participation. *Psychological Science, 24*(4), 498–506. doi:10.1177/0956797612457783.
- Gallagher, M. W., & Resick, P. A. (2012). Mechanisms of change in cognitive processing therapy and prolonged exposure therapy for PTSD: Preliminary evidence for the differential effects of hopelessness and habituation. *Cognitive Therapy & Research, 36*(6), 750–755.
- Gallese, V., & Goldman, A. (1998). Mirror neurons and the simulation theory of mind-reading. *Trends in Cognitive Sciences, 2*(12), 493–501. Retrieved from <http://eutils.ncbi.nlm.nih.gov/entrez/eutils/eflink.fcgi?dbfrom=pubmed&id=21227300&retmode=ref&cmd=prlinks>.
- Gallese, V., Fadiga, L., Fogassi, L., & Rizzolatti, G. (1996). Action recognition in the premotor cortex. *Brain, 119*, 593–609.
- Gallois, C. (1994). Group membership, social rules, and power: A social psychological perspective on emotional communication. *Journal of Pragmatics, 22*, 301–324.
- Galvan, A., Hare, T. A., Parra, C. E., Penn, J., Voss, H., Glover, G., & Casey, B. J. (2006). Earlier development of the accumbens relative to orbitofrontal cortex might underlie risk-taking behavior in adolescents. *Journal of Neuroscience, 26*(25), 6885–6892.
- Gamer, M., & Buchel, C. (2009). Amygdala activation predicts gaze toward fearful eyes. *Journal of Neuroscience, 29*, 9123–9126.
- Gamer, M., Schmitz, A. K., Tittgemeyer, M., & Schilbach, L. (2013). The human amygdala drives reflexive orienting towards facial features. *Current Biology, 23*, R917–R918.
- Ganzel, B. L., & Morris, P. A. (2011). Allostatic and the developing human brain: Explicit consideration of implicit models. *Development & Psychopathology, 23*(4), 955–974.
- Gao, X., & Maurer, D. (2010). A happy story: Developmental changes in children's sensitivity to facial expressions of varying intensities. *Journal of Experimental Child Psychology, 107*, 67–86.
- Gao, W., et al. (2011). Temporal and spatial evolution of brain network topology during the first two years of life. *PloS one, 6*, e25278.
- Gardner, W. L., Pickett, C. L., Jefferis, V., & Knowles, M. (2005). On the outside looking in: Loneliness and social monitoring. *Personality & Social Psychology Bulletin, 31*(11), 1549–1560. doi:10.1177/0146167205277208.
- Garland, E. L., Farb, N. A., Goldin, R. P., & Fredrickson, B. L. (2015). Mindfulness broadens awareness and builds eudaimonic meaning: A process model of mindful positive emotion regulation. *Psychological Inquiry, 26*(4), 293–314.
- Garland, E. L., Fredrickson, B. L., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits psychopathology. *Clinical Psychology Review, 30*, 849–864.
- Garnefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality & Individual Differences, 30*, 1311–1327.
- Garnefski, N., Kraaij, V., & Van Etten, M. L. (2005). Specificity of relations between adolescents' cognitive emotion regulation strategies and internalizing and externalizing psychopathology. *Journal of Adolescence, 28*, 619–631.
- Garnefski, N., Legerstee, J., Kraaij, V., van den Kommer, T., & Teerds, J. (2002). Cognitive coping strategies and symptoms of depression and

- anxiety: A comparison between adolescents and adults. *Journal of Adolescence*, 25, 603–611.
- Garner, M., Attwood, A., Baldwin, D. S., James, A., & Munafo, M. R. (2011). Inhalation of 7.5% carbon dioxide increases threat processing in humans. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, 36(8), 1557–1562. <https://doi.org/10.1038/npp.2011.15>.
- Garrison, J., Erdeniz, B., & Done, J. (2013). Prediction error in reinforcement learning: A meta-analysis of neuroimaging studies. *Neuroscience & Biobehavioral Reviews*, 37(7), 1297–1310.
- Gartstein, M. A., & Rothbart, M. K. (2003). Studying infant temperament via the Revised Infant Behavior Questionnaire. *Infant Behavior & Development*, 26, 64–68.
- Gasper, K., & Clore, G. L. (2002). Attending to the big picture: Mood and global vs. local Mood and global vs. local processing of visual information. *Psychological Science*, 13, 34–40.
- Gazzola, V., Spezio, M. L., Etzel, J. A., Castelli, F., Adolphs, R., & Keysers, C. (2012). Primary somatosensory cortex discriminates affective significance in social touch. *Proceedings of the National Academy of Sciences of the United States of America*, 109(25), E1657–E1666. doi:10.1073/pnas.1113211109.
- Geanakoplos, J., Pearce, D., & Stacchetti, E. (1989). Psychological games and sequential rationality. *Games & Economic Behavior*, 1(1), 60–79.
- Gee, D. G., Humphreys, K. L., Flannery, J., Goff, B., Telzer, E. H., Shapiro, M., . . . Tottenham, N. (2013). A developmental shift from positive to negative connectivity in human amygdala-prefrontal circuitry. *Journal of Neuroscience*, 33(10), 4584–4593. doi:10.1523/JNEUROSCI.3446-12.2013.
- Gee, D. G., McEwen, S. C., Forsyth, J. K., Haut, K. M., Bearden, C. E., Addington, J., . . . Olvet, D. (2015). Reliability of an fMRI paradigm for emotional processing in a multisite longitudinal study. *Human Brain Mapping*, 36(7), 2558–2579.
- Geers, A. L., & Lassiter, G. D. (1999). Affective expectations and information gain: Evidence for assimilation and contrast effects in affective experience. *Journal of Experimental Social Psychology*, 35(4), 394–413.
- Geers, A. L., Helfer, S. G., Kosbab, K., Weiland, P. E., & Landry, S. J. (2005). Reconsidering the role of personality in placebo effects: Dispositional optimism, situational expectations, and the placebo response. *Journal of Psychosomatic Research*, 58(2), 121–127. doi:10.1016/j.jpsychores.2004.08.011.
- Geier, C. F., Terwilliger, R., Teslovich, T., Velanova, K., & Luna, B. (2010). Immaturities in reward processing and its influence on inhibitory control in adolescence. *Cerebral Cortex*, 20(7), 1613–1629.
- Gelfand, M., Raver, J., Nishii, L., Leslie, L., & Lun, J., and colleagues (2011). Differences between tight and loose societies: A 33-nation study. *Science*, 33, 1100–1104.
- Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. New York: Oxford University Press.
- Gelman, A. (2017). The failure of null hypothesis significance testing when studying incremental changes, and what to do about it. *Personality and Social Psychology Bulletin*, 44, 16–23.
- Gelman, S. A., & Rhodes, M. (2012). “Two-thousand years of stasis”: How psychological essentialism impedes evolutionary understanding. In K. S. Rosengren, S. Brem, E. M. Evans, & G. Sinatra (Eds.), *Evolution challenges: Integrating research and practice in teaching and learning about evolution* (pp. 3–21). New York: Oxford University Press.
- Gelstein, S., Yeshurun, Y., Rozenkrantz, L., Shushan, S., Frumin, I., Roth, Y., & Sobel, N. (2011). Human tears contain a chemosignal. *Science*, 331(6014), 226–230.
- Gendron, M., Crivelli, C., & Barrett, L. F. (in press). Universality reconsidered: Diversity in meaning making about facial expressions. *Current Directions in Psychological Science*.
- Gendron, M., Roberson, D., & Barrett, L. F. (2015). Cultural variation in emotion perception is real: A response to Sauter, Eisner, Ekman, and Scott. *Psychological Science*, 26(3), 357–359. doi:10.1177/0956797614566659.
- Gendron, M., Roberson, D., van der Vyver, J. M., & Barrett, L. F. (2014a). Cultural relativity in perceiving emotion from vocalizations. *Psychological Science*, 25(4), 911–920. doi:10.1177/0956797613517239.
- Gendron, M., Roberson, D., van der Vyver, J. M., & Barrett, L. F. (2014b). Perceptions of emotion from facial expressions are not culturally universal: Evidence from a remote culture. *Emotion*, 14(2), 251–262. doi:10.1037/a0036052.
- Genevsky, A., & Knutson, B. (2015). Neural affective mechanisms predict market-level microlending. *Psychological Science*, 26(9), 1411–1422. <https://doi.org/10.1177/0956797615588467>.
- Genevsky, A., Västfjäll, D., Slovic, P., & Knutson, B. (2013). Neural underpinnings of the identifiable victim effect: Affect shifts preferences for giving. *Journal of Neuroscience*, 33(43), 17188–17196.
- Gennaro, R. J. (Ed.) (2004). *Higher order theories of consciousness*. Amsterdam: John Benjamins.
- George, M. S., Ketter, T. A., Parekh, P. I., Herscovitch, P., & Post, R. M. (1996). Gender differences in regional

## 478 REFERENCES

- cerebral blood flow during transient self-induced sadness or happiness. *Biological Psychiatry*, 40(9), 859–871. doi:10.1016/0006-3223(95)00572-2.
- Georgiou, G. A., Bleakley, C., Hayward, J., Russo, R., Dutton, K., Eltiti, S., and Fox, E. (2005). Focusing on fear: Attentional disengagement from emotional faces. *Visual Cognition*, 12, 145–158.
- Gerstein, G. L., & Perkel, D. H. (1969). Simultaneously recorded trains of action potentials: Analysis and functional interpretation. *Science*, 164(3881), 828–830.
- Gerstorf, D., Ram, N., Mayraz, G., Hidajat, M., Lindenberger, U., Wagner, G. G., & Schupp, J. (2010). Late-life decline in well-being across adulthood in Germany, the UK, and the US: Something is seriously wrong at the end of life. *Psychology & Aging*, 25(2), 477–485. doi:10.1037/a0017543.
- Geurts, D. E., Huys, Q. J., Den Ouden, H. E., & Cools, R. (2013). Aversive Pavlovian control of instrumental behavior in humans. *Journal of Cognitive Neuroscience*, 25(9), 1428–1441.
- Geuter, S., Koban, L., & Wager, T. D. (2017). The cognitive neuroscience of placebo effects: Concepts, predictions, and physiology. *Annual Review of Neuroscience*, 40, 167–188.
- Ghashghaei, H. T., Hilgetag, C. C., & Barbas, H. (2007). Sequence of information processing for emotions based on the anatomic dialogue between prefrontal cortex and amygdala. *NeuroImage*, 34(3), 905–923.
- Gianaros, P. J., Hariri, A. R., Sheu, L. K., Muldoon, M. F., Sutton-Tyrrell, K., & Manuck, S. B. (2009). Preclinical atherosclerosis covaries with individual differences in reactivity and functional connectivity of the amygdala. *Biological Psychiatry*, 65(11), 943–950.
- Gianaros, P. J., Jennings, J. R., Sheu, L. K., Greer, P. J., Kuller, L. H., & Matthews, K. A. (2007). Prospective reports of chronic life stress predict decreased grey matter volume in the hippocampus. *NeuroImage*, 35(2), 795–803.
- Gibbs, R. A., Rogers, J., Katze, M. G., Bumgarner, R., Weinstock, G. M., Mardis, E. R., . . . Batzer, M. A. (2007). Evolutionary and biomedical insights from the rhesus macaque genome. *Science*, 316(5822), 222–234.
- Gibson, W. T., Gonzalez, C. R., Fernandez, C., Ramasamy, L., Tabachnik, T., Du, R. R., . . . Anderson, D. J. (2015). Behavioral responses to a repetitive visual threat stimulus express a persistent state of defensive arousal in *Drosophila*. *Current Biology*, 25(11), 1401–1415.
- Gilbert, D. T., & Wilson, T. D. (2007). Propection: Experiencing the future. *Science*, 317(5843), 1351–1354.
- Gilbert, D. T., Gill, M. J., & Wilson, T. D. (2002). The future is now: Temporal correction in affective forecasting. *Organizational Behavior & Human Decision Processes*, 88(1), 430–444.
- Gilbert, D. T., King, G., Pettigrew, S., & Wilson, T. D. (2016). Comment on “Estimating the reproducibility of psychological science.” *Science*, 351, 1037.
- Gilbertson, M. W., Paulus, L. A., Williston, S. K., Gurvits, T. V., Lasko, N. B., Pitman, R. K., & Orr, S. P. (2006). Neurocognitive function in monozygotic twins discordant for combat exposure: Relationship to posttraumatic stress disorder. *Journal of Abnormal Psychology*, 115(3), 484.
- Gilligan, C. (1977). In a different voice: Women's conceptions of self and of morality. *Harvard Educational Review*, 47(4), 481–517.
- Gilman, J. M., & Hommer, D. W. (2008). Modulation of brain response to emotional images by alcohol cues in alcohol-dependent patients. *Addiction Biology*, 13, 423–434. doi:10.1111/j.1369-1600.2008.00111.
- Gilmore, R. O. (2016). From big data to deep insight in developmental science. *Wiley Interdisciplinary Reviews: Cognitive Science*, 7, 112–126.
- Gilmore, R., Kennedy, J., & Adolph, K. (in press). Practical solutions for sharing data and materials from psychological research. *Advances in Methods and Practices in Psychological Science*.
- Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review*, 102(2), 379.
- Giuliani, N. R., & Pfeifer, J. H. (2014). Age-related changes in reappraisal of appetitive cravings during adolescence. *NeuroImage*, 108C, 173–181. doi:10.1016/j.neuroimage.2014.12.037.
- Glascher, J., & Adolphs, R. (2003). Processing of the arousal of subliminal and supraliminal emotional stimuli by the human amygdala. *The Journal of Neuroscience*, 23, 10274–10282.
- Glasser, M. F., Smith, S. M., Marcus, D. S., Andersson, J. L., Auerbach, E. J., Behrens, T. E., . . . Van Essen, D. C. (2016). The Human Connectome Project's neuroimaging approach. *Nature Neuroscience*, 19, 1175–1187.
- Glenberg, A. M., Sato, M., Cattaneo, L., Riggio, L., & Buccino, G. (2008). Processing abstract language modulates motor system activity. *Quarterly Journal of Psychology*, 61, 905–916.
- Glenn, A. L., & Raine, A. (2009). Psychopathy and instrumental aggression: Evolutionary, neurobiological, and legal perspectives. *International Journal of Law & Psychiatry*, 32(4), 253–258.
- Glimcher, P. W., & Rustichini, A. (2004). Neuroeconomics: The consilience of brain and decision. *Science*, 306, 447–452.
- Global Burden of Disease Collaborators. (2016). Global, regional, and national incidence, prevalence, and

- years lived with disability for 310 diseases and injuries, 1990–2015: A systematic analysis for the Global Burden of Disease Study 2015. *Lancet*, 388, 1545–1602.
- Glover, G. H., Li, T.-Q., & Ress, D. (2000). Image-based method for retrospective correction of physiological motion effects in fMRI: RETROICOR. *Magnetic Resonance in Medicine*, 44(1), 162–167.
- Goetz, J. L., Keltner, D., & Simon-Thomas, E. (2010). Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin*, 136(3), 351–374.
- Gogtay, N., Giedd, J. N., Lusk, L., Hayashi, K. M., Greenstein, D., Vaituzis, A. C., . . . Thompson, P. M. (2004). Dynamic mapping of human cortical development during childhood through early adulthood. *Proceedings of the National Academy of Sciences of the United States of America*, 101(21), 8174–8179.
- Gold, J. I., & Shadlen, M. N. (2000). Representation of a perceptual decision in developing oculomotor commands. *Nature*, 404, 390–394.
- Gold, J. I., & Shadlen, M. N. (2007). The neural basis of decision making. *Annual Review of Neuroscience*, 30(1), 535–574.
- Gold, S. M., Dziobek, I., Sweat, V., Tirsi, A., Rogers, K., Bruehl, H., . . . Convit, A. (2007). Hippocampal damage and memory impairments as possible early brain complications of type 2 diabetes. *Diabetologia*, 50(4), 711–719.
- Goldberg, L. R. (2001). Analyses of Digman's child-personality data: Derivation of Big Five factor scores from each of six samples. *Journal of Personality*, 69, 709–743.
- Goldie, P. (2000). *The emotions: A philosophical exploration*. Oxford, UK: Oxford University Press.
- Goldin, P. R., McRae, K., Ramel, W., & Gross, J. J. (2008). The neural bases of emotion regulation: Reappraisal and suppression of negative emotion. *Biological Psychiatry*, 63, 577–586.
- Goldman-Rakic, P. S. (1996). Regional and cellular fractionation of working memory. *Proceedings of the National Academy of Sciences of the United States of America*, 93, 13473–13480.
- Goldsmith, H. H. (1994). Parsing the emotional domain from a developmental perspective. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 68–73). New York: Oxford University Press.
- Goldsmith, H. H., & Davidson, R. J. (2004). Disambiguating the components of emotion regulation. *Child Development*, 75, 361–365.
- Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M. K., Thomas, A., Chess, S., . . . McCall, R. B. (1987). Roundtable: What is temperament? Four approaches. *Child Development*, 58, 505–529.
- Goldstein-Piekarski, A. N., Williams, L. M., & Humphreys, K. (2016). A trans-diagnostic review of anxiety disorder comorbidity and the impact of multiple exclusion criteria on studying clinical outcomes in anxiety disorders. *Transl Psychiatry*, 6, e847.
- Goldwater, D. S., Pavlides, C., Hunter, R. G., Bloss, E. B., Hof, P. R., McEwen, B. S., & Morrison, J. H. (2009). Structural and functional alterations to rat medial prefrontal cortex following chronic restraint stress and recovery. *Neuroscience*, 164(2), 798–808.
- Gonzaga, G. C., Keltner, D., Londahl, E. A., & Smith, M. D. (2001). Love and the commitment problem in romantic relations and friendship. *Journal of Personality & Social Psychology*, 81(2), 247–262.
- Gonzaga, G. C., Turner, R. A., Keltner, D., Campos, B., & Altemus, M. (2006). Romantic love and sexual desire in close relationships. *Emotion*, 6(2), 163.
- Gonzalez-Liencre, C., Juckel, G., Tas, C., Friebe, A., & Brüne, M. (2014). Emotional contagion in mice: The role of familiarity. *Behavioural Brain Research*, 263, 16–21. doi:10.1016/j.bbr.2014.01.020.
- Goodman, S. N., Fanelli, D., & Ioannidis, J. P. (2016). What does research reproducibility mean? *Sci Transl Med*, 8, 341ps312.
- Gordon, J. A., & Redish, A. D. (2016). Current challenges and promises in psychiatry. In A. D. Redish & J. A. Gordon (Eds.), *Computational psychiatry: New perspectives on mental illness* (pp. 3–14). Cambridge, MA: MIT Press.
- Goren, C. C., Sarty, M., & Wu, P. Y. (1975). Visual following and pattern discrimination of face-like stimuli by newborn infants. *Pediatrics*, 56(4), 544–549.
- Gosling, S. D. (2008). Personality in non-human animals. *Social & Personality Psychology Compass*, 2, 985–1001.
- Gosling, S. D., & Mason, W. (2015). Internet research in psychology. *Annual Review of Psychology*, 66, 877–902.
- Gothard, K. M., Battaglia, F. P., Erickson, C. A., Spitler, K. M., & Amaral, D. G. (2007). Neural responses to facial expression and face identity in the monkey amygdala. *Journal of Neurophysiology*, 97, 1671–1683.
- Gotlib, I. H., & Joormann, J. (2010). Cognition and depression: Current status and future directions. *Annual Review of Clinical Psychology*, 6(1), 285–312. <http://doi.org/10.1146/annurev.clinpsy.121208.131305>.
- Gottfried, J. A. (2010). Central mechanisms of odour object perception. *Nature Reviews Neuroscience*, 11(9), 628–641.
- Gottfried, J. A., & Wilson, D. A. (2011). Smell. In J. A. Gottfried (Ed.), *Neurobiology of sensation and*



## 480 REFERENCES

- reward (Chapter 5). Boca Raton, FL: CRC Press/Taylor & Francis.
- Gottfried, J. A., O'Doherty, J., & Dolan, R. J. (2003). Encoding predictive reward value in human amygdala and orbitofrontal cortex. *Science*, *301*, 1104–1107.
- Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-emotion: How families communicate emotionally*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Goyal, M. S., Venkatesh, S., Milbrandt, J., Gordon, J. I., & Raichle, M. E. (2015). Feeding the brain and nurturing the mind: Linking nutrition and the gut microbiota to brain development. *Proceedings of the National Academy of Sciences*, *112*(46), 14105–14112. <http://doi.org/10.1073/pnas.1511465112>.
- Grabenhorst, F., & Rolls, E. T. (2011). Value, pleasure, and choice in the ventral prefrontal cortex. *Trends in Cognitive Sciences*, *15*, 56–67.
- Gracely, R. H., Dubner, R., Deeter, W. R., & Wolskee, P. J. (1985). Clinicians' expectations influence placebo analgesia. *The Lancet*, *1*(8419), 43.
- Gradis, J. L., Qin, P., Lincoln, A. K., Miller, M., Lawler, E., Sørensen, H. T., & Lash, T. L. (2010). Inflammatory bowel disease and completed suicide in Danish adults. *Inflammatory Bowel Diseases*, *16*(12), 2158–2161. <http://doi.org/10.1002/ibd.21298>.
- Graeff, F. G., Guimarães, F. S., De Andrade, T. G., & Deakin, J. F. (1996). Role of 5-HT in stress, anxiety, and depression. *Pharmacology Biochemistry & Behavior*, *54*(1), 129–141.
- Graham, B. M., & Milad, M. R. (2013). Blockade of estrogen by hormonal contraceptives impairs fear extinction in female rats and women. *Biological Psychiatry*, *73*(4), 371–378.
- Graham, F. K. (1979). Distinguishing among orienting, defense, and startle reflexes. In H. D. Kimmel, E. H. van Olst, & J. F. Orlebeke (Eds.), *The orienting reflex in humans* (pp. 137–167). Hillsdale, NH: Lawrence Erlbaum Associates.
- Graham, R., & LaBar, K. S. (2007). Garner interference reveals dependencies between emotional expression and gaze in face perception. *Emotion*, *7*(2), 296.
- Graham, E. K., Gerstorf, D., Yoneda, T. B., Piccinin, A. M., Booth, T., Beam, C. R., . . . Mroczek, D. K. (2017). A coordinated analysis of Big-Five trait change across 14 longitudinal studies. *PsyArXiv*.
- Grant, K. E., Compas, B. E., Stuhlmacher, A. F., Thurm, A. E., McMahon, S. D., & Halpert, J. A. (2003). Stressors and child and adolescent psychopathology: Moving from markers to mechanisms of risk. *Psychological Bulletin*, *129*, 447–466.
- Grau, J. W. (2014). Learning from the spinal cord: How the study of spinal cord plasticity informs our view of learning. *Neurobiology of Learning & Memory*, *108*, 155–171.
- Gray, J. A. (1982a). The neuropsychology of anxiety: An inquiry into the functions of the septo-hippocampal system. *Behavioral & Brain Sciences*, *5*(3), 469–484.
- Gray, J. A. (1982b). *The neuropsychology of anxiety*. New York: Oxford University Press.
- Gray, J. A., & McNaughton, N. (1996). The neuropsychology of anxiety: Reprise. *Nebraska Symposium on Motivation*, *43*, 61–134.
- Gray, J. A., & McNaughton, N. (2000). *The neuropsychology of anxiety* (2nd ed.). New York: Oxford University Press.
- Gray, J. D., Rubin, T. G., Hunter, R. G., & McEwen, B. S. (2014). Hippocampal gene expression changes underlying stress sensitization and recovery. *Molecular Psychiatry*, *19*(11), 1171–1178.
- Gray, J. M., Young, A. W., Barker, W. A., Curtis, A., & Gibson, D. (1997). Impaired recognition of disgust in Huntington's disease gene carriers. *Brain*, *120*, 2029–2038.
- Gray, J. R. (2001). Emotional modulation of cognitive control: Approach-withdrawal states double-dissociate spatial from verbal two-back task performance. *Journal of Experimental Psychology: General*, *130*(3), 436–452.
- Gray, J. R. (2004). Integration of emotion and cognitive control. *Current Directions in Psychological Science*, *13*(2), 46–48. doi:10.1111/j.0963-7214.2004.00272.x
- Gray, J. R., Braver, T. S., & Raichle, M. E. (2002). Integration of emotion and cognition in the lateral prefrontal cortex. *Proceedings of the National Academy of Sciences of the United States of America*, *99*(6), 4115–4120.
- Grayson, D. S., Bliss-Moreau, E., Bennett, J., Lavenex, P., & Amaral, D. G. (2017). Neural reorganization due to neonatal amygdala lesions in the rhesus monkey: Changes in morphology and network structure. *Cerebral Cortex*, *27*, 3240–3253.
- Grayson, D. S., Bliss-Moreau, E., Machado, C. J., Bennett, J., Shen, K., Grant, K. A., . . . Amaral, D. G. (2016). The rhesus monkey connectome predicts disrupted functional networks resulting from pharmacogenetic inactivation of the amygdala. *Neuron*, *91*, 453–466.
- Green, L., Myerson, J., & McFadden, E. (1997). Rate of temporal discounting decreases with amount of reward. *Memory & Cognition*, *25*(5), 715–723. doi:10.3758/BF03211314.
- Greenberg, L. S. (2004). Emotion-focused therapy. *Clinical Psychology & Psychotherapy*, *11*(1), 3–16. <http://doi.org/10.1002/cpp.388>.
- Greenberg, R. P., Constantino, M. J., & Bruce, N. (2006). Are patient expectations still relevant for psychotherapy process and outcome? *Clinical Psychology Review*, *26*(6), 657–678. doi:10.1016/j.cpr.2005.03.002.

- Greene, J. D. (2008). The secret joke of Kant's soul. In W. Sinnott-Armstrong (Ed.), *Moral psychology: Vol. 3. The neuroscience of morality: Emotion, disease, and development* (pp. 35–79). Cambridge, MA: MIT Press.
- Greenough, W. T., Black, J. E., & Wallace, C. S. (1987). Experience and brain development. *Child Development*, 539–559.
- Greer, S. M., Trujillo, A. J., Glover, G. H., & Knutson, B. (2014). Control of nucleus accumbens activity with neurofeedback. *NeuroImage*, 96, 237–244.
- Gregg, T., & Siegel, A. (2003). Differential effects of NK1 receptors in the mid-brain periaqueductal gray upon defensive rage and predatory attack in the cat. *Brain Research*, 994, 55–66.
- Greicius, M. D., Krasnow, B., Reiss, A. L., & Menon, V. (2002). Functional connectivity in the resting brain: A network analysis of the default mode hypothesis. *Proceedings of the National Academy of Sciences*, 100(1), 253–258. doi:10.1073/pnas.0135058100.
- Grewe, O., Kopiez, R., & Altenmüller, E. (2009). Chills as an indicator of individual emotional peaks. *Annals of the New York Academy of Sciences*, 1169(1), 351–354.
- Grill, H. J., & Norgren, R. (1978). The taste reactivity test. I. Mimetic responses to gustatory stimuli in neurologically normal rats. *Brain Research*, 143(2), 263–279.
- Grillon, C., & Charney, D. R. (2011). In the face of fear: Anxiety sensitizes defensive responses to fearful faces. *Psychophysiology*, 48, 1745–1752.
- Grillon, C., & Morgan III, C. A. (1999). Fear-potentiated startle conditioning to explicit and contextual cues in Gulf War veterans with posttraumatic stress disorder. *Journal of Abnormal Psychology*, 108(1), 134.
- Grillon, C., Ameli, R., Woods, S. W., Merikangas, K., & Davis, M. (1991). Fear-potentiated startle in humans: Effects of anticipatory anxiety on the acoustic blink reflex. *Psychophysiology*, 28(5), 588–595.
- Grillon, C., Pine, D. S., Baas, J. M., Lawley, M., Ellis, V., & Charney, D. S. (2006). Cortisol and DHEA-S are associated with startle potentiation during aversive conditioning in humans. *Psychopharmacology*, 186(3), 434–441.
- Grosenick, L., Klingenberg, B., Katovich, K., Knutson, B., & Taylor, J. E. (2013). Interpretable whole-brain prediction analysis with GraphNet. *NeuroImage*, 72, 304–321.
- Gross, J. J. (1998a). Antecedent-and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality & Social Psychology*, 74(1), 224.
- Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, 2(3), 271–299. <http://doi.org/10.1037/1089-2680.2.3.271>.
- Gross, J. J. (1999). Emotion regulation: Past, present, future. *Cognition & Emotion*, 13, 551–573.
- Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science*, 10(6), 214–219.
- Gross, J. J. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3–22). New York: Guilford Press.
- Gross, J. J. (2014b). Emotion regulation: Conceptual foundations and empirical foundations. In J. J. Gross (Ed.), *Handbook of emotion regulation* (2nd ed., pp. 3–20). New York: Guilford Press.
- Gross, J. J. (2015a). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, 26(1), 1–26.
- Gross, J. J. (2015b). The extended process model of emotion regulation: Elaborations, applications, and future directions. *Psychological Inquiry*, 26, 130–137.
- Gross, J. J. (Ed.). (2014a). *Handbook of emotion regulation* (2nd ed.). New York: Guilford.
- Gross, J. J., & Barrett, L. F. (2011). Emotion generation and emotion regulation: One or two depends on your point of view. *Emotion Review*, 1, 8–16.
- Gross, J. J., & Jazaieri, H. (2014). *Emotion, emotion regulation, and psychopathology: An affective science perspective*. *Clinical Psychological Science*, 2(4), 387–401.
- Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition & Emotion*, 9(1), 87–108.
- Gross, J. J., Carstensen, L. L., Pasupathi, M., Tsai, J., Götestam Skorpen, C., & Hsu, A. Y. (1997). Emotion and aging: Experience, expression, and control. *Psychology & Aging*, 12, 590–599.
- Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. A. Simpson, & J. N. Hughes (Eds.), *Emotion regulation in families: Pathways to dysfunction and health* (pp. 13–35). Washington, DC: American Psychological Association.
- Gross, J. J., Sheppes, G., & Urry, H. L. (2011). Cognition and Emotion Lecture at the 2010 SPSP Emotion Preconference: Emotion generation and emotion regulation: A distinction we should make (carefully). *Cognition & Emotion*, 25(5), 765–781.
- Gross, J. J., Sutton, S. K., & Ketelaar, T. (1998). Relations between affect and personality: Support for the affect-level and affective reactivity views. *Personality & Social Psychology Bulletin*, 24, 279–288.
- Gross, M. M., Crane, E. A., & Fredrickson, B. L. (2010). Methodology for assessing bodily expression of emotion. *Journal of Nonverbal Behavior*, 34(4), 223–248.

## 482 REFERENCES

- Gruber, J. (2011). Can feeling too good be bad?: Positive emotion persistence (PEP) in bipolar disorder. *Current Directions in Psychological Science*, 20, 217–221.
- Gruber, J., Mauss, I. B., & Tamir, M. (2011). A dark side of happiness? How, when, and why happiness is not always good. *Perspectives on Psychological Science*, 6(3), 222–233.
- Grühn, D., & Scheibe, S. (2008). Age-related differences in valence and arousal ratings of pictures from the International Affective Picture System (IAPS): Do ratings become more extreme with age? *Behavior Research Methods*, 40, 512–521.
- Grunau, R. V., & Craig, K. D. (1987). Pain expression in neonates: Facial action and cry. *Pain*, 28(3), 395–410.
- Grupe, D. W., & Nitschke, J. B. (2013). Uncertainty and anticipation in anxiety: An integrated neurobiological and psychological perspective. *Nature Reviews Neuroscience*, 14, 488–501.
- Grupe, D. W., Oathes, D. J., & Nitschke, J. B. (2013). Dissecting the anticipation of aversion reveals dissociable neural networks. *Cerebral Cortex*, 23, 1874–1883.
- Gryll, S. L., & Katahn, M. (1978). Situational factors contributing to the placebos effect. *Psychopharmacology (Berlin)*, 57(3), 253–261.
- Gu, X., Liu, X., Van Dam, N. T., Hof, P. R., & Fan, J. (2012). Cognition–emotion integration in the anterior insular cortex. *Cerebral Cortex*, 23(1), 20–27.
- Guilford, Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–1081.
- Guillory, S. A., & Bujarski, K. A. (2014). Exploring emotions using invasive methods: Review of 60 years of human intracranial electrophysiology. *Social Cognitive & Affective Neuroscience*, 9(12), 1880–1889.
- Guitart-Masip, M., Duzel, E., Dolan, R., & Dayan, P. (2014). Action versus valence in decision making. *Trends in Cognitive Sciences*, 18(4), 194–202.
- Guitart-Masip, M., Economides, M., Huys, Q. J., Frank, M. J., Chowdhury, R., Duzel, E., . . . Dolan, R. J. (2014). Differential, but not opponent, effects of L-DOPA and citalopram on action learning with reward and punishment. *Psychopharmacology*, 231(5), 955.
- Gungor, N. Z., & Paré, D. (2016). Functional heterogeneity in the bed nucleus of the stria terminalis. *Journal of Neuroscience*, 36, 8038–8049.
- Gunnar, M. R., Wewerka, S., Frenn, K., Long, J. D., & Griggs, C. (2009). Developmental changes in hypothalamus-pituitary-adrenal activity over the transition to adolescence: Normative changes and associations with puberty. *Development & Psychopathology*, 21, 69–85.
- Gunnar, M., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology*, 58, 145–173. doi:10.1146/annurev.psych.58.110405.085605.
- Gunning-Dixon, F. M., Gur, R. C., Perkins, A. C., Schroeder, L., Turner, T., Turetsky, B. I., . . . Gur, R. E. (2003). Age-related differences in brain activation during emotional face processing. *Neurobiology of Aging*, 24(2), 285–295.
- Guo, W., Xue, J.-M., Shao, D., Long, Z.-T., & Cao, F.-L. (2015). Effect of the interplay between trauma severity and trait neuroticism on posttraumatic stress disorder symptoms among adolescents exposed to a pipeline explosion. *PlosOne*, 10, e0120493.
- Guroglu, B., van den Bos, W., & Crone, E. A. (2009). Neural correlates of social decision making and relationships: A developmental perspective. *Annals of the New York Academy of Sciences*, 1167, 197–206.
- Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior & Organization*, 3(4), 367–388.
- Guyer, A. E., Choate, V. R., Pine, D. S., & Nelson, E. E. (2012). Neural circuitry underlying affective responses to peer feedback in adolescence. *Social, Cognitive, & Affective Neuroscience*, 7(1), 82–91.
- Guyer, A. E., Monk, C. S., McClure-Tone, E. B., Nelson, E. E., Roberson-Nay, R., Adler, A. D., . . . Ernst, M. (2008). A developmental examination of amygdala response to facial expressions. *Journal of Cognitive Neuroscience*, 20(9), 1565–1582.
- Gyurak, A., Gross, J. J., & Etkin, A. (2011). Explicit and implicit emotion regulation: A dual-process framework. *Cognition & Emotion*, 25(3), 400–412. <http://doi.org/10.1080/02699931.2010.544160>.
- Haber, S. N. (2003). The primate basal ganglia: Parallel and integrative networks. *Journal of Chemical Neuroanatomy*, 26, 3–17–330.
- Haber, S. N., & Knutson, B. (2010). The reward circuit: Linking primate anatomy and human imaging. *Neuropsychopharmacology*, 35, 4–26.
- Haber, S. N., Fudge, J. L., & McFarland, N. R. (2000). Striatonigrostriatal pathways in primates form an ascending spiral from the shell to the dorsolateral striatum. *Journal of Neuroscience*, 20(6), 2369–2382.
- Hadj-Bouziane, F., Liu, N., Bell, A. H., Gothard, K. M., Luh, W. M., Tootell, R. B., . . . Ungerleider, L. G. (2012). Amygdala lesions disrupt modulation of functional MRI activity evoked by facial expression in the monkey inferior temporal cortex. *Proceedings of the National Academy of Sciences of the United States of America*, 109, E3640–E3648.

- Hadwin, J., Frost, S., French, C. C., & Richards, A. (1997). Cognitive processing and trait anxiety in typically developing children: Evidence for interpretation bias. *Journal of Abnormal Psychology, 106*, 486–490.
- Hagan, C. C., Woods, W., Johnson, S., Calder, A. J., Green, G. G., & Young, A. W. (2009). MEG demonstrates a supra-additive response to facial and vocal emotion in the right superior temporal sulcus. *Proceedings of the National Academy of Sciences of the United States of America, 106*, 20010–20015.
- Hagberg, H., Gressens, P., & Mallard, C. (2012). Inflammation during fetal and neonatal life: Implications for neurologic and neuropsychiatric disease in children and adults. *Annals of Neurology, 71*(4), 444–457. <http://doi.org/10.1002/ana.22620>.
- Hagemann, D., Hewig, J., Seifert, J., Naumann, E., & Bartussek, D. (2005). The latent state-trait structure of resting EEG asymmetry: Replication and extension. *Psychophysiology, 42*, 740–752.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review, 108*, 814–834.
- Haidt, J., & Keltner, D. (1999). Culture and facial expression: Open-ended methods find more faces and a gradient of recognition. *Cognition & Emotion, 13*, 225–266.
- Hajcak, G., & Nieuwenhuis, S. (2006). Reappraisal modulates the electrocortical response to unpleasant pictures. *Cognitive, Affective, & Behavioral Neuroscience, 6*(4), 291–297. <http://doi.org/10.3758/CABN.6.4.291>.
- Hajcak, G., & Olvet, D. M. (2008). The persistence of attention to emotion: Brain potentials during and after picture presentation. *Emotion, 8*(2), 250–255. <http://doi.org/10.1037/1528-3542.8.2.250>.
- Hakamata, Y., Lissek, S., Bar-Haim, Y., Britton, J. C., Fox, N. A., Leibenluft, E., . . . Pine, D. S. (2010). Attention bias modification treatment: A meta-analysis toward the establishment of novel treatment for anxiety. *Biological Psychiatry, 68*, 982–990. doi:10.1016/j.biopsych.2010.07.021.
- Hakulinen, C., Elovainio, M., Pulkki-Raback, L., Virtanen, M., Kivimaki, M., & Jokela, M. (2015). Personality and depressive symptoms: Individual participant meta-analysis of 10 cohort studies. *Depression & Anxiety, 32*, 461–470.
- Halberstadt, A. G., & Eaton, K. L. (2003). A meta-analysis of family expressiveness and children's emotion expressiveness and understanding. *Marriage & Family Review, 34*, 35–62. doi:10.1300/J002v34n01\_03.
- Halberstadt, J. B. (2005). Featural shift in explanation-biased memory for emotional faces. *Journal of Personality & Social Psychology, 88*, 38–49.
- Halberstadt, J. B., & Niedenthal, P. M. (2001). Effects of emotion concepts on perceptual memory for emotional expressions. *Journal of Personality & Social Psychology, 81*, 587–598.
- Halberstadt, J., Winkelman, P., Niedenthal, P. M., & Dalle, N. (2009). Emotional conception: How embodied emotion concepts guide perception and facial action. *Psychological Science, 10*, 1254–1261.
- Halfon, N., Larson, K., Lu, M., Tullis, E., & Russ, S. (2014). Lifecourse health development: Past, present and future. *Maternal & Child Health Journal, 18*(2), 344.
- Halgren, E., Raji, T., Marinkovic, K., Jousmaki, V., & Hari, R. (2000). Cognitive response profile of the human fusiform face area as determined by MEG. *Cerebral Cortex, 10*(1), 69–81.
- Halgren, E., Walter, R. D., Cherlow, D. G., & Crandall, P. H. (1978). Mental phenomena evoked by electrical stimulation of the human hippocampal formation and amygdala. *Brain, 101*, 83–117.
- Halit, H., De Haan, M., & Johnson, M. H. (2003). Cortical specialisation for face processing: Face-sensitive event-related potential components in 3- and 12-month-old infants. *NeuroImage, 19*(3), 1180–1193.
- Hall, E. (1959). *The silent language*. Garden City, NY: Doubleday.
- Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in physicians and medical institutions: What is it, can it be measured, and does it matter? *The Milbank Quarterly, 79*(4), 613–639. v. doi:10.1111/1468-0009.00223.
- Hamacher-Dang, T. C., Merz, C. J., & Wolf, O. T. (2015). Stress following extinction learning leads to a context-dependent return of fear. *Psychophysiology, 52*(4), 489–498.
- Hamani, C., Mayberg, H., Stone, S., Laxton, A., Haber, S., & Lozano, A. M. (2011). The subcallosal cingulate gyrus in the context of major depression. *Biological Psychiatry, 69*(4), 301–308. <http://doi.org/10.1016/j.biopsych.2010.09.034>.
- Hamilton, J. P., Etkin, A., Furman, D. J., Lemus, M. G., Johnson, R. F., & Gotlib, I. H. (2012). Functional neuroimaging of major depressive disorder: A meta-analysis and new integration of base line activation and neural response data. *American Journal of Psychiatry, 169*, 693–703.
- Hamm, A. O., Cuthbert, B. N., Globisch, J., & Vaitl, D. (1997). Fear and the startle reflex: Blink modulation and autonomic response patterns in animal and mutilation fearful subjects. *Psychophysiology, 34*, 97–107.
- Hamm, A. O., Weike, A. I., Schupp, H. T., Treig, T., & Dressel, A. (2003). Affective blindsight: Intact fear conditioning to a visual cue in a cortically

## 484 REFERENCES

- blind patient. *Brain: A Journal of Neurology*, 126, 267–275.
- Hammack, S. E., Cooper, M. A., & Lezak, K. R. (2012). “Overlapping neurobiology of learned helplessness and conditioned defeat: Implications for PTSD and mood disorders.” *Neuropharmacology*, 62(2), 565–575.
- Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology*, 1(1), 293–319. <http://doi.org/10.1146/annurev.clinpsy.1.102803.143938>.
- Hampton, A. N., & O’Doherty, J. P. (2007). Decoding the neural substrates of reward-related decision making with functional MRI. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 1377–1382.
- Hanish, L. D., Eisenberg, N., Fabes, R. A., Spinrad, T. L., Ryan, P., & Schmidt, S. (2004). The expression and regulation of negative emotions: Risk factors for young children’s peer victimization. *Development & Psychopathology*, 16, 335–353. [doi:10.1017/S0954579404044542](http://doi.org/10.1017/S0954579404044542).
- Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, 107(1), 128–140.
- Hankin, B. L., Badanes, L. S., Abela, J. R., & Watamura, S. E. (2010). Hypothalamic-pituitary-adrenal axis dysregulation in dysphoric children and adolescents: Cortisol reactivity to psychosocial stress from preschool through middle adolescence. *Biological Psychiatry*, 68, 484–490.
- Hannestad, J., Subramanyam, K., DellaGioia, N., Planeta-Wilson, B., Weinzimmer, D., Pittman, B., & Carson, R. E. (2012). Glucose metabolism in the insula and cingulate is affected by systemic inflammation in humans. *Journal of Nuclear Medicine*, 53(4), 601–607. <http://doi.org/10.2967/jnumed.111.097014>.
- Hansen, C. H., & Hansen, R. D. (1988). Finding the face in the crowd: An anger superiority effect. *Journal of Personality & Social Psychology*, 54, 917–924.
- Harbaugh, William T., Kate Krause, and Timothy R. Berry. (2001). GARP for kids: On the development of rational choice behavior. *American Economic Review*, 91(5), 1539–1545.
- Harbuz, M. S., Chover-Gonzalez, A. J., & Jessop, D. S. (2003). Hypothalamo-pituitary-adrenal axis and chronic immune activation. *Annals of the New York Academy of Sciences*, 992(1), 99–106. <http://doi.org/10.1111/j.1749-6632.2003.tb03141.x>.
- Harden, K. P., & Mann, F. D. (2015). Biological risk for the development of problem behavior in adolescence: Integrating insights from behavioral genetics and neuroscience. *Child Development Perspectives*, 9(4), 211–216.
- Hardin, C. D., & Higgins, E. T. (1996). Shared reality: How social verification makes the subjective objective. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: The interpersonal context* (Vol. 3, pp. 28–84). New York: Guilford.
- Hare, R. D. (2003). *The psychopathy checklist—revised*. Toronto, ON: Multi-Health Systems.
- Hare, R. D., & Vertommen, H. (2009). Self-control in decision-making involves modulation of the vmPFC valuation system. *Science*, 324(5927), 646–648. [doi:10.1126/science.1168450](http://doi.org/10.1126/science.1168450).
- Hare, T. A., Camerer, C. F., & Rangel, A. (2009). Self-control in decision-making involves modulation of the vmPFC valuation system. *Science (New York, N.Y.)*, 324(5927), 646–648. [doi:10.1126/science.1168450](http://doi.org/10.1126/science.1168450).
- Hare, T. A., Malmaud, J., & Rangel, A. (2011). Focusing attention on the health aspects of foods changes value signals in vmPFC and improves dietary choice. *Journal of Neuroscience*, 31, 11077–11087.
- Hare, T. A., O’Doherty, J., Camerer, C. F., Schultz, W., & Rangel, A. (2008). Dissociating the role of the orbitofrontal cortex and the striatum in the computation of goal values and prediction errors. *Journal of Neuroscience*, 28(22), 5623–5630.
- Hare, T. A., Tottenham, N., Galvan, A., Voss, H. U., Glover, G. H., & Casey, B. J. (2008). Biological substrates of emotional reactivity and regulation in adolescence during an emotional go–no go task. *Biological Psychiatry*, 63(10), 927–934.
- Hareli, S., & Hess, U. (2010). What emotional reactions can tell us about the nature of others: An appraisal perspective on person perception. *Cognition & Emotion*, 24, 128–140.
- Hariri, A. R., Bookheimer, S. Y., & Mazziotta, J. C. (2000). Modulating emotional response: Effects of a neocortical network on the limbic system. *NeuroReport*, 11, 43–48.
- Hariri, A. R., Mattay, V. S., Tessitore, A., Fera, F., & Weinberger, D. R. (2003). Neocortical modulation of the amygdala response to fearful stimuli. *Biological Psychiatry*, 53(6), 494–501.
- Hariri, A. R., Mattay, V. S., Tessitore, A., Kolachana, B., Fera, F., Goldman, D., . . . Weinberger, D. R. (2002). Serotonin transporter genetic variation and the response of the human amygdala. *Science*, 297(5580), 400–403.
- Harlé, K. M., & Sanfey, A. G. (2007). Incidental sadness biases social economic decisions in the Ultimatum Game. *Emotion*, 7(4), 876–881. [doi:10.1037/1528-3542.7.4.876](http://doi.org/10.1037/1528-3542.7.4.876).
- Harlé, K. M., & Sanfey, A. G. (2010). Effects of approach and withdrawal motivation on interactive

- economic decisions. *Cognition and Emotion*, 24(8), 1456–1465. doi:10.1080/02699930903510220.
- Harlé, K. M., Chang, L. J., van't Wout, M., & Sanfey, A. G. (2012). The neural mechanisms of affect infusion in social economic decision-making: A mediating role of the anterior insula. *NeuroImage*, 61(1), 32–40. doi:10.1016/j.neuroimage.2012.02.027.
- Harlow, J. M. (1848). Passage of an iron rod through the head. *Boston Medical & Surgical Journal*, 39, 389–393.
- Harnish, J. D., Dodge, K. A., & Valente, E. (1995). Mother-child interaction quality as a partial mediator of the roles of maternal depressive symptomatology and socioeconomic status in the development of child behavior problems. *Child Development*, 66, 739–753. doi: 10.1111/j.1467-8624.1995.tb00902.x.
- Harper, L. V. (2005). Epigenetic inheritance and the intergenerational transfer of experience. *Psychological Bulletin*, 131(3), 340–360. doi:10.1037/0033-2909.131.3.340.
- Harris, C. R. (2001). Cardiovascular responses of embarrassment and effects of emotional suppression in a social setting. *Journal of Personality & Social Psychology*, 81(5), 886.
- Harris, L. T., & Fiske, S. T. (2006). Dehumanizing the lowest of the low: Neuro-imaging responses to extreme outgroups. *Psychological Science*, 17, 847–853.
- Harris, L. T., & Fiske, S. T. (2009). Social neuroscience evidence for dehumanised perception. *European Review of Social Psychology*, 20, 192–231.
- Harris, L. T., & Fiske, S. T. (2011). Dehumanised perception: A psychological means to facilitate atrocities, torture, and genocide? *Zeitschrift für Psychologie/Journal of Psychology*, 219, 175–181.
- Harris, L. T., Lee, V. K., Capestany, B. H., & Cohen, A. O. (2014). Assigning economic value to people results dehumanization brain response. *Journal of Neuroscience, Psychology, & Economics*, 7, 151–163.
- Harris, R. M., Dijkstra, P. D., & Hofmann, H. A. (2014). Complex structural and regulatory evolution of the pro-opiomelanocortin gene family. *General & Comparative Endocrinology*, 195, 107–115. https://doi.org/10.1016/j.ygcen.2013.10.007.
- Harrison, N. A., Brydon, L., Walker, C., Gray, M. A., Steptoe, A., & Critchley, H. D. (2009). Inflammation causes mood changes through alterations in subgenual cingulate activity and mesolimbic connectivity. *Biological Psychiatry*, 66(5), 407–414. http://doi.org/10.1016/j.biopsych.2009.03.015.
- Harrison, N. A., Doeller, C. F., Voon, V., Burgess, N., & Critchley, H. D. (2014). Peripheral inflammation acutely impairs human spatial memory via actions on medial temporal lobe glucose metabolism. *Biological Psychiatry*, 76(7), 585–593. http://doi.org/10.1016/j.biopsych.2014.01.005.
- Harrison, N. A., Voon, V., Cercignani, M., Cooper, E. A., Pessiglione, M., & Critchley, H. D. (2015). A neurocomputational account of how inflammation enhances sensitivity to punishments versus rewards. *Biological Psychiatry*, 80(1), 73–81. http://doi.org/10.1016/j.biopsych.2015.07.018.
- Harrison, N., Singer, T., Rotshtein, P., Dolan, R. J., & Critchley, H. D. (2006). Pupillary contagion: Central mechanisms engaged in sadness processing. *Social Cognitive & Affective Neuroscience*, 1, 5–17.
- Hasler, G., van der Veen, J. W., Tumonis, T., Meyers, N., Shen, J., & Drevets, W. C. (2007). Reduced prefrontal glutamate/glutamine and  $\gamma$ -aminobutyric acid levels in major depression determined using proton magnetic resonance spectroscopy. *Archives of General Psychiatry*, 64(2), 193–200.
- Hassin, R. R., Aviezer, H., & Bentin, S. (2013). Inherently ambiguous: Facial expressions of emotions, in context. *Emotion Review*, 5(1), 60–65.
- Hasin, D. S., Shmulewitz, D., Stohl, M., Greenstein, E., Aivadyan, C., Morita, K., . . . Grant, B. F. (2015). Procedural validity of the AUDADIS-5 depression, anxiety and post-traumatic stress disorder modules: Substance abusers and others in the general population. *Drug and Alcohol Dependence*, 152, 246–256.
- Hastie, R., & Dawes, R. M. (2010). *Rational choice in an uncertain world: The psychology of judgment and decision making*. Thousand Oaks, CA: Sage.
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1993). Emotional contagion. *Current Directions in Psychological Science*, 2(3), 96–100.
- Hattam, R., & Zembylas, M. (2010). What's anger got to do with it? Towards a post-indignation pedagogy for communities in conflict. *Social Identities: Journal for the Study of Race, Nation & Culture*, 16, 23–40. doi:10.1080/13504630903465852.
- Havermans, R. C. (2011). “You say it's liking, I say it's wanting. . . .” On the difficulty of disentangling food reward in man. *Appetite*, 57, 286–294.
- Hawkins, R. D., Abrams, T. W., Carew, T. J., & Kandel, E. R. (1983). A cellular mechanism of classical conditioning in *Aplysia*: Activity-dependent amplification of presynaptic facilitation. *Science*, 219(4583), 400–405. https://doi.org/10.1126/science.6294833.
- Haxby, J. V., Guntupalli, J. S., Connolly, A. C., Halchenko, Y. O., Conroy, B. R., Gobbini, M. I., . . . Ramadge, P. J. (2011). A common, high-dimensional model of the representational space in human ventral temporal cortex. *Neuron*, 72(2), 404–416.
- Haxby, J. V., Hoffman, E. A., & Gobbini, M. I. (2000). The distributed human neural system for face perception. *Trends in Cognitive Sciences*, 4, 223–233.
- Haxby, J. V., Hoffman, E. A., & Gobbini, M. I. (2002). Human neural systems for face recognition and

## 486 REFERENCES

- social communication. *Biological Psychiatry*, 51(1), 59–67.
- Hayashi, K., Nakao, K., & Nakamura, K. (2015). Appetitive and aversive information coding in the primate dorsal raphe nucleus. *Journal of Neuroscience*, 35(15), 6195–6208.
- Hayden, B. Y., Pearson, J. M., & Platt, M. L. (2009). Fictive reward signals in the anterior cingulate cortex. *Science*, 324(5929), 948–950.
- He, S.-Q., Dum, R. P., & Strick, P. L. (1993). Topographic organization of corticospinal projections from the frontal lobe: Motor areas on the lateral surface of the hemisphere. *Journal of Neuroscience*, 13, 9–52–980.
- Healey, J., & Picard, R. W. (2005). Detecting stress during real-world driving tasks using physiological sensors. *IEEE Transactions on Intelligent Transportation Systems*, 6(2), 156–166. doi:10.1109/TITS.2005.848368.
- Hebart, M. N., & Gläscher, J. (2015). Serotonin and dopamine differentially affect appetitive and aversive general Pavlovian-to-instrumental transfer. *Psychopharmacology*, 232(2), 437.
- Hebb, D. O. (1949). *The organization of behavior: A neuropsychological theory*. New York: Wiley.
- Heberlein, A. S., Padon, A. A., Gillihan, S. J., Farah, M. J., & Fellows, L. K. (2008). Ventromedial frontal lobe plays a critical role in facial emotion recognition. *Journal of Cognitive Neuroscience*, 20(4), 721–733.
- Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review*, 102, 284–304. doi:10.1037/0033-295X.102.2.284.
- Hedge, C., Powell, G., & Sumner, P. (*in press*). The reliability paradox: Why robust cognitive tasks do not produce reliable individual differences. *Behav Res Methods*.
- Heeren, A., Mogoase, C., Philippot, P., & McNally, R. J. (2015). Attention bias modification for social anxiety: A systematic review and meta-analysis. *Clinical Psychology Review*, 40, 76–90.
- Heeren, A., Reese, H. E., McNally, R. J., & Philippot, P. (2012). Attention training toward and away from threat in social phobia: Effects on subjective, behavioral, and physiological measures of anxiety. *Behaviour Research & Therapy*, 50(1), 30–39.
- Hehman, E., Ingbretsen, Z. A., & Freeman, J. B. (2014). The neural basis of stereotypic impact on multiple social categorization. *NeuroImage*, 101, 704–711.
- Heimer, L., & Van Hoesen, G. W. (2006). The limbic lobe and its output channels: Implications for emotional functions and adaptive behavior. *Neuroscience & Biobehavioral Reviews*, 30(2), 126–147.
- Heimer, L., Van Hoesen, G. W., Trimble, M., & Zahm, D. S. (2008). *Anatomy of neuropsychiatry: The new anatomy of the basal forebrain and its implications for neuropsychiatric illness*. Amsterdam: Elsevier: Academic Press.
- Hein, G., & Singer, T. (2008). I feel how you feel but not always: The empathic brain and its modulation. *Current Opinion in Neurology* 18(2), 153–158. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0959438808000706>.
- Hein, G., Silani, G., Preuschhoff, K., Batson, C. D., & Singer, T. (2010). Neural responses to ingroup and outgroup members' suffering predict individual differences in costly helping. *Neuron* 68(1), 149–160. doi:10.1016/j.neuron.2010.09.003.
- Heinrich, C., Lähteinen, S., Suzuki, F., Anne-Marie, L., Huber, S., Häussler, U., . . . Depaulis, A. (2011). Increase in BDNF-mediated TrkB signaling promotes epileptogenesis in a mouse model of mesial temporal lobe epilepsy. *Neurobiology of Disease*, 42(1), 35–47.
- Hejmadi, A., Davidson, R. J., & Rozin, P. (2000). Exploring Hindu Indian emotion expressions: Evidence for accurate recognition by Americans and Indians. *Psychological Science*, 11(3), 183–187.
- Heller, A. S. (2016). Cortical-subcortical interactions in depression: From animal models to human psychopathology. *Frontiers in Systems Neuroscience*, 10(March), 1–10. <http://doi.org/10.3389/fnsys.2016.00020>.
- Heller, A. S., Fox, A. S., Wing, E., Mayer, K., Vack, N. J., & Davidson, R. J. (2015). The neurodynamics of affect in the laboratory predicts persistence of real-world emotional responses. *Journal of Neuroscience*, 35(29), 10503–10509.
- Heller, A. S., Johnstone, T., Light, S. N., Peterson, M. J., Kolden, G. G., Kalin, N. H., & Davidson, R. J. (2013). Relationships between changes in sustained fronto-striatal connectivity and positive affect in major depression resulting from antidepressant treatment. *The American Journal of Psychiatry*, 170(2), 197–206. <http://doi.org/10.1176/appi.ajp.2012.12010014>.
- Heller, A. S., Johnstone, T., Peterson, M. J., Kolden, G. G., Kalin, N. H., & Davidson, R. J. (2013). Increased prefrontal cortex activity during negative emotion regulation as a predictor of depression symptom severity trajectory over 6 months. *Journal of the American Medical Association Psychiatry*, 70, 1181–1189.
- Heller, A. S., Johnstone, T., Shackman, A. J., Light, S., Peterson, M. J., Kolden, G. G., . . . Davidson, R. J. (2009). Reduced capacity to sustain positive emotion in major depression reflects diminished maintenance of fronto-striatal brain activation. *Proceedings of the National Academy of Sciences of the United States of America*, 106, 22445–22450.

- Heller, A. S., Lapate, R. C., Mayer, K. E., & Davidson, R. J. (2014). The face of negative affect: Trial-by-trial corrugator responses to negative pictures are positively associated with amygdala and negatively associated with ventromedial prefrontal cortex activity. *Journal of Cognitive Neuroscience*, *26*, 2102–2110.
- Heller, A. S., van Reekum, C. M., Schaefer, S. M., Lapate, R. C., Radler, B. T., Ryff, C. D., & Davidson, R. J. (2013). Sustained ventral striatal activity predicts eudaimonic well-being and cortisol output. *Psychological Science*, *24*(11), 2191–2200.
- Henckens, M. J., van der Marel, K., van der Toorn, A., Pillai, A. G., Fernandez, G., Dijkhuizen, R. M., & Joels, M. (2015). Stress-induced alterations in large-scale functional networks of the rodent brain. *NeuroImage*, *105*, 312–322.
- Henderson, H., Pine, D. S., & Fox, N. A. (2014). Behavioral inhibition and developmental risk: A dual-processing perspective. *Neuropsychopharmacology*, *40*, 207–224. doi:10.1038/npp.2014.189.
- Hendrie, C. A., & Pickles, A. R. (2010). Depression as an evolutionary adaptation: Anatomical organization around the third ventricle. *Medical Hypotheses*, *74*, 735–740.
- Hengartner, M. P. (2018). Developmental course of child personality traits and their associations with externalizing psychopathology: Results from a longitudinal multi-informant study in a representative cohort. *Journal of Research in Personality*, *73*, 164–172.
- Hengartner, M. P., van der Linden, D., Bohleber, L., & von Wyl, A. (2017). Big Five personality traits and the general factor of personality as moderators of stress and coping reactions following an emergency alarm on a Swiss university campus. *Stress Health*, *33*, 35–44.
- Hengartner, M. P., Tyrer, P., Ajdacic-Gross, V., Angst, J., & Rossler, W. (in press). Articulation and testing of a personality-centred model of psychopathology: evidence from a longitudinal community study over 30 years. *European Archives of Psychiatry and Clinical Neuroscience*.
- Hennenlotter, A., Dresel, C., Castrop, F., Ceballos-Baumann, A. O., Wohlschläger, A. M., & Haslinger, B. (2009). The link between facial feedback and neural activity within central circuitries of emotion—New insights from Botulinum toxin-induced denervation of frown muscles. *Cerebral Cortex*, *19*(3), 537–542.
- Hennings, T., Repacholi, B., Meltzoff, A., & Scott, K. (2014). Do infants generalize other people's emotional dispositions across contexts? Poster presentation at the biennial meeting of the International Conference on Infant Studies, Berlin, Germany, July 3–5.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral & Brain Sciences*, *33*, 61–83; discussion, 83–135.
- Herman, B. H., and Panksepp, J. (1981). Ascending endorphin inhibition of distress vocalization. *Science*, *211*, 1060–1062.
- Herman, J. P., & Cullinan, W. E. (1997). Neurocircuitry of stress: Central control of the hypothalamo-pituitary-adrenocortical axis. *Trends in Neurosciences*, *20*(2), 78–84.
- Hermann, A., Küpper, Y., Schmitz, A., Walter, B., Vaitl, D., Hennig, J., . . . Tabbert, K. (2012). Functional gene polymorphisms in the serotonin system and traumatic life events modulate the neural basis of fear acquisition and extinction. *PLoS One*, *7*(9), e44352.
- Hermans, E. J., van Marle, H. J., Ossewaarde, L., Henckens, M. J., Qin, S., van Kesteren, M. T., . . . Fernandez, G. (2011). Stress-related noradrenergic activity prompts large-scale neural network reconfiguration. *Science*, *334*(6059), 1151–1153. doi:10.1126/science.1209603.
- Hernández, M. M., Eisenberg, N., Valiente, C., Spinrad, T. L., VanSchyndel, S. K., Diaz, A., . . . Southworth, J. (2017). Concurrent and longitudinal associations of peers' acceptance with emotions and effortful control in kindergarten. *International Journal of Behavioral Development*, *41*, 30–40. doi: 10.1177/0165025415608519.
- Herry, C., Bach, D. R., Esposito, F., Di Salle, F., Perrig, W. J., Scheffler, K., . . . Seifritz, E. (2007). Processing of temporal unpredictability in human and animal amygdala. *Journal of Neuroscience*, *27*, 5958–5966.
- Hershberger, W. A. (1986). An approach through the looking-glass. *Learning & Behavior*, *14*(4), 443–451.
- Hertel, P. (2004). Memory for emotional and nonemotional events in depression. *Memory & Emotion*, 186–216.
- Hertenstein, M. J., & Campos, J. J. (2004). The retention effects of an adult's emotional displays on infant behavior. *Child Development*, *75*(2), 595–613.
- Hertenstein, M. J., & Weiss, S. J. (Eds.). (2011). *The handbook of touch: Neuroscience, behavioral, and health perspectives*. New York: Springer Publishing Company.
- Hertenstein, M. J., Holmes, R., McCullough, M., & Keltner, D. (2009). The communication of emotion via touch. *Emotion*, *9*(4), 566.
- Hertenstein, M. J., Keltner, D., App, B., Bulleit, B. A., & Jaskolka, A. R. (2006). Touch communicates distinct emotions. *Emotion*, *6*(3), 528.
- Herting, M. M., Gautam, P., Chen, Z., Mezher, A., & Vetter, N. C. (in press). Test-retest reliability of longitudinal task-based fMRI: Implications for developmental studies. *Dev Cogn Neurosci*.



## 488 REFERENCES

- Herz, R. S. (2003). The effect of verbal context on olfactory perception. *Journal of Experimental Psychology: General*, 132(4), 595–606. doi:10.1037/0096-3445.132.4.595.
- Hess, U., & Fischer, A. (2013). Emotional mimicry as social regulation. *Personality & Social Psychology Review*, 17(2), 142–157. doi:10.1177/1088868312472607.
- Hess, U., Adams, R. B., Jr., & Kleck, R. E. (2004). Facial appearance, gender, and emotion expression. *Emotion*, 4(4), 378–388. doi:10.1037/1528-3542.4.4.378.
- Hess, U., Kappas, A., & Banse, R. (1995). The intensity of facial expressions is determined by underlying affective state and social situation. *Journal of Personality & Social Psychology*, 69, 280–288.
- Hess, U., Sabourin, G., & Kleck, R. E. (2007). Postauricular and eyeblink startle responses to facial expressions. *Psychophysiology*, 44, 431–435.
- Hess, U., Senécal, S., Kirouac, G., Herrera, P., Philippot, P., & Kleck, R. E. (2000). Emotional expressivity in men and women: Stereotypes and self-perceptions. *Cognition & Emotion*, 14, 5.
- Hess, U., Thibault, P., & Levesque, M. (2013). Where do emotional dialects come from? A comparison of the understanding of emotion terms between Gabon and Quebec. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 512–519). Oxford, UK: Oxford University Press.
- Hewitson, J. P., Grainger, J. R., & Maizels, R. M. (2009). Helminth immunoregulation: The role of parasite secreted proteins in modulating host immunity. *Molecular & Biochemical Parasitology*, 167(1), 1–11. <http://doi.org/10.1016/j.molbiopara.2009.04.008>.
- Hietanen, J. K., Surakka, V., & Linnankoski, I. (1998). Facial electromyographic responses to vocal affect expressions. *Psychophysiology*, 35(5), 530–536.
- Higuchi, S., Imamizu, H., & Kawato, M. (2007). Cerebellar activity evoked by common tool-use execution and imagery tasks: An fMRI study. *Cortex*, 43, 350–358.
- Hill, W. D., Arslan, R. C., Xia, C., Luciano, M., Amador, C., Navarro, P., . . . Penke, L. (in press). Genomic analysis of family data reveals additional genetic effects on intelligence and personality. *Molecular Psychiatry*.
- Hinson, J. M., Jameson, T. L., & Whitney, P. (2003). Impulsive decision making and working memory. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 29(2), 298–306. doi:10.1037/0278-7393.29.2.298.
- Hochschild, A. (1979). Emotion work, feeling rules, and social structure. *American Journal of Sociology*, 85(3), 551–573.
- Hoffman, K. L., Gothard, K. M., Schmid, M. C., & Logothetis, N. K. (2007). Facial-expression and gaze-selective responses in the monkey amygdala. *Current Biology*, 17, 766–772.
- Hofmann, S. G., & Smits, J. A. (2008). Cognitive-behavioral therapy for adult anxiety disorders: A meta-analysis of randomized placebo-controlled trials. *Journal of Clinical Psychiatry*, 69, 621–632.
- Hohmann, G. W. (1966). Some effects of spinal cord lesions on experienced emotional feelings. *Psychophysiology*, 3(2), 143–156.
- Hohwy, J. (2013). *The predictive mind*. Oxford, UK: Oxford University Press.
- Holland, P. C., & Gallagher, M. (1999). Amygdala circuitry in attentional and representational processes. *Trends in Cognitive Sciences*, 3(2), 65–73.
- Holland, P. C., & Gallagher, M. (2006). Different roles for amygdala central nucleus and substantia innominata in the surprise-induced enhancement of learning. *Journal of Neuroscience*, 26(14), 3791–3797.
- Holland, P. C., Han, J. S., & Gallagher, M. (2000). Lesions of the amygdala central nucleus alter performance on a selective attention task. *Journal of Neuroscience*, 20(17), 6701–6706.
- Holt, C., A., & Laury, S. K. (2002). Risk aversion and incentive effects. *American Economic Review*, 92(5), 1644–1655.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, 7(7), e1000316. doi:10.1371/journal.pmed.1000316.
- Holzel, B. K., Carmody, J., Evans, K. C., Hoge, E. A., Dusek, J. A., Morgan, L., . . . Lazar, S. W. (2010). Stress reduction correlate with structural changes in the amygdala. *Social Cognitive & Affective Neuroscience*, 5, 11–7.
- Hoque, M. E., McDuff, D. J., & Picard, R. W. (2012). Exploring temporal patterns in classifying frustrated and delighted smiles. *IEEE Transactions on Affective Computing*, 3, 323–334.
- Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of Personality & Social Psychology*, 97, 963–976.
- Horga, G., & Maia, T. V. (2012). Conscious and unconscious processes in cognitive control: A theoretical perspective and a novel empirical approach. *Frontiers in Human Neuroscience*, 6, 199. doi:10.3389/fnhum.2012.00199.

- Horowitz, L. F., Saraiva, L. R., Kuang, D., Yoon, K. H., & Buck, L. B. (2014). Olfactory receptor patterning in a higher primate. *Journal of Neuroscience*, *34*(37), 12241–12252. doi:10.1523/JNEUROSCI.1779-14.2014.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*, 540–545.
- House, P. K., Vyas, A., & Sapolsky, R. (2011). Predator cat odors activate sexual arousal pathways in brains of *Toxoplasma gondii* infected rats. *PLoS One*, *6*, e23277.
- Howard, J. D., Gottfried, J. A., Tobler, P. N., & Kahnt, T. (2015). Identity-specific coding of future rewards in the human orbitofrontal cortex. *Proceedings of the National Academy of Sciences*, *112*, 5195–5200.
- Howell, R. T., Kern, M. L., & Lyubomirsky, S. (2007). Health benefits: Meta-analytically determining the impact of well-being on objective health outcomes. *Health Psychology Review*, *1*, 83–136.
- Hróbjartsson, A., & Gøtzsche, P. C. (2001). Is the placebo powerless? *New England Journal of Medicine*, *344*(15), 1594–1602.
- Hróbjartsson, A., & Gøtzsche, P. C. (2004). Is the placebo powerless? Update of a systematic review with 52 new randomized trials comparing placebo with no treatment. *Journal of Internal Medicine*, *256*(2), 91–100. doi:10.1111/j.1365-2796.2004.01355.x.
- Hsu, D. T., Sanford, B. J., Meyers, K. K., Love, T. M., Hazlett, K. E., Wang, H., . . . Koeppe, R. A. (2013). Response of the  $\mu$ -opioid system to social rejection and acceptance. *Molecular Psychiatry*, *18*(11), 1211–1217.
- Hu, H. (2016). Reward and aversion. *Annual Review of Neuroscience*, *39*, 297–324.
- Hu, L., & Iannetti, G. D. (2016). Painful issues in pain prediction. *Trends in Neurosciences*, *39*, 212–220.
- Hu, S. (2015). Affective reactions differ between Chinese and American health young adults: A cross-cultural study using the international affective picture system. *BMC Psychiatry*, *15*(60), 1–7.
- Huang, J., Xu, D., Peterson, B. S., Hu, J., Cao, L., Wei, N., . . . Hu, S. (2015). Affective reactions differ between Chinese and American healthy young adults: A cross-cultural study using the international affective picture system. *BMC Psychiatry*, *15*(1), 60.
- Huetzel, S. A., & Kranton, R. E. (2012). Identity economics and the brain: Uncovering the mechanisms of social conflict. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, *367*(1589), 680–691. doi:10.1098/rstb.2011.0264.
- Hugenberg, K., & Bodenhausen, G. V. (2003). Facing prejudice: Implicit prejudice and the perception of facial threat. *Psychological Science*, *14*(6), 640–643.
- Hugenberg, K., & Bodenhausen, G. V. (2004). Ambiguity in social categorization: The role of prejudice and facial affect in race categorization. *Psychological Science*, *15*, 342–345.
- Hughes, B. L., Ambady, N., & Zaki, J. (2017). Trusting outgroup, but not ingroup members, requires control: Neural and behavioral evidence. *Social Cognitive and Affective Neuroscience*, *12*(3), 372–381.
- Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*, 747–770. doi:10.1037/0012-1649.42.5.747.
- Hühnel, I., Fölster, M., Werheid, K., & Hess, U. (2014). Empathic reactions of younger and older adults: No age related decline in affective responding. *Journal of Experimental Social Psychology*, *50*, 136–143. http://dx.doi.org/10.1016/j.jesp.2013.09.011.
- Huizinga, M., Dolan, C. V., & van der Molen, M. W. (2006). Age-related change in executive function: Developmental trends and a latent variable analysis. *Neuropsychologia*, *44*, 2017–2036.
- Humphrey, N. (1983). *Consciousness regained*. New York: Oxford University Press.
- Hunsinger, M., Isbell, L. M., & Clore, G. L. (2011). Sometimes happy people focus on the trees and sad people focus on the forest: Context-dependent effects of mood in impression formation. *Personality & Social Psychology Bulletin*, *38*, 220–232.
- Huntsinger, J. R. (2011). Mood and trust in intuition interactively orchestrate correspondence between implicit and explicit attitudes. *Personality & Social Psychology Bulletin*, *37*, 1245–1258.
- Huntsinger, J. R. (2012). Does positive affect broaden and negative affect narrow attentional scope? A new answer to an old question. *Journal of Experimental Psychology: General*, *141*, 595–600.
- Huntsinger, J. R., & Ray, C. (2014). A flexible influence of affective feelings on cognitive performance. Unpublished manuscript. Chicago, IL: Loyola University.
- Huntsinger, J. R., Clore, G. L., & Bar-Anan, Y. (2010). Mood and global-local focus: Priming a local focus reverses the link between mood and global-local processing. *Emotion*, *10*, 722–726.
- Huntsinger, J. R., Isbell, L. M., & Clore, G. L. (2014). The affective control of thought: Malleable, not fixed. *Psychological Review*, *121*, 600–618.

## 490 REFERENCES

- Huntsinger, J. R., Sinclair, S., Dunn, E., & Clore, G. L. (2010). Affective regulation of stereotype activation: It's the (accessible) thought that counts. *Personality & Social Psychology Bulletin*, *26*, 564–577.
- Hutchison, W. D., Davis, K. D., Lozano, A. M., Tasker, R. R., & Dostrovsky, J. O. (1999). Pain-related neurons in the human cingulate cortex. *Nature Neuroscience*, *2*, 403–405.
- Hutteman, R., Bleidorn, W., Kereste, G., Brkovic, I., Butkovic, A., & Denissen, J. J. A. (2014). Reciprocal associations between parenting challenges and parents' personality development in young and middle adulthood. *European Journal of Personality*, *28*, 168–179.
- Huys, Q. J., Cools, R., Gölzer, M., Friedel, E., Heinz, A., Dolan, R. J., & Dayan, P. (2011). Disentangling the roles of approach, activation and valence in instrumental and Pavlovian responding. *PLoS Computational Biology*, *7*(4), e1002028.
- Huys, Q. J., Eshel, N., O'Nions, E., Sheridan, L., Dayan, P., & Roiser, J. P. (2012). Bonsai trees in your head: How the Pavlovian system sculpts goal-directed choices by pruning decision trees. *PLoS Computational Biology*, *8*(3), e1002410.
- Huys, Q. J., Lally, N., Faulkner, P., Eshel, N., Seifritz, E., Gershman, S. J., . . . Roiser, J. P. (2015). Interplay of approximate planning strategies. *Proceedings of the National Academy of Sciences*, *112*(10), 3098–3103.
- Huys, Q. J., Tobler, P. N., Hasler, G., & Flagel, S. B. (2014). The role of learning-related dopamine signals in addiction vulnerability. *Progress in Brain Research*, *211*, 31–77.
- Hyde, J. S., Mezulis, A. H., & Abramson, L. Y. (2008). The ABCs of depression: Integrating affective, biological, and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review*, *115*, 291–313.
- Hyman, S. E. (2016). Back to basics: Luring industry back into neuroscience. *Nature Neuroscience*, *19*, 1383–1384.
- Iacoboni, M., Woods, R. P., Brass, M., Bekkering, H., Mazziotta, J. C., & Rizzolatti, G. (1999). Cortical mechanisms of human imitation. *Science*, *286*(5449), 2526–2528.
- Iacono, W. G., Vaidyanathan, U., Vrieze, S. I., & Malone, S. M. (2014). Knowns and unknowns for psychophysiological endophenotypes: Integration and response to commentaries. *Psychophysiology*, *51*, 1339–1347.
- Iannetti, G. D., Salomons, T. V., Moayedi, M., Mouraux, A., & Davis, K. D. (2013). Beyond metaphor: Contrasting mechanisms of social and physical pain. *Trends in Cognitive Sciences*, *17*, 371–378.
- Ifcher, J., & Zarghamee, H. (2011). Happiness and time preference: The effect of positive affect in a random-assignment experiment. *The American Economic Review*, *101*(7), 3109–3129.
- Ihssen, N., Heim, S., & Keil, A. (2007). The costs of emotional attention: Affective processing inhibits subsequent lexico-semantic analysis. *Journal of Cognitive Neuroscience*, *19*(12), 1932–1949. <http://doi.org/10.1162/jocn.2007.19.12.1932>.
- Ikkai, A., & Curtis, C. E. (2011). Common neural mechanisms supporting spatial working memory, attention and motor intention. *Neuropsychologia*, *49*, 1428–1434.
- Inagaki, T. K., Muscatell, K. A., Irwin, M. R., Cole, S. W., & Eisenberger, N. I. (2012). Inflammation selectively enhances amygdala activity to socially threatening images. *NeuroImage*, *59*(4), 3222–3226. <http://doi.org/10.1016/j.neuroimage.2011.10.090>.
- Inagaki, T. K., Muscatell, K. A., Irwin, M. R., Moieni, M., Dutcher, J. M., Jevtic, I., . . . Eisenberger, N. I. (2014). The role of the ventral striatum in inflammatory-induced approach toward support figures. *Brain, behavior, and immunity* *Brain, Behavior, & Immunity*, *44*, 247–252.
- Indovina, I., Robbins, T. W., Núñez-Elizalde, A. O., Dunn, B. D., & Bishop, S. J. (2011). Fear-conditioning mechanisms associated with trait vulnerability to anxiety in humans. *Neuron*, *69*(3), 563–571.
- Insel, T. R., & Young, L. J. (2001). The neurobiology of attachment. *Nature Reviews Neuroscience*, *2*, 129–136.
- Insel, T., Cuthbert, B., Garvey, M., Heinssen, R., Pine, D. S., Quinn, K., Sanislow, C., & Wang, P. (2010). Research domain criteria (RDoC): Toward a new classification framework for research on mental disorders. *American Journal of Psychiatry*, *167*(7), 748–751.
- Institute of Medicine and National Research Council. (2011). *The science of adolescent risk-taking: Workshop report*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12961>.
- Institute of Medicine. (2001). *Exploring the biological contributions to human health: Does sex matter?* Washington, DC: National Academy Press.
- Institute of Medicine. (2013). *Improving the utility and translation of animal models for nervous system disorders: Workshop summary*. Washington, DC: National Academies Press.
- Institute of Medicine. (2014). *Improving and accelerating therapeutic development for nervous system disorders*. Washington, DC: National Academies Press.
- Isbell, L. M., Lair, E. C., & Rovenpor, D. (2013). Affect-as-information about processing styles: A cognitive malleability approach. *Social & Personality Psychology Compass*, *7*, 93–114.

- Isen, A. M. (1984). Toward understanding the role of affect in cognition. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition* (pp. 179–236). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Isen, A. M., & Geva, N. (1987). The influence of positive affect on acceptable level of risk: The person with a large canoe has a large worry. *Organizational Behavior & Human Decision Processes*, 39(2), 145–154.
- Isen, A. M., & Patrick, R. (1983). The effect of positive feelings on risk taking: When the chips are down. *Organizational Behavior & Human Performance*, 31(2), 194–202. doi:10.1016/0030-5073(83)90120-4.
- Isen, A. M., Nygren, T. E., & Ashby, F. G. (1988). Influence of positive affect on the subjective utility of gains and losses: It is just not worth the risk. *Journal of Personality & Social Psychology*, 55(5), 710.
- Isen, A. M., Shalcker, T. E., Clark, M. S., & Karp, L. (1978). Affect, accessibility of material in memory and behavior: A cognitive loop? *Journal of Personality & Social Psychology*, 36, 1–12.
- Itti, L., & Baldi, P. (2009). Bayesian surprise attracts human attention. *Vision Research*, 49(10), 1295–1306.
- Iwata, M., Ota, K. T., & Duman, R. S. (2013). The inflammasome: Pathways linking psychological stress, depression, and systemic illnesses. *Brain, Behavior, & Immunity*, 31, 105–114. http://doi.org/10.1016/j.bbi.2012.12.008.
- Iyer, R. V., Kochenderfer-Ladd, B., Eisenberg, N., & Thompson, M. (2010). Peer victimization and effortful control: Relations to school engagement and academic achievement. *Merrill-Palmer Quarterly*, 56, 361–387. doi:10.1353/mpq.0.0058.
- Izard, C. E. (1971). *The face of emotion*. New York: Appleton Century Crofts.
- Izard, C. E. (1977). *Human emotions*. New York: Plenum.
- Izard, C. E. (1994). Innate and universal facial expressions: Evidence from developmental and cross-cultural research. *Psychological Bulletin*, 115, 288–299.
- Izard, C. E. (2007). Basic emotions, natural kinds, emotion schemas, and a new paradigm. *Perspectives on Psychological Science*, 2(3), 260–280.
- Izard, C. E. (2009). Emotion theory and research: Highlights, unanswered questions, and emerging issues. *Annual Review of Psychology*, 60, 1–25.
- Izard, C. E. (2010). The many meanings/aspects of emotion: Definitions, functions, activation, and regulation. *Emotion Review*, 2(4), 363–370.
- Izard, C. E., & Ackerman, B. P. (2000). Motivational, organizational, and regulatory functions of discrete emotions. In M. Lewis & J. M. Haviland-Jones (Eds.), *Handbook of emotions* (2nd ed., pp. 253–264). New York: Guilford Press.
- Izard, C. E., & Malatesta, C. Z. (1987). Perspectives on emotional development: Differential emotions theory of early emotional development. In J. D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 494–554). New York: Wiley Interscience.
- Izard, C., Fine, S., Schultz, D., Mostow, A., Ackerman, B., & Youngstrom, E. (2001). Emotion knowledge as a predictor of social behavior and academic competence in children at risk. *Psychological Science*, 12, 18–23.
- Izquierdo, A., and Murray, E. A. (2007). Selective bilateral amygdala lesions in rhesus monkeys fail to disrupt object reversal learning. *Journal of Neuroscience*, 27, 1054–1062.
- Izquierdo, A., Suda, R. K., & Murray, E. A. (2004). Bilateral orbital prefrontal cortex lesions in rhesus monkeys disrupt choices guided by both reward value and reward contingency. *Journal of Neuroscience*, 24, 7–540–7548.
- Izuma, K., Saito, D. N., & Sadato, N. (2008). Processing of social and monetary rewards in the human striatum. *Neuron*, 58(2), 284–294.
- Jack, R. E., Crivelli, C., & Wheatley, T. (2018). Data-driven methods to diversify knowledge of human psychology. *Trends Cogn Sci*, 22, 1–5.
- Jackson, D. C., Malmstadt, J. R., Larson, C. L., & Davidson, R. J. (2000). Suppression and enhancement of emotional responses to unpleasant pictures. *Psychophysiology*, 37(04), 515–522. http://doi.org/null.
- Jackson, D. C., Mueller, C. J., Dolski, L., Dalton, K. M., Nitschke, J. B., Urry, H. L., . . . Davidson, R. J. (2003). Now you feel it, now you don't: Frontal brain electrical asymmetry and individual differences in emotion regulation. *Psychological Science*, 14, 612–617.
- Jackson, E. D., Payne, J. D., Nadel, L., & Jacobs, W. J. (2006). Stress differentially modulates fear conditioning in healthy men and women. *Biological Psychiatry*, 59(6), 516–522.
- Jacob, S., Hayreh, D. J., & McClintock, M. K. (2001). Context-dependent effects of steroid chemosignals on human physiology and mood. *Physiology & Behavior*, 74(1–2), 15–27.
- Jahn, A. L., Fox, A. S., Abercrombie, H. C., Shelton, S. E., Oakes, T. R., Davidson, R. J., & Kalin, N. H. (2010). Subgenual prefrontal cortex activity predicts individual differences in hypothalamic-pituitary-adrenal activity across different contexts. *Biological Psychiatry*, 67, 175–181.
- Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (1999a). Social motives and emotional feelings

## 492 REFERENCES

- as determinants of facial displays: The case of smiling. *Personality & Social Psychology Bulletin*, 25, 424–435.
- Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (1999b). Social motives, emotional feelings, and smiling. *Cognition & Emotion*, 13(4), 321–345.
- Jakobs, E., Manstead, A. S. R., & Fischer, A. H. (2001). Social context effects on facial activity in a negative emotional setting. *Emotion*, 1, 51–69.
- Jalenques, I., Rondepierre, F., Massoubre, C., Haffen, E., Grand, J. P., Labeille, B., . . . D'incan, M. (2016). High prevalence of psychiatric disorders in patients with skin-restricted lupus: A case-control study. *British Journal of Dermatology*, 174(5), 1051–1060.
- James, W. (1884). What is an emotion? *Mind*, 9, 188–205.
- James, W. (1890/1950). *The principles of psychology, Vol II*. Mineola, NY: Dover Publications.
- James, W. (1894). The physical bases of emotion. *Psychological Review*, 101, 205–210.
- James, W. (1902/1958). *The varieties of religious experience*. New York: New American Library.
- James, W. (2007). *What is an emotion?* Radford, VA: Wilder Publications.
- Jamison, K. R. (2004). *Exuberance: The passion for life*. New York: Alfred A. Knopf.
- Janak, P. H., & Tye, K. M. (2015). From circuits to behaviour in the amygdala. *Nature*, 517, 284–292.
- Jänig, W. (1989). Autonomic nervous system. In *Human physiology* (pp. 333–370). Berlin: Springer Berlin Heidelberg.
- Jankowski, K. F., Moore, W. E., Merchant, J. S., Kahn, L. E., & Pfeifer, J. H. (2014). But do you think I'm cool? Developmental differences in striatal recruitment during direct and reflected social self-evaluations. *Developmental Cognitive Neuroscience*, 8, 40–54. doi:10.1016/j.dcn.2014.01.003.
- Jarcho, J. M., Fox, N. A., Pine, D. S., Etkin, A., Leibenluft, E., Shechner, T., & Ernst, M. (2013). The neural correlates of emotion-based cognitive control in adults with early childhood behavioral inhibition. *Biological Psychology*, 92, 306–314.
- Jarcho, J. M., Fox, N. A., Pine, D. S., Leibenluft, E., Shechner, T., Degnan, K. A., . . . Ernst, M. (2014). Enduring influence of early temperament on neural mechanisms mediating attention-emotion conflict in adults. *Depression & Anxiety*, 31(1), 53–62.
- Jaremka, L. M., Gabriel, S., & Carvallo, M. (2011). What makes us feel the best also makes us feel the worst: The emotional impact of independent and interdependent experiences. *Self & Identity*, 10(1), 44–63. doi:10.1080/15298860903513881.
- Jasinska, A. J., Yasuda, M., Rhodes, R. E., Wang, C., & Polk, T. A. (2012). Task difficulty modulates the impact of emotional stimuli on neural response in cognitive-control regions. *Frontiers in Psychology*, 3, 345.
- Javaras, K. N., Schaefer, S. M., Van Reekum, C. M., Lapate, R. C., Greischar, L. L., Bachhuber, D. R., . . . Davidson, R. J. (2012). Conscientiousness predicts greater recovery from negative emotion. *Emotion*, 12(5), 875.
- Jaycox, L. H., Foa, E. B., & Morral, A. R. (1998). Influence of emotional engagement and habituation on exposure therapy for PTSD. *Journal of Consulting & Clinical Psychology*, 66(1), 185–192.
- Jazaieri, H., Jinpa, G. T., McGonigal, K., Rosenberg, E. L., Finkelstein, J., Simon-Thomas, E., . . . Goldin, P. R. (2013). Enhancing compassion: A randomized controlled trial of a compassion cultivation training program. *Journal of Happiness Studies*, 14 (4), 1113–1126. <http://dx.doi.org/10.1007/s10902-012-9373-z>.
- Jiang, Y., & He, S. (2006). Cortical responses to invisible faces: dissociating subsystems for facial-information processing. *Current Biology*, 16(20), 2023–2029. doi:10.1016/j.cub.2006.08.084
- Jiang, H., Ling, Z., Zhang, Y., Mao, H., Ma, Z., Yin, Y., . . . Li, L. (2015). Altered fecal microbiota composition in patients with major depressive disorder. *Brain, Behavior, & Immunity*, 48, 186–194.
- Joels, M., Pu, Z., Wiegert, O., Oitzl, M. S., & Krugers, H. J. (2006). Learning under stress: How does it work? *Trends in Cognitive Sciences*, 10(4), 152–158. doi:10.1016/j.tics.2006.02.002.
- Joffily, M., & Coricelli, G. (2013). “Emotional valence and the free-energy principle.” *PLoS Computational Biology*, 9(6), E1003094.
- John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality*, 72, 1301–1334.
- John, O. P., Caspi, A., Robins, R. W., Moffitt, T. E., & Stouthamer-Loeber, M. (1994). The “little five”: Exploring the five-factor model of personality in adolescent boys. *Child Development*, 65, 160–178.
- Johnson, E. J., & Tversky, A. (1983). Affect, generalization, and the perception of risk. *Journal of Personality & Social Psychology*, 45(1), 20–31. doi:10.1037/0022-3514.45.1.20.
- Johnson, K. L., Freeman, J. B., & Pauker, K. (2012). Race is gendered: How covarying phenotypes and stereotypes bias sex categorization. *Journal of Personality & Social Psychology*, 102(1), 116–131. doi:10.1037/a0025335.
- Johnson, K. L., McKay, L. S., & Pollick, F. E. (2011). He throws like a girl (but only when he's sad): Emotion affects sex-decoding of biological motion displays. *Cognition*, 119(2), 265–280.

- Johnson, M. H., Dziurawiec, S., Ellis, H., & Morton, J. (1991). Newborns' preferential tracking of face-like stimuli and its subsequent decline. *Cognition*, 40(1–2), 1–19.
- Johnson, P. B., Ferraina, S., Bianchi, L., & Caminiti, R. (1996). Cortical networks for visual reaching: Physiological and anatomical organization of frontal and parietal lobe arm regions. *Cerebral Cortex*, 6, 102–119.
- Johnson-Laird, P. N., & Oatley, K. (1992). Basic emotions, rationality, and folk theory. *Cognition & Emotion*, 6(3/4), 201–223.
- Johnstone, T., Reekum, C. M. van, Urry, H. L., Kalin, N. H., & Davidson, R. J. (2007). Failure to regulate: Counterproductive recruitment of top-down prefrontal-subcortical circuitry in major depression. *The Journal of Neuroscience*, 27(33), 8877–8884.
- Jolij, J., & Lamme, V. A. F. (2005). Repression of unconscious information by conscious processing: Evidence from affective blindsight induced by transcranial magnetic stimulation. *Proceedings of the National Academy of Sciences*, 102, 10747–10751.
- Jollans, L., & Whelan, R. (2016). The clinical added value of imaging: A perspective from outcome prediction. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 1, 423–432.
- Jones, A. K., Brown, W. D., Friston, K. J., Qi, L. Y., & Frackowiak, R. S. (1991). Cortical and subcortical localization of response to pain in man using positron emission tomography. *Proceedings: Biological Sciences*, 244, 39–44.
- Jones, B., & Rachlin, H. (2006). Social discounting. *Psychological Science*, 17(4), 283–286. doi:10.1111/j.1467-9280.2006.01699.x.
- Jones, C. R., Fazio, R. H., & Vasey, M. W. (2012). Attentional control buffers the effect of public speaking anxiety on performance. *Social Psychological & Personality Science*, 3, 556–561.
- Jones, S., Eisenberg, N., Fabes, R. A., & MacKinnon, D. P. (2002). Parents' reactions to elementary school children's negative emotions: Relations to social and emotional functioning at school. *Merrill-Palmer Quarterly*, 48, 133–159. doi:10.1353/mpq.2002.0007.
- Jones, R. M., Somerville, L. H., Li, J., Ruberry, E. J., Libby, V., Glover, G., Voss, H. U., Ballon, D. J., & Casey, B. J. (2011). Behavioral and neural properties of social reinforcement learning. *Journal of Neuroscience*, 31(37), 13039–13405.
- Jonsson, T., Kravitz, E. A., & Heinrich, R. (2011). Sound production during agonistic behavior of male *Drosophila melanogaster*. *Fly*, 5(1), 29–38.
- Joormann, J., Waugh, C. E., & Gotlib, I. H. (2015). Cognitive bias modification for interpretation in major depression effects on memory and stress reactivity. *Clinical Psychological Science*, 3(1), 126–139.
- Jovanovic, T., Norrholm, S. D., Blanding, N. Q., Phifer, J. E., Weiss, T., Davis, M., . . . Ressler, K. (2010). Fear potentiation is associated with hypothalamic–pituitary–adrenal axis function in PTSD. *Psychoneuroendocrinology*, 35(6), 846–857.
- Juang, L. P., & Cookston, J. T. (2009). Acculturation, discrimination, and depressive symptoms among Chinese American adolescents: A longitudinal study. *Journal of Primary Prevention*, 30, 475–496. doi:10.1007/s10935-009-0177-9.
- Julius, D., & Basbaum, A. I. (2001). Molecular mechanisms of nociception. *Nature*, 413, 203–210.
- Juranek, J., Filipek, P. A., Berenji, G. R., Modahl, C., Osann, K., & Spence, M. A. (2006). Association between amygdala volume and anxiety level: Magnetic resonance imaging (MRI) study in autistic children. *Journal of Child Neurology*, 21(12), 1051–1058. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17156697>.
- Juruena, M. F., Giampietro, V. P., Smith, S. D., Surguladze, S. A., Dalton, J. A., Benson, P. J., . . . Fu, C. H. (2010). Amygdala activation to masked happy facial expressions. *Journal of the International Neuropsychological Society*, 16(2), 383–387.
- Juslin, P. N., & Laukka, P. (2003). Communication of emotions in vocal expression and music performance: Different channels, same code? *Psychological Bulletin*, 129(5), 770.
- Kaas, J. H., & Collins, C. E. (2004). The resurrection of multisensory cortex in primates: Connection patterns that integrate modalities. In Gemma Calvert, Charles Spence, & Barry E. Stein (Eds.), *The handbook of multisensory processes* (pp. 285–293). Cambridge, MA: MIT Press.
- Kaczurkin, A. N., Moore, T. M., Ruparel, K., Ciric, R., Calkins, M. E., Shinohara, R. T., . . . Satterthwaite, T. D. (2016). Elevated amygdala perfusion mediates developmental sex differences in trait anxiety. *Biological Psychiatry*, 80, 775–785.
- Kagan, J. (1988). The meanings of personality predicates. *American Psychologist*, 43, 614–620.
- Kagan, J. (1997). *Galen's prophecy: Temperament in human nature*. NY: Perseus.
- Kagan, J. (2007). *What is emotion?* New Haven, CT: Yale University Press.
- Kagan, J. (2010a). Please, no more naked predicates: A reply. *Emotion Review*, 2, 117–119.
- Kagan, J. (2010b). Some plain words on emotion. *Emotion Review*, 3, 221–224.
- Kagan, J. (2010c). Some plain words on emotion. *Emotion Review*, 3, 221–224.

## 494 REFERENCES

- Kagan, J. (2013). *The human spark*. New York: Basic Books.
- Kagan, J. (2016a). An overly permissive extension. *Perspectives in Psychological Science*, *11*, 442–450.
- Kagan, J. (2016b). Why stress remains an ambiguous concept. *Perspectives on Psychological Science*, *11*, 464–465.
- Kagan, J., & Snidman, N. (1991). Temperamental factors in human development. *American Psychologist*, *46*, 856–862.
- Kagan, J., & Snidman, N. (2004). *The long shadow of temperament*. Cambridge, MA: Harvard University Press.
- Kagan, J., Reznick, J. S., & Snidman, N. (1998). Biological bases of childhood shyness. *Science*, *240*, 167–171.
- Kagan, J., Snidman, N., Kahn, V., & Towsley, S. (2007). The preservation of two infant temperaments into adolescence. *Monographs of the Society for Research in Child Development*, *72*, 1–75.
- Kahneman, D. (2003). A perspective on judgment and choice: Mapping bounded rationality. *American Psychologist*, *58*(9), 697–720.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263–292.
- Kahneman, D., Krueger, A. B., Schkade, D., Schwarz, N., & Stone, A. A. (2006). Would you be happier if you were richer? A focusing illusion. *Science*, *312*(5782), 1908–1910.
- Kalanthroff, E., Cohen, N., & Henik, A. (2013). Stop feeling: Inhibition of emotional interference following stop-signal trials. *Frontiers in Human Neuroscience*, *7*, 78.
- Kalin, N. H. (2017). Mechanisms underlying the early risk to develop anxiety and depression: A translational approach. *European Neuropsychopharmacology*, *27*, 543–553.
- Kalin, N. H., & Shelton, S. E. (1989). Defensive behaviors in infant rhesus monkeys: Environmental cues and neurochemical regulation. *Science (New York, N.Y.)*, *243*(4899), 1718–1721.
- Kalin, N. H., Fox, A. S., Kovner, R., Riedel, M. K., Fekete, E. M., Roseboom, P. H., . . . Oler, J. A. (2016). Overexpressing corticotrophin-releasing hormone in the primate amygdala increases anxious temperament and alters its neural circuit. *Biological Psychiatry*, *80*, 345–355.
- Kalin, N. H., Shelton, S. E., & Davidson, R. J. (2007). Role of the primate orbitofrontal cortex in mediating anxious temperament. *Biological Psychiatry*, *62*, 1134–1139.
- Kalin, N. H., Shelton, S. E., Fox, A. S., Oakes, T. R., & Davidson, R. J. (2005). Brain regions associated with the expression and contextual regulation of anxiety in primates. *Biological Psychiatry*, *58*, 796–804.
- Kalisch, R., Wiech, K., Herrmann, K., & Dolan, R. J. (2006). Neural correlates of self-distraction from anxiety and a process model of cognitive emotion regulation. *Journal of Cognitive Neuroscience*, *18*(8), 1266–1276.
- Kalokerinos, E. K., Greenaway, K. H., & Denson, T. F. (2015). Reappraisal but not suppression downregulates the experience of positive and negative emotion. *Emotion*, *15*(3), 271–275. <http://doi.org/10.1037/emo0000025>.
- Kampe, K. K., Frith, C. D., Dolan, R. J., & Frith, U. (2001). Reward value of attractiveness and gaze. *Nature*, *413*(6856), 589. <https://doi.org/10.1038/35098149>.
- Kandel, E. R. (2001). The molecular biology of memory storage: A dialogue between genes and synapses. *Science (New York, N.Y.)*, *294*(5544), 1030–1038. <https://doi.org/10.1126/science.1067020>.
- Kandler, C., & Bleidorn, W. (2015). Personality differences and development: Genetic and environmental contributions. In J. D. Wright (Ed.), *International encyclopedia of the social and behavioral sciences* (2nd ed., Vol. 17, pp. 884–890). New York: Elsevier.
- Kang, S. M., Shaver, P. R., Sue, S., Min, K. H., & Jing, H. (2003). Culture-specific patterns in the prediction of life satisfaction: Roles of emotion, relationship quality, and self-esteem. *Personality & Social Psychology Bulletin*, *29*, 1596–1608. doi:10.1177/0146167203255986.
- Kanske, P., Heissler, J., Schönfelder, S., Bongers, A., & Wessa, M. (2011). How to regulate emotion? Neural networks for reappraisal and distraction. *Cerebral Cortex*, *21*(6), 1379–1388. <http://doi.org/10.1093/cercor/bhq216>.
- Kant, I. (1949). *The critique of pure reason* (L. W. Beck, Trans.). Chicago, IL: University of Chicago Press. (Original work published 1781).
- Kanwisher, N., & Yovel, G. (2006). The fusiform face area: A cortical region specialized for the perception of faces. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, *361*, 2109–2128.
- Kapp, B. S., Wilson, A., Pascoe, J. P., Supple, W. F., & Whalen, P. J. (1990). A neuroanatomical systems analysis of conditioned bradycardia in the rabbit. In M. Gabriel & J. Moore (Eds.), *Neurocomputation and learning: Foundations of adaptive networks* (pp. 55–90). New York: Bradford Books.
- Kappos, L., & Mehling, M. (2010). Images in clinical medicine. Dissociation of voluntary and emotional innervation after stroke. *The New England Journal of Medicine*, *363*(16), e25. <https://doi.org/10.1056/NEJMicm0900573>.
- Kaptchuk, T. J. (2006). Sham device v. inert pill: Randomised controlled trial of two placebo

- treatments. *British Medical Journal*, 332(7538), 391–397. doi:10.1136/bmj.38726.603310.55.
- Kaptchuk, T. J., Goldman, P., Stone, D. A., & Stason, W. B. (2000). Do medical devices have enhanced placebo effects? *Journal of Clinical Epidemiology*, 53(8), 786–792.
- Kaptchuk, T. J., Kelley, J. M., Conboy, L. A., Davis, R. B., Kerr, C. E., Jacobson, E. E., . . . Lembo, A. J. (2008). Components of placebo effect: Randomised controlled trial in patients with irritable bowel syndrome. *British Medical Journal*, 336(7651), 999–1003. doi:10.1136/bmj.39524.439618.25.
- Kapur, S., Phillips, A. G., & Insel, T. R. (2012). Why has it taken so long for biological psychiatry to develop clinical tests and what to do about it? *Molecular Psychiatry*, 17, 1174–1179.
- Karatsoreos, I. N., Bhagat, S., Bloss, E. B., Morrison, J. H., & McEwen, B. S. (2011). Disruption of circadian clocks has ramifications for metabolism, brain, and behavior. *Proceedings of the national Academy of Sciences*, 108(4), 1657–1662.
- Karshikoff, B., Jensen, K. B., Kosek, E., Kalpouzos, G., Soop, A., Ingvar, M., . . . Axelsson, J. (2016). Why sickness hurts: A central mechanism for pain induced by peripheral inflammation. *Brain, Behavior, & Immunity*, 57, 38–46.
- Karshikoff, B., Jensen, K. B., Ingvar, M., Kosek, E., Kalpouzos, G., Soop, A., Höglund, C. O., Lekander, M., & Axelsson, J. (2015). LPS increases pain sensitivity by decreased pain inhibition and increased insular activation. *Brain, Behavior, and Immunity*, 49, e1. <http://doi.org/10.1016/j.bbi.2015.06.026>
- Kassam, K. S., & Mendes, W. B. (2013). The effects of measuring emotion: Physiological reactions to emotional situations depend on whether someone is asking. *PLoS One*, 8(7), e64959. doi: 10.1371/journal.pone.0064959.
- Kassam, K. S., Markey, A. R., Cherkassky, V. L., Loewenstein, G., & Just, M. A. (2013). Identifying emotions on the basis of neural activation. *PLoS One*, 8(6), e66032.
- Kassinove, H., Sukhodolsky, D. G., Tsytsarev, S. V., & Solovyova, S. (1997). Self-reported anger episodes in Russia and America. *Journal of Social Behavior & Personality*, 12(2), 301–324.
- Kastner, S., & Ungerleider, L. G. (2000). Mechanisms of visual attention in the human cortex. *Annual Review of Neuroscience*, 23, 315–341.
- Kats, L. B., & Dill, L. M. (1998). The scent of death: Chemosensory assessment of predation risk by prey animals. *Ecoscience*, 5(3), 361–394.
- Kawamichi, H., Sugawara, S. K., Hamano, Y. H., Mkita, K., Kochiyama, T., & Sadatao, N. (2017). Increased frequency of social interaction is associated with enjoyment enhancement and reward system activation. *Scientific Reports*, 6, 24561.
- Kawasaki, H., Tsuchiya, N., Kovach, C. K., Nourski, K. V., Oya, H., Howard, M. A., & Adolphs, R. (2012). Processing of facial emotion in the human fusiform gyrus. *Journal of Cognitive Neuroscience*, 24(6), 1358–1370.
- Keane, J., Calder, A. J., Hodges, J. R., & Young, A. W. (2002). Face and emotion processing in frontal variant frontotemporal dementia. *Neuropsychologia*, 40(6), 655–665.
- Keating, D. P. (2016). Transformative role of epigenetics in child development research: Commentary on the special section. *Child Development*, 87(1), 135–142.
- Keightley, M. (2003). Personality influences limbic-cortical interactions during sad mood induction. *NeuroImage*, 20(4), 2031–2039. <http://doi.org/10.1016/j.neuroimage.2003.08.022>.
- Kelley, W. M., Wagner, D. D., & Heatherton, T. F. (2015). In search of a human self-regulation system. *Annual Review of Neuroscience*, 38, 389–411.
- Kelly, E. L. (1927). *Interpretation of educational measurements*. Yonkers, NY: World Book.
- Keltner, D. (1995). Signs of appeasement: Evidence for the distinct displays of embarrassment, amusement, and shame. *Journal of Personality & Social Psychology*, 68(3), 441–454.
- Keltner, D. (1996). Evidence for the distinctness of embarrassment, shame, and guilt: A study of recalled antecedents and facial expressions of emotion. *Cognition & Emotion*, 10(2), 155–172.
- Keltner, D. (2009). *Born to be good: The science of a meaningful life*. New York: W.W. Norton & Company.
- Keltner, D., & Bonanno, G. A. (1997). A study of laughter and dissociation: Distinct correlates of laughter and smiling during bereavement. *Journal of Personality & Social Psychology*, 73(4), 687.
- Keltner, D., & Buswell, B. N. (1997). Embarrassment: Its distinct form and appeasement functions. *Psychological Bulletin*, 122(3), 250.
- Keltner, D., & Gross, J. J. (1999). Functional accounts of emotions. *Cognition & Emotion*, 13(5), 467–480. doi:10.1080/026999399379140.
- Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition & Emotion*, 13(5), 505–521. doi:10.1080/026999399379168.
- Keltner, D., & Kring, A. M. (1998). Emotion, social function, and psychopathology. *Review of General Psychology*, 2(3), 320–342.
- Keltner, D., & Lerner, J. S. (2010). Emotion. In S. T. Fiske, D. T. Gilbert, G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., Vol. 1, pp. 317–352). Hoboken, NJ: John Wiley & Sons.
- Keltner, D., & Shiota, M. N. (2003). New displays and new emotions: A commentary on Rozin and Cohen (2003). *Emotion*, 3(1), 86–91.



## 496 REFERENCES

- Keltner, D., Ellsworth, P. C., & Edwards, K. (1993). Beyond simple pessimism: Effects of sadness and anger on social perception. *Journal of Personality & Social Psychology*, 64(5), 740.
- Keltner, D., Oatley, K., & Jenkins, J. M. (2013). *Understanding emotions*. Hoboken, NJ: Wiley Global Education.
- Kemeny, M. E., & Shestyuk, A. (2008). Emotions, the neuroendocrine and immune systems, and health. In *Handbook of Emotions* (3rd ed., pp. 661–676). New York: The Guilford Press.
- Kendler, K. S. (2012a). The dappled nature of causes of psychiatric illness: Replacing the organic-functional/hardware-software dichotomy with empirically based pluralism. *Molecular Psychiatry*, 17, 377–388.
- Kendler, K. S. (2012b). Levels of explanation in psychiatric and substance use disorders: Implications for the development of an etiologically based nosology. *Molecular Psychiatry*, 17(1), 11–21.
- Kendler, K. S. (2016). The phenomenology of major depression and the representativeness and nature of DSM criteria. *American Journal of Psychiatry*, 173, 771–780.
- Kendler, K. S., & Halberstadt, L. J. (2013). The road not taken: Life experiences in monozygotic twin pairs discordant for major depression. *Molecular Psychiatry*, 18, 975–984.
- Kendler, K. S., Gardner, C. O., & Prescott, C. A. (2003). Personality and the experience of environmental adversity. *Psychological Medicine*, 33, 1193–1202.
- Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal relationship between stressful life events and the onset of major depression. *American Journal of Psychiatry*, 156, 837–841.
- Kennedy, D. P., Gläscher, J., Tyszka, J. M., & Adolphs, R. (2009). Personal space regulation by the human amygdala. *Nature Neuroscience*, 12(10), 1226–1227. <https://doi.org/10.1038/nn.2381>.
- Kennedy, S. E., Koeppe, R. A., Young, E. A., & Zubietta, J. K. (2006). Dysregulation of endogenous opioid emotion regulation circuitry in major depression in women. *Archives of General Psychiatry*, 63, 1199–1208.
- Kennerley, S. W., & Wallis, J. D. (2009a). Evaluating choices by single neurons in the frontal lobe: Outcome value encoded across multiple decision variables. *European Journal of Neuroscience*, 29, 2–061–2073.
- Kennerley, S. W., & Wallis, J. D. (2009b). Reward-dependent modulation of working memory in lateral prefrontal cortex. *Journal of Neuroscience*, 29, 3–259–3270.
- Kenrick, D. T., & Funder, D. C. (1988). Profiting from controversy. Lessons from the person-situation debate. *American Psychologist*, 43, 23–34.
- Kensinger, E. A., Brierley, B., Medford, N., Growdon, J. H., & Corkin, S. (2002). Effects of normal aging and Alzheimer's disease on emotional memory. *Emotion*, 2, 118–134. doi:10.1037/1528-3542.2.2.118.
- Kentridge, R. W., Heywood, C. A., and Weiskrantz, L. (2004). Spatial attention speeds discrimination without awareness in blindsight. *Neuropsychologia*, 42, 831–835.
- Kermode, F. (1995). *Not entitled*. New York: Farrar, Straus, & Giroux.
- Kershenbaum, A., Blumstein, D. T., Roch, M. A., Akçay, C., Backus, G., Bee, M. A. . . . Zamora-Gutierrez, V. (2014). Acoustic sequences in non-human animals: A tutorial review and prospectus. *Biological Review of the Cambridge Philosophical Society*, doi: 10.1111/brv.12160
- Kershenbaum, A., Blumstein, D. T., Roch, M. A., Akçay, Ç., Backus, G., Bee, M. A., . . . Coen, M. (2016). Acoustic sequences in non-human animals: A tutorial review and prospectus. *Biological Reviews*, 91(1), 13–52.
- Kesner, R. P., & Rolls, E. T. (2015). A computational theory of hippocampal function, and tests of the theory: New developments. *Neuroscience & Biobehavioral Reviews*, 48, 92–147.
- Kessler, E. M., & Staudinger, U. M. (2009). Affective experience in adulthood and old age: The role of affective arousal and perceived affect regulation. *Psychology & Aging*, 24, 349–362.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 593–602.
- Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 617–627.
- Keyes, K. M., Hatzenbuehler, M. L., & Hasin, D. S. (2011). Stressful life experiences, alcohol consumption, and alcohol use disorders: the epidemiologic evidence for four main types of stressors. *Psychopharmacology*, 218(1), 1–17. <http://doi.org/10.1007/s00213-011-2236-1>.
- Keyes, C., & Gazzola, V. (2009). Expanding the mirror: Vicarious activity for actions, emotions, and sensations. *Current Opinion in Neurobiology*, 19(6), 666–671. doi:10.1016/j.conb.2009.10.006. Epub 2009 Oct 31.
- Khalsa, S. S., Feinstein, J. S., Li, W., Feusner, J. D., Adolphs, R., & Hurlmann, R. (2016). Panic anxiety in humans with bilateral amygdala lesions: Pharmacological induction via

- cardiorespiratory interoceptive pathways. *Journal of Neuroscience*, 36, 3559–3566.
- Khan, R. M., Luk, C. H., Flinker, A., Aggarwal, A., Lapid, H., Haddad, R., & Sobel, N. (2007). Predicting odor pleasantness from odorant structure: Pleasantness as a reflection of the physical world. *Journal of Neuroscience*, 27(37), 10015–10023. doi:10.1523/Jneurosci.1158-07.2007.
- Kheirbek, M. A., Klemenhagen, K. C., Sahay, A., & Hen, R. (2012). Neurogenesis and generalization: A new approach to stratify and treat anxiety disorders. *Nature Neuroscience*, 15(12), 1613–1620. http://doi.org/10.1038/nn.3262.
- Kierkegaard, S. (1843/2013). *Kierkegaard's Writings IV, Part II: Either/Or*. Translated by Hong, H.V. and Hong, E.H. Princeton University Press.
- Killgore, W. D. S., & Yurgelun-Todd, D. A. (2004). Activation of the amygdala and anterior cingulate during nonconscious processing of sad versus happy faces. *NeuroImage*, 21, 1215–1223.
- Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science*, 330, 932–932.
- Kilner, J. M., & Lemon, R. N. (2013). What we know currently about mirror neurons. *Current Biology*, 23, R1057–R1062.
- Kilpatrick, D. G., Koenen, K. C., Ruggiero, K. J., Acierno, R., Galea, S., Resnick, H. S., . . . Gelernter, J. (2007). The serotonin transporter genotype and social support and moderation of posttraumatic stress disorder and depression in hurricane-exposed adults. *American Journal of Psychiatry*, 164(11), 1693–1699.
- Kim, C. K., Adhikari, A., & Deisseroth, K. (2017). Integration of optogenetics with complementary methodologies in systems neuroscience. *Nature Reviews Neuroscience*, 18, 222–235.
- Kim, H., Adolphs, R., O'Doherty, J. P., & Shimojo, S. (2007). Temporal isolation of neural processes underlying face preference decisions. *Proceedings of the National Academy of Sciences of the United States of America*, 104(46), 18253–18258.
- Kim, J. J., & Diamond, D. M. (2002). The stressed hippocampus, synaptic plasticity and lost memories. *Nature Reviews Neuroscience*, 3(6), 453–462.
- Kim, M. J., & Whalen, P. J. (2009). The structural integrity of an amygdala-prefrontal pathway predicts trait anxiety. *Journal of Neuroscience*, 29, 11614–11618.
- Kim, M. J., Gees, D. G., Loucks, R. A., Davis, F. C., & Whalen, P. J. (2010). Anxiety dissociates dorsal and ventral medial prefrontal cortex functional connectivity with the amygdala at rest. *Cerebral Cortex*, 21, 1667–1673.
- Kim, M. J., Loucks, R. A., Neta, M., Davis, F. C., Oler, J. A., Mazzulla, E. C., & Whalen, P. J. (2010). Behind the mask: The influence of mask-type on amygdala response to fearful faces. *Social Cognitive and Affective Neuroscience*, 5(4), 363–368. http://doi.org/10.1093/scan/nsq014.
- Kim, M. J., Loucks, R. A., Palmer, A. L., Brown, A. C., Solomon, K. M., Marchante, A. N., & Whalen, P. J. (2011). The structural and functional connectivity of the amygdala: From normal emotion to pathological anxiety. *Behavioural Brain Research*, 223, 403–410.
- Kim, M. Y., Ford, B. Q., Mauss, I., & Tamir, M. (2015). Knowing when to seek anger: Psychological health and context-sensitive emotional preferences. *Cognition & Emotion*, 29, 1126–1136.
- Kim, S. Y., Adhikari, A., Lee, S. Y., Marshel, J. H., Kim, C. K., Mallory, C. S., . . . Malenka, R. C. (2013). Diverging neural pathways assemble a behavioural state from separable features in anxiety. *Nature*, 496(7444), 219–223.
- Kimbrell, T. A., George, M. S., Parekh, P. I., Ketter, T. A., Podell, D. M., Danielson, A. L., . . . Post, R. M. (1999). Regional brain activity during transient self-induced anxiety and anger in healthy adults. *Biological Psychiatry*, 46(4), 454–465.
- King, R., & Schaefer, A. (2011). The emotional startle effect is disrupted by a concurrent working memory task. *Psychophysiology*, 48, 269–276.
- King-Casas, B., Tomlin, D., Anen, C., Camerer, C. F., Quartz, S. R., & Montague, P. R. (2005). Getting to know you: Reputation and trust in a two-person economic exchange. *Science*, 308(5718), 78–83.
- Kirby, L. A., & Robinson, J. L. (2017). Affective mapping: An activation likelihood estimation (ALE) meta-analysis. *Brain & Cognition*, 118, 137–148.
- Kircanski, K., Lieberman, M. D., & Craske, M. G. (2012). Feelings into words: Contributions of language to exposure therapy. *Psychological Science*, 23, 1086–1091.
- Kirouac, G., & Hess, U. (1999). Group membership and the decoding of nonverbal behavior. In P. Philippot, R. Feldman, & E. Coats (Eds.), *The social context of nonverbal behavior* (pp. 182–210). Cambridge, UK: Cambridge University Press.
- Kirsch, I. (1978). The placebo effect and the cognitive-behavioral revolution. *Cognitive Therapy & Research*, 2(3), 255–264. doi:10.1007/BF01185787.
- Kirsch, I. (2004). Conditioning, expectancy, and the placebo effect: Comment on Stewart-Williams and Podd (2004). *Psychological Bulletin*, 130(2), 341–343. doi:10.1037/0033-2909.130.2.341.
- Kirsch, I. (2014). *The emperor's new drugs: Medication and placebo in the treatment of depression* (Vol. 225, pp. 291–303). Berlin; Heidelberg: Springer Berlin Heidelberg.
- Kirsch, I., Deacon, B. J., Huedo-Medina, T. B., Scoboria, A., Moore, T. J., & Johnson, B. T. (2008).

## 498 REFERENCES

- Initial severity and antidepressant benefits: A meta-analysis of data submitted to the Food and Drug Administration. *PLoS Medicine*, 5(2), e45. doi:10.1371/journal.pmed.0050045.
- Kirsch, I., Kong, J., Sadler, P., Spaeth, R., Cook, A., Kaptchuk, T. J., & Gollub, R. (2014). Expectancy and conditioning in placebo analgesia: Separate or connected processes? *Psychology of Consciousness: Theory, Research, & Practice*, 1(1), 51–59. doi:10.1037/cns0000007.
- Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1993). The “Trier Social Stress Test”—a tool for investigating psychobiological stress responses in a laboratory setting. *Neuropsychobiology*, 28(1–2), 76–81. doi:119004.
- Kishida, K. T., & Montague, P. R. (2012). Imaging models of valuation during social interaction in humans. *Biological Psychiatry*, 72, 93–100.
- Klauer, K. C. (1997). Affective priming. *European Review of Social Psychology*, 8(1), 67–103.
- Kleckner, I. R., Zhang, J., Touroutoglou, A., Chanes, L., Xia, Chengie, Simmons, W. K., Quigley, K. S., Dickerson, B. C., & Barrett, L. F. (2017). Evidence for a large-scale brain system supporting allostasis and interoception in humans. *Nature Human Behavior*, 1, 0069.
- Kleibeuker, S. W., Koolschijn, P. C., Jolles, D. D., Schel, M. A., De Dreu, C. K., & Crone, E. A. (2013). Prefrontal cortex involvement in creative problem solving in middle adolescence and adulthood. *Developmental Cognitive Neuroscience*, 5, 197–206. doi:10.1016/j.dcn.2013.03.003. Epub 2013 Mar 16.
- Kleinginna Jr, P. R., & Kleinginna, A. M. (1981). A categorized list of emotion definitions, with suggestions for a consensual definition. *Motivation & Emotion*, 5(4), 345–379.
- Klimecki, O. M., Leiberg, S., Lamm, C., & Singer, T. (2013). Functional neural plasticity and associated changes in positive affect after compassion training. *Cerebral Cortex*, 23(7), 1552–1561. http://doi.org/10.1093/cercor/bhs142.
- Klimecki, O. M., Leiberg, S., Ricard, M., & Singer, T. (2014). Differential pattern of functional brain plasticity after compassion and empathy training. *Social Cognitive & Affective Neuroscience*, 9(6), 873–879. doi:10.1093/scan/nst060.
- Klimecki, O., & Singer, T. (2012). Empathic distress fatigue rather than compassion fatigue? Integrating findings from empathy research in psychology and social neuroscience. In *Pathological altruism* (pp. 369–383). New York: Oxford University Press. doi:10.1093/acprof:oso/9780199738571.003.0253.
- Klimstra, T. A., Hale, W. W., Raaijmakers, Q. A. W., Branje, S. J. T., & Meeus, W. H. J. (2009). Maturation of personality in adolescence. *Journal of Personality & Social Psychology*, 96(4), 898–912.
- Klinnert, M. D., Emde, R. N., Butterfield, P., & Campos, J. J. (1986). Social referencing: The infant's use of emotional signals from a friendly adult with mother present. *Developmental Psychology*, 22(4), 427.
- Klucken, T., Schweckendiek, J., Blecker, C., Walter, B., Kuepper, Y., Hennig, J., & Stark, R. (2015). The association between the 5-HTTLPR and neural correlates of fear conditioning and connectivity. *Social Cognitive & Affective Neuroscience*, 10(5), 700–707.
- Clumpers, F., Kroes, M. C., Heitland, I., Everaerd, D., Akkermans, S. E., Oosting, R. S., . . . Baas, J. M. (2015). Dorsomedial prefrontal cortex mediates the impact of serotonin transporter linked polymorphic region genotype on anticipatory threat reactions. *Biological Psychiatry*, 78, 582–589.
- Klunk, W. E., Engler, H., Nordberg, A., Wang, Y., Blomqvist, G., Holt, D. P., . . . Langstrom, B. (2004). Imaging brain amyloid in Alzheimer's disease with Pittsburgh Compound-B. *Annals of Neurology*, 55, 306–319.
- Knafo, A., & Israel, S. (2012). Kindness: A neglected temperamental dimension of empathy and prosociality. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 168–179). New York: Guilford Press.
- Knight, M., Seymour, T. L., Gaunt, J. T., Baker, C., Nesmith, K., & Mather, M. (2007). Aging and goal-directed emotional attention: Distraction reverses emotional biases. *Emotion*, 7(4), 705.
- Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior*, 20(3), 165–182.
- Knutson, B. (2016; January 15). Deep Science. <https://www.edge.org/response-detail/26758>
- Knutson, B., & Greer, S. M. (2008). Anticipatory affect: Neural correlates and consequences for choice. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, 363, 3771–3786.
- Knutson, B., & Huettel, S. A. (2015). The risk matrix. *Current Opinion in Behavioral Sciences*, 5, 141–146.
- Knutson, B., Adams, C. M., Fong, G. W., & Hommer, D. (2001). Anticipation of increasing monetary reward selectively recruits nucleus accumbens. *Journal of Neuroscience*, 21(16), RC159.
- Knutson, B., Katovich, K., & Suri, G. (2014). Inferring affect from fMRI data. *Trends in Cognitive Sciences*, 18(8), 422–428.
- Knutson, B., Rick, S., Wimmer, G. E., Prelec, D., & Loewenstein, G. (2007). Neural predictors of purchases. *Neuron*, 53(1), 147–156.
- Knutson, B., Wimmer, G. E., Kuhnen, C. M., & Winkielman, P. (2008). Nucleus accumbens

- activation mediates the influence of reward cues on financial risk taking. *NeuroReport*, 19, 509–513.
- Knutson, B., Wimmer, G. E., Rick, S., Hollon, N. G., Prelec, D., & Lowenstein, G. (2008). Neural antecedents of the endowment effect. *Neuron*, 58, 814–822.
- Knutson, K. M., Mah, L., Manly, C. F., & Grafman, J. (2007). Neural correlates of automatic beliefs about gender and race. *Human Brain Mapping*, 28(10), 915–930. doi:10.1002/hbm.20320.
- Koban, L., Jepma, M., Geuter, S., & Wager, T. D. (2017). What's in a word? How instructions, suggestions, and social information change pain and emotion. *Neuroscience and Biobehavioral Reviews*, 81, 29–42.
- Kobayashi, H., & Kohshima, S. (1997). Unique morphology of the human eye. *Nature*, 387, 767–768.
- Kober, H., Barrett, L. F., Joseph, J., Bliss-Moreau, E., Lindquist, K., & Wager, T. D. (2008). Functional grouping and cortical-subcortical interactions in emotion: A meta-analysis of neuroimaging studies. *NeuroImage*, 42, 998–1031.
- Kobiella, A., Grossmann, T., Reid, V. M., & Striano, T. (2008). The discrimination of angry and fearful facial expressions in 7-month-old infants: An event-related potential study. *Cognition & Emotion*, 22(1), 134–146.
- Kochanska, G. (1998). Mother-child relationship, child fearfulness, and emerging attachment: A short-term longitudinal study. *Developmental Psychology*, 34, 480–490. doi:10.1037/0012-1649.34.3.480.
- Kochanska, G. (2001). Emotional development in children with different attachment histories: The first three years. *Child Development*, 72, 474–490. doi:10.1111/1467-8624.00291.
- Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control in early childhood: Continuity and change, antecedents, and implications for social development. *Developmental Psychology*, 36, 220–232. doi:10.1037/0012-1649.36.2.220.
- Koenen, K. C., Aiello, A. E., Bakshis, E., Amstadter, A. B., Ruggiero, K. J., Acierno, R., . . . Galea, S. (2009). Modification of the association between serotonin transporter genotype and risk of posttraumatic stress disorder in adults by county-level social environment. *American Journal of Epidemiology*, 169(6), 704–711.
- Kohlberg, L. (1984). *The psychology of moral development: The nature and validity of moral stages*. New York: Harper & Row.
- Kohn, N., Eickhoff, S. B., Scheller, M., Laird, A. R., Fox, P. T., & Habel, U. (2014). Neural network of cognitive emotion regulation—an ALE meta-analysis and MACM analysis. *NeuroImage*, 87, 345–355.
- Kok, B. E., & Fredrickson, B. L. (2010). Upward spirals of the heart: Autonomic flexibility, as indexed by vagal tone, reciprocally and prospectively predicts positive emotions and social connectedness. *Biological Psychology*, 85, 432–436.
- Kok, B. E., & Fredrickson, B. L. (2015). Positive emotions link social closeness and cardiac vagal tone. Revised manuscript under review.
- Kok, B. E., & Singer, T. (2017). Effects of contemplative dyads on engagement and perceived social connectedness over 9 months of mental training: A randomized clinical trial. *Journal of the American Medical Association Psychiatry*, 74, 126–134.
- Kok, B. E., Coffey, K. A., Cohn, M. A., Catalino, L. I., Vacharkulksemsuk, T., Algoe, S. B., . . . Fredrickson, B. L. (2013). How positive emotions build physical health: Perceived positive social connections account for the upward spiral between positive emotions and vagal tone. *Psychological Science*, 24(7), 1123–1132.
- Kokaia, M., Ernfors, P., Kokaia, Z., Elmér, E., Jaenisch, R., & Lindvall, O. (1995). Suppressed epileptogenesis in BDNF mutant mice. *Experimental Neurology*, 133(2), 215–224.
- Kolodyazhniy, V., Kreibig, S. D., Gross, J. J., Roth, W. T., & Wilhelm, F. H. (2011). An affective computing approach to physiological emotion specificity: Toward subject-independent and stimulus-independent classification of film-induced emotions. *Psychophysiology*, 48(7), 908–922. http://doi.org/10.1111/j.1469-8986.2010.01170.x.
- Kominsky, J., & Casasanto, D. (2013). Specific to whose body? Perspective taking and the spatial mapping of valence. *Frontiers in Psychology*, 4, 2–66. doi:10.3389/fpsyg.2013.00266.
- Konorski, J. (1967). *Integrative activity of the brain: An interdisciplinary approach*. Chicago, IL: University of Chicago Press.
- Koo, M., Clore, G. L., Kim, J., & Choi, I. (2012). Affective facilitation and inhibition of cultural influences on reasoning. *Cognition & Emotion*, 26, 680–689.
- Koolhaas, J. M., Bartolomucci, A., Buwalda, B., de Boer, S. F., Flugge, G., Korte, S. M., . . . Fuchs, E. (2011). Stress revisited: A critical evaluation of the stress concept. *Neuroscience & Biobehavioral Reviews*, 35, 1291–1301.
- Kordower, J. H., Le, H. K., & Mufson, E. J. (1992). Galanin immunoreactivity in the primate central nervous system. *Journal of Comparative Neurology*, 319(4), 479–500.
- Koscik, T. R., & Tranel, D. (2011). The human amygdala is necessary for developing and expressing normal interpersonal trust. *Neuropsychologia*, 49(4), 602–611.
- Kosfeld, M., Heinrichs, M., Zak, P. J., Fischbacher, U., & Fehr, E. (2005). Oxytocin increases trust in humans. *Nature*, 435, 673–676.

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## 500 REFERENCES

- Koster, E. H., Crombez, G., Verschuere, B., & De Houwer, J. (2004). Selective attention to threat in the dot probe paradigm: Differentiating vigilance and difficulty to disengage. *Behaviour Research & Therapy*, *42*(10), 1183–1192.
- Kotelnikova, Y., Olino, T. M., Mackrell, S. V. M., Jordan, P. L., & Hayden, E. P. (2013). Structure of observed temperament in middle childhood. *Journal of Research in Personality*, *47*, 524–532.
- Kotov, R., Krueger, R. F., Watson, D., Achenbach, T. M., Althoff, R. R., Bagby, R. M., . . . Zimmerman, M. (2017). The hierarchical taxonomy of psychopathology (HiTOP): A dimensional alternative to traditional nosologies. *Journal of Abnormal Psychology*, *126*, 454–477.
- Kotter, R., & Meyer, N. (1992). The limbic system: A review of its empirical foundation. *Behavioural Brain Research*, *52*(2), 105–127.
- Kouider, S., Berthet, V., & Faivre, N. (2011). Preference is biased by crowded facial expressions. *Psychological Science*, *22*(2), 184–189. doi:10.1177/0956797610396226.
- Kouider, S., Eger, E., Dolan, R. J., & Henson, R. N. (2009). Activity in face-responsive brain regions is modulated by invisible, attended faces: Evidence from masked priming. *Cerebral Cortex*, *19*, 13–23.
- Kozak, M. J., & Cuthbert, B. N. (2016). The NIMH research domain criteria initiative: Background, issues, and pragmatics. *Psychophysiology*, *53*, 286–297.
- Kragel, P. A., & LaBar, K. S. (2013). Multivariate pattern classification reveals autonomic and experiential representations of discrete emotions. *Emotion (Washington, D.C.)*, *13*(4), 681–690. <http://doi.org/10.1037/a0031820>.
- Kragel, P. A., & LaBar, K. S. (2015). Multivariate neural biomarkers of emotional states are categorically distinct. *Social Cognitive and Affective Neuroscience*, *10*(11), 1437–1448. doi:10.1093/scan/nsv032. Epub 2015 Mar 25.
- Kragel, P. A., & LaBar, K. S. (2016). Decoding the nature of emotion in the brain. *Trends Cogn Sci*, *20*, 444–455.
- Kragel, P. A., Kano, M., Van Oudenhove, L., Ly, H. G., Dupont, P., Rubio, A., . . . Wager, T. D. (2018). Generalizable representations of pain, cognitive control, and negative emotion in medial frontal cortex. *Nature Neuroscience*, *21*, 283–289.
- Krakauer, J. W., Ghazanfar, A. A., Gomez-Marín, A., MacIver, M. A., & Poeppel, D. (2017). Neuroscience needs behavior: Correcting a reductionist bias. *Neuron*, *93*, 480–490.
- Kralik, J. D., & Sampson, W. W. L. (2012). A fruit in hand is worth many more in the bush: Steep spatial discounting by free-ranging rhesus macaques (*Macaca mulatta*). *Behavioural Processes*, *89*(3), 197–202.
- Kramer, A. D., Guillory, J. E., & Hancock, J. T. (2014). Experimental evidence of massive-scale emotional contagion through social networks. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(24), 8788–8790. doi:10.1073/pnas.1320040111.
- Kraut, R. E., & Johnston, R. E. (1979). Social and emotional messages of smiling: An ethological approach. *Journal of Personality & Social Psychology*, *37*, 1539–1553.
- Kreibig, S. D. (2010). Autonomic nervous system activity in emotion: A review. *Biological Psychology*, *84*(3), 394–421. doi:10.1016/j.biopsycho.2010.03.010.
- Kriegeskorte, N., & Bandettini, P. (2007). Analyzing for information, not activation, to exploit high-resolution fMRI. *NeuroImage*, *38*(4), 649–662.
- Kringelbach, M. L. (2005). The human orbitofrontal cortex: Linking reward to hedonic experience. *Nature Reviews Neuroscience*, *6*, 691–702.
- Kringelbach, M. L., & Berridge, K. C. (2012). The joyful mind. *Scientific American*, *307*(2), 40–45.
- Krishnan, A., Woo, C. W., Chang, L. J., Ruzic, L., Gu, X., Lopez-Sola, M., . . . Wager, T. D. (2016). Somatic and vicarious pain are represented by dissociable multivariate brain patterns. *Elife*, *5*, e15166. <http://doi.org/10.7554/eLife.15166>.
- Krolak-Salmon, P., Henaff, M. A., Vighetto, A., Bertrand, O., & Mauguier, F. (2004). Early amygdala reaction to fear spreading in occipital, temporal, and frontal cortex: A depth electrode ERP study in human. *Neuron*, *42*(4), 665–676. doi:S0896627304002648.
- Krosch, A. R., & Amodio, D. M. (2014). Economic scarcity alters the perception of race. *Proceedings of the National Academy of Sciences*, *111*(25), 9079–9084.
- Kross, E., Berman, M. G., Mischel, W., Smith, E. E., & Wager, T. D. (2011). Social rejection shares somatosensory representations with physical pain. *Proceedings of the National Academy of Sciences of the United States of America*, *108*, 6270–6275.
- Krueger, R. F., Kotov, R., Watson, D., Forbes, M. K., Eaton, N. R., Ruggero, C. J., . . . Zimmerman, J. (in press). Progress in achieving empirical classification of psychopathology. *World Psychiatry*.
- Kruglanski, A. W., Pierro, A., & Sheveland, A. (2011). How many roads lead to Rome? Equifinality set-size and commitment to goals and means. *European Journal of Social Psychology*, *41*(3), 344–352.
- Kruglanski, A. W., Shah, J. Y., Fishbach, A., Friedman, R., Chun, W. Y., & Sleeth-Kepler, D. (2002).

- A theory of goal systems. *Advances in Experimental Social Psychology*, 34, 331–378.
- Krumhuber, E. G., Kappas, A., & Manstead, A. S. R. (2013). Effects of dynamic aspects of facial expressions: A review. *Emotion Review*, 5(1), 41–46.
- Krusemark, E. A., & Li, W. (2011). Do all threats work the same way? Divergent effects of fear and disgust on sensory perception and attention. *Journal of Neuroscience*, 31(9), 3429–3434. doi:10.1523/JNEUROSCI.3429-11.2011
- Krusemark, E. A., & Li, W. (2013). From early sensory specialization to later perceptual generalization: Dynamic temporal progression in perceiving individual threats. *Journal of Neuroscience*, 33(2), 587–594.
- Kuehl, L. K., Lass-Hennemann, J., Richter, S., Blumenthal, T. D., Oitzl, M., & Schachinger, H. (2010). Accelerated trace eyeblink conditioning after cortisol IV-infusion. *Neurobiology of Learning & Memory*, 94(4), 547–553.
- Kuehn, B. M. (2008). Asthma linked to psychiatric disorders. *Journal of the American Medical Association*, 299(2), 158–160.
- Kuhl, D. (2002). *What dying people want: Practical wisdom for the end of life*. New York: Public Affairs.
- Kuhn, S., & Gallinat, J. (2011). Common biology of craving across legal and illegal drugs - a quantitative meta-analysis of cue-reactivity brain response. *European Journal of Neuroscience*, 33, 1318–1326.
- Kuhnen, C. M., & Knutson, B. (2011). The influence of affect on beliefs, preferences, and financial decisions. *Journal of Financial & Quantitative Analysis*, 46(3), 605–626.
- Kuhnen, C., & Knutson, B. (2005). The neural basis of financial risk taking. *Neuron*, 47, 763–770.
- Kullmann, J. S., Grigoleit, J. S., Lichte, P., Kobbe, P., Rosenberger, C., Banner, C., . . . Bingel, U. (2013). Neural response to emotional stimuli during experimental human endotoxemia. *Human Brain Mapping*, 34(9), 2217–2227.
- Kunde, W., Reuss, H., & Kiesel, A. (2012). Consciousness and cognitive control. *Advances in Cognitive Psychology*, 8(1), 9–18. http://doi.org/10.2478/v10053-008-0097-x
- Kunwar, P. S., Zelikowsky, M., Remedios, R., Cai, H., Yilmaz, M., Meister, M., & Anderson, D. J. (2015). Ventromedial hypothalamic neurons control a defensive emotion state. *eLife*, 4, e06633.
- Kunzmann, U., Kupperbusch, C. S., & Levenson, R. W. (2005). Behavioral inhibition and amplification during emotional arousal: A comparison of two age groups. *Psychology & Aging*, 20(1), 144.
- Kunzmann, U., Little, T. D., & Smith, J. (2000). Is age-related stability of subjective well-being a paradox? Cross-sectional and longitudinal evidence from the Berlin Aging Study. *Psychology & Aging*, 15, 511–526.
- Kuppens, P., & Verduyn, P. (2015). Looking at emotion regulation through the window of emotion dynamics. *Psychological Inquiry*, 26(1), 72–79. http://doi.org/10.1080/1047840X.2015.960505.
- Kuppens, P., Tuerlinckx, F., Russell, J. A., & Barrett, L. F. (2013). The relation between valence and arousal in subjective experience. *Psychological Bulletin*, 139(4), 917–940.
- Kuppens, P., Van Mechelen, I., Nezlek, J. B., Dossche, D., & Timmermans, T. (2007). Individual differences in core affect variability and their relationship to personality and psychological adjustment. *Emotion*, 7, 262–274.
- Kurd, S. K., Troxel, A. B., Crits-Christoph, P., & Gelfand, J. M. (2010). The risk of depression, anxiety, and suicidality in patients with psoriasis: A population-based cohort study. *Archives of Dermatology*, 146(8), 891–895. http://doi.org/10.1001/archdermatol.2010.186.
- Kurth, F., Zilles, K., Fox, P. T., Laird, A. R., & Eickhoff, S. B. (2010). A link between the systems: Functional differentiation and integration within the human insula revealed by meta-analysis. *Brain Structure & Function*, 214, 519–534.
- Kurzban, R. (2001). The social psychophysics of cooperation: Nonverbal communication in a public goods game. *Journal of Nonverbal Behavior*, 25(4), 241–259.
- LaBar, K. S., & Cabeza, R. (2006). Cognitive neuroscience of emotional memory. *Nature Reviews Neurology*, 7, 54–64.
- LaBar, K. S., Cook, C. A., Torpey, D. C., & Welsh-Bohmer, K. A. (2004). Impact of healthy aging on awareness and fear conditioning. *Behavioral Neuroscience*, 118(5), 905.
- LaBar, K. S., Crupain, M. J., Voyvodic, J. T., & McCarthy, G. (2003). Dynamic perception of facial affect and identity in the human brain. *Cerebral Cortex*, 13(10), 1023–1033.
- LaBar, K. S., Gatenby, J. C., Gore, J. C., LeDoux, J. E., & Phelps, E. A. (1998). Human amygdala activation during conditioned fear acquisition and extinction: A mixed-trial fMRI study. *Neuron*, 20(5), 937–945. http://doi.org/10.1016/S0896-6273(00)80475-4.
- Labouvie-Vief, G. (2003). Dynamic integration: Affect, cognition, and the self in adulthood. *Current Directions in Psychological Science*, 12, 201–206. doi:10.1046/j.0963-7214.2003.01262.x.
- Labouvie-Vief, G., & Medler, M. (2002). Affect optimization and affect complexity: Modes and styles of regulation in adulthood. *Psychology & Aging*, 17, 571–588.

## 502 REFERENCES

- Lacey, J. I. (1959). Psychophysiological approaches to the evaluation of psychotherapeutic process and outcome. In E. A. Rubinstein & M. B. Parloff (Eds.), *Research in psychotherapy* (Vol. 1, pp. 160–208). Washington, DC: American Psychological Association.
- Lacey, J. I., & Lacey, B. (1970). Some autonomic central nervous system interrelationships. In P. Black (Ed.), *Physiological Correlates of Emotion* (pp. 205–227). New York: Academic Press.
- Lacey, B., & Lacey, J. I. (1974). Studies of heart rate and other bodily responses in sensorimotor behavior. In P. A. Obrist, A. H. Black, J. Brener, & L. Dicara (Eds.), *Cardiovascular Psychophysiology* (pp. 538–564). Chicago: Aldine.
- Ladourie, E. (1978). *Montaillou: Cathars and Catholics in a French village* (Trans. B. Bray). London: Scolar.
- Lahat, A., Lamm, C., Chronis-Tuscano, A., Pine, D. S., Henderson, H. A., & Fox, N. A. (2014a). Early behavioral inhibition and increased error monitoring predict later social phobia symptoms in childhood. *Journal of the American Academy of Child & Adolescent Psychiatry*, 53, 447–455. <http://dx.doi.org/10.1016/j.jaac.2013.12.019>.
- Lahat, A., Walker, O. L., Lamm, C., Degnan, K. A., Henderson, H. A., & Fox, N. A. (2014b). Cognitive conflict links behavioural inhibition and social problem solving during social exclusion in childhood. *Infant & Child Development*, 23(3), 273–282. doi:10.1002/icd.1845.
- Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist*, 64, 241–256.
- Laidlaw, K. E., Foulsham, T., Kuhn, G., & Kingstone, A. (2011). Potential social interactions are important to social attention. *Proceedings of the National Academy of Sciences of the United States of America*, 108, 5548–5553.
- Lakens, D. (2017). Impossibly hungry judges. The 20% statistician. <https://daniellakens.blogspot.com/2017/07/impossibly-hungry-judges.html>
- Lamb, M. E., Chuang, S. S., Wessels, H., Broberg, A. G., & Hwang, C. P. (2002). Emergence and construct validations of the Big Five factors in early childhood: A longitudinal analysis of their ontogeny in Sweden. *Child Development*, 73, 1517–1524.
- Lamb, R. J., Preston, K. L., Schindler, C. W., Meisch, R. A., Davis, F., Katz, J. L., . . . Goldberg, S. R. (1991). The reinforcing and subjective effects of morphine in post-addicts: A dose-response study. *Journal of Pharmacology & Experimental Therapeutics*, 259(3), 1165–1173.
- Laming, D. R. J. (1968). *Information theory of choice-reaction times*. New York: Academic Press.
- Lamm, C., Batson, C. D., & Decety, J. (2007). The neural substrate of human empathy: Effects of perspective-taking and cognitive appraisal. *Journal of Cognitive Neuroscience*, 19(1), 42–58. doi:10.1162/jocn.2007.19.1.42.
- Lamm, C., Decety, J., & Singer, T. (2011). Meta-analytic evidence for common and distinct neural networks associated with directly experienced pain and empathy for pain. *NeuroImage*, 54(3), 2492–2502. doi:10.1016/j.neuroimage.2010.10.014.
- Lamm, C., Meltzoff, A. N., & Decety, J. (2010). How do we empathize with someone who is not like us? A functional magnetic resonance imaging study. *Journal of Cognitive Neuroscience*, 22(2), 362–376. doi:10.1162/jocn.2009.21186.
- Lamm, C., White, L. K., McDermott, J. M., & Fox, N. A. (2012). Neural activation underlying cognitive control in the context of neutral and affectively charged pictures in children. *Brain & Cognition*, 79, 181–187.
- Lamme, V. A., & Roelfsema, P. R. (2000). The distinct modes of vision offered by feedforward and recurrent processing. *Trends in Neuroscience*, 23, 571–579.
- Lamont, M., & Monar, V. (2002). The study of boundaries in the social sciences. *Annual Review of Sociology*, 28, 67–95.
- Lane, J. D., Wellman, H. M., Olson, S. L., Miller, A. L., Wang, L., & Tardif, T. (2012). Relations between temperament and theory of mind development in the United States and China: Biological and behavioral correlates of preschoolers' false-belief understanding. *Developmental Psychology*, 49, 825–836. doi:10.1037/a0028825.
- Lang, F. R., & Carstensen, L. L. (1994). Close emotional relationships in late life: Further support for proactive aging in the social domain. *Psychology & Aging*, 9, 315–324.
- Lang, F., Staudinger, U., & Carstensen, L. L. (1998). Perspectives on socioemotional selectivity in late life: How personality and social context do (and do not) make a difference. *Journal of Gerontology: Psychological Sciences*, 53, 21–30.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J. M. Shlien (Ed.), *Research in psychotherapy* (Vol. 3, pp. 90–102). Washington, DC: American Psychological Association.
- Lang, P. J. (1980). Behavioral treatment and bio-behavioral assessment: Computer applications. In J. B. Sidowski, J. H. Johnson, & T. A. Williams (Eds.), *Technology in mental health care delivery systems* (pp. 119–137). Norwood, NJ: Ablex Publishing.
- Lang, P. J. (1988). What are the data of emotion? In V. Hamilton, G. H. Bower, & N. Frijda (Eds.), *Cognitive perspectives on emotion and motivation* (pp. 173–194). Boston, MA: Martinus Nijhoff.

- Lang, P. J. (1994). The varieties of emotional experience: A meditation on James-Lange theory. *Psychological Review*, *101*, 211–221.
- Lang, P. J. (1995). The emotion probe. Studies of motivation and attention. *The American Psychologist*, *50*(5), 372–385.
- Lang, P. J., & Bradley, M. M. (2010). Emotion and the motivational brain. *Biological Psychology*, *84*, 437–450.
- Lang, P. J., & Bradley, M. M. (2013). Appetitive and defensive motivation: Goal-directed or goal-determined? *Emotion Review*, *5*, 230–234.
- Lang, P. J., & Davis, M. (2006). Emotion, motivation, and the brain: Reflex foundations in animal and human research. *Progress in Brain Research*, *156*, 3–29.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. *Psychological Review*, *3*, 377–395.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1997). Motivated attention: Affect, activation and action. In P. J. Lang, R. F. Simons, & M. T. Balaban (Eds.), *Attention and orienting: Sensory and motivational processes* (pp. 97–136). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1998). Emotion, motivation, and anxiety: Brain mechanisms and psychophysiology. *Biological Psychology*, *44*(12), 1248–1263.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (2008). *International affective picture system (IAPS): Affective ratings of pictures and instruction manual. Technical Report A-8*. Gainesville, FL: The Center for Research in Psychophysiology, University of Florida.
- Lang, P. J., Davis, M., & Öhman, A. (2000). Fear and anxiety: Animal models and human cognitive psychophysiology. *Journal of Affective Disorders*, *61*(3), 137–159.
- Lange, C. G. ([1885] 1922). The emotions: A psychophysiological study. In C. G. Lange & W. James (Eds.), *The emotions* (pp. 33–90). Baltimore, MD: Williams & Wilkins.
- Langford, D. J., Crager, S. E., Shehzad, Z., Smith, S. B., Sotocinal, S. G., Levenstadt, J. S., . . . Mogil, J. S. (2006). Social modulation of pain as evidence for empathy in mice. *Science*, *312*, 1867–1870.
- Lapate, R. C., Reekun, C. M., Schaefer, S. M., Greischar, L. L., Norris, C. J., Bachhuber, D. R., . . . Davidson, R. J. (2014). Prolonged marital stress is associated with short-lived responses to positive stimuli. *Psychophysiology*, *51*(6), 499–509.
- Lapate, R. C., Rokers, B., Li, T., & Davidson, R. J. (2014). Nonconscious emotional activation colors first impressions: A regulatory role for conscious awareness. *Psychological Science*, *25*(2), 349–357. doi:10.1177/0956797613503175.
- Lapate, R. C., Rokers, B., Tromp, D. P. M., Orfali, N. S., Oler, J. A., Doran, S. T., . . . Davidson, R. J. (2016). Awareness of emotional stimuli determines the behavioral consequences of amygdala activation and amygdala-prefrontal connectivity. *Scientific Reports*, *6*, 25826. doi:10.1038/srep25826.
- Lapate, R. C., Samaha, J., Rokers, B., Hamzah, H., Postle, B. R., & Davidson, R. J. (2017). Inhibition of lateral prefrontal cortex produces emotionally biased first impressions: A transcranial magnetic stimulation and electroencephalography study. *Psychological Science*, *28*, 942–953.
- Larsen, J. T., McGraw, A. P., & Cacioppo, J. T. (2001). Can people feel happy and sad at the same time? *Journal of Personality & Social Psychology*, *81*(4), 684–696.
- Larsen, R. J., & Fredrickson, B. L. (1999). Measurement issues in emotion research. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 40–60). New York: Russell Sage Foundation.
- Larsen, R. J., Kasimatis, M., & Frey, K. (1992). Facilitating the furrowed brow: An unobtrusive test of the facial feedback hypothesis applied to unpleasant affect. *Cognition & Emotion*, *6*(5), 321–338.
- Larson, C. L., Aronoff, J., & Steuer, E. L. (2012). Simple geometric shapes are implicitly associated with affective value. *Motivation & Emotion*, *36*(3), 404–413. doi:10.1007/s11031-011-9249-2.
- Larson, C. L., Nitschke, J. B., & Davidson, R. J. (2007). Common and distinct patterns of affective response in dimensions of anxiety and depression. *Emotion*, *7*(1), 182–191. <http://doi.org/10.1037/1528-3542.7.1.182>.
- Larson, C. L., Ruffalo, D., Nietert, J. Y., & Davidson, R. J. (2000). Temporal stability of the emotion-modulated startle response. *Psychophysiology*, *37*(1), 92–101.
- Larson, R. W., & Ham, M. (1993). Stress and “storm and stress” in early adolescence: The relationship of negative events with dysphoric affect. *Developmental Psychology*, *29*, 130–140.
- Larson, R. W., Moneta, G., Richards, M. H., & Wilson, S. (2002). Continuity, stability, and change in daily emotional experience across adolescence. *Child Development*, *73*(4), 1151–1165.
- Laska, M., Fendt, M., Wieser, A., Endres, T., Hernandez Salazar, L. T., & Apfelbacher, R. (2005). Detecting danger—or just another odorant? Olfactory sensitivity for the fox odor component, 2,4,5-trimethylthiazoline in four species of mammals. *Physiology & Behavior*, *84*(2), 211–215. doi:10.1016/j.physbeh.2004.11.006.
- Laska, M., Seibt, A., & Weber, A. (2000). “Microsmatic” primates revisited: Olfactory sensitivity in the squirrel monkey. *Chemical Senses*, *25*(1), 47–53.



## 504 REFERENCES

- Lau, H. C., & Passingham, R. E. (2006). Relative blindsight in normal observers and the neural correlate of visual consciousness. *Proceedings of the National Academy of Sciences of the United States of America*, *103*(49), 18763–18768. doi:10.1073/pnas.0607716103.
- Lau, H. C., & Rosenthal, D. (2011). Empirical support for higher-order theories of conscious awareness. *Trends in Cognitive Sciences*, *15*(8), 365–373. doi:10.1016/j.tics.2011.05.009.
- Laukka, P., Elenbein, H. A., Söder, N., Nordström, H., Althoff, J., Chui, W., . . . Thingujam, N. S. (2013). Cross-cultural decoding of positive and negative non-linguistic emotion vocalizations. *Frontiers in Psychology*, *4*, 353. http://doi.org/10.3389/fpsyg.2013.00353.
- Laurent, H. K. (2014). Clarifying the contours of emotion regulation: Insights from parent-child stress research. *Child Development Perspectives*, *8*(1), 30–35.
- Laurent, S. M., & Hodges, S. D. (2009). Gender roles and empathic accuracy: The role of communion in reading minds. *Sex Roles*, *60*, 387–398. doi:10.1007/s11199-008-9544-x.
- Lavie, N. (1995). Perceptual load as a necessary condition for selective attention. *Journal of Experimental Psychology: Human Perception & Performance*, *21*, 451–468.
- Lavie, N., & De Fockert, J. W. (2005). The role of working memory in attentional capture. *Psychonomic Bulletin & Review*, *12*, 669–674.
- Lawson, R., Rees, G., & Friston, K. (2014). “An aberrant precision account of autism.” *Frontiers in Human Neuroscience*, *8*, 302.
- Lawton, M. P., Kleban, M. H., Rajagopal, D., & Dean, J. (1992). Dimensions of affective experience in three age groups. *Psychology & Aging*, *7*, 171–184.
- Layous, K., Nelson, S. K., Oberle, E., Schonert-Reichl, K. A., & Lyubomirsky, S. (2012). Kindness counts: Prompting prosocial behavior in preadolescents boosts peer acceptance and well-being. *PLoS One*, *7*(12), e51380. doi:10.1371/journal.pone.0051380.
- Lazarov, A., Marom, S., Yahalom, N., Pine, D. S., Hermesh, H., & Bar-Haim, Y. (in press). Attention bias modification augments cognitive-behavioral group therapy for social anxiety disorder: A randomized controlled trial. *Psychological Medicine*.
- Lazarus, R. (1994). The stable and the unstable in emotion. In P. Ekman & R. Davidson (Eds.), *The nature of emotion* (pp. 79–85). New York: Oxford University Press.
- Lazarus, R. S. (1984). On the primacy of cognition. *American Psychologist*, *39*(2), 124–129.
- Lazarus, R. S. (1991a). Cognition and motivation in emotion. *American Psychologist*, *46*(4), 352–367.
- Lazarus, R. S. (1991b). *Emotion and adaptation*. New York: Oxford University Press.
- Lazarus, R. S. (1994a). Appraisal: The long and the short of it. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 208–215). New York: Oxford University Press.
- Lazarus, R. S. (1994b). Universal antecedents of emotion. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 163–171). New York: Oxford University Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leary, M. R., & Leder, S. (2009). The nature of hurt feelings: Emotional experience and cognitive appraisals. In A. L. Vangelisti (Ed.), *Feeling hurt in close relationships* (pp. 15–33). New York: Cambridge University Press.
- Leary, M. R., Springer, C., Negel, L., Ansell, E., & Evans, K. (1998). The causes, phenomenology, and consequences of hurt feelings. *Journal of Personality & Social Psychology*, *74*(5), 1225–1237.
- LeBel, E. P., Berger, D., Campbell, L., & Loving, T. J. (2017). Falsifiability is not optional. *Journal of Personality and Social Psychology*, *113*, 254–261.
- Lebreton, M., Jorge, S., Michel, V., Thirion, B., & Pessiglione, M. (2009). An automatic valuation system in the human brain: Evidence from functional neuroimaging. *Neuron*, *64*(3), 431–439.
- Lebron-Milad, K., & Milad, M. R. (2012). Sex differences, gonadal hormones and the fear extinction network: Implications for anxiety disorders. *Biology of Mood & Anxiety Disorders*, *2*(1), 3.
- Lederbogen, F., Kirsch, P., Haddad, L., Streit, F., Tost, H., Schuch, P., . . . Meyer-Lindenberg, A. (2011). City living and urban upbringing affect neural social stress processing in humans. *Nature*, *474*(7352), 498–501.
- LeDoux, J. (1994). Emotional experience is an output of, not a cause of, emotional processing. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion* (pp. 394–396). New York: Oxford University Press.
- LeDoux, J. E. (1991). Emotion and the limbic system concept. *Concepts in Neurology*, *2*, 169–199.
- LeDoux, J. E. (1994). Emotional processing, but not emotions, can occur unconsciously. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 291–292). New York: Oxford University Press.
- LeDoux, J. E. (1996). *The emotional brain: The mysterious underpinnings of emotional life*. New York: Simon & Schuster.
- LeDoux, J. E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience*, *23*, 155–184.

- LeDoux, J. E. (2003). The emotional brain, fear, and the amygdala. *Cellular & Molecular Neurobiology*, 23, 727–738.
- LeDoux, J. E. (2012). Rethinking the emotional brain. *Neuron*, 73, 653–676. doi:10.1016/j.neuron.2012.02.004.
- LeDoux, J. E. (2013). The slippery slope of fear. *Trends in Cognitive Sciences*, 17, 155–156. doi:10.1016/j.tics.2013.02.004.
- LeDoux, J. E. (2014). Coming to terms with fear. *Proceedings of the National Academy of Sciences of the United States of America*, 111, 2871–2878.
- LeDoux, J. E. (2015). *Anxious. Using the brain to understand and treat fear and anxiety*. New York: Viking.
- LeDoux, J. (2016). *Anxious: Using the Brain to Understand and Treat Fear and Anxiety* (Reprint edition). New York, New York: Penguin Books.
- LeDoux, J. E. (2017). Semantics, surplus meaning, and the science of fear. *Trends in Cognitive Sciences*, 21, 303–306.
- LeDoux, J. (2018). The subjective experience of emotion: a fearful view. *Current Opinion in Behavioral Sciences*, 19, 67–72.
- LeDoux, J. E., & Brown, R. (2017). A higher-order theory of emotional consciousness. *Proceedings of the National Academy of Sciences of the United States of America*, 114, E2016–E2025.
- LeDoux, J. E., & Hofmann, S. G. (2018). The subjective experience of emotion: a fearful view. *Current Opinion in Behavioral Sciences*, 19, 1–6.
- LeDoux, J. E., Iwata, J., Cicchetti, P., & Reis, D. J. (1988). Different projections of the central amygdaloid nucleus mediate autonomic and behavioral correlates of conditioned fear. *Journal of Neuroscience*, 8, 2517–2529.
- Lee, D. H., & Anderson, A. K. (submitted). Reading what the mind thinks from how the eye sees.
- Lee, D. H., Mirza, R., Flanagan, J. G., & Anderson, A. K. (2014). Optical origins of opposing facial expression actions. *Psychological Science*, 25, 745–752.
- Lee, D. H., Susskind, J. M., & Anderson, A. K. (2013). Social transmission of the sensory benefits of eye widening in fear expressions. *Psychological Science*, 24(6), 957–965. http://doi.org/10.1177/0956797612464500.
- Lee, F. S., Heimer, H., Giedd, J. N., Lein, E. S., Sestan, N., Weinberger, D. R., & Casey, B. J. (2014). Mental health. Adolescent mental health—opportunity and obligation. *Science*, 346, 547–549.
- Lee, H., Heller, A. S., van Reekum, C. M., Nelson, B., & Davidson, R. J. (2012). Amygdala-prefrontal coupling underlies individual differences in emotion regulation. *NeuroImage*, 62(3), 1575–1581. doi:10.1016/j.neuroimage.2012.05.044.
- Lee, H., Kim, D. W., Remedios, R., Anthony, T. E., Chang, A., Madisen, L., . . . Anderson, D. J. (2014). Scalable control of mounting and attack by Esr1+ neurons in the ventromedial hypothalamus. *Nature*, 509, 627–632.
- Lee, K. H., & Siegle, G. J. (2014). Different brain activity in response to emotional faces alone and augmented by contextual information. *Psychophysiology*, 51(11), 1147–1157. http://doi.org/10.1111/psyp.12254.
- Lee, L., Amir, O., & Ariely, D. (2009). In search of homo economicus: Cognitive noise and the role of emotion in preference consistency. *Journal of Consumer Research*, 36(2), 173–187.
- Leger, K. A., Charles, S. T., Turiano, N. A., & Almeida, D. M. (2016). Personality and stressor-related affect. *Journal of Personality and Social Psychology*, 111, 917–928.
- Legerstee, J. S., Tulen, J. H., Dierckx, B., Treffers, P. D., Verhulst, F. C., & Utens, E. M. (2010). CBT for childhood anxiety disorders: Differential changes in selective attention between treatment responders and non-responders. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 51, 162–172.
- Legrain, V., Iannetti, G. D., Plaghki, L., & Mouraux, A. (2011). The pain matrix reloaded: A salience detection system for the body. *Progress in Neurobiology*, 93, 111–124.
- Lehrner, A., Bierer, L. M., Passarelli, V., Pratchett, L. C., Flory, J. D., Bader, H. N., . . . Yehuda, R. (2014). Maternal PTSD associates with greater glucocorticoid sensitivity in offspring of Holocaust survivors. *Psychoneuroendocrinology*, 40, 213–220. doi:10.1016/j.psyneuen.2013.11.019.
- Leiberg, S., Klimecki, O., & Singer, T. (2011). Short-term compassion training increases prosocial behavior in a newly developed prosocial game. *PLoS One*, 6(3), e17798. https://doi.org/10.1371/journal.pone.0017798.
- Lejuez, C. W., O'Donnell, J., Wirth, O., Zvolensky, M. J., & Eifert, G. H. (1998). Avoidance of 20% carbon dioxide-enriched air with humans. *Journal of the Experimental Analysis of Behavior*, 70(1), 79–86. https://doi.org/10.1901/jeab.1998.70-79.
- Lemay, E. P., & Dobush, S. (2014). When do personality and emotion predict destructive behavior during relationship conflict? The role of perceived commitment asymmetry. *Journal of Personality*.
- Lemay, E. P., Jr., & Clark, M. S. (2008). How the head liberates the heart: Projection of communal responsiveness guides relationship promotion. *Journal of Personality & Social Psychology*, 94(4), 647–671.
- Lemay, E. P., Jr., & Dudley, K. L. (2011). Caution: Fragile! Regulating the interpersonal security of chronically insecure partners. *Journal of Personality & Social Psychology*, 100(4), 681–702.

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## 506 REFERENCES

- Lemay, E. P., Jr., Overall, N. C., & Clark, M. S. (2012). Experiences and interpersonal consequences of hurt feelings and anger. *Journal of Personality & Social Psychology*, *103*(6), 982–1006. doi:10.1037/a0030064.
- Lemerise, A., & Arsenio, W. F. (2000). An integrated model of emotion processes and cognition in social information processing. *Child Development*, *71*, 107–118.
- Lench, H. C., Flores, S. A., & Bench, S. W. (2011). Discrete emotions predict changes in cognition, judgment, experience, behavior, and physiology: A meta-analysis of experimental emotion elicitation. *Psychological Bulletin*, *137*(5), 834–855.
- Lengua, L. J., & Wachs, T. D. (2012). Temperament and risk: Resilient and vulnerable responses to adversity. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 519–540). New York: Guilford.
- Lenroot, R. K., & Giedd, J. N. (2008). The changing impact of genes and environment on brain development during childhood and adolescence. *Developmental and Psychopathology*, *20*, 1161–1175.
- Lenroot, R. K., Schmitt, J. E., Ordaz, S. J., Wallace, G. L., Neale, M. C., Lerch, J. P., . . . Giedd, J. N. (2009). Differences in genetic and environmental influences on the human cerebral cortex associated with development during childhood and adolescence. *Human Brain Mapping*, *30*(1), 163–174.
- Leppänen, J. M., & Hietanen, J. K. (2003). Affect and face perception: Odors modulate the recognition advantage of happy faces. *Emotion*, *3*(4), 315–326. doi:10.1037/1528-3542.3.4.315.
- Leppänen, J. M., & Nelson, C. A. (2009). Tuning the developing brain to social signals of emotions. *Nature Reviews Neuroscience*, *10*(1), 37–47.
- Leppänen, J. M., Moulson, M. C., Vogel-Farley, V. K., & Nelson, C. A. (2007). An ERP study of emotional face processing in the adult and infant brain. *Child Development*, *78*, 232–245.
- Leppänen, J. M., Peltola, M. J., Mäntymaa, M., Koivuluoma, M., Salminen, M., & Puura, K. (2010). Cardiac and behavioral evidence for emotional influences on attention in 7-month-old infants. *International Journal of Behavioral Development*, *34*, 547–553.
- Lerner, J. S., & Keltner, D. (2001). Fear, anger, and risk. *Journal of Personality & Social Psychology*, *81*(1), 146–159.
- Lerner, J. S., & Tiedens, L. Z. (2006). Portrait of the angry decision maker: How appraisal tendencies shape anger's influence on cognition. *Journal of Behavioral Decision Making*, *19*(2), 115–137.
- Lerner, J. S., Goldberg, J. H., & Tetlock, P. E. (1998). Sober second thought: The effects of accountability, anger and authoritarianism on attributions of responsibility. *Personality & Social Psychology Bulletin*, *24*, 563–574.
- Lerner, J. S., Li, Y., & Weber, E. U. (2013). The financial costs of sadness. *Psychological Science*, *24*(1), 72–79. doi:10.1177/0956797612450302.
- Lerner, J. S., Li, Y., Valdesolo, P., & Kassam, K. S. (2015). Emotion and decision making. *Annual Review of Psychology*, *66*, 799–823.
- Lerner, J. S., Small, D. A., & Loewenstein, G. (2004). Heart strings and purse strings: Carryover effects of emotions on economic decisions. *Psychological Science*, *15*(5), 337–341. doi:10.1111/j.0956-7976.2004.00679.x.
- Levenson, R. W. (1992). Autonomic nervous system differences among emotions. *Psychological Science*, *3*(1), 23–27.
- Levenson, R. W. (1994). Human emotion: A functional view. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 123–126). New York: Oxford University Press.
- Levenson, R. W. (1999). The intrapersonal functions of emotion. *Cognition & Emotion*, *13*(5), 481–504. <http://doi.org/10.1080/026999399379159>.
- Levenson, R. W. (2003). Blood, sweat, and fears: The autonomic architecture of emotion. *Annals of the New York Academy of Sciences*, *1000*, 348–366.
- Levenson, R. W. (2007). Emotion elicitation with neurological patients. In J. A. Coan & J. J. B. Allen (Eds.), *The handbook of emotion elicitation and assessment* (pp. 158–168). New York: Oxford University Press.
- Levenson, R. W. (2011). Basic emotion questions. *Emotion Review*, *3*, 379–386.
- Levenson, R. W. (2014). The autonomic nervous system and emotion. *Emotion Review*, *6*, 100–112.
- Levenson, R. W., & Miller, B. M. (2007). Loss of cells—loss of self. Frontotemporal lobar degeneration and human emotion. *Current Directions in Psychological Science*, *15*, 289–294.
- Levenson, R. W., Ascher, E., Goodkind, M., McCarthy, M. E., Smith, V. E., & Werner, K. (2008). Laboratory testing of emotion and frontal cortex. In G. Goldenberg & B. L. Miller (Eds.), *Handbook of clinical neurology: Volume 88 (3rd series)* (pp. 489–498). Edinburgh: Elsevier.
- Levenson, R. W., Carstensen, L. L., & Gottman, J. M. (1993). Long-term marriage: Age, gender, and satisfaction. *Psychology & Aging*, *8*, 301–313.
- Levenson, R. W., Carstensen, L. L., Friesen, W. V., & Ekman, P. (1991). Emotion, physiology, and expression in old age. *Psychology & Aging*, *6*, 28–35.
- Levenson, R. W., Ekman, P., & Friesen, W. V. (1990). Voluntary facial action generates emotion-specific autonomic nervous system activity. *Psychophysiology*, *27*(4), 363–384.

- Levenson, R. W., Sturm, V. E., & Haase, C. M. (2014). Emotional and behavioral symptoms in neurodegenerative disease: A model for studying the neural bases of psychopathology. *Annual Review of Clinical Psychology, 10*, 581–606.
- Leventhal, H., & Scherer, K. (1987). The relationship of emotion to cognition: A functional approach to a semantic controversy. *Cognition & Emotion, 1*(1), 3–28. <http://doi.org/10.1080/02699938708408361>.
- Levine, J. D., Gordon, N. C., & Fields, H. L. (1978). The mechanism of placebo analgesia. *The Lancet, 2*(8091), 654–657.
- Levy, B. J., & Wagner, A. D. (2011). Cognitive control and right ventrolateral prefrontal cortex: Reflexive reorienting, motor inhibition, and action updating. *Annals of the New York Academy of Sciences, 1224*, 40–62.
- Levy, D. J., & Glimcher, P. W. (2011). Comparing apples and oranges: Using reward-specific and reward-general subjective value representation in the brain. *Journal of Neuroscience, 31*(41), 14693–14707.
- Levy, I., Belmaker, L. R., Manson, K., Tymula, A., & Glimcher, P. W. (2012). Measuring the subjective value of risky and ambiguous options using experimental economics and functional MRI methods. *Journal of Visualized Experiments: JoVE (67)*, e3724. doi:10.3791/3724.
- Levy, I., Lazzaro, S. C., Rutledge, R. B., & Glimcher, P. W. (2011). Choice from non-choice: Predicting consumer preferences from blood oxygenation level-dependent signals obtained during passive viewing. *Journal of Neuroscience, 31*(1), 118–125.
- Levy, I., Snell, J., Nelson, A. J., Rustichini, A., & Glimcher, P. W. (2010). Neural representation of subjective value under risk and ambiguity. *Journal of Neurophysiology, 103*(2), 1036–1047.
- LeWinn, K. Z., Sheridan, M. A., Keyes, K. M., Hamilton, A., & McLaughlin, K. A. (2017). Sample composition alters associations between age and brain structure. *Nat Commun, 8*, 874.
- Lewinsohn, P. M., Striegel-Moore, R. H., & Seeley, J. R. (2000). Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(10), 1284–1292.
- Lewis, A. D., Huebner, E. S., Reschly, A. L., & Valois, R. F. (2009). The incremental validity of positive emotions in predicting school functioning. *Journal of Psychoeducational Assessment, 27*, 397–408. doi:10.1177/0734282908330571.
- Lewis, M. (2010). The development of anger. In M. Potegal, G. Stemmler, & C. Spielberger (Eds.), *International handbook of anger* (pp. 177–191). New York: Springer.
- Lewis, M. B., & Bowler, P. J. (2009). Botulinum toxin cosmetic therapy correlates with a more positive mood. *Journal of Cosmetic Dermatology, 8*(1), 24–26.
- Lewis-Fernández, R., Hinton, D. E., Laria, A. J., Patterson, E. H., Hofmann, S. G., Craske, M. G., . . . Liao, B. (2010). Culture and the anxiety disorders: Recommendations for DSM-V. *Depression & Anxiety, 27*(2), 212–229.
- Lewontin, R. C. (2000). *The triple helix: Gene, organism and environment*. Cambridge, MA: Harvard University Press.
- Li, B. (2015). The paraventricular thalamus controls a central amygdala fear circuit. *Nature, 519*(7544), 455–459. <http://doi.org/10.1038/nature13978>.
- Li, J., Delgado, M. R., & Phelps, E. A. (2011). How instructed knowledge modulates the neural systems of reward learning. *Proceedings of the National Academy of Sciences, 108*(1), 55–60.
- Li, W. (2014). Learning to smell danger: Acquired associative representation of threat in the olfactory cortex. *Frontiers in Behavioral Neuroscience, 8*, 98. doi:10.3389/fnbeh.2014.00098.
- Li, W., Howard, J. D., Parrish, T. B., & Gottfried, J. A. (2008). Aversive learning enhances perceptual and cortical discrimination of indiscriminable odor cues. *Science, 319*(5871), 1842–1845. doi:10.1126/science.1157184.
- Li, W., Moallem, I., Paller, K. A., & Gottfried, J. A. (2007). Subliminal smells can guide social preferences. *Psychological Science, 18*(12), 1044–1049. doi:10.1111/j.1467-9280.2007.02023.x.
- Li, W., Zinbarg, R. E., Boehm, S. G., & Paller, K. A. (2008). Neural and behavioral evidence for affective priming from unconsciously perceived emotional facial expressions and the influence of trait anxiety. *Journal of Cognitive Neuroscience, 20*(1), 95–107. doi:10.1162/jocn.2008.20006.
- Liang, M., Mouraux, A., Hu, L., & Iannetti, G. D. (2013). Primary sensory cortices contain distinguishable spatial patterns of activity for each sense. *Nature Communications, 4*, 1979.
- Liao, W., Qiu, C., Gentili, C., Walter, M., Pan, Z., Ding, J., . . . Chen, H. (2010). Altered effective connectivity network of the amygdala in social anxiety disorder: A resting-state fMRI study. *PLoS One, 5*(12), e15238.
- Liao, W., Xu, Q., Mantini, D., Ding, J., Machado-de-Sousa, J. P., & Hallak, J. E. (2011). Altered gray matter morphometry and resting-state functional and structural connectivity in social anxiety disorder. *Brain Research, 1388*, 167–177.
- Liberles, S. D., & Buck, L. B. (2006). A second class of chemosensory receptors in the olfactory epithelium. *Nature, 442*(7103), 645–650. doi:10.1038/nature05066.

## 508 REFERENCES

- Lieberman, N., & Trope, Y. (2008). The psychology of transcending the here and now. *Science*, 322(5905), 1201–1205. doi:10.1126/science.1161958.
- Liddell, B. J., Brown, K. J., Kemp, A. H., Barton, M. J., Das, P., Peduto, A., . . . Williams, L. M. (2005). A direct brainstem-amygdala-cortical “alarm” system for subliminal signals of fear. *NeuroImage*, 24(1), 235–243.
- Liddell, B. J., Williams, L. M., Rathjen, J., Shevrin, H., & Gordon, E. (2004). A temporal dissociation of subliminal versus supraliminal fear perception: An event-related potential study. *Journal of Cognitive Neuroscience*, 16, 479–486.
- Lidstone, S. C., Schulzer, M., Dinelle, K., Mak, E., Sossi, V., Ruth, T. J., . . . Stoessl, A. J. (2010). Effects of expectation on placebo-induced dopamine release in Parkinson disease. *Archives of General Psychiatry*, 67(8), 857–865. doi:10.1001/archgenpsychiatry.2010.88.
- Lieberman, D. A. (2000). *Learning*. Wadsworth, Belmont, CA.
- Lieberman, M. D. (2007). Social cognitive neuroscience: A review of core processes. *Annual Review of Psychology*, 58, 259–289.
- Lieberman, M. D. (2009). What makes big ideas sticky? In M. Brockman (Ed.), *What's next? Dispatches on the future of science* (pp. 89–103). New York: Vintage Books.
- Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words: Affect labeling disrupts amygdala activity to affective stimuli. *Psychological Science*, 18, 421–428.
- Lieberman, M. D., Hariri, A., Jarcho, J. J., Eisenberger, N. I., & Bookheimer, S. Y. (2005). An fMRI investigation of race-related amygdala activity in African-American and Caucasian-American individuals. *Nature Neuroscience*, 8, 720–722.
- Lieberman, M. D., Inagaki, T. K., Tabibnia, G., & Crockett, M. J. (2011). Subjective responses to emotional stimuli during labeling, reappraisal, and distraction. *Emotion*, 3, 468–480.
- Lieberman, M. D., Jarcho, J. M., Berman, S., Naliboff, B. D., Suyenobu, B. Y., Mandelkern, M., & Mayer, E. A. (2004). The neural correlates of placebo effects: A disruption account. *NeuroImage*, 22(1), 447–455. doi:10.1016/j.neuroimage.2004.01.037.
- Liew, J., Eisenberg, N., & Reiser, M. (2004). Preschoolers' effortful control and negative emotionality, immediate reactions to disappointment, and quality of social functioning. *Journal of Experimental Child Psychology*, 89, 298–313. doi:10.1016/j.jecp.2004.06.004.
- Lilienfeld, S. O., & Waldman, I. D. (Eds.). (2017). *Psychological science under scrutiny: Recent challenges and proposed solutions*. New York, NY: Wiley.
- Lim, S. L., Padmala, S., & Pessoa, L. (2009). Segregating the significant from the mundane on a moment-to-moment basis via direct and indirect amygdala contributions. *Proceedings of the National Academy of Sciences of the United States of America*, 106, 16841–16846.
- Lim, S.-L., O'Doherty, J. P., & Rangel, A. (2011). The decision value computations in the vmPFC and striatum use a relative value code that is guided by visual attention. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 31(37), 13214–13223. doi:10.1523/JNEUROSCI.1246-11.2011.
- Lin, D., Boyle, M. P., Dollar, P., Lee, H., Lein, E. S., Perona, P., & Anderson, D. J. (2011). Functional identification of an aggression locus in the mouse hypothalamus. *Nature*, 470, 221–226.
- Linde, K., Witt, C. M., Streng, A., Weidenhammer, W., Wagenpfeil, S., Brinkhaus, B., . . . Melchart, D. (2007). The impact of patient expectations on outcomes in four randomized controlled trials of acupuncture in patients with chronic pain. *Pain*, 128(3), 264–271. doi:10.1016/j.pain.2006.12.006.
- Lindquist, K. A., & Barrett, L. F. (2008). Constructing emotion: The experience of fear as a conceptual act. *Psychological Science*, 19(9), 898–903.
- Lindquist, K. A., & Barrett, L. F. (2012). A functional architecture of the human brain: Emerging insights from the science of emotion. *Trends in Cognitive Sciences*, 16(11), 533–540.
- Lindquist, K. A., & Gendron, M. (2013). What's in a word? Language constructs emotion perception. *Emotion Review*, 5(1), 66–71.
- Lindquist, K. A., Barrett, L. F., Bliss-Moreau, E., & Russell, J. A. (2006). Language and the perception of emotion. *Emotion*, 6(1), 125.
- Lindquist, K. A., Gendron, M., & Satpute, A. B. (2016). Language and emotion: Putting words into feelings and feelings into words. In L. F. Barrett, M. Lewis, & J. M. Haviland-Jones (Eds.), *The handbook of emotions* (4th ed., pp. 579–594). New York: Guilford Press.
- Lindquist, K. A., Gendron, M., Barrett, L. F., & Dickerson, B. C. (2014). Emotion perception, but not affect perception, is impaired with semantic memory loss. *Emotion*, 14(2), 375–387. doi:10.1037/a0035293.
- Lindquist, K. A., Kober, H., Bliss-Moreau, E., & Barrett, L. F. (2012). The brain basis of emotion: A meta-analytic review. *Behavioural & Brain Research*, 35, 121–202.
- Lindquist, K. A., Satpute, A. B., & Gendron, M. (2015). Does language do more than communicate emotion? *Current Directions in Psychological Science*, 24(2), 99–108.

- Lindquist, K. A., Satpute, A. B., Wager, T. D., Weber, J., & Barrett, L. F. (2015). The brain basis of positive and negative affect: Evidence from a meta-analysis of the human neuroimaging literature. *Cerebral Cortex*, 26(5), 1910–1922. doi:10.1093/cercor/bhv001. Epub 2015 Jan 28. doi:10.1093/cercor/bhv001.
- Lindquist, K. A., Wager, T. D., Kober, H., Bliss-Moreau, E., & Barrett, L. F. (2012). The brain basis of emotion: A meta-analytic review. *Behavioral & Brain Sciences*, 35, 121–143.
- Lindquist, K., & Barrett, L. (2008). Constructing emotion: The experience of fear as a conceptual act. *Psychological Science*, 19(9), 898–903.
- Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York: Guilford Press.
- Linetzky, M., Pergamin-Hight, L., Pine, D. S., & Bar-Haim, Y. (2015). Quantitative evaluation of the clinical efficacy of attention bias modification treatment for anxiety disorders. *Depression & Anxiety*, 32, 383–391.
- Linnman, C., Moulton, E. A., Barmettler, G., Becerra, L., & Borsook, D. (2012). Neuroimaging of the periaqueductal gray: State of the field. *NeuroImage*, 60(1), 505–522. <https://doi.org/10.1016/j.neuroimage.2011.11.095>.
- Liotti, M., & Panksepp, J. (2004). On the neural nature of human emotions and implications for biological psychiatry. In J. Panksepp (Ed.), *Textbook of biological psychiatry* (pp. 33–74). New York: Wiley.
- Liotti, M., Mayberg, H. S., Brannan, S. K., McGinnis, S., Jerabek, P., & Fox, P. T. (2000). Differential limbic—cortical correlates of sadness and anxiety in healthy subjects: Implications for affective disorders. *Biological Psychiatry*, 48(1), 30–42.
- Liston, C., McEwen, B. S., & Casey, B. J. (2009). Psychosocial stress reversibly disrupts prefrontal processing and attentional control. *Proceedings of the National Academy of Sciences*, 106(3), 912–917.
- Livingstone, M. S., & Hubel, D. H. (1987). Psychophysical evidence for separate channels for the perception of form, color, movement, and depth. *Journal of Neuroscience*, 7, 3416–3468.
- Lo, B. C. Y., Lau, S., Cheung, S., & Allen, N. B. (2012). The impact of rumination on internal attention switching. *Cognition & Emotion*, 26(2), 209–223. <http://doi.org/10.1080/02699931.2011.574997>.
- Lo, M. T., Hinds, D. A., Tung, J. Y., Franz, C., Fan, C. C., Wang, Y., . . . Chen, C. H. (2017). Genome-wide analyses for personality traits identify six genomic loci and show correlations with psychiatric disorders. *Nature Genetics*, 49, 152–156.
- Lobmaier, J. S., Tiddeman, B. P., & Perrett, D. I. (2008). Emotional expression modulates perceived gaze direction. *Emotion*, 8(4), 573.
- Lochmann, T., Deneve, S. (2011). Neural processing as causal inference. *Current Opinion in Neurobiology*, 21(5), 774–781.
- Loewenstein, G. (1987). Anticipation and the valuation of delayed consumption. *The Economic Journal*, 97(387), 666–684.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior & Human Decision Processes*, 65(3), 272–292.
- Loewenstein, G. F., & Lerner, J. S. (2013). The role of affect in decision making. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 619–642). New York: Oxford University Press. doi:10.1080/02699931.2012.698982.
- Loewenstein, G. F., Thompson, L., & Bazerman, M. H. (1989). Social utility and decision making in interpersonal contexts. *Interpersonal Relations & Group Processes*, 57, 426–441.
- Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, N. (2001). Risk as feelings. *Psychological Bulletin*, 127(2), 267.
- Loewenstein, G., & Schkade, D. (1999). Wouldn't it be nice? Predicting future feelings. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 85–105). New York: Russell Sage Foundation.
- Lohani, M., & Isaacowitz, D. M. (2014). Age differences in managing response to sadness elicitors using attentional deployment, positive reappraisal and suppression. *Cognition & Emotion*, 28, 678–697. doi:10.1080/02699931.2013.853648.
- Loken, E., & Gelman, A. (2017). Measurement error and the replication crisis. *Science*, 10, 584–585.
- Lonsdorf, T. B., Weike, A. I., Nikamo, P., Schalling, M., Hamm, A. O., & Öhman, A. (2009). Genetic gating of human fear learning and extinction: Possible implications for gene-environment interaction in anxiety disorder. *Psychological Science*, 20(2), 198–206.
- Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *The Economic Journal*, 92(368), 805–824.
- Lopez, R. B., Hofmann, W., Wagner, D. D., Kelley, W. M., & Heatherton, T. F. (2014). Neural predictors of giving in to temptation in daily life. *Psychological Science*, 25(7), 1337–1344.
- Lovibond, P. F. (1983). Facilitation of instrumental behavior by a Pavlovian appetitive conditioned stimulus. *Journal of Experimental Psychology: Animal Behavior Processes*, 9(3), 225–247.
- Löw, A., Lang, P. J., Smith, J. C., & Bradley, M. M. (2008). Both predator and prey: Emotional arousal in threat and reward. *Psychological Science*, 19, 865–873.
- Lowry, C. A., Smith, D. G., Siebler, P. H., Schmidt, D., Stamper, C. E., Hassell, J. E., Jr., . . . Rook, G. A.

## 510 REFERENCES

- (2016). The microbiota, immunoregulation, and mental health: Implications for public health. *Current Environmental Health Reports*, 3, 270–286.
- Lu M.-T., Preston, J. B., & Strick, P. L. (1994). Interconnections between the prefrontal cortex and the premotor areas in the frontal lobe. *Journal of Comparative Neurology*, 341, 3–75–392.
- Lu, M.-C., Guo, H.-R., Lin, M.-C., Livneh, H., Lai, N.-S., & Tsai, T.-Y. (2016). Bidirectional associations between rheumatoid arthritis and depression: A nationwide longitudinal study. *Scientific Reports*, 6(Feb.), 20647. <http://doi.org/10.1038/srep20647>.
- Lubke, K. T., & Pause, B. M. (2015). Always follow your nose: The functional significance of social chemosignals in human reproduction and survival. *Hormones & Behavior*, 68C, 134–144. doi:10.1016/j.yhbeh.2014.10.001.
- Luciano, M., Hagenaars, S. P., Davies, G., Hill, W. D., Clarke, T.-K., Shirali, M., . . . Deary, I. J. (2018). Association analysis in over 329,000 individuals identifies 116 independent variants influencing neuroticism. *Nature Genetics*, 50, 6–11.
- Luck, S. J. (2005). Ten simple rules for designing ERP experiments. In T. C. Handy (Ed.), *Event-related potentials: A methods handbook* (pp. 17–32). Cambridge, MA: MIT Press.
- Lundh, L.-G., & Öst, L.-G. (2001). Attentional bias, self-consciousness and perfectionism in social phobia before and after cognitive-behaviour therapy. *Scandinavian Journal of Behaviour Therapy*, 30.
- Lundstrom, J. N., Boyle, J. A., Zatorre, R. J., & Jones-Gotman, M. (2008). Functional neuronal processing of body odors differs from that of similar common odors. *Cerebral Cortex*, 18(6), 1466–1474. doi:10.1093/cercor/bhm178.
- Lundstrom, J. N., Boyle, J. A., Zatorre, R. J., & Jones-Gotman, M. (2009). The neuronal substrates of human olfactory based kin recognition. *Human Brain Mapping*, 30(8), 2571–2580. doi:10.1002/hbm.20686.
- Luo, S., Ainslie, G., & Monterosso, J. (2014). The behavioral and neural effect of emotional primes on intertemporal decisions. *Social Cognitive & Affective Neuroscience*, 9(3), 283–291. doi:10.1093/scan/nss132.
- Lupien, S. J., Maheu, F., Tu, M., Fiocco, A., & Schramek, T. E. (2007). The effects of stress and stress hormones on human cognition: Implications for the field of brain and cognition. *Brain & Cognition*, 65(3), 209–237.
- Lupien, S. J., Parent, S., Evans, A. C., Tremblay, R. E., Zelazo, P. D., Corbo, V., . . . Séguin, J. R. (2011). Larger amygdala but no change in hippocampal volume in 10-year-old children exposed to maternal depressive symptomatology since birth. *Proceedings of the National Academy of Sciences*, 108(34), 14324–14329.
- Luppino, G., Matelli, M., Camarda, R., & Rizzolatti, G. (1993). Corticocortical connections of area F3 (SMA-proper) and area F6 (pre-SMA) in the macaque monkey. *Journal of Comparative Neurology*, 338, 114–140.
- Luppino, G., Rozzi, S., Calzavara, R., & Matelli, M. (2003). Prefrontal and agranular cingulate projections to the dorsal premotor areas F2 and F7 in the macaque monkey. *European Journal of Neuroscience*, 17, 559–578.
- Lutz, A., Greischar, L. L., Perlman, D. M., & Davidson, R. J. (2009). BOLD signal in insula is differentially related to cardiac function during compassion meditation in experts vs. novices. *NeuroImage*, 47(3), 1038–1046. doi:10.1016/j.neuroimage.2009.04.081.
- Lutz, A., Slagter, H. A., Dunne, J. D., & Davidson, R. J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences*, 12, 163–169.
- Ly, V., Cools, R., & Roelofs, K. (2014). Aversive disinhibition of behavior and striatal signaling in social avoidance. *Social Cognitive & Affective Neuroscience*, 9(10), 1530–1536.
- Ly, V., Huys, Q. J. M., Stins, J. F., Roelofs, K., & Cools, R. (2014). Individual differences in bodily freezing predict emotional biases in decision making. *Frontiers in Behavioral Neuroscience*, 8, 237. doi:10.3389/fnbeh.2014.00237.
- Ly, V., von Borries, A. K., Brazil, I. A., Bulten, B. H., Cools, R., & Roelofs, K. (2016). Reduced transfer of affective value to instrumental behavior in violent offenders. *Journal of Abnormal Psychology*, 125(5), 657–663.
- Lyons, D. E., Santos, L. R., & Keil, F. C. (2006). Reflections of other minds: How primate social cognition can inform the function of mirror neurons. *Current Opinion in Neurobiology*, 16, 230–234.
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131, 803–855. doi:10.1037/0033-2909.131.6.803.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, 9, 111–131.
- MacDonald, A. W., Cohen, J. D., Stenger, V. A., & Carter, C. S. (2000). Dissociating the role of the dorsolateral prefrontal and anterior cingulate cortex in cognitive control. *Science*, 288(5472), 1835–1838.
- MacDonald, G., & Leary, M. R. (2005). Why does social exclusion hurt? The relationship between

- social and physical pain. *Psychological Bulletin*, 131(2), 202.
- Machado, C. J., & Bachevalier, J. (2007). The effects of selective amygdala, orbital frontal cortex or hippocampal formation lesions on reward assessment in nonhuman primates. *European Journal of Neuroscience*, 25, 2885–2904.
- Mack, A., & Rock, I. (1998). *Inattentive blindness*. Cambridge, MA: MIT Press.
- Mackie, D. M., & Worth, L. T. (1989). Cognitive deficits and the mediation of positive affect in persuasion. *Journal of Personality & Social Psychology*, 57, 27–40.
- Mackintosh, N. J. (1983). *Conditioning and associative learning*. New York: Oxford University Press.
- Macklin, M. L., Metzger, L. J., Litz, B. T., McNally, R. J., Lasko, N. B., Orr, S. P., & Pitman, R. K. (1998). Lower precombat intelligence is a risk factor for posttraumatic stress disorder. *Journal of Consulting & Clinical Psychology*, 66(2), 323.
- Macknik, S. L., & Livingstone, M. S. (1998). Neuronal correlates of visibility and invisibility in the primate visual system. *Nature Neuroscience*, 1, 144–149.
- Maclean, P. (1955). The limbic system (“visceral brain”) and emotional behavior. *Archives of Neurology & Psychiatry*, 73, 120–133.
- MacLean, P. D. (1949). Psychosomatic disease and the “visceral brain”: Recent developments bearing on the Papez theory of emotion. *Psychosomatic Medicine*, 11, 338–353.
- MacLean, P. D. (1952). Some psychiatric implications of physiological studies on frontotemporal portion of limbic system (visceral brain). *Electroencephalography & Clinical Neurophysiology*, 4, 407–418.
- MacLean, P. D. (1985). Evolutionary psychiatry and the triune brain. *Psychological Medicine*, 15(2), 219–221.
- MacLean, P. D. (1990). *The triune brain in evolution: Role in paleocerebral functions* (1990 ed.). New York: Springer.
- MacLeod, C., & Clarke, P. J. F. (2015). The attentional bias modification approach to anxiety intervention. *Clinical Psychological Science*, 3, 58–78.
- MacLeod, C., & Grafton, B. (2016). Anxiety-linked attentional bias and its modification: Illustrating the importance of distinguishing processes and procedures in experimental psychopathology research. *Behaviour Research and Therapy*, 86, 68–86.
- MacLeod, C., & Mathews, A. (1988). Anxiety and the allocation of attention to threat. *Quarterly Journal of Experimental Psychology, A*, 40(4), 653–670.
- MacLeod, C., & Mathews, A. (2012). Cognitive bias modification approaches to anxiety. *Annual Review of Clinical Psychology*, 8, 189–217.
- MacLeod, C., Mathews, A., & Tata, P. (1986). Attentional bias in emotional disorders. *Journal of Abnormal Psychology*, 95, 15–20. doi:10.1037//0021-843x.95.1.15.
- MacLeod, C., Rutherford, E., Campbell, L., Ebsworthy, G., & Holker, L. (2002). Selective attention and emotional vulnerability: Assessing the causal basis of their association through the experimental manipulation of attentional bias. *Journal of Abnormal Psychology*, 111, 107–123. doi:10.1037//0021-843x.111.1.107.
- Macmillan, M. (2000). *An odd kind of fame: Stories of Phineas Gage*. Cambridge, MA: MIT Press.
- Macmillan, M. (2002). *An Odd Kind of Fame: Stories of Phineas Gage* (Reprint edition). Cambridge, MA: A Bradford Book.
- MacNamara, A., Ferri, J., & Hajcak, G. (2011). Working memory load reduces the LPP and this effect is attenuated with anxiety. *Cognitive, Affective, & Behavioral Neuroscience*, 11, 321–331.
- Macpherson, H., Rowsell, R., Cox, K. H. M., Scholey, A., & Pipingas, A. (2015). Acute mood but not cognitive improvements following administration of a single multivitamin and mineral supplement in healthy women aged 50 and above: A randomised controlled trial. *Age*, 37(3), 9782. doi:10.1007/s11357-015-9782-0. Epub 2015 Apr 24. <http://doi.org/10.1007/s11357-015-9782-0>.
- Maeng, L. Y., & Milad, M. R. (2015). Sex differences in anxiety disorders: Interactions between fear, stress, and gonadal hormones. *Hormones & Behavior*, 76, 106–117.
- Magai, C., Consedine, N. S., Krivoshekova, Y. S., Kudadjie-Gyamfi, E., & McPherson, R. (2006). Emotion experience and expression across the adult life span: Insights from a multimodal assessment study. *Psychology & Aging*, 21, 303–317. doi:10.1037/0882-7974.21.2.303.
- Majid, A. (2012). Current emotion research in the language sciences. *Emotion Review*, 4(4), 432–443. doi:10.1177/1754073912445827.
- Majidi-Zolbanin, J., Azarfarin, M., Samadi, H., Enayati, M., & Salari, A.-A. (2013). Adolescent fluoxetine treatment decreases the effects of neonatal immune activation on anxiety-like behavior in mice. *Behavioural Brain Research*, 250, 123–132. <http://doi.org/10.1016/j.bbr.2013.05.003>.
- Malenka, R. C., & Nicoll, R. A. (1999). Long-term potentiation—a decade of progress? *Science*, 285, 1870–1874.
- Malkova, L., Gaffan, D., & Murray, E. A. (1997). Excitotoxic lesions of the amygdala fail to produce impairment in visual learning for auditory secondary reinforcement but interfere with reinforcer devaluation effects in rhesus monkeys. *Journal of Neuroscience*, 17, 6011–6020.



## 512 REFERENCES

- Malouff, J. M., Thorsteinsson, E. B., Schutte, N. S., Bhullar, N., & Rooke, S. E. (2010). The five-factor model of personality and relationship satisfaction of intimate partners: A meta-analysis. *Journal of Research in Personality, 44*, 124–127.
- Mancia, G., Bertinieri, G., Grassi, G., Parati, G., Pomidossi, G., Ferrari, A., . . . Zanchetti, A. (1983). Effects of blood-pressure measurement by the doctor on patient's blood pressure and heart rate. *Lancet, 2*(8352), 695–698.
- Maner, J. K., DeWall, C. N., Baumeister, R. F., & Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the “porcupine problem.” *Journal of Personality & Social Psychology, 92*(1), 42–55. doi:10.1037/0022-3514.92.1.42.
- Mangina, C. A., & Beuzeron-Mangina, J. H. (1996). Direct electrical stimulation of specific human brain structures and bilateral electrodermal activity. *International Journal of Psychophysiology, 22*(1–2), 1–8. doi:10.1016/0167-8760(96)00022-0.
- Manucia, G. K., Baumann, D. J., & Cialdini, R. B. (1984). Mood influences on helping: Direct effects or side effects? *Journal of Personality & Social Psychology, 46*(2), 357.
- Marder, E., & Taylor, A. L. (2011). Multiple models to capture the variability in biological neurons and networks. *Nature Neuroscience, 14*, 133–138.
- Maren, S., & Holmes, A. (2015). Stress and fear extinction. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 41*(1), 1–22. http://doi.org/10.1038/npp.2015.180.
- Maren, S., Phan, K. L., & Liberzon, I. (2013). The contextual brain: Implications for fear conditioning, extinction and psychopathology. *Nature Reviews Neuroscience, 14*(June), 417–428. http://doi.org/10.1038/nrn3492.
- Markou, A., Chiamulera, C., Geyer, M. A., Tricklebank, M., & Steckler, T. (2009). Removing obstacles in neuroscience drug discovery: the future path for animal models. *Neuropsychopharmacology, 34*, 74–89.
- Markov, N. T., Ercsey-Ravasz, M., Van Essen, D. C., Knoblauch, K., Toroczkai, Z., & Kennedy, H. (2013). Cortical high-density counterstream architectures. *Science, 342*(6158), 1238406. doi:10.1126/science.1238406.
- Markov, N. T., Misery, P., Falchier, A., Lamy, C., Vezoli, J., Quilodran, R., . . . Knoblauch, K. (2011). Weight consistency specifies regularities of macaque cortical networks. *Cerebral Cortex, 21*(6), 1254–1272. doi:10.1093/cercor/bhq201.
- Markovic, J., Anderson, A. K., & Todd, R. M. (2014). Tuning to the significant: Neural and genetic processes underlying affective enhancement of visual perception and memory. *Behavioural Brain Research, 259*, 229–241.
- Marks, L. E. (2011). A brief history of sensation and reward. In J. A. Gottfried (Ed.), *Neurobiology of sensation and reward* (pp. 15–43). Boca Raton, FL: CRC Press.
- Marowsky, A., Yanagawa, Y., Obata, K., & Vogt, K. E. (2005). A specialized subclass of interneurons mediates dopaminergic facilitation of amygdala function. *Neuron, 48*, 1025–1037.
- Marr, D. (1982). *Vision: A computational investigation into the human representation and processing of visual information*. San Francisco, CA: W. H. Freeman and Company.
- Marroquin, B. (2011). Interpersonal emotion regulation as a mechanism of social support in depression. *Clinical Psychology Review, 31*, 1276–1290.
- Marryat, L., Thompson, L., Minnis, H., & Wilson, P. (2014). Associations between social isolation, pro-social behaviour and emotional development in preschool aged children: A population based survey of kindergarten staff. *BMC Psychology, 2*, 1–11. doi:10.1186/s40359-014-0044-1.
- Marsella, S., Gratch, J., & Petta, P. (2010). Computational models of emotion. *A Blueprint for Affective Computing—A Sourcebook & Manual, 11*(1), 21–46.
- Marsh, A. A., Adams, R. B., Jr., & Kleck, R. E. (2005). Why do fear and anger look the way they do? Form and social function in facial expressions. *Personality & Social Psychology Bulletin, 31*, 73–86.
- Marsh, A. A., Ambady, N., & Kleck, R. E. (2005). The effects of fear and anger facial expressions on approach- and avoidance- related behaviors. *Emotion, 5*, 119–124.
- Marshall, P. J., Reeb, B. C., & Fox, N. A. (2009). Electrophysiological responses to auditory novelty in temperamentally different 9-month-old infants. *Developmental Science, 12*, 568–582. doi:10.1111/j.1467-7687.2008.00808.x.
- Marshall-Berenz, E. C., Gonzalez, A., Leyro, T. M., & Zvolensky, M. J. (2011). Examination of mask disturbance behavior during a carbon dioxide-enriched air challenge. *Journal of Behavior Therapy & Experimental Psychiatry, 42*(3), 253–257. https://doi.org/10.1016/j.jbtep.2011.01.004.
- Martens, J. P., & Tracy, J. L. (2013). The emotional origins of a social learning bias does the pride expression cue copying? *Social Psychological & Personality Science, 4*(4), 492–499.
- Martin, L. J., Hathaway, G., Isbester, K., Mirali, S., Acland, E. L., Niederstrasser, N., . . . Sternberg, W. F. (2015). Reducing social stress elicits emotional contagion of pain in mouse and human strangers. *Current Biology, 25*(3), 326–332.
- Martin, L. L., Campbell, W. K., & Henry, C. D. (2004). The roar of awakening: Mortality

- acknowledgement as a call to authentic living. In J. Greenberg, T. Pyszczynski, & S. Koole (Eds.), *The handbook of experimental existentialism* (pp. 431–448). New York: Guilford Publishers.
- Martin, M. (1990). On the induction of mood. *Clinical Psychology Review*, 10(6), 669–697. doi:10.1016/0272-7358(90)90075-L.
- Martinez, K. G., Castro-Couch, M., Franco-Chaves, J. A., Ojeda-Arce, B., Segura, G., Milad, M. R., & Quirk, G. J. (2012). Correlations between psychological tests and physiological responses during fear conditioning and renewal. *Biology of Mood & Anxiety Disorders*, 2(1), 16.
- Martinez, K. G., Franco-Chaves, J. A., Milad, M. R., & Quirk, G. J. (2014). Ethnic differences in physiological responses to fear conditioned stimuli. *PLoS One*, 9(12), e114977.
- Maruskin, L. A., Thrash, T. M., & Elliot, A. J. (2012). The chills as a psychological construct: Content universe, factor structure, affective composition, elicitors, trait antecedents, and consequences. *Journal of Personality & Social Psychology*, 103(1), 135.
- Marx, M. H. (1951). Intervening variable or hypothetical construct. *Psychological Review*, 58, 235–247.
- Mascaro, J. S., Rilling, J. K., Negi, L. T., & Raison, C. L. (2013). Compassion meditation enhances empathic accuracy and related neural activity. *Social Cognitive & Affective Neuroscience*, 8(1), 48–55. doi:10.1093/scan/nss095.
- Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). *Microeconomic theory*. New York: Oxford University Press.
- Mascolo, M. F., & Griffin, S. (Eds.) (1998). *What develops in emotional development?* New York: Plenum Press.
- Masten, A., Roisman, G. I., Long, J. D., Burt, K. B., Obradovic, J., Riley, J. R., Boelcke-Stennes, K., & Tellegen, A. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41, 733–746.
- Master, S. L., Eisenberger, N. I., Taylor, S. E., Naliboff, B. D., Shirinyan, D., & Lieberman, M. D. (2009). A picture's worth: Partner photographs reduce experimentally induced pain. *Psychological Science*, 20(11), 1316–1318. doi:10.1111/j.1467-9280.2009.02444.x.
- Maszk, P., Eisenberg, N., & Guthrie, I. K. (1999). Relations of children's social status to their emotionality and regulation: A short-term longitudinal study. *Merrill-Palmer Quarterly*, 45, 468–492.
- Matejka, M., Kazzer, P., Seehausen, M., Bajbouj, M., Klann-Delius, G., Menninghaus, W., . . . Prehn, K. (2013). Talking about emotion: Prosody and skin conductance indicate emotion regulation. *Frontiers in Psychology*, 4, 260. doi:10.3389/fpsyg.2013.00260. eCollection 2013.
- Mather, M., & Carstensen, L. L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Sciences*, 9, 496–502.
- Mather, M., & Knight, M. (2005). Goal-directed memory: The role of cognitive control in older adults' emotional memory. *Psychology & Aging*, 20, 554–570. doi:10.1037/0882-7974.20.4.554.
- Mathews, A., & Mackintosh, B. (1998). A cognitive model of selective processing in anxiety. *Cognitive Therapy & Research*, 22(6), 539–560.
- Mathews, A., Ridgeway, V., Cook, E., & Yiend, J. (2007). Inducing a benign interpretational bias reduces trait anxiety. *Journal of Behavior Therapy & Experimental Psychiatry*, 38(2), 225–236.
- Mathur, V. A., Harada, T., & Chiao, J. Y. (2012). Racial identification modulates default network activity for same and other races. *Human Brain Mapping*, 33(8), 1883–1893.
- Mathur, V. A., Harada, T., Lipke, T., & Chiao, J. Y. (2010). Neural basis of extraordinary empathy and altruistic motivation. *NeuroImage*, 51(4), 1468–1475.
- Matsumoto, D., & Ekman, P. (1988). Japanese and Caucasian facial expressions of emotion (JACFEE) [Slides]. San Francisco: San Francisco State University, Department of Psychology, Intercultural and Emotion Research Laboratory.
- Matsumoto, D., & Hwang, H. S. (2010). Judging faces in context. *Social & Personality Psychology Compass*, 4(6), 393–402.
- Matsumoto, D., & Willingham, B. (2009). Spontaneous facial expressions of emotion of congenitally and noncongenitally blind individuals. *Journal of Personality and Social Psychology*, 96(1), 1–10.
- Matsumoto, D., Keltner, D., Shiota, M. N., O'Sullivan, M., & Frank, M. (2008). Facial expressions of emotion. In Lisa Feldman Barrett, Michael Lewis, and Jeannette M. Haviland-Jones (Eds.), *Handbook of emotions* (3rd ed., pp. 211–234). New York: The Guilford Press.
- Matsumoto, D., Olide, A., Schug, J., Willingham, B., & Callan, M. (2009). Cross-cultural judgments of spontaneous facial expressions of emotion. *Journal of Nonverbal Behavior*, 33(4), 213–238.
- Matsumoto, D., Yoo, S. H., & Fontaine, J. (2008). Mapping expressive differences around the world: The relationship between emotional display rules and individualism versus collectivism. *Journal of Cross-Cultural Psychology*, 39(1), 55–74. <https://doi.org/10.1177/0022022107311854>.
- Matsumoto, D., Willingham, B., & Olide, A. (2009). Sequential dynamics of culturally moderated facial expressions of emotion. *Psychological Science*, 20(10), 1269–1274.

## 514 REFERENCES

- Matthews, G., Deary, I. J., & Whiteman, M. C. (2009). Stable traits and transient states. In G. Matthews, I. J. Deary, & M. C. Whiteman (Eds.), *Personality traits* (3rd ed., pp. 85–120). New York: Cambridge University Press.
- Maurage, P., & Campanella, S. (2013). Experimental and clinical usefulness of crossmodal paradigms in psychiatry: An illustration from emotional processing in alcohol-dependence. *Frontiers in Human Neuroscience*, *7*, 394. doi:10.3389/fnhum.2013.00394.
- Maurer, D., & Young, R. E. (1983). Newborn's following of natural and distorted arrangements of facial features. *Infant Behavior & Development*, *6*(1), 127–131.
- Mauss, I. B., Levenson, R. W., McCarter, L., Wilhelm, F. H., & Gross, J. J. (2005). The tie that binds? Coherence among emotion experience, behavior, and physiology. *Emotion*, *5*(2), 175–190. http://doi.org/10.1037/1528-3542.5.2.175.
- Mauss, I. B., Tamir, M., Anderson, C. L., & Savino, N. S. (2011). Can seeking happiness make people unhappy? Paradoxical effects of valuing happiness. *Emotion*, *11*, 807–815.
- Maxwell, J. S., & Davidson, R. J. (2007). Emotion as motion: Asymmetries in approach and avoidant actions. *Psychological Science*, *18*, 1113–1119.
- Mayberg, H. S., Liotti, M., Brannan, S. K., McGinnis, S., Mahurin, R. K., Jerabek, P. A., . . . Fox, P. T. (1999). Reciprocal limbic-cortical function and negative mood: Converging PET findings in depression and normal sadness. *American Journal of Psychiatry*, *156*(5), 675–682.
- Mayberg, H. S., Lozano, A. M., Voon, V., McNeely, H. E., Seminowicz, D., Hamani, C., . . . Kennedy, S. H. (2005). Deep brain stimulation for treatment-resistant depression. *Neuron*, *45*(5), 651–660.
- Mayer, E. A., Knight, R., Mazmanian, S. K., Cryan, J. F., & Tillisch, K. (2014). Gut microbes and the brain: Paradigm shift in neuroscience. *Journal of Neuroscience*, *34*, 15490–15496.
- Mayr, E. (1974). Behavior programs and evolutionary strategies: Natural selection sometimes favors a genetically “closed” behavior program, sometimes an “open” one. *American Scientist*, *62*(6), 650–659.
- Mayr, E. (1974). Teleological and Teleonomic: A New Analysis. *Boston Studies in the Philosophy of Science*, *XIV*, 91–117. See also https://link.springer.com/chapter/10.1007/978-94-009-5345-1\_10
- Mayr, E. (2004). *What makes biology unique?* New York: Cambridge University Press.
- Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, *91*(11), 1869–1876.
- Mazur, J. E. (1987). An adjusting procedure for studying delayed reinforcement. In M. L. Commons, J. E. Mazur, & J. A. Nevin (Eds.), *Quantitative analysis of behavior: The effect of delay and of intervening events on reinforcement* (pp. 55–57). New York: Psychology Press.
- McAdams, D. P. (2015). *The art and science of personality development*. New York: Guilford Press.
- McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, *61*, 517–542.
- McAdams, D. P., & Pals, J. L. (2006). A new Big Five: Fundamental principles for an integrative science of personality. *American Psychologist*, *61*, 204–217.
- McBride Murry, V., Berkel, C., Brody, G. H., Miller, S. J., & Chen, Y. (2009). Linking parental socialization to interpersonal protective processes, academic self-presentation, and expectations among rural African American youth. *Cultural Diversity & Ethnic Minority Psychology*, *15*, 1–10. doi:10.1037/a0013180.
- McCabe, C., Rolls, E. T., Bilderbeck, A., & McGlone, F. (2008). Cognitive influences on the affective representation of touch and the sight of touch in the human brain. *Social Cognitive & Affective Neuroscience*, *3*(2), 97–108. doi:10.1093/scan/nsn005.
- McClure, S. M., Berns, G. S., & Montague, P. R. (2003). Temporal prediction errors in a passive learning task activate human striatum. *Neuron*, *38*(2), 339–346.
- McCrae, R. R., & Costa, P. T., Jr. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*, 81–90.
- McCrae, R. R., Costa, P. T. Jr., Ostendorf, F., Angleitner, A., Hrebícková, M., Avia, M. D., . . . Smith, P. B. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality & Social Psychology*, *78*, 173–186.
- McDougall, W. (1926). *An introduction to social psychology*. Boston, MA: Luce.
- McEwen, B. S. (1998). Stress, Adaptation, and Disease: Allostasis and Allostatic Load. *Annals of the New York Academy of Sciences*, *840*(1), 33–44. http://doi.org/10.1111/j.1749-6632.1998.tb09546.x
- McEwen, B. S., & Chattarji, S. (2007). Neuroendocrinology of Stress. *Handbook of neurochemistry and molecular neurobiology* (3<sup>rd</sup> ed., pp. 572–593). New York: Springer-Verlag.
- McEwen, B. S., & Gianaros, P. J. (2011). Stress-and allostasis-induced brain plasticity. *Annual Review of Medicine*, *62*, 431–445.
- McEwen, B. S., Weiss, J. M., & Schwartz, L. S. (1968). Selective retention of corticosterone by limbic structures in rat brain. *Nature*, *220*(5170), 911–912.

- McGaugh, J. L. (2002). "Memory consolidation and the amygdala: A systems perspective." *Trends in Neurosciences*, 25, 456–201. doi:10.1016/S0166-2236(02)02211-7. PMID 12183206.
- McIntosh, A. R. (2000). Towards a network theory of cognition. *Neural Networks*, 13(8–9), 861–870.
- McKernan, M. G., & Shinnick-Gallagher, P. (1997). Fear conditioning induces a lasting potentiation of synaptic currents in vitro. *Nature*, 390, 607–611.
- McLaughlin, K. A., & Hatzenbuehler, M. L. (2009). Mechanisms linking stressful life events and mental health problems in a prospective, community-based sample of adolescents. *Journal of Adolescent Health*, 44, 153–160.
- McLaughlin, K. A., & Nolen-Hoeksema, S. (2011). Rumination as a transdiagnostic factor in depression and anxiety. *Behaviour Research & Therapy*, 49, 186–193.
- McLaughlin, K. A., Busso, D. S., Duys, A., Green, J. G., Alves, S., Way, M., & Sheridan, M. A. (2014). Amygdala response to negative stimuli predicts PTSD symptom onset following a terrorist attack. *Depression & Anxiety*, 31, 834–842.
- McLaughlin, K. A., Green, J. G., Gruber, M. J., Sampson, N. A., Zaslavsky, A., & Kessler, R. C. (2012). Childhood adversities and first onset of psychiatric disorders in a national sample of adolescents. *Archives of General Psychiatry*, 69, 1151–1160.
- McLaughlin, K. A., Hatzenbuehler, M. L., & Hilt, L. M. (2009). Emotion dysregulation as a mechanism linking peer victimization to the development of internalizing symptoms among youth. *Journal of Consulting & Clinical Psychology*, 77, 894–904.
- McLaughlin, K. A., Hatzenbuehler, M. L., Mennin, D. S., & Nolen-Hoeksema, S. (2011). Emotion regulation and adolescent psychopathology: A prospective study. *Behaviour Research & Therapy*, 49, 544–554.
- McLaughlin, K. A., Kubzansky, L. D., Dunn, E. C., Waldinger, R. J., Vaillant, G. E., & Koenen, K. C. (2010). Childhood social environment, emotional reactivity to stress, and mood and anxiety disorders across the life course. *Depression & Anxiety*, 27, 1087–1094.
- McLaughlin, K. A., Sheridan, M. A., & Lambert, H. K. (2014). Childhood adversity and neural development: Deprivation and threat as distinct dimensions of early experience. *Neuroscience & Biobehavioral Reviews*, 47, 578–591.
- McLaughlin, K. A., Sheridan, M. A., Tibu, F., Fox, N. A., Zeanah, C. H., & Nelson, C. A., 3rd. (2015). Causal effects of the early caregiving environment on development of stress response systems in children. *Proceedings of the National Academy of Sciences of the United States of America*, 112, 5637–5642.
- McMenamin, B. W., Langeslag, S. J., Sirbu, M., Padmala, S., & Pessoa, L. (2014). Network organization unfolds over time during periods of anxious anticipation. *Journal of Neuroscience*, 34, 11261–11273.
- McPartland, J., Dawson, G., Webb, S. J., Panagiotides, H., & Carver, L. J. (2004). Event-related brain potentials reveal anomalies in temporal processing of faces in autism spectrum disorder. *Journal of Child Psychology & Psychiatry*, 45(7), 1235–1245.
- McRae, K., Ciesielski, B., & Gross, J. J. (2012). Unpacking cognitive reappraisal: Goals, tactics, and outcomes. *Emotion*, 12(2), 250.
- McRae, K., Gross, J. J., Weber, J., Robertson, E. R., Sokol-Hessner, P., Ray, R. D., . . . Ochsner, K. N. (2012). The development of emotion regulation: An fMRI study of cognitive reappraisal in children, adolescents and young adults. *Social, Cognitive, & Affective Neuroscience*, 7(1), 11–22.
- McRae, K., Hughes, B., Chopra, S., Gabrieli, J. D. E., Gross, J. J., & Ochsner, K. N. (2010). The neural bases of distraction and reappraisal. *Journal of Cognitive Neuroscience*, 22(2), 248–262. doi:10.1162/jocn.2009.21243.
- Meaney, M. J., Sapolsky, R. M., & McEwen, B. S. (1985). The development of the glucocorticoid receptor system in the rat limbic brain. II. An autoradiographic study. *Developmental Brain Research*, 18(1), 165–168.
- Medin, D. L., & Ortony, A. (1989). Psychological essentialism. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 179–195). New York: Cambridge University Press.
- Meeren, H. K., van Heijnsbergen, C. C., & de Gelder, B. (2005). Rapid perceptual integration of facial expression and emotional body language. *Proceedings of the National Academy of Sciences of the United States of America*, 102(45), 16518–16523.
- Meissner, K., Bingel, U., Colloca, L., Wager, T. D., Watson, A., & Flaten, M. A. (2011). The placebo effect: Advances from different methodological approaches. *Journal of Neuroscience*, 31(45), 16117–16124. doi:10.1523/JNEUROSCI.4099-11.2011.
- Meister, I. G., Krings, T., Foltys, H., Boroojerdi, B., Muller, M., Topper, R., & Thron, A. (2004). Playing piano in the mind - an fMRI study on music imagery and performance in pianists. *Cognitive Brain Research*, 19, 219–228.
- Meletti, S., Cantalupo, G., Benuzzi, F., Mai, R., Tassi, L., Gasparini, E., . . . Nichelli, P. (2012). Fear and happiness in the eyes: An intra-cerebral event-related potential study from the human amygdala. *Neuropsychologia*, 50(1), 44–54. doi:10.1016/j.neuropsychologia.2011.10.020.

## 516 REFERENCES

- Mellers, B. A., & McGraw, A. P. (2001). Anticipated emotions as guides to choice. *Current Directions in Psychological Science*, 10(6), 210–214.
- Mellers, B., Schwartz, A., & Ritov, I. (1999). Emotion-based choice. *Journal of Experimental Psychology: General*, 128(3), 332.
- Mellers, B., Schwartz, A., Ho, K., & Ritov, I. (1997). Elation and disappointment: Emotional responses to risky options. *Psychological Science*, 8(6), 423–429.
- Mellor, D. H. (ed). (1990). *F. P. Ramsey: Philosophical Papers*. New York: Cambridge University Press.
- Meltzoff, A. N., & Repacholi, B. M. (2014). Infants' emotion attributions—Influences on learning and imitation. Symposium presentation at the annual meeting of the Cognitive Science Society. Quebec City, July.
- Melzack, R., & Wall, P. D. (1965). Pain mechanisms: A new theory. *Science*, 150, 971–979.
- Melzack, R., & Wall, P. D. (2004). *The Challenge of Pain* (Vol. 2nd). London: Penguin Books.
- Mennella, J. A. (2014). Ontogeny of taste preferences: Basic biology and implications for health. *The American Journal of Clinical Nutrition*, 99(3), 704S–711S.
- Menon, V., & Uddin, L. Q. (2010). Saliency, switching, attention and control: A network model of insula function. *Brain Structure & Function*, 214(5–6), 655–667.
- Merckelbach, H., van den Hout, M. A., Jansen, A., van der Molen, G. M. (1998). Many stimuli are frightening, but some are more frightening than others: The contributions of preparedness, dangerousness, and unpredictability to making a stimulus fearful. *Journal of Psychopathology & Behavioral Assessment*, 10, 355–366.
- Merker, B. (2007). Consciousness without a cerebral cortex: A challenge for neuroscience and medicine. *Behavioral & Brain Sciences*, 30, 63–134.
- Merskey, H. (1994). Classification of Chronic Pain: Descriptions of Chronic Pain Syndromes and Definition of Pain Terms. Report by the International Association for the Study of Pain Task Force on Taxonomy. Seattle, WA: IASP Press.
- Merton, R. K. (1942/1973). The normative structure of science. In R. K. Merton (Ed.), *The sociology of science: Theoretical and empirical investigations* (pp. 267–278). Chicago, IL: University of Chicago Press.
- Mervielde, I., & De Fruyt, F. (1999). Construction of the Hierarchical Personality Inventory for Children (HiPIC). In I. Mervielde, I. L. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality psychology in Europe: Proceedings of the eighth European conference on personality psychology* (pp. 107–127). Tilburg, the Netherlands: Tilburg University Press.
- Merz, C. J., Tabbert, K., Schweckendiek, J., Klucken, T., Vaitl, D., Stark, R., & Wolf, O. T. (2012). Oral contraceptive usage alters the effects of cortisol on implicit fear learning. *Hormones & Behavior*, 62(4), 531–538.
- Merz, C. J., Wolf, O. T., Schweckendiek, J., Klucken, T., Vaitl, D., & Stark, R. (2013). Stress differentially affects fear conditioning in men and women. *Psychoneuroendocrinology*, 38(11), 2529–2541.
- Mesquita, B., & Frijda, N. H. (2011). An emotion perspective on emotion regulation. *Cognition & Emotion*, 25(5), 782–784. <http://doi.org/10.1080/02699931.2011.586824>.
- Messaoudi, M., Lalonde, R., Violle, N., Javelot, H., Desor, D., Nejdi, A., . . . Cazaubiel, J. M. (2011). Assessment of psychotropic-like properties of a probiotic formulation (*Lactobacillus helveticus* R0052 and *Bifidobacterium longum* R0175) in rats and human subjects. *British Journal of Nutrition*, 105(5), 755–764.
- Messaoudi, M., Violle, N., Bisson, J.-F., Desor, D., Javelot, H., & Rougeot, C. (2011). Beneficial psychological effects of a probiotic formulation (*Lactobacillus helveticus* R0052 and *Bifidobacterium longum* R0175) in healthy human volunteers. *Gut Microbes*, 2(4), 256–261.
- Mesulam, M. (2009). Defining neurocognitive networks in the BOLD new world of computed connectivity. *Neuron*, 62(1), 1–3. doi:10.1016/j.neuron.2009.04.001.
- Mesulam, M. M. (1990). Large-scale neurocognitive networks and distributed processing for attention, language, and memory. *Annals of Neurology*, 28(5), 597–613.
- Mesulam, M. M. (1998). From sensation to cognition. *Brain*, 121(6), 1013–1052.
- Meyer, A. (2017). A biomarker of anxiety in children and adolescents: A review focusing on the error-related negativity (ERN) and anxiety across development. *Dev Cogn Neurosci*, 27, 58–68.
- Meyer, M. L., Masten, C. L., Ma, Y., Wang, C., Shi, Z., Eisenberger, N. I., & Han, S. (2013). Empathy for the social suffering of friends and strangers recruits distinct patterns of brain activation. *Social Cognitive & Affective Neuroscience*, 8(4), 446–454. doi:10.1093/scan/nss019.
- Meyer, M. L., Williams, K. D., & Eisenberger, N. I. (2015). Why social pain can live on: Different neural mechanisms are associated with reliving social and physical pain. *PLoS One*, 10(6), e0128294.
- Meyer, U., & Feldon, J. (2009). Neural basis of psychosis-related behaviour in the infection model of schizophrenia. *Behavioural Brain Research*, 204(2), 322–334.
- Meyer-Lindenberg, A., Domes, G., Kirsch, P., & Heinrichs, M. (2011). Oxytocin and vasopressin in

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date (day).

- the human brain: Social neuropeptides for translational medicine. *Nature Reviews Neuroscience*, *12*, 524–538.
- Michalowski, J. M., Melzig, C. A., Weike, A. I., Stockburger, J., Schupp, H. T., & Hamm, A. O. (2009). Brain dynamics in spider-phobic individuals exposed to phobia-relevant and other emotional stimuli. *Emotion*, *9*, 306–315.
- Michl, L. C., McLaughlin, K. A., Shepherd, K., & Nolen-Hoeksema, S. (2013). Rumination as a mechanism linking stressful life events to symptoms of depression and anxiety: Longitudinal evidence in early adolescents and adults. *Journal of Abnormal Psychology*, *122*, 339–352.
- Middleton, F. A., & Strick, P. L. (2002). Basal-ganglia “projections” to the prefrontal cortex of the primate. *Cerebral Cortex*, *12*, 9–26–935.
- Mifsud, K. R., Gutiérrez-Mecinas, M., Trollope, A. F., Collins, A., Saunderson, E. A., & Reul, J. M. (2011). Epigenetic mechanisms in stress and adaptation. *Brain, Behavior, & Immunity*, *25*(7), 1305–1315.
- Mikocka-Walus, A., Knowles, S. R., Keefer, L., & Graff, L. (2016). Controversies revisited: A systematic review of the comorbidity of depression and anxiety with inflammatory bowel diseases. *Inflammatory Bowel Diseases*, *22*(3), 752–762.
- Mikulincer, M., & Shaver, P. R. (2005). Attachment security, compassion, and altruism. *Current Directions in Psychological Science*, *14*(1), 34–38. doi:10.1111/j.0963-7214.2005.00330.x.
- Milad, M. R., & Quirk, G. J. (2002). Neurons in medial prefrontal cortex signal memory for fear extinction. *Nature*, *420*(6911), 70–74.
- Milad, M. R., & Quirk, G. J. (2012). Fear extinction as a model for translational neuroscience: Ten years of progress. *Annual Review of Psychology*, *63*, 129–151.
- Milad, M. R., Goldstein, J. M., Orr, S. P., Wedig, M. M., Klibanski, A., Pitman, R. K., & Rauch, S. L. (2006). Fear conditioning and extinction: Influence of sex and menstrual cycle in healthy humans. *Behavioral Neuroscience*, *120*(6), 1196.
- Milad, M. R., Orr, S. P., Pitman, R. K., & Rauch, S. L. (2005). Context modulation of memory for fear extinction in humans. *Psychophysiology*, *42*(4), 456–464.
- Milad, M. R., Wright, C. I., Orr, S. P., Pitman, R. K., Quirk, G. J., & Rauch, S. L. (2007). Recall of fear extinction in humans activates the ventromedial prefrontal cortex and hippocampus in concert. *Biological Psychiatry*, *62*(5), 446–454. <http://doi.org/10.1016/j.biopsych.2006.10.011>.
- Milad, M. R., Zeidan, M. A., Contero, A., Pitman, R. K., Klibanski, A., Rauch, S. L., & Goldstein, J. M. (2010). The influence of gonadal hormones on conditioned fear extinction in healthy humans. *Neuroscience*, *168*(3), 652–658.
- Miller, A. L., Kiely Gouley, K., Seifer, R., Dickstein, S., & Shields, A. (2004). Emotions and behaviors in the head start classroom: Associations among observed dysregulation, social competence, and preschool adjustment. *Early Education & Development*, *15*, 147–166. doi:10.1207/s15566935eed1502\_2.
- Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience*, *24*, 167–202.
- Miller, G. E., Lachman, M. E., Chen, E., Gruenewald, T. L., Karlamangla, A. S., & Seeman, T. E. (2011). Pathways to resilience: Maternal nurturance as a buffer against the effects of childhood poverty on metabolic syndrome at midlife. *Psychological Science*, *22*(12), 1591–1599.
- Miller, M. W., Patrick, C. J., & Levenston, G. K. (2002). Affective imagery and the startle response: Probing mechanisms of modulation during pleasant scenes, personal experiences, and discrete negative emotions. *Psychophysiology*, *39*, 519–529.
- Miller, R. S. (1995). On the nature of embarrassment: Shyness, social evaluation, and social skill. *Journal of Personality*, *63*(2), 315–339.
- Miller, S., & Konorski, J. (1928). Sur une forme particuliere des reflexes conditionnels. *Comptes Rendus des Seances de La Societe Polonaise de Biologie*, *49*, 1155–1157.
- Millikan, R. G. (1984). *Language, thought, and other biological categories*. Cambridge, MA: MIT Press.
- Milne, E., & Grafman, J. (2001). Ventromedial prefrontal cortex lesions in humans eliminate implicit gender stereotyping. *Journal of Neuroscience*, *21*(12), RC150.
- Milojev, P., & Sibley, C. G. (2017). Normative personality trait development in adulthood: A 6-year cohort-sequential growth model. *Journal of Personality & Social Psychology*, *112*, 510–526.
- Minett, M. S., Nassar, M. A., Clark, A. K., Passmore, G., Dickenson, A. H., Wang, F., . . . Wood, J. N. (2012). Distinct Nav1. 7-dependent pain sensations require different sets of sensory and sympathetic neurons. *Nature Communications*, *3*, 791.
- Miserendino, M. J. D., Sananes, C. B., Melia, K. R., and Davis, M. (1990). Blocking of acquisition but not expression of conditioned fear-potentiated startle by NMDA antagonists in the amygdala. *Nature*, *345*, 716–718.
- Miskovic, V., & Keil, A. (2012). Acquired fears reflected in cortical sensory processing: A review of electrophysiological studies of human classical conditioning. *Psychophysiology*, *49*(9), 1230–1241. doi:10.1111/j.1469-8986.2012.01398.x.
- Mitchell, D. G., & Greening, S. G. (2012). Conscious perception of emotional stimuli: Brain mechanisms. *The Neuroscientist*, *18*, 386–398.

## 518 REFERENCES

- Mitchell, J. P. (2008). Contributions of functional neuroimaging to the study of social cognition. *Current Directions in Psychological Science*, 17(2), 142–146.
- Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., Howerter, A., & Wager, T. D. (2000). The unity and diversity of executive functions and their contributions to complex “Frontal Lobe” tasks: A latent variable analysis. *Cognitive Psychology*, 41(1), 49–100.
- Miyamoto, Y., & Ryff, C. D. (2011). Cultural differences in the experiences of dialectical and non-dialectical emotions and their implications for health. *Culture & Emotion*, 25, 22–30.
- Mizutani, N., Okamoto, M., Yamaguchi, Y., Kusakabe, Y., Dan, I., & Yamanaka, T. (2010). Package images modulate flavor perception for orange juice. *Food Quality & Preference*, 21(7), 867–872. doi:10.1016/j.foodqual.2010.05.010.
- Mobbs, D., Hagan, C. C., Dalgleish, T., Silston, B., & Prevost, C. (2015). The ecology of human fear: Survival and the nervous system. *Frontiers in Neuroscience*, 9, 55. doi:10.3389/fnins.2015.00055. eCollection 2015. doi:10.3389/fnins.2015.00055.
- Mobbs, D., Petrovic, P., Marchant, J. L., Hassabis, D., Weiskopf, N., Seymour, B., . . . Frith, C. D. (2007). When fear is near: Threat imminence elicits prefrontal-periaqueductal gray shifts in humans. *Science*, 317, 1079–1083.
- Mobbs, D., Yu, R., Meyer, M., Passamonti, L., Seymour, B., Calder, A. J., . . . Dalgleish, T. (2009). A key role for similarity in vicarious reward. *Science*, 324(5929), 900–900.
- Mobbs, D., Yu, R., Rowe, J. B., Eich, H., FeldmanHall, O., & Dalgleish, T. (2010). Neural activity associated with monitoring the oscillating threat value of a tarantula. *Proceedings of the National Academy of Sciences of the United States of America*, 107, 20582–20586.
- Modha, D. S., & Singh, R. (2010). Network architecture of the long-distance pathways in the macaque brain. *Proceedings of the National Academy of Sciences of the United States of America*, 107(30), 13485–13490.
- Modinos, G., Pettersson-Yeo, W., Allen, P., McGuire, P. K., Aleman, A., & Mechelli, A. (2012). Multivariate pattern classification reveals differential brain activation during emotional processing in individuals with psychosis proneness. *NeuroImage*, 59, 3033–3041. doi:10.106/j.neuroimage.2011.10.048.
- Moffitt, T. E., Poulton, R., & Caspi, A. (2013). Lifelong impact of early self-control. *American Scientist*, 101, 352–359.
- Mogg, K., & Bradley, B. P. (1999). Orienting of attention to threatening facial expressions under presented under conditions of restricted awareness. *Cognition & Emotion*, 13, 713–740.
- Mogg, K., & Bradley, B. P. (1999). Some methodological issues in assessing attentional biases for threatening faces in anxiety: A replication study using a modified version of the probe detection task. *Behaviour Research & Therapy*, 37(6), 595–604.
- Mogg, K., & Bradley, B. P. (2002). Selective orienting of attention to masked threat faces in social anxiety. *Behaviour Research & Therapy*, 40(12), 1403–1414.
- Mogg, K., & Bradley, B. P. (2016). Anxiety and attention to threat: Cognitive mechanisms and treatment with attention bias modification. *Behaviour Research & Therapy*, 87, 76–108.
- Mogg, K., & Bradley, B. P. (2018). Anxiety and threat-related attention: Cognitive-motivational framework and treatment. *Trends Cogn Sci*, 22, 225–240.
- Mogg, K., Waters, A. M., & Bradley, B. P. (2017). Attention bias modification (ABM): Review of effects of multisession ABM training on anxiety and threat-related attention in high-anxious individuals. *Clin Psychol Sci*, 5, 698–717.
- Möhler, H. (1999). Benzodiazepine actions mediated by specific gamma-aminobutyric acid(A) receptor subtypes. *Nature*, 401(6755), 796–800. https://doi.org/10.1038/44579.
- Mondloch, M. V., Cole, D. C., & Frank, J. W. (2001). Does how you do depend on how you think you’ll do? A systematic review of the evidence for a relation between patients’ recovery expectations and health outcomes. *CMAJ: Canadian Medical Association Journal/Journal de l’Association medicale Canadienne*, 165(2), 174–179.
- Monk, C. S., Nelson, E. E., McClure, E. B., Mogg, K., Bradley, B. P., Leibenluft, E., . . . Ernst, M. (2006). Ventrolateral prefrontal cortex activation and attentional bias in response to angry faces in adolescents with generalized anxiety disorder. *American Journal of Psychiatry*, 163(6), 1091–1097.
- Monk, C. S., Telzer, E. H., Mogg, K., Bradley, B. P., Mai, X., Louro, H. M., . . . Pine, D. S. (2008). Amygdala and ventrolateral prefrontal cortex activation to masked angry faces in children and adolescents with generalized anxiety disorder. *Archives of General Psychiatry*, 65(5), 568–576. doi:10.1001/archpsyc.65.5.568 [pii]10.1001/archpsyc.65.5.568.
- Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting & Clinical Psychology*, 74(5), 898.
- Montague, P. R., & Berns, G. S. (2002). Neural economics and the biological substrates of valuation. *Neuron*, 36(2), 265–284.

- Montague, P. R., Dayan, P., & Sejnowski, T. J. (1996). A framework for mesencephalic dopamine systems based on predictive Hebbian learning. *Journal of Neuroscience*, *16*(5), 1936–1947.
- Montgomery, G. H., & Kirsch, I. (1997). Classical conditioning and the placebo effect. *Pain*, *72*(1–2), 107–113.
- Montgomery, G., & Kirsch, I. (1996). Mechanisms of Placebo Pain Reduction: An Empirical Investigation. *Psychological Science*, *7*(3), 174–176. doi:10.1111/j.1467-9280.1996.tb00352.x.
- Moore, G. J., Bebchuk, J. M., Wilds, I. B., Chen, G., & Menji, H. K. (2000). Lithium-induced increase in human brain grey matter. *The Lancet*, *356*(9237), 1241–1242.
- Moore, S. A., Zoellner, L. A., & Mollenholt, N. (2008). Are expressive suppression and cognitive reappraisal associated with stress-related symptoms? *Behaviour Research & Therapy*, *46*, 993–1000.
- Moore, W. E., 3rd, Pfeifer, J. H., Masten, C. L., Mazziotta, J. C., Iacoboni, M., & Dapretto, M. (2012). Facing puberty: Associations between pubertal development and neural responses to affective facial displays. *Social Cognitive & Affective Neuroscience*, *7*(1), 35–43. doi:10.1093/scan/nsr066.
- Moors, A., Ellsworth, P. C., Scherer, K. R., & Frijda, N. H. (2013). Appraisal theories of emotion: State of the art and future development. *Emotion Review*, *5*(2), 119–124.
- Moran, T. P. (2016). Anxiety and working memory capacity: A meta-analysis and narrative review. *Psychological Bulletin*, *142*, 831–864.
- Morecraft, R. J., & Tanji, J. (2009). Cingulofrontal interactions and the cingulate motor areas. In B. A. Vogt (Ed.), *Cingulate neurobiology and disease* (pp. 113–144). Oxford University Press.
- Morelli, S. A., Ong, D. C., Makati, R., Jackson, M. O., & Zaki, J. (2017). Empathy and well-being correlate with centrality in different social networks. *Proceedings of the National Academy of Sciences*, *114*(37), 9843–9847.
- Moretti, L., & di Pellegrino, G. (2010). Disgust selectively modulates reciprocal fairness in economic interactions. *Emotion*, *10*(2), 169–180.
- Morgan, M. A., Romanski, L. M., & LeDoux, J. E. (1993). Extinction of emotional learning: Contribution of medial prefrontal cortex. *Neuroscience Letters*, *163*(1), 109–113.
- Morgane, P. J., & Mokler, D. J. (2006). The limbic brain: Continuing resolution. *Neuroscience & Biobehavioral Reviews*, *30*(2), 119–125.
- Morimoto, Y., & Fujita, K. (2011). Capuchin monkeys (*Cebus apella*) modify their own behaviors according to a conspecific's emotional expressions. *Primates*, *52*(3), 279–286.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development*, *16*, 361–388. doi:10.1111/j.1467-9507.2007.00389.x.
- Morris, J. S., DeGelder, B., Weiskrantz, L., & Dolan, R. J. (2001). Differential extrageniculostriate and amygdala responses to presentation of emotional faces in a cortically blind field. *Brain: A Journal of Neurology*, *124*(Pt 6), 1241–1252.
- Morris, J. S., Friston, K. J., Buchel, C., Frith, C. D., Young, A. W., Calder, A. J., & Dolan, R. J. (1998). A neuromodulatory role for the human amygdala in processing emotional facial expressions. *Brain*, *121*(Pt 1), 47–57.
- Morris, J. S., Frith, C. D., Perrett, D. I., Rowland, D., Young, A. W., Calder, A. J., & Dolan, R. J. (1996). A differential neural response in the human amygdala to fearful and happy facial expressions. *Nature*, *383*(6603), 812–815.
- Morris, J. S., Öhman, A., & Dolan, R. J. (1998). Conscious and unconscious emotional learning in the human amygdala. *Nature*, *393*(6684), 467–470.
- Morris, J. S., Öhman, A., & Dolan, R. J. (1999). A subcortical pathway to the right amygdala mediating “unseen” fear. *Proceedings of the National Academy of Sciences of the United States of America*, *96*(4), 1680–1685.
- Morris, W. N. (1992). A functional analysis of the role of mood in affective systems. *Review of Personality & Social Psychology*, *13*, 256–293.
- Morrison, F. J., & Grammer, J. K. (2016). Conceptual clutter and measurement mayhem: Proposals for cross-disciplinary integration in conceptualizing and measuring executive function. In J. A. Griffin, P. McCardle, & L. S. Freund (Eds.), *Executive function in preschool-age children: Integrating measurement, neurodevelopment, and translational research* (pp. 327–348). Washington, DC: American Psychological Association.
- Morrison, S. E., & Salzman, C. D. (2009). The convergence of information about rewarding and aversive stimuli in single neurons. *Journal of Neuroscience*, *29*(37), 11471–11483.
- Morrison, S. E., & Salzman, C. D. (2011). Representations of appetitive and aversive information in the primate orbitofrontal cortex. *Annals of the New York Academy of Sciences*, *1239*, 59–70. <http://doi.org/10.1111/j.1749-6632.2011.06255.x>
- Morriss, J., Christakou, A., & van Reekum, C. M. (2015). Intolerance of uncertainty predicts fear extinction in amygdala-ventromedial prefrontal cortical circuitry. *Biology of Mood & Anxiety Disorders*, *5*(1), 4. doi:10.1186/s13587-015-0019-8. eCollection 2015.

AQ: please complete the reference.



## 520 REFERENCES

- Morriss, J., Taylor, A. N. W., Roesch, E. B., & van Reekum, C. M. (2013). Still feeling it: The time course of emotional recovery from an attentional perspective. *Frontiers in Human Neuroscience*, 7, 201. doi:10.3389/fnhum.2013.00201. eCollection 2013.
- Mortillaro, M., Mehu, M., & Scherer, K. R. (2011). Subtly different positive emotions can be distinguished by their facial expressions. *Social Psychological & Personality Science*, 2(3), 262–271.
- Morton, D. L., Watson, A., El-Deredy, W., & Jones, A. K. (2009). Reproducibility of placebo analgesia: Effect of dispositional optimism. *Pain*, 146(1–2), 194–198. doi:10.1016/j.pain.2009.07.026.
- Mota, S., & Picard, R. (2003). Automated Posture Analysis for detecting Learner's Interest Level. In *Workshop on computer vision and pattern recognition for human-computer interaction* (pp. 49–54). Madison, WI: IEEE. doi:10.1109/CVPRW.2003.10047.
- Möttus, R., McCrae, R. R., Allik, J., & Realo, A. (2014). Cross-rater agreement on common and specific variance of personality scales and items. *Journal of Research in Personality*, 52, 47–54.
- Motyl, M., Demos, A. P., Carsel, T. S., Hanson, B. E., Melton, Z. J., Mueller, A. B., . . . Skitka, L. J. (2017). The state of social and personality science: Rotten to the core, not so bad, getting better, or getting worse? *Journal of Personality & Social Psychology*, 113, 34–58.
- Motzkin, J. C., Philippi, C. L., Oler, J. A., Kalin, N. H., Baskaya, M. K., & Koenigs, M. (2015). Ventromedial prefrontal cortex damage alters resting blood flow to the bed nucleus of stria terminalis. *Cortex*, 64, 281–288.
- Motzkin, J. C., Philippi, C. L., Wolf, R. C., Baskaya, M. K., & Koenigs, M. (2014). Ventromedial prefrontal cortex lesions alter neural and physiological correlates of anticipation. *Journal of Neuroscience*, 34(31), 10430–10437.
- Motzkin, J. C., Philippi, C. L., Wolf, R. C., Baskaya, M. K., & Koenigs, M. (2015). Ventromedial prefrontal cortex is critical for the regulation of amygdala activity in humans. *Biological Psychiatry*, 77(3), 276–284. http://doi.org/10.1016/j.biopsych.2014.02.014.
- Moulson, M. C., Fox, N. A., Zeanah, C. H., & Nelson, C. A. (2009). Early adverse experiences and the neurobiology of facial emotion processing. *Developmental Psychology*, 45(1), 17–30.
- Mouraux, A., & Iannetti, G. D. (2009). Nociceptive laser-evoked brain potentials do not reflect nociceptive-specific neural activity. *Journal of Neurophysiology*, 101, 3258–3269.
- Mouraux, A., Diukova, A., Lee, M. C., Wise, R. G., & Iannetti, G. D. (2011). A multisensory investigation of the functional significance of the “pain matrix.” *NeuroImage*, 54, 2237–2249.
- Moussa, M. N., Vechlekar, C. D., Burdette, J. H., Steen, M. R., Hugenschmidt, C. E., & Laurienti, P. J. (2011). Changes in cognitive state alter human functional brain networks. *Frontiers in Human Neuroscience*, 5, 83.
- Mowrer, O. H. (1951). Two-factor learning theory: Summary and comment. *Psychological Review*, 58(5), 350.
- Mrazek, A. J., Chiao, J. Y., Blizinsky, K. D., Lun, J., & Gelfand, M. J. (2013). The role of culture-gene coevolution in morality judgment: Examining the interplay between tightness-looseness and allelic variation of the serotonin transporter gene. *Culture & Brain*, 1, 100–117.
- Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality & Social Psychology*, 75, 1333–1349.
- Mujica-Parodi, L. R., Strey, H. H., Frederick, B., Savoy, R., Cox, D., Botanov, Y., . . . Weber, J. (2009). Chemosensory cues to conspecific emotional stress activate amygdala in humans. *PLoS One*, 4(7), e6415.
- Müller, J. (1840). *Handbuch der Physiologie des Menschen*. Koblenz, Germany: J. Holscher.
- Müller, V. I., Cieslik, E. C., Turetsky, B. I., & Eickhoff, S. B. (2012). Crossmodal interactions in audiovisual emotion processing. *NeuroImage*, 60(1), 553–561. doi:10.1016/j.neuroimage.2011.12.007.
- Mumford, D. (1992). On the computational architecture of the neocortex. II. *Biological Cybernetics*, 66, 241–251.
- Mumme, D., Fernald, A., & Herrera, A., & Fernald, A. (1996). Infants' responses to facial and vocal emotional signals in a social referencing paradigm. *Child Development*, 67, 3219–3237.
- Munafò, M. R., Nosek, B. A., Bishop, D. V. M., Button, K. S., Chambers, C. D., du Sert, N. P., . . . Ioannidis, J. P. A. (2017). A manifesto for reproducible science. *Nature Human Behaviour*, 1, 21.
- Müri, R. M. (2016). Cortical control of facial expression. *Journal of Comparative Neurology*, 524(8), 1578–1585.
- Muris, P., Huidjing, J., Mayer, B., & Hameetman, M. (2008). A space odyssey: Experimental manipulation of threat perception and anxiety-related interpretation bias in children. *Child Psychiatry & Human Development*, 39, 469–480.
- Muris, P., Luermans, J., Merckelbach, H., & Mayer, B. (2000a). “Danger is lurking everywhere.” The relation between anxiety and threat perception abnormalities in normal children. *Journal of Behavior Therapy & Experimental Psychiatry*, 31(2), 123–136.

- Muris, P., Merckelbach, H., & Damsma, E. (2000b). Threat perception bias in nonreferred socially anxious children. *Journal of Clinical Child Psychology*, 29, 348–359.
- Murphy, K. R., & Aguinis, H. (*in press*). HARKing: How badly can cherry picking and question trolling produce bias in published results? *Journal of Business and Psychology*.
- Murphy, B. C., Shepard, S. A., Eisenberg, N., & Fabes, R. A. (2004). Concurrent and across time prediction of young adolescents' social functioning: The role of emotionality and regulation. *Social Development*, 13, 56–86. doi:10.1111/j.1467-9507.2004.00257.x.
- Murphy, F. C., Ewbank, M. P., Calder, A. J. (2012). Emotion and personality factors influence the neural response to emotional stimuli. *Behavioral & Brain Sciences*, 2012, 35, 156–157.
- Murphy, F. C., Nimmo-Smith, I., & Lawrence, A. D. (2003). Functional neuroanatomy of emotions: a meta-analysis. *Cognitive Affective Behavioral Neuroscience*, 3, 207–233.
- Murphy, S. E., Yiend, J., Lester, K. J., Cowen, P. J., & Harmer, C. J. (2009). Short-term serotonergic but not noradrenergic antidepressant administration reduces attentional vigilance to threat in healthy volunteers. *International Journal of Neuropsychopharmacology*, 12, 169–179.
- Murray, E. A., & Coulter, J. D. (1981). Organization of corticospinal neurons in the monkey. *Journal of Comparative Neurology*, 195, 339–365.
- Murray, E. A., & Izquierdo, A. (2007). Orbitofrontal cortex and amygdala contributions to affect and action in primates. *Annals of the New York Academy of Sciences*, 1121, 273–296. <https://doi.org/10.1196/annals.1401.021>.
- Murray, E. A., Gaffan, E. A., & Flint, R. W. (1996). Anterior rhinal cortex and amygdala: Dissociation of their contributions to memory and food preference in rhesus monkeys. *Behavioral Neuroscience*, 110, 30–42.
- Murray, E. A., Wise, S. P., & Drevets, W. C. (2011). Localization of dysfunction in major depressive disorder: Prefrontal cortex and amygdala. *Biological Psychiatry*, 69, e43–e54.
- AQ: Please update reference. Muscatell, K. A., Moieni, M., Inagaki, T. K., Dutcher, J. M., Jevtic, I., Breen, E. C., . . . Eisenberger, N. I. (2016). Exposure to an inflammatory challenge enhances neural sensitivity to negative and positive social feedback. *Brain, Behavior, & Immunity*, 57, 21–29.
- Myers, D. G. (1999). Close relationships and quality of life. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-being* (pp. 374–391). New York: Sage.
- Myin-Germeys, I., Peeters, F., Havermans, R., Nicolson, N. A., DeVries, M. W., Delespaul, P., & van Os, J. (2003). Emotional reactivity to daily life stress in psychosis and affective disorder: An experience sampling study. *Acta Psychiatrica Scandinavica*, 107, 124–131.
- Nafe, J. P. (1929). A quantitative theory of feeling. *Journal of General Psychology*, 2, 199–211.
- Nagel, M., Jansen, P. R., Stringer, S., Watanabe, K., de Leeuw, C. A., Bryois, J., . . . Posthuma, D. (2017). GWAS meta-analysis of neuroticism (N=449,484) identifies novel genetic loci and pathways. *bioRxiv*.
- Nakamura, M., Buck, R., & Kenny, D. (1990). Relative contributions of expressive behavior and contextual information to the judgment of the emotional state of another. *Journal of Personality & Social Psychology*, 59, 1032–1039.
- Namburi, P., Al-Hasani, R., Calhoun, G. G., Bruchas, M. R., & Tye, K. M. (2016). Architectural representation of valence in the limbic system. *Neuropsychopharmacology*, 41, 1697–1715.
- Namburi, P., Beyeler, A., Yoroza, S., Calhoun, G. G., Halbert, S. A., Wichmann, R., . . . Gray, J. M. (2015). A circuit mechanism for differentiating positive and negative associations. *Nature*, 520(7549), 675–678.
- Nanni, V., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: A meta-analysis. *American Journal of Psychiatry*, 169, 141–151. doi:10.1176/appi.ajp.2011.11020335.
- Naqvi, N. H., Rudrauf, D., Damasio, H., & Bechara, A. (2007). Damage to the insula disrupts addiction to cigarette smoking. *Science*, 315(5811), 531–534.
- Naragon-Gainey, K. (2010). Meta-analysis of the relations of anxiety sensitivity to the depressive and anxiety disorders. *Psychological Bulletin*, 136, 128–150.
- Naragon-Gainey, K. E. (2011). A lower order structural examination of the neuroticism/negative emotionality domain: Relations with internalizing symptoms and selected clinical traits (Doctoral dissertation). Iowa City, IA: University of Iowa. <https://ir.uiowa.edu/cgi/viewcontent.cgi?article=2784&context=etd>
- Naragon-Gainey, K., & DeMarree, K. G. (2015). Assessment and construct validity of decentering/defusion. Manuscript in preparation.
- Naragon-Gainey, K., & DeMarree, K. G. (2017). Decentering attenuates the associations of negative affect and positive affect with psychopathology. *Clinical Psychological Science*, 5, 1027–1047.
- Naragon-Gainey, K., McMahon, T. P., & Chacko, T. P. (2017). The structure of common emotion regulation strategies: A meta-analytic examination. *Psychological Bulletin*, 143, 384–427.
- Naragon-Gainey, K., & Watson, D. (2014). Consensually-defined facets of personality as

## 522 REFERENCES

- prospective predictors of change in depression symptoms. *Assessment*, 21, 387–403.
- Naragon-Gainey, K., & Watson, D. (in press). What lies beyond neuroticism? An examination of the unique contributions of social-cognitive vulnerabilities to internalizing disorders. *Assessment*.
- Naragon-Gainey, K., Gallagher, M. W., & Brown, T. A. (2013). Stable “trait” variance of temperament as a predictor of the temporal course of depression and social phobia. *Journal of Abnormal Psychology*, 122, 611–623.
- Naragon-Gainey, K., Watson, D., & Markon, K. E. (2009). Differential relations of depression and social anxiety symptoms to the facets of extraversion/positive emotionality. *Journal of Abnormal Psychology*, 118, 299–310.
- Nasca, C., Bigio, B., Zelli, D., Nicoletti, F., & McEwen, B. S. (2014). Mind the gap: Glucocorticoids modulate hippocampal glutamate tone underlying individual differences in stress susceptibility. *Molecular Psychiatry*, 20(6), 755–763. doi:10.1038/mp.2014.96. Epub 2014 Sep 2.
- Nasca, C., Xenos, D., Barone, Y., Caruso, A., Scaccianoce, S., Matrisciano, F., . . . Simmaco, M. (2013). L-acetylcarnitine causes rapid antidepressant effects through the epigenetic induction of mGlu2 receptors. *Proceedings of the National Academy of Sciences*, 110(12), 4804–4809.
- Nashold, B. S., Jr, Wilson, W. P., & Slaughter, D. G. (1969). Sensations evoked by stimulation in the midbrain of man. *Journal of Neurosurgery*, 30(1), 14–24. https://doi.org/10.3171/jns.1969.30.1.0014.
- Neal, D. T., & Chartrand, T. L. (2011). Embodied emotion perception amplifying and dampening facial feedback modulates emotion perception accuracy. *Social Psychological & Personality Science*, 2(6), 673–678.
- Nelson, C. A., & De Haan, M. (1996). Neural correlates of infants’ visual responsiveness to facial expressions of emotion. *Developmental Psychobiology*, 29(7), 577–595.
- Nelson, C. A., & Dolgin, K. G. (1985). The generalized discrimination of facial expressions by seven-month-old infants. *Child Development*, 56(1), 58–61.
- Nelson, C. A., Morse, P. A., & Leavitt, L. A. (1979). Recognition of facial expressions by seven-month-old infants. *Child Development*, 50(4), 1239–1242. http://dx.doi.org/10.2307/1129358
- Nelson, C. A., Westerlund, A., McDermott, J., Zeanah, C. H., & Fox, N. A. (2013). Emotion recognition following early psychosocial deprivation. *Development & Psychopathology*, 25(2), 517–525.
- Nelson, E. E., Lau, J. Y., & Jarcho, J. M. (2014). Growing pains and pleasures: How emotional learning guides development. *Trends in Cognitive Sciences*, 18(2), 99–108.
- Nelson, L. D., Simmons, J., & Simonsohn, U. (2018). Psychology’s renaissance. *Annual Review of Psychology*, 69, 511–534.
- Nesse, R. (2000). Is depression an adaptation? *Archives of General Psychiatry*, 57, 14–20.
- Nesse, R. (2005). Natural selection and the regulation of defenses: A signal detection analysis of the smoke detector principle. *Evolution & Human Behavior*, 26, 88–105.
- Nesse, R. M. (1990). Evolutionary explanations of emotions. *Human Nature*, 1(3), 261–289. https://doi.org/10.1007/BF02733986.
- Nesse, R. M., & Ellsworth, P. C. (2009). Evolution, emotions, and emotional disorders. *American Psychologist*, 64(2), 129–139. http://doi.org/10.1037/a0013503.
- Nesse, R. M., Bhatnagar, S., & Young, E. A. (2007). Evolutionary origins and functions of the stress response.\* In G. Fink (Ed.), *Encyclopedia of stress* (2nd ed., pp. 965–970). New York: Academic Press. https://doi.org/10.1016/B978-012373947-6.00150-1.
- Nettle, D., & Bateson, M. (2012). The evolutionary origins of mood and its disorders. *Current Biology*, 22, R712–R721.
- Neuberg, S. L., & Cottrell, C. A. (2002). Intergroup emotions: A biocultural approach. From prejudice to intergroup emotions: Differentiated reactions to social groups, 265–283.
- Neufeld, K. M., Kang, N., Bienenstock, J., & Foster, J. a. (2011). Reduced anxiety-like behavior and central neurochemical change in germ-free mice. *Neurogastroenterology & Motility*, 23(3), 255–265. http://doi.org/10.1111/j.1365-2982.2010.01620.x.
- Neumann, R., & Strack, F. (2000). “Mood contagion”: The automatic transfer of mood between persons. *Journal of Personality & Social Psychology*, 79(2), 211–223.
- Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children’s peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin*, 113, 99–128. doi:10.1037/0033-2909.113.1.99.
- Neyer, F. J., & Voigt, D. (2004). Personality and social network effects on romantic relationships: A dyadic approach. *European Journal of Personality*, 18, 279–299.
- Nichols, T. E., Das, S., Eickhoff, S. B., Evans, A. C., Glatard, T., Hanke, M., . . . Yeo, B. T. (2017). Best practices in data analysis and sharing in neuroimaging using MRI. *Nature Neuroscience*, 20, 299–303.
- Niedenthal, P. M. (2007). Embodying emotion. *Science*, 316(5827), 1002–1005.
- Niedenthal, P. M., & Brauer, M. (2012). Social functionality of human emotion. *Annual Review of*

- Psychology*, 63(1), 259–285. doi:10.1146/annurev.psych.121208.131605.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality & Social Psychology Review*, 9, 184–211.
- Niedenthal, P. M., Mermillod, M., Maringer, M., & Hess, U. (2010). The Simulation of Smiles (SIMS) model: Embodied simulation and the meaning of facial expression. *Behavioral & Brain Sciences*, 33(6), 417–433; discussion 433–480. <http://doi.org/10.1017/S0140525X10000865>.
- Niedenthal, P. M., Wood, A., & Rychlowska, M. (2014). Embodied Emotional Concepts. In L. Shapiro (Ed.), *The Routledge handbook of embodied cognition* (pp. 240–249). Oxford, UK: Routledge Philosophy.
- Nigg, J. T. (2017). On the relations among self-regulation, self-control, executive functioning, effortful control, cognitive control, impulsivity, risk-taking, and inhibition for developmental psychopathology. *Journal of Child Psychology & Psychiatry*, 58, 361–383.
- Nigro, G., & Neisser, U. (1983). Point of view in personal memories. *Cognitive Psychology*, 15(4), 467–482.
- Nihonsugi, T., Ihara, A., & Haruno, M. (2015). Selective increase of intention-based economic decisions by noninvasive brain stimulation to the dorsolateral prefrontal cortex. *Journal of Neuroscience*, 35(8), 3412–3419.
- Niles, A. N., Craske, M. G., Lieberman, M. D., & Hur, C. (2015). Affect labeling enhances exposure effectiveness for public speaking anxiety. *Behavior Research & Therapy*, 68, 27–35.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231.
- Nishina, A. (2012). Microcontextual characteristics of peer victimization experiences and adolescents' daily well-being. *Journal of Youth & Adolescence*, 41, 191–201. doi:10.1007/s10964-011-9669-z.
- Niv, Y., & Schoenbaum, G. (2008). Dialogues on prediction errors. *Trends in Cognitive Sciences*, 12, 265–272.
- Niv, Y., Edlund, J. A., Dayan, P., & O'Doherty, J. P. (2012). Neural prediction errors reveal a risk-sensitive reinforcement-learning process in the human brain. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 32(2), 551–562. doi:10.1523/JNEUROSCI.5498-10.2012.
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, 100(4), 569–582. <http://doi.org/10.1037/0021-843X.100.4.569>.
- Nolen-Hoeksema, S., Stice, E., Wade, E., & Bohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology*, 116(1), 198–207.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3(5), 400–424. doi:10.1111/j.1745-6924.2008.00088.x.
- Norman, G. J., Norris, C. J., Gollan, J., Ito, T. A., Hawkey, L. C., Larsen, J. T., . . . Berntson, G. G. (2011). Current emotion research in psychophysiology: The neurobiology of evaluative bivalence. *Emotion Review*, 3(3), 349–359.
- Normansell, L., & Panksepp, J. (2011). Glutamatergic modulation of separation distress: Profound emotional effects of excitatory amino acids in chicks. *Neuroscience & Biobehavioral Reviews*, 35, 1890–1901.
- Norrholm, S. D., Jovanovic, T., Smith, A. K., Binder, E., Klengel, T., Conneely, K., . . . Gillespie, C. F. (2013). Differential genetic and epigenetic regulation of catechol-O-methyltransferase is associated with impaired fear inhibition in posttraumatic stress disorder. *Frontiers in Behavioral Neuroscience*, 7, 30. <http://doi.org/10.3389/fnbeh.2013.00030>.
- Norrholm, S. D., Vervliet, B., Jovanovic, T., Boshoven, W., Myers, K. M., Davis, M., . . . Duncan, E. J. (2008). Timing of extinction relative to acquisition: A parametric analysis of fear extinction in humans. *Behavioral Neuroscience*, 122(5), 1016.
- Norris, C. J., Gollan, J., Berntson, G. G., & Cacioppo, J. T. (2010). The current status of research on the structure of evaluative space. *Biological Psychology*, 84(3), 422–436.
- Norrnell, U., Finger, S., & Lajonchere, C. (1999). Cutaneous sensory spots and the 'law of specific nerve energies': History and development of ideas. *Brain Research Bulletin*, 48, 457–465.
- Northoff, G., Schneider, F., Rotte, M., Matthiae, Tempelmann, C. C., Wiebking, C., . . . Panksepp, J. (2009). Differential parametric modulation of self-relatedness and emotions in different brain regions. *Human Brain Mapping*, 30, 369–382.
- Nowicki, S., Jr., & Duke, M. P. (1994). Individual differences in the nonverbal communication of affect: The Diagnostic Analysis of Nonverbal Accuracy Scale. *Journal of Nonverbal Behavior*, 18, 9–35.
- Nummenmaa, L., & Saarimäki, H. (in press). Emotions as discrete patterns of systemic activity. *Neuroscience Letters*.
- Nummenmaa, L., Glerean, E., Hari, R., & Hietanen, J. K. (2014). Bodily maps of emotions. *Proceedings of the National Academy of Sciences*, 111, 646–651.

FAQ: Please update reference.

## 524 REFERENCES

- Nummenmaa, L., Glerean, E., Viinikainen, M., Jääskeläinen, I. P., Hari, R., & Sams, M. (2012). Emotions promote social interaction by synchronizing brain activity across individuals. *Proceedings of the National Academy of Sciences of the United States of America*, *109*(24), 9599–9604. doi:10.1073/pnas.1206095109. Epub 2012 May 23.
- Nummenmaa, L., Hirvonen, J., Parkkola, R., & Hietanen, J. K. (2008). Is emotional contagion special? An fMRI study on neural systems for affective and cognitive empathy. *NeuroImage*, *43*(3), 571–580.
- Nusslock, R., Shackman, A. J., McMenamin, B. W., Greischar, L. L., Davidson, R. J., & Kovacs, M. (2018). Comorbid anxiety moderates the relationship between depression history and prefrontal EEG asymmetry. *Psychophysiology*, *55*, e12953.
- Nuzzo, R. (2015). How scientists fool themselves-and how they can stop. *Nature*, *526*, 182–185.
- Nyborg, V. M., & Curry, J. F. (2003). The impact of perceived racism: Psychological symptoms among African American boys. *Journal of Clinical Child & Adolescent Psychology*, *32*, 258–266. doi:10.1207/S15374424JCCP3202\_11.
- Nye, C. D., Allemand, M., Gosling, S. D., Potter, J., & Roberts, B. W. (2016). Personality trait differences between young and middle-aged adults: Measurement artifacts or actual trends? *Journal of Personality*, *84*, 473–492.
- O'Doherty, J. P. (2004). Reward representations and reward-related learning in the human brain: Insights from neuroimaging. *Current Opinion in Neurobiology*, *14*, 769–776.
- O'Doherty, J. P., Dayan, P., Friston, K., Critchley, H., & Dolan, R. J. (2003). Temporal difference models and reward-related learning in the human brain. *Neuron*, *38*(2), 329–337. PubMed PMID: 12718865.
- O'Doherty, J., Dayan, P., Schultz, J., Deichmann, R., Friston, K., & Dolan, R. J. (2004). Dissociable roles of ventral and dorsal striatum in instrumental conditioning. *Science*, *304*(5669), 452–454.
- O'Doherty, J., Winston, J., Critchley, H., Perrett, D., Burt, D. M., & Dolan, R. J. (2003). Beauty in a smile: The role of medial orbitofrontal cortex in facial attractiveness. *Neuropsychologia*, *41*(2), 147–155.
- O'Mahony, S. M., Stilling, R. M., Dinan, T. G., & Cryan, J. F. (2015). The microbiome and childhood diseases: Focus on brain-gut axis. *Birth Defects Research Part C: Embryo Today: Reviews*, *105*(4), 296–313.
- O'Reilly, J. X., Crosson, P. L., Jbabdi, S., Sallet, J., Noonan, M. P., Mars, R. B., . . . Baxter, M. G. (2013). Causal effect of disconnection lesions on interhemispheric functional connectivity in rhesus monkeys. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(34), 13982–13987. doi:10.1073/pnas.1305062110.
- Oatley, K., & Johnson-Laird, P. (1987). Towards a cognitive theory of emotions. *Cognition & Emotion*, *1*, 29–50.
- Ober, C. (1999). Studies of HLA, fertility and mate choice in a human isolate. *Human Reproduction Update*, *5*(2), 103–107.
- Ochsner, K. N., & Gross, J. J. (2005). The cognitive control of emotion. *Trends in Cognitive Sciences*, *9*(5), 242–249.
- Ochsner, K. N., & Gross, J. J. (2008). Cognitive emotion regulation insights from social cognitive and affective neuroscience. *Perspective in Psychological Science*, *17*, 153–158.
- Ochsner, K. N., & Phelps, E. (2007). Emerging perspectives on emotion–cognition interactions. *Trends in Cognitive Sciences*, *11*, 317–318.
- Ochsner, K. N., Bunge, S. A., Gross, J. J., & Gabrieli, J. D. E. (2002). Rethinking feelings: An fMRI study of the cognitive regulation of emotion. *Journal of Cognitive Neuroscience*, *14*(8), 1215–1229.
- Ochsner, K. N., Ray, R. D., Cooper, J. C., Robertson, E. R., Chopra, S., Gabrieli, J. D., & Gross, J. J. (2004). For better or for worse: Neural systems supporting the cognitive down- and up-regulation of negative emotion. *NeuroImage*, *23*, 483–499.
- Ochsner, K. N., Ray, R. R., Hughes, B., McRae, K., Cooper, J. C., Weber, J., . . . Gross, J. J. (2009). Bottom-up and top-down processes in emotion generation. *Psychological Science*, *20*(11), 1322–1331.
- Ochsner, K. N., Silvers, J. A., & Buhle, J. T. (2012). Functional imaging studies of emotion regulation: A synthetic review and evolving model of the cognitive control of emotion. *Annals of the New York Academy of Sciences*, *1251*, E1–E24. <http://doi.org/10.1111/j.1749-6632.2012.06751.x>.
- Öhman, A. (1993). Fear and anxiety as emotional phenomena: Clinical phenomenology, evolutionary perspectives, and information-processing mechanisms. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 511–536). New York: Guilford Press.
- Öhman, A. (2000). Fear and anxiety: Evolutionary, cognitive, and clinical perspectives. *Handbook of Emotions*, *2*, 573–593.
- Öhman, A., & Dimberg, U. (1978). Facial expressions as conditioned stimuli for electrodermal responses: A case of “preparedness”? *Journal of Personality & Social Psychology*, *36*, 1251–1258.
- Öhman, A., & Soares, J. J. (1994). “Unconscious anxiety”: Phobic responses to masked stimuli. *Journal of Abnormal Psychology*, *103*(2), 231–240.

- Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychology: General*, *130*, 466–478.
- Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychology: General*, *130*(3), 466–478.
- Öhman, A., Lundqvist, D., & Esteves, F. (2001). The face in the crowd revisited: A threat advantage with schematic stimuli. *Journal of Personality & Social Psychology*, *80*(3), 381–396.
- Öhman, A., Lundqvist, D., & Esteves, F. (2001). The face in the crowd revisited: A threat advantage with schematic stimuli. *Journal of Personality & Social Psychology*, *80*(3), 381–396.
- Okbay, A., & Rietveld, C. A. (2015). On improving the credibility of candidate gene studies: A review of candidate gene studies published in *Emotion*. *Emotion*, *15*, 531–537.
- Okbay, A., Baselmans, B. M., De Neve, J. E., Turley, P., Nivard, M. G., Fontana, M. A., . . . Cesarini, D. (2016). Genetic variants associated with subjective well-being, depressive symptoms, and neuroticism identified through genome-wide analyses. *Nature Genetics*, *48*, 624–633.
- Okon-Singer, H., Alyagon, U., Kofman, O., Tzelgov, J., & Henik, A. (2011). Fear-related pictures deteriorate the performance of university students with high fear of snakes or spiders. *Stress*, *14*, 185–193.
- Okon-Singer, H., Hendler, T., Pessoa, L., & Shackman, A. J. (2014). Introduction to the special research topic on the neurobiology of emotion-cognition interactions. *Frontiers in Human Neuroscience*, *8*, 1051.
- Okon-Singer, H., Hendler, T., Pessoa, L., & Shackman, A. J. (2015). The neurobiology of emotion-cognition interactions: Fundamental questions and strategies for future research. *Frontiers in Human Neuroscience*, *9*, 58.
- Okon-Singer, H., Lichtenstein-Vidne, L., & Cohen, N. J. (2013). Dynamic modulation of emotional processing. *Biological Psychology*, *92*, 480–491.
- Okon-Singer, H., Tzelgov, J., & Henik, A. (2007). Distinguishing between automaticity and attention in the processing of emotionally significant stimuli. *Emotion*, *7*, 147–157.
- Olatunji, B. O., Naragon-Gainey, K., & Wolitzky-Taylor, K. B. (2013). Specificity of rumination in anxiety and depression: A multimodal meta-analysis. *Clinical Psychology: Science & Practice*, *20*, 225–257.
- Olbert, C. M., Gala, G. J., & Tupler, L. A. (2014). Quantifying heterogeneity attributable to polythetic diagnostic criteria: theoretical framework and empirical application. *Journal of Abnormal Psychology*, *123*, 452–462.
- Olderbak, S., Hildebrandt, A., Pinkpank, T., Sommer, W., & Wilhelm, O. (2014). Psychometric challenges and proposed solutions when scoring facial emotion expression codes. *Behavior Research Methods*, *46*, 992–1006.
- Oler, J. A., Fox, A. S., Shackman, A. J., & Kalin, N. H. (2016). The central nucleus of the amygdala is a critical substrate for individual differences in anxiety. In D. G. Amaral & R. Adolphs (Eds.), *Living without an amygdala* (pp. 218–251). New York: Guilford.
- Oler, J. A., Fox, A. S., Shelton, S. E., Christian, B. T., Murali, D., Oakes, T. R., . . . Kalin, N. H. (2009). Serotonin transporter availability in the amygdala and bed nucleus of the stria terminalis predicts anxious temperament and brain glucose metabolic activity. *Journal of Neuroscience*, *29*, 9961–9966.
- Olney, N. T., Goodkind, M. S., Lomen-Hoerth, C., Whalen, P. K., Williamson, C. A., Holley, D. E., . . . Rosen, H. J. (2011). Behaviour, physiology and experience of pathological laughing and crying in amyotrophic lateral sclerosis. *Brain*, *134*, 3458–3469.
- Olsson, A., & Phelps, E. A. (2007). Social learning of fear. *Nature Neuroscience*, *10*, 1095–1102.
- Olsson, M. J., Lundstrom, J. N., Kimball, B. A., Gordon, A. R., Karshikoff, B., Hosseini, N., . . . Lekander, M. (2014). The scent of disease: Human body odor contains an early chemosensory cue of sickness. *Psychological Science*, *25*(3), 817–823. doi:10.1177/0956797613515681.
- Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality & Social Psychology*, *91*(4), 730–749.
- Ong, L. M., de Haes, J. C., Hoos, A. M., & Lammes, F. B. (1995). Doctor-patient communication: A review of the literature. *Social Science & Medicine*, *40*(7), 903–918.
- Ongur, D., Ferry, A. T., & Price, J. L. (2003). Architectonic subdivision of the human orbital and medial prefrontal cortex. *Journal of Comparative Neurology*, *460*, 425–449.
- Onnela, J. P., & Rauch, S. L. (2016). Harnessing smartphone-based digital phenotyping to enhance behavioral and mental health. *Neuropsychopharmacology*, *41*, 1691–1696.
- Onnis, R., Dadds, M. R., & Bryant, R. A. (2011). Is there a mutual relationship between opposite attentional biases underlying anxiety? *Emotion*, *11*, 582–594.
- Oosterhof, N. N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences of the United States of America*, *105*, 11087–11092.

## 526 REFERENCES

- Opitz, P. C., Rauch, L. C., Terry, D. P., & Urry, H. L. (2012). Prefrontal mediation of age differences in cognitive reappraisal. *Neurobiology of Aging*, 33, 645–655. doi:10.1016/j.neurobiolaging.2010.06.004.
- Ormel, J., Bastiaansen, A., Riese, H., Bos, E. H., Servaas, M., Ellenbogen, M., . . . Aleman, A. (2013). The biological and psychological basis of neuroticism: Current status and future directions. *Neuroscience & Biobehavioral Reviews*, 37, 59–72.
- Ormel, J., Jeronimus, B. F., Kotov, R., Riese, H., Bos, E. H., Hankin, B., . . . Oldehinkel, A. J. (2013). Neuroticism and common mental disorders: Meaning and utility of a complex relationship. *Clinical Psychology Review*, 33, 686–697.
- Orr, S. P., Lasko, N. B., Macklin, M. L., Pineles, S. L., Chang, Y., & Pitman, R. K. (2012). Predicting post-trauma stress symptoms from pre-trauma psychophysiological reactivity, personality traits and measures of psychopathology. *Biology of Mood & Anxiety Disorders*, 2(1), 8.
- Ortega, A. N., & Rosenheck, R. (2000). Posttraumatic stress disorder among Hispanic Vietnam veterans. *American Journal of Psychiatry*, 157(4), 615–619.
- Ortony, A., & Clore, G. L. (2014). Can an appraisal model be compatible with psychological constructionism? In L. F. Barrett & J. R. Russell (Eds.), *The psychological construction of emotion* (pp. 305–333). New York: Guilford Press.
- Ortony, A., & Turner, T. J. (1990). What's basic about basic emotions? *Psychological Review*, 97, 315–331.
- Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. New York: Cambridge University Press.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Chicago, IL: University of Illinois Press.
- Ostby, Y., Tamnes, C. K., Fjell, A. M., Westlye, L. T., Due-Tønnessen, P., & Walhovd, K. B. (2009). Heterogeneity in subcortical brain development: A structural magnetic resonance imaging study of brain maturation from 8 to 30 years. *Journal of Neuroscience*, 29(38), 11772–11782.
- Osterling, J., & Dawson, G. (1994). Early recognition of children with autism: A study of first birthday home videotapes. *Journal of Autism & Developmental Disorders*, 24(3), 247–225.
- Otto, A. R., Raio, C. M., Chiang, A., Phelps, E. A., & Daw, N. D. (2013). Working-memory capacity protects model-based learning from stress. *Proceedings of the National Academy of Sciences*, 110(52), 20941–20946.
- Otto, M. W., Leyro, T. M., Christian, K., Deveney, C. M., Reese, H., Pollack, M. H., & Orr, S. P. (2007). Prediction of “fear” acquisition in healthy control participants in a de novo fear-conditioning paradigm. *Behavior Modification*, 31(1), 32–51.
- Otte, C., Gold, S. M., Penninx, B. W., Pariante, C. M., Etkin, A., Fava, M., . . . Schatzberg, A. F. (2016). Major depressive disorder. *Nat Rev Dis Primers*, 2, 16065.
- Owren, M. J., & Bachorowski, J. (2001). The evolution of emotional expression: A “selfish-gene” account of smiling and laughter in early hominids and humans. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotions: Current issues and future directions* (pp. 152–191). New York: Guilford.
- Owren, M. J., & Rendall, D. (2001). Sound on the rebound: Bringing form and function back to the forefront in understanding nonhuman primate vocal signaling. *Evolutionary Anthropology: Issues, News, and Reviews*, 10(2), 58–71.
- Oya, H., Kawasaki, H., Howard, M. A., & Adolphs, R. (2002). Electrophysiological responses in the human amygdala discriminate emotion categories of complex visual stimuli. *Journal of Neuroscience*, 22(21), 9502–9512. doi:22/21/9502.
- Pace, V. L., & Brannick, M. T. (2010). How similar are personality scales of the “same” construct. *Personality and Individual Differences*, 49, 669–676.
- Pace, T. W., Negi, L. T., Adame, D. D., Cole, S. P., Sivilli, T. I., Brown, T. D., . . . Raison, C. L. (2009). Effect of compassion meditation on neuroendocrine, innate immune and behavioral responses to psychosocial stress. *Psychoneuroendocrinology*, 34(1), 87–98.
- Pacheco-Unguetti, A. P., & Parmentier, F. B. (2014). Sadness increases distraction by auditory deviant stimuli. *Emotion*, 14, 203–213.
- Padmala, S., & Pessoa, L. (2008). Affective learning enhances visual detection and responses in primary visual cortex. *Journal of Neuroscience*, 28(24), 6202–6210. doi:10.1523/JNEUROSCI.1233-08.2008.
- Padmala, S., Lim, S.-L., & Pessoa, L. (2010). Pulvinar and affective significance: Responses track moment-to-moment visibility. *Frontiers in Human Neuroscience*, 4, 1–9.
- Padoa-Schioppa, C., & Assad, J. A. (2006). Neurons in the orbitofrontal cortex encode economic value. *Nature*, 441, 223–226.
- Padoa-Schioppa, C., & Assad, J. A. (2008). The representation of economic value in the orbitofrontal cortex is invariant for changes of menu. *Nature Neuroscience*, 11, 95–102.
- Palagini, L., Mosca, M., Tani, C., Gemignani, A., Mauri, M., & Bombardieri, S. (2013). Depression and systemic lupus erythematosus: A systematic review. *Lupus*, 22(5), 409–416. http://doi.org/10.1177/0961203313477227.
- Palmer, S. E., Schloss, K. B., Xu, Z., & Prado-León, L. R. (2013). Music-color associations are mediated by emotion. *Proceedings of the National Academy of Sciences*, 110(22), 8836–8841.

- Palmers, K. M. (2016). Psychology is in crisis over whether it's in crisis. *Wired*. Retrieved from <https://www.wired.com/2016/03/psychology-crisis-whether-crisis/>.
- Pankevich, D. E., Altevogt, B. M., Dunlop, J., Gage, F. H., & Hyman, S. E. (2014). Improving and accelerating drug development for nervous system disorders. *Neuron*, *84*, 546–553.
- Panksepp, J. (1985). Mood changes. In P. J. Vinken, G. W. Bruyn, & H. L. Klawans (Eds.), *Handbook of clinical neurology (revised series)*. Vol. 1 (45): *Clinical neuropsychology* (pp. 271–285). Amsterdam: Elsevier Science.
- Panksepp, J. (1994). Basic emotions ramify widely in the brain, yielding many concepts that cannot be distinguished unambiguously . . . yet. In P. Ekman & R. Davidson (Eds.), *The nature of emotion* (pp. 86–89). New York: Oxford University Press.
- Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. New York: Oxford University Press.
- Panksepp, J. (2002). Foreword: The MacLean legacy and some modern trends in emotion research. In G. Cory & R. Gardner (Eds.), *The evolutionary neuroethology of Paul MacLean: Convergences and frontiers* (pp. ix–xxvii). Westport, CN: Greenwood/Praeger.
- Panksepp, J. (2003). Feeling the pain of social loss. *Science*, *302*, 237–239.
- Panksepp, J. (2005). Affective consciousness: Core emotional feelings in animals and humans. *Consciousness & Cognition*, *14*, 30–80.
- Panksepp, J. (2007). Neurologizing the psychology of affects: How appraisal-based constructivism and basic emotion theory can coexist. *Perspectives on Psychological Science*, *2*(3), 281–296.
- Panksepp, J. (2011a). Cross-species affective neuroscience decoding of the primal affective experiences of humans and related animals. *PLoS One*, *6*(9), e21236.
- Panksepp, J. (2011b). The basic emotional circuits of mammalian brains: Do animals have affective lives? *Neuroscience & Biobehavioral Reviews*, *35*(9), 1791–1804.
- Panksepp, J. (2011c). Empathy and the laws of affect. *Science*, *334*(6061), 1358–1359.
- Panksepp, J. (2012). The vicissitudes of preclinical psychiatric research: Justified abandonment by big pharma? *Future Neurology*, *7*, 1–3.
- Panksepp, J. (Ed.). (2004). *Textbook of biological psychiatry*. Hoboken, NJ: Wiley.
- Panksepp, J., & Biven, L. (2012). *The archaeology of mind: Neuroevolutionary origins of human emotions*. New York: W.W. Norton & Company.
- Panksepp, J., & Harro, J. (2004). The future of neuropeptides in biological psychiatry and emotional psychopharmacology: Goals and strategies. In J. Panksepp (Ed.), *Textbook of biological psychiatry* (pp. 627–660). Hoboken, NJ: Wiley.
- Panksepp, J., & Watt, D. (2011). What is basic about basic emotions? Lasting lessons from affective neuroscience. *Emotion Review*, *3*, 387–396.
- Panksepp, J., & Yovell, Y. (2014). Preclinical modeling of primal emotional affects (Seeking, Panic and Play): Gateways to the development of new treatments for depression. *Psychopathology*, *47*, 383–393.
- Panksepp, J., Nelson, E., & Bekkedal, M. (1997). Brain systems for the mediation of social separation-distress and social-reward evolutionary antecedents and neuropeptide intermediaries. *Annals of the New York Academy of Sciences*, *807*(1), 78–100.
- Panksepp, J., Normansell, L., Herman, B., Bishop, P., & Crepeau, L. (1988). Neural and neurochemical control of separation distress call. In J. D. Newman (Ed.), *The physiological control of mammalian vocalizations* (pp. 263–299). New York: Plenum.
- Panksepp, J., Wright, J. S., Döbrössy, M. D., Schlaepfer, T. E., & Coenen, V. A. (2014). Affective neuroscience strategies for understanding and treating depressions: From preclinical models to novel therapeutics. *Clinical Psychological Science*, *2*, 472–494.
- Papez, J. W. (1995 [original 1937]). A proposed mechanism of emotion. *Journal of Neuropsychiatry & Clinical Neurosciences*, *7*(1), 103–112.
- Park, H. D., & Tallon-Baudry, C. (2014). The neural subjective frame: From bodily signals to perceptual consciousness. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, *369*(1641), 20130208. doi:10.1098/rstb.2013.0208. Print 2014 May 5.
- Parke, R. D., Coltrane, S., Duffy, S., Buriel, R., Dennis, J., Powers, J., . . . Widaman, K. F. (2004). Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development*, *75*, 1632–1656. doi:10.1111/j.1467-8624.2004.00807.x.
- Parker, A., Halberstadt, A. G., Dunsmore, J. C., Townley, G., Bryant, A., Thompson, J. A., & Beale, K. S. (2012). “Emotions are a window into one’s heart”: A qualitative analysis of parental beliefs about children’s emotions across three ethnic groups. *Monographs of the Society for Research in Child Development*, *77*, 1–144. doi:10.1111/j.1540-5834.2012.00676.x.
- Parker, S. W., & Nelson, C. A. (2005). The impact of early institutional rearing on the ability to discriminate facial expressions of emotion: An event-related potential study. *Child Development*, *76*(1), 54–72.



## 528 REFERENCES

- Parkinson, B. (1996). Emotions are social. *British Journal of Social Psychology*, 87, 663–683.
- Parkinson, B. (2005). Do facial movements express emotions or communicate motives? *Personality & Social Psychology Review*, 9, 278–311.
- Parkinson, C., & Wheatley, T. (2013). Old cortex, new contexts: Re-purposing spatial perception for social cognition. *Frontiers in Human Neuroscience*, 7, 645. doi:10.3389/fnhum.2013.00645.
- Parkinson, C., & Wheatley, T. (2014). Relating anatomical and social connectivity: White matter microstructure predicts emotional empathy. *Cerebral Cortex*, 24(3), 614–625. doi:10.1093/cercor/bhs347.
- Parkinson, C., & Wheatley, T. (2015). The repurposed social brain. *Trends in Cognitive Sciences*, 19(3), 133–141. doi:10.1016/j.tics.2015.01.003.
- Parkinson, C., Kleinbaum, A. M., & Wheatley, T. (2017). Spontaneous neural encoding of social network position. *Nature Human Behavior*, 1, 72.
- Parkinson, C., Kleinbaum, A. M., & Wheatley, T. (2018). Similar neural responses predict friendship. *Nature Communications*, 9, 332.
- Parkinson, C., Liu, S., & Wheatley, T. (2014). A common cortical metric for spatial, temporal, and social distance. *Journal of Neuroscience*, 34(5), 1979–1987. doi:10.1523/JNEUROSCI.2159-13.2014.
- Parrott, W. G. (2014). *The positive side of negative emotions*. New York: Guilford Publications.
- Parvizi, J., Anderson, S. W., Martin, C. O., Damasio, H., and Damasio, A. (2001). Pathological laughter and crying: A link to the cerebellum. *Brain*, 124, 1708–1719.
- Pasley, B. N., Mayes, L. C., & Schultz, R. T. (2004). Subcortical discrimination of unperceived objects during binocular rivalry. *Neuron*, 42, 163–172.
- Pasparakis, E., Koliari, E., Zourarakis, C., Tsapakis, E. M., Roussos, P., Giakoumaki, S. G., & Bitsios, P. (2015). The effects of the CACNA1C rs1006737 A/G on affective startle modulation in healthy males. *European Psychiatry*, 30(4), 492–498.
- Passingham, R. E., Bengtsson, S. L., & Lau, H. C. (2010). Medial frontal cortex: From self-generated action to reflection on one's own performance. *Trends in Cognitive Sciences*, 14(1), 16–21. doi:10.1016/j.tics.2009.11.001.
- Passingham, R. E., Stephan, K. E., & Kotter, R. (2002). The anatomical basis of functional localization in the cortex. *Nature Reviews Neuroscience*, 3, 606–616.
- Pastor-Bernier, A., & Cisek, P. (2011). Neural correlates of biased competition in premotor cortex. *Journal of Neuroscience*, 31, 7–083–7088.
- Pasupathi, M., & Wainryb, D. (2010). On telling the whole story: Facts and interpretations in autobiographical memory narratives from childhood through midadolescence. *Developmental Psychology*, 46(3), 735–746.
- Patel, P. D., Katz, M., Karssen, A. M., & Lyons, D. M. (2008). Stress-induced changes in corticosteroid receptor expression in primate hippocampus and prefrontal cortex. *Psychoneuroendocrinology*, 33(3), 360–367. https://doi.org/10.1016/j.psyneuen.2007.12.003.
- Paton, J. J., Belova, M. A., Morrison, S. E., & Salzman, C. D. (2006). The primate amygdala represents the positive and negative value of visual stimuli during learning. *Nature*, 439, 865–870.
- Patterson, P. H. (2002). Maternal infection: Window on neuroimmune interactions in fetal brain development and mental illness. *Current Opinion in Neurobiology*, 12(1), 115–118. http://doi.org/10.1016/S0959-4388(02)00299-4.
- Paulhus, D. L., Robins, R. W., Trzesniewski, K. H., & Tracy, J. L. (2004). Two replicable suppressor situations in personality research. *Multivariate Behavioral Research*, 39(2), 303–328.
- Paulus, M. P. (2015). Pragmatism instead of mechanism: A call for impactful biological psychiatry. *Journal of the American Medical Association Psychiatry*, 72, 631–632.
- Paulus, M. P., & Stein, M. B. (2006). An insular view of anxiety. *Biological Psychiatry*, 60(4), 383–387.
- Paulus, M. P., Feinstein, J. S., Castillo, G., Simmons, A. N., & Stein, M. B. (2005). Dose-dependent decrease of activation in bilateral amygdala and insula by lorazepam during emotion processing. *Archives of General Psychiatry*, 62, 282–288.
- Paus, T. (2013). How environment and genes shape the adolescent brain. *Hormones & Behavior*, 64(2), 195–202. doi:10.1016/j.yhbeh.2013.04.004.
- Paus, T., Keshavan, M., & Giedd, J. N. (2008). Why do many psychiatric disorders emerge during adolescence? *Nature Reviews Neuroscience*, 9(12), 947–957.
- Pause, B. M. (2012). Processing of body odor signals by the human brain. *Chemosensory Perception*, 5(1), 55–63. doi:10.1007/s12078-011-9108-2.
- Pause, B. M., Ohrt, A., Prehn, A., & Ferstl, R. (2004). Positive emotional priming of facial affect perception in females is diminished by chemosensory anxiety signals. *Chemical Senses*, 29(9), 797–805. doi:10.1093/chemse/bjh245.
- Payer, D. E., Baicy, K., Lieberman, M. D., & London, E. D. (2012). Overlapping neural substrates between intentional and incidental down-regulation of negative emotions. *Emotion*, 2, 229–235.
- Payer, D. E., Lieberman, M. D., & London, E. D. (2011). Neural correlates of affect processing and aggression in methamphetamine dependence. *Archives of General Psychiatry*, 68, 271–282.
- Payne, J. D., & Kensinger, E. A. (2010). Sleep's role in the consolidation of emotional episodic memories.

- Current Directions in Psychological Science*, 19(5), 290–295. doi:10.1177/0963721410383978.
- Payne, J. D., Jackson, E. D., Hoscheidt, S., Ryan, L., Jacobs, W. J., & Lynn, N. (2007). Stress administered prior to encoding impairs neutral but enhances emotional long-term episodic memories. *Learning & Memory*, 14, 861–868.
- Pearce, J. M. (2008). *Animal learning and cognition* (3rd ed.). Hove, UK: Psychology Press.
- Pearce, J. M., & Hall, G. (1980). A model for Pavlovian learning: Variations in the effectiveness of conditioned but not of unconditioned stimuli. *Psychological Review*, 87(6), 532–552. <http://doi.org/10.1037/0033-295X.87.6.532>.
- Pearson, J. M., Watson, K. K., & Platt, M. L. (2014). Decision making: The neuroethological turn. *Neuron*, 82, 950–965.
- Peciña, S., Cagniard, B., Berridge, K. C., Aldridge, J. W., & Zhuang, X. (2003). Hyperdopaminergic mutant mice have higher “wanting” but not “liking” for sweet rewards. *Journal of Neuroscience*, 23(28), 9395–9402.
- Peck, C. J., & Salzman, C. D. (2014). The amygdala and basal forebrain as a pathway for motivationally guided attention. *Journal of Neuroscience*, 34(41), 13757–13767. doi:10.1523/JNEUROSCI.2106-14.2014.
- Peck, C. J., Lau, B., & Salzman, C. D. (2013). The primate amygdala combines information about space and value. *Nature Neuroscience*, 16(3), 340–348. doi:10.1038/nn.3328.
- Peelen, M. V., Atkinson, A. P., & Vuilleumier, P. (2010). Supramodal representations of perceived emotions in the human brain. *Journal of Neuroscience*, 30(30), 10127–10134. doi:10.1523/JNEUROSCI.2161-10.2010.
- Pedersen, W. S., Balderston, N. L., Miskovich, T. A., Belleau, E. L., Helmstetter, F. J., & Larson, C. L. (2016). The effects of stimulus novelty and negativity on BOLD activity in the amygdala, hippocampus, and bed nucleus of the stria terminalis. *Social Cognitive & Affective Neuroscience*, 12(5), 748–757.
- Peers, P. V., & Lawrence, A. D. (2009). Attentional control of emotional distraction in rapid serial visual presentation. *Emotion*, 9, 140–145.
- Pegna, A. J., Khateb, A., Lazeyras, F., & Seghier, M. L. (2005). Discriminating emotional faces without primary visual cortices involves the right amygdala. *Nature Neuroscience*, 8(1), 24–25. doi:10.1038/nn1364.
- Peinemann, A., Schuller, S., Pohl, C., Jahn, T., Weindl, A., & Kassubek, J. (2005). Executive dysfunction in early stages of Huntington’s disease is associated with striatal and insular atrophy: A neuropsychological and voxel-based morphometric study. *Journal of the Neurological Sciences*, 239, 11–19.
- Pellicano, E., & Burr, D. (2012). “When the world becomes ‘too real’: A Bayesian explanation of autistic perception.” *Trends in Cognitive Sciences*, 16(10), 504–510.
- Peltola, M. J., Leppänen, J. M., Mäki, S., & Hietanen, J. K. (2009). The emergence of enhanced attention to fearful faces between 5 and 7 months of age. *Social Cognitive & Affective Neuroscience*, 4, 134–142.
- Peltola, M. J., Leppänen, J. M., Palokangas, T., & Hietanen, J. K. (2008). Fearful faces modulate looking duration and attention disengagement in 7-month-old infants. *Developmental Science*, 11, 60–68.
- Peng, M., Chang, L., & Zhou, R. (2013). Physiological and behavioral responses to strangers compared to friends as a source of disgust. *Evolution & Human Behavior*, 34(2), 94–98. doi:10.1016/j.evolhumbehav.2012.10.002.
- Penny, W. D., Stephan, K. E., Mechelli, A., & Friston, K. J. (2004). Comparing dynamic causal models. *NeuroImage*, 22(3), 1157–1172. <http://doi.org/10.1016/j.neuroimage.2004.03.026>.
- Penton-Voak, I. S., Thomas, J., Gage, S. H., McMurrin, M., McDonald, S., & Munafò, M. R. (2013). Increasing recognition of happiness in ambiguous facial expressions reduces anger and aggressive behavior. *Psychological Science*, 24(5), 688–697. doi:10.1177/0956797612459657. Epub 2013 Mar 26.
- Penzo, M. A., Robert, V., Tucciarone, J., De Bundel, D., Wang, M., Van Aelst, L., . . . Huang, Z. J. (2015). The paraventricular thalamus controls a central amygdala fear circuit. *Nature*, 519(7544), 455–459.
- Peper, J. S., & Dahl, R. E. (2013). The teenage brain: Surging hormones- brain-behavior interactions during puberty. *Current Directions in Psychological Science*, 22(2), 134–139.
- Peper, J. S., Koolschijn, P. C., & Crone, E. A. (2013). Development of risk taking: Contributions from adolescent testosterone and the orbito-frontal cortex. *Journal of Cognitive Neuroscience*, 25(12), 2141–2150. doi:10.1162/jocn\_a\_00445.
- Peper, J. S., Mandl, R. C., Braams, B. R., de Water, E., Heijboer, A. C., Koolschijn, P. C. M., & Crone, E. A. (2012). Delay discounting and frontostriatal fiber tracts: A combined DTI and MTR study on impulsive choices in healthy young adults. *Cerebral Cortex*, 23(7), 1695–1702.
- Pereira, A. C., Huddleston, D. E., Brickman, A. M., Sosunov, A. A., Hen, R., McKhann, G. M., . . . Small, S. A. (2007). An in vivo correlate of exercise-induced neurogenesis in the adult dentate gyrus. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 5638–5643.

## 530 REFERENCES

- Pérez-Edgar, K., Bar-Haim, Y., Martin McDermott, J., Chronis-Tuscano, A., Pine, D. S., & Fox, N. A. (2010). Attention biases to threat and behavioral inhibition in early childhood shape adolescent social withdrawal. *Emotion, 10*, 349–357.
- Pérez-Edgar, K., McDermott, J. N., Korelitz, K., Degnan, K. A., Curby, T. W., Pine, D. S., & Fox, N. A. (2010). Patterns of sustained attention in infancy shape the developmental trajectory of social behavior from toddlerhood through adolescence. *Developmental Psychology, 46*, 1723–1730.
- Pérez-Edgar, K., Reeb-Sutherland, B. C., McDermott, J. M., White, L. K., Henderson, H. A., Degnan, K. A., Hane, A. A., Pine, D. S., & Fox, N. A. (2011). Attention bias to threat link behavioral inhibition to social withdrawal over time in very young children. *Journal of Abnormal Child Psychology, 39*, 885–895. doi:10.1007/s10802-011-9495-5.
- Pérez-Edgar, K., Roberson-Nay, R., Hardin, M. G., Poeth, K., Guyer, A. E., Nelson, E. E., . . . Ernst, M. (2007). Attention alters neural responses to evocative faces in behaviorally inhibited adolescents. *NeuroImage, 35*(4), 1538–1546.
- Perlman, S. B., Morris, J. P., Vander Wyk, B. C., Green, S. R., Doyle, J. L., & Pelphrey, K. A. (2009). Individual differences in personality predict how people look at faces. *PLoS One, 4*, e5952.
- Peroutka, S. J., & Howell, T. A. (1994). The molecular evolution of G protein-coupled receptors: Focus on 5-hydroxytryptamine receptors. *Neuropharmacology, 33*(3–4), 319–324.
- Perusini, J. N., & Fanselow, M. S. (2015). Neurobehavioral perspectives on the distinction between fear and anxiety. *Learning and Memory, 22*, 417–425.
- Pessoa, L. (2005). To what extent are emotional visual stimuli processed without attention and awareness? *Current Opinion in Neurobiology, 15*, 188–196.
- Pessoa, L. (2008). On the relationship between emotion and cognition. *Nature Reviews Neuroscience, 9*(2), 148–158. doi:10.1038/nrn2317.
- Pessoa, L. (2009). How do emotion and motivation direct executive function? *Trends in Cognitive Sciences, 13*(4), 160–166.
- Pessoa, L. (2012). Beyond brain regions: Network perspective of cognition–emotion interactions. *Behavioral & Brain Sciences, 35*(3), 158–159. doi:10.1017/S0140525X11001567.
- Pessoa, L. (2013). *The cognitive-emotional brain: From interactions to integration*. Cambridge, MA: MIT Press.
- Pessoa, L. (2014). Understanding brain networks and brain organization. *Physics of Life Reviews, 11*(3), 400–435.
- Pessoa, L. (2017). A network model of the emotional brain. *Trends in Cognitive Sciences, 21*(5), 357–371.
- Pessoa, L., & Adolphs, R. (2010). Emotion processing and the amygdala: From a “low road” to “many roads” of evaluating biological significance. *Nature Reviews Neuroscience, 11*(11), 773–783. doi:10.1038/nrn2920.
- Pessoa, L., & Ungerleider, L. G. (2004). Top-down mechanisms for working memory and attentional processes. In M. S. Gazzaniga (Ed.), *The new cognitive neurosciences* (3rd ed., pp. 919–930). Cambridge, MA: MIT Press.
- Pessoa, L., Japee, S., & Ungerleider, L. G. (2005). Visual awareness and the detection of fearful faces. *Emotion, 5*, 243–247.
- Pessoa, L., Japee, S., Sturman, D., & Ungerleider, L. G. (2006). Target visibility and visual awareness modulate amygdala responses to fearful faces. *Cerebral Cortex, 16*(3), 366–375. doi:bh1115 [pii]10.1093/cercor/bh1115.
- Pessoa, L., Kastner, S., & Ungerleider, L. G. (2002). Attentional control of the processing of neutral and emotional stimuli. *Cognitive Brain Research, 15*(1), 31–45.
- Pessoa, L., McKenna, M., Gutierrez, E., & Ungerleider, L. G. (2002). Neural processing of emotional faces requires attention. *Proceedings of the National Academy of Sciences of the United States of America, 99*, 11458–11463.
- Pessoa, L., Padmala, S., & Morland, T. (2005). Fate of unattended fearful faces in the amygdala is determined by both attentional resources and cognitive modulation. *NeuroImage, 28*, 249–255.
- Petersen, A. C. (1988). Adolescent development. *Annual Review in Psychology, 39*, 583–607.
- Petrides, M. (2005). Lateral prefrontal cortex: Architectonic and functional organization. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, 360*(1456), 781–795. doi:10.1098/rstb.2005.1631.
- Petrovic, P., Dietrich, T., Fransson, P., Andersson, J., Carlsson, K., & Ingvar, M. (2005). Placebo in emotional processing—induced expectations of anxiety relief activate a generalized modulatory network. *Neuron, 46*(6), 957–969. doi:10.1016/j.neuron.2005.05.023.
- Petrovic, P., Pleger, B., Seymour, B., Kloppel, S., De Martino, B., Critchley, H., & Dolan, R. J. (2008). Blocking central opiate function modulates hedonic impact and anterior cingulate response to rewards and losses. *Journal of Neuroscience, 28*(42), 10509–10516. <http://doi.org/10.1523/JNEUROSCI.2807-08.2008>.
- Pfeifer, J. H., & Allen, N. B. (2012). Arrested development? Reconsidering dual-systems models of brain function in adolescence and disorders. *Trends in Cognitive Sciences, 16*(6), 322–329. doi:10.1016/j.tics.2012.04.011.

- Pfeifer, J. H., Masten, C. L., Moore, W. E., Oswald, T. M., Mazziotta, J. C., Iacoboni, M., & Dapretto, M. (2011). Entering adolescence: Resistance to peer influence, risky behavior, and neural changes in emotion reactivity. *Neuron*, *69*(5), 1029–1036.
- Pfeiffer, U. J., Vogeley, K., & Schilbach, L. (2013). From gaze cueing to dual eye-tracking: Novel approaches to investigate the neural correlates of gaze in social interaction. *Neuroscience & Biobehavioral Reviews*, *37*, 2516–2528.
- Pfeiffer, W. (1963). Alarm substances. *Experientia*, *19*, 113–123.
- Phan, K. L., Sripada, C. S., Angstadt, M., & McCabe, K. (2010). Reputation for reciprocity engages the brain reward center. *Proceedings of the National Academy of Sciences of the United States of America*, *107*(29), 13099–13104. doi:10.1073/pnas.1008137107. Epub 2010 Jul 6.
- Phan, K. L., Wager, T., Taylor, S. F., & Liberzon, I. (2002). Functional neuroanatomy of emotion: A meta-analysis of emotion activation studies in PET and fMRI. *NeuroImage*, *16*, 331–348.
- Phelps, E. A. (2006). Emotion and cognition: Insights from studies of the human amygdala. *Annual Review of Psychology*, *57*(1), 27–53. doi:10.1146/annurev.psych.56.091103.070234.
- Phelps, E. A., & LeDoux, J. E. (2005). Contributions of the amygdala to emotion processing: From animal models to human behavior. *Neuron*, *48*(2), 175–187.
- Phelps, E. A., & Sharot, T. (2008). How (and why) emotion enhances the subjective sense of recollection. *Current Directions in Psychological Science*, *17*(2), 147–152.
- Phelps, E. A., Delgado, M. R., Nearing, K. I., & LeDoux, J. E. (2004). Extinction learning in humans: Role of the amygdala and vmPFC. *Neuron*, *43*(6), 897–905. http://doi.org/10.1016/j.neuron.2004.08.042.
- Phelps, E. A., Lempert, K. M., & Sokol-Hessner, P. (2014). Emotion and decision making: Multiple modulatory neural circuits. *Annual Review of Neuroscience*, *37*, 263–287.
- Phelps, E., Ling, S., & Carrasco, M. (2006). Emotion facilitates perception and potentiates the perceptual benefits of attention. *Psychological Science*, *17*, 292–299. doi:10.1111/j.1467-9280.2006.01701.x.
- Phelps, E.A., O'Connor, K. J., Cunningham, W. A., Funayama, E. S., Gatenby, J. C., Gore, J. C., & Banaji, M. R. (2000). Performance on indirect measures of race evaluation predicts amygdala activation. *Journal of Cognitive Neuroscience*, *12*(5), 729–738.
- Phillips, L. H., Henry, J. D., Hosie, J. A., & Milne, A. B. (2008). Effective regulation of the experience and expression of negative affect in old age. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *63*, 138–145.
- Phillips, M. L., Ladouceur, C. D., & Drevets, W. C. (2008). A neural model of voluntary and automatic emotion regulation: Implications for understanding the pathophysiology and neurodevelopment of bipolar disorder. *Molecular Psychiatry*, *13*(9), 833–857. http://doi.org/10.1038/mp.2008.65.
- Phinney, J. S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, *7*, 156–176.
- Phinney, J. S., Horenczyk, G., Liebkind, K., & Vedder, P. (2001). Ethnic identity, immigration, and well-being: An interactional perspective. *Journal of Social Issues*, *57*(3), 493–510.
- Piaget, J. (1932). *The moral judgment of the child*. London: Kegan Paul, Trench, Trubner and Company.
- Picard, R. W., & Healey, J. (1997). Affective wearables. *Personal & Ubiquitous Computing*, *1*, 231–240. doi:10.1007/BF01682026.
- Picard, R. W., Fedor, S., & Ayzenberg, Y. (2015). Multiple arousal theory and daily-life electrodermal activity asymmetry. *Emotion Review*, *8*(1), 62–75. http://journals.sagepub.com/doi/abs/10.1177/1754073914565517
- Picard, R. W., Vyzas, E., & Healey, J. (2001). Toward machine emotional intelligence? Analysis of affective physiological state. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *23*(10), 1175–1191.
- Pichon, S., Miendlarzewska, E. A., Eryilmaz, H., & Vuilleumier, P. (2015). Cumulative activation during positive and negative events and state anxiety predicts subsequent inertia of amygdala reactivity. *Social Cognitive & Affective Neuroscience*, *10*, 180–190.
- Pickering, T. G., James, G. D., Boddie, C., Harshfield, G. A., Blank, S., & Laragh, J. H. (1988). How common is white coat hypertension? *Journal of the American Medical Association*, *259*(2), 225–228.
- Piech, R. M., McHugo, M., Smith, S. D., Dukic, M. S., Van Der Meer, J., Abou-Khalil, B., . . . Zald, D. H. (2011). Attentional capture by emotional stimuli is preserved in patients with amygdala lesions. *Neuropsychologia*, *49*(12), 3314–3319. doi:10.1016/j.neuropsychologia.2011.08.004.
- Piff, P. K., Purcell, A., Gruber, J., Hertenstein, M. J., & Keltner, D. (2012). Contact high: Mania proneness and positive perception of emotional touches. *Cognition & Emotion*, *26*(6), 1116–1123.
- Pillutla, M. M., & Murnighan, J. K. (1996). Unfairness, anger, and spite: Emotional rejections of ultimatum offers. *Organizational Behavior & Human Decision Processes*, *68*(3), 208–224.
- Pine, D. S., & LeDoux, J. E. (2017). Elevating the role of subjective experience in the clinic: Response to

- Fanselow and Pennington. *American Journal of Psychiatry*, 174, 1121–1122.
- Pinheiro, A. P., Liu, T., Nestor, P. G., McCarley, R. W., Gonçalves, Ó. F., & Niznikiewicz, M. A. (2013). Visual emotional information processing in male schizophrenia patients: Combining ERP, clinical and behavioral evidence. *Neuroscience Letters*, 550, 75–80. doi:10.1016/j.neulet.2013.06.022.
- Pinker, S. (1994). *The language instinct*. New York: Harper.
- Pitkänen, A., & Amaral, D. G. (1998). Organization of the intrinsic connections of the monkey amygdaloid complex: Projections originating in the lateral nucleus. *Journal of Comparative Neurology*, 398(3), 431–458.
- Pitman, R. K., & Orr, S. P. (1986). Test of the conditioning model of neurosis: Differential aversive conditioning of angry and neutral facial expressions in anxiety disorder patients. *Journal of Abnormal Psychology*, 95(3), 208.
- Pitman, R. K., Orr, S. P., Lowenhagen, M. J., Macklin, M. L., & Altman, B. (1991). Pre-Vietnam contents of posttraumatic stress disorder veterans' service medical and personnel records. *Comprehensive Psychiatry*, 32(5), 416–422.
- Pitman, R. K., Rasmussen, A. M., Koenen, K. C., Shin, L. M., Orr, S. P., Gilbertson, M. W., . . . Liberzon, I. (2012). Biological studies of post-traumatic stress disorder. *Nature Reviews Neuroscience*, 13(11), 769–787.
- Pizarro, D. A., Inbar, Y., & Helion, C. (2011). On disgust and moral judgment. *Emotion Review*, 3, 267–268.
- Ploghaus, A., Narain, C., Beckmann, C. F., Clare, S., Bantick, S., Wise, R., . . . Tracey, I. (2001). Exacerbation of pain by anxiety is associated with activity in a hippocampal network. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 21(24), 9896–9903.
- Plutchik, R., & Kellerman, H. (Eds.). (1980). *Emotion: Theory, research, and experience: Vol. 1. Theories of emotion*. New York: Academic Press.
- Poh, M. Z., Swenson, N. C., & Picard, R. W. (2010). A wearable sensor for unobtrusive, long-term assessment of electrodermal activity. *IEEE Transactions on Bio-Medical Engineering*, 57(5), 1243–1252. doi:10.1109/TBME.2009.2038487.
- Poldrack, R. A. (2006). Can cognitive processes be inferred from neuroimaging data? *Trends in Cognitive Sciences*, 10(2), 59–63. doi:10.1016/j.tics.2005.12.004.
- Poldrack, R. A. (2011). Inferring mental states from neuroimaging data: From reverse inference to large-scale decoding. *Neuron*, 72(5), 692–697. doi:10.1016/j.neuron.2011.11.001.
- Poldrack, R. A. (2016). Why preregistration no longer makes me nervous. Retrieved from <http://www.russpoldrack.org/2016/09/why-preregistration-no-longer-makes-me.html>.
- Poldrack, R. A., & Wagner, A. D. (2008). The interface between neuroscience and psychological science. *Current Directions in Psychological Science*.
- Poldrack, R. A., & Yarkoni, T. (2016). From brain maps to cognitive ontologies: Informatics and the search for mental structure. *Annual Review of Psychology*, 67, 587–612.
- Poldrack, R. A., Baker, C. I., Durnez, J., Gorgolewski, K. J., Matthews, P. M., Munafò, M. R., . . . Yarkoni, T. (2017). Scanning the horizon: Towards transparent and reproducible neuroimaging research. *Nature Reviews Neuroscience*, 18, 115–126.
- Poldrack, R. A., Monahan, J., Imrey, P. B., Reyna, V., Raichle, M. E., Faigman, D., & Buckholz, J. W. (2018). Predicting violent behavior: What can neuroscience add? *Trends Cogn Sci*, 22, 111–123.
- Poletti, M., De Rosa, A., & Bonuccelli, U. (2012). "Affective symptoms and cognitive functions in Parkinson's disease." *Journal of the Neurological Sciences*, 317(1–2), 97–102.
- Polimanti, R., Piacentini, S., Manfellotto, D., & Fuciarelli, M. (2012). Human genetic variation of CYP450 superfamily. *Pharmacogenomics*, 13, 1951–1960.
- Pollak, S. D., & Kistler, D. J. (2002). Early experience is associated with the development of categorical representations for facial expressions of emotion. *Proceedings of the National Academy of Sciences of the United States of America*, 99(13), 9072–9076. doi:10.1073/pnas.142165999.
- Pollak, S. D., & Sinha, P. (2002). Effects of early experience on children's recognition of facial displays of emotion. *Developmental Psychology*, 38, 784–791.
- Pool, E., Brosch, T., Delplanque, S., & Sander, D. (2016). Attentional bias for positive emotional stimuli: A meta-analytic investigation. *Psychological Bulletin*, 142, 79–106.
- Porges, S. W. (2007). The polyvagal perspective. *Biological Psychology*, 74(2), 116–143.
- Porter, R. H., & Moore, J. D. (1981). Human kin recognition by olfactory cues. *Physiology & Behavior*, 27(3), 493–495.
- Posner, M. I. (1980). Orienting of attention. *Quarterly Journal of Experimental Psychology*, 32(1), 3–25.
- Posner, M. I. (1994). Attention: The mechanisms of consciousness. *Proceedings of the National Academy of Sciences of the United States of America*, 91, 7398–7403.
- Posner, M. I., & Rothbart, M. K. (2007). Research on attention networks as a model for the integration of psychological science. *Annual Review of Psychology*, 58, 1–23.

- Posner, M. I., Inhoff, A. W., Friedrich, F. J., & Cohen, A. (1987). Isolating attentional systems: A cognitive-anatomical analysis. *Psychobiology*, *15*(2), 107–121.
- Postolache, T. T., Stiller, J. W., Herrell, R., Goldstein, M. A., Shreeram, S. S., Zebrak, R., . . . Rohan, K. J. (2005). Tree pollen peaks are associated with increased nonviolent suicide in women. *Molecular Psychiatry*, *10*(3), 232–235.
- Pourtois, G., Grandjean, D., Sander, D., & Vuilleumier, P. (2004). Electrophysiological correlates of rapid spatial orienting towards fearful faces. *Cerebral Cortex*, *14*(6), 619–633.
- Pourtois, G., Schettino, A., & Vuilleumier, P. (2013). Brain mechanisms for emotional influences on perception and attention: What is magic and what is not. *Biological Psychology*, *92*, 492–512.
- Powell, J., Lewis, P. A., Roberts, N., Garcia-Fiñana, M., Dunbar, R. I. M. (2012). Orbital prefrontal cortex volume predicts social network size: An imaging study of individual differences in humans. *Proceedings of the Royal Society B: Biological Sciences*, *279*(1736), 2157–2162.
- Powers, K. E., Worsham, A. L., Freeman, J. B., Wheatley, T., & Heatherton, T. F. (2014). Social connection modulates perceptions of animacy. *Psychological Science*, *25*(10), 1943–1948. doi:10.1177/0956797614547706.
- Prehn-Kristensen, A., Ohrt, A., Sojka, B., Ferstl, R., & Pause, B. M. (2006). Chemosensory anxiety signals augment the startle reflex in humans. *Neuroscience Letters*, *394*(2), 127–130. <https://doi.org/10.1016/j.neulet.2005.10.012>.
- Prehn-Kristensen, A., Wiesner, C., Bergmann, T. O., Wolff, S., Jansen, O., Mehdorn, H. M., . . . Pause, B. M. (2009). Induction of empathy by the smell of anxiety. *PLoS One*, *4*(6), e5987. doi:10.1371/journal.pone.0005987.
- Prenoveau, J. M., Craske, M. G., Zinbarg, R., Mineka, S., Rose, R. D., & Griffith, J. W. (2011). Are anxiety and depression just as stable as personality during late adolescence? Results from a 3-year longitudinal latent variable study. *Journal of Abnormal Psychology*, *4*, 832–843.
- Preston, S. D., & de Waal, F. B. M. (2002). Empathy: Its ultimate and proximate bases. *Behavioral & Brain Sciences*, *25*(1), 1–20. doi:10.1017/S0140525X02000018.
- Preston, S. D., & Hofelich, A. J. (2012). The many faces of empathy: Parsing empathic phenomena through a proximate, dynamic-systems view of representing the other in the self. *Emotion Review*, *4*(1), 24–33. doi:10.1177/1754073911421378.
- Preuschoff, K., Bossaerts, P., & Quartz, S. R. (2006). Neural differentiation of expected reward and risk in human subcortical structures. *Neuron*, *51*(3), 381–390.
- Price, C. J., & Friston, K. J. (2002). Degeneracy and cognitive anatomy. *Trends in Cognitive Sciences*, *6*, 416–421.
- Price, D. D., Finniss, D. G., & Benedetti, F. (2008). A comprehensive review of the placebo effect: Recent advances and current thought. *Annual Review of Psychology*, *59*(1), 565–590. doi:10.1146/annurev.psych.59.113006.095941.
- Price, J. L. (2003). Comparative aspects of amygdala connectivity. *Annals of the New York Academy of Sciences*, *985*, 50–58.
- Price, R. B., Allen, K. B., Silk, J. S., Ladouceur, C. D., Ryan, N. D., Dahl, R. E., . . . Siegle, G. J. (2016). Vigilance in the laboratory predicts avoidance in the real world: A dimensional analysis of neural, behavioral, and ecological momentary data in anxious youth. *Dev Cogn Neurosci*, *19*, 128–136.
- Price, R. B., Wallace, M., Kuckertz, J. M., Amir, N., Graur, S., Cummings, L., . . . Bar-Haim, Y. (2016). Pooled patient-level meta-analysis of children and adults completing a computer-based anxiety intervention targeting attentional bias. *Clinical Psychology Review*, *50*, 37–49.
- Price, R. B., Siegle, G. J., Silk, J. S., Ladouceur, C. D., McFarland, A., Dahl, R. E., & Ryan, N. D. (2014). Looking under the hood of the dot-probe task: An fMRI study in anxious youth. *Depression & Anxiety*, *31*(3), 178–187. doi:10.1002/da.22255.
- Prinz, J. J. (2007). *The emotional construction of morals*. Oxford, UK: Oxford University Press.
- Prinz, P., & Dekovic, J. (2008). Continuity and change of childhood personality characteristics through the lens of teachers. *Personality & Individual Differences*, *45*, 82–88.
- Prkachin, K. M. (1992). The consistency of facial expressions of pain: A comparison across modalities. *Pain*, *51*(3), 297–306.
- Provine, R. R. (1992). Contagious laughter: Laughter is a sufficient stimulus for laughs and smiles. *Bulletin of the Psychonomic Society*, *30*(1), 1–4. <https://doi.org/10.3758/BF03330380>.
- Provine, R. R., Krosnowski, K. A., & Brocato, N. W. (2009). Tearing: Breakthrough in human emotional signaling. *Evolutionary Psychology*, *7*(1), 52–56.
- Qi, S., Hassabis, D., Sun, J., Guo, F., Daw, N., & Mobbs, D. (*in press*). How cognitive and reactive fear circuits optimize escape decisions in humans. *Proceedings of the National Academy of Sciences USA*.
- Qin, S., Hermans, E. J., van Marle, H. J., Luo, J., & Fernández, G. (2009). Acute psychological stress reduces working memory-related activity in the dorsolateral prefrontal cortex. *Biological Psychiatry*, *66*, 25–32.

## 534 REFERENCES

- Quigley, K. S., & Barrett, L. F. (2014). Is there consistency and specificity of autonomic changes during emotional episodes? Guidance from the Conceptual Act Theory and psychophysiology. *Biological Psychology*, *98*, 82–94. doi:10.1016/j.biopsycho.2013.12.013.
- Quirk, G. J., & Beer, J. S. (2006). Prefrontal involvement in the regulation of emotion: Convergence of rat and human studies. *Current Opinion in Neurobiology*, *16*(6), 723–727.
- Quirk, G. J., Garcia, R., & González-Lima, F. (2006). Prefrontal mechanisms in extinction of conditioned fear. *Biological Psychiatry*, *60*(4), 337–343.
- Quirk, G. J., Reppas, J. B., & LeDoux, J. E. (1995). Fear conditioning enhances short-latency auditory responses of lateral amygdala neurons: Parallel recordings in the freely behaving rat. *Neuron*, *15*, 1029–1039.
- Rabin, M. (1993). Incorporating fairness into game theory and economics. *The American Economic Review*, *83*(5), 1281–1302.
- Radulescu, A. R., & Mujica-Parodi, L. R. (2013). Human gender differences in the perception of conspecific alarm chemosensory cues. *PLoS One*, *8*(7), e68485. doi:10.1371/journal.pone.0068485.
- Raghunathan, R., & Pham, M. (1999). All negative moods are not equal: Motivational influences of anxiety and sadness on decision making. *Organizational Behavior & Human Decision Processes*, *79*(1), 56–77. doi:10.1006/obhd.1999.2838.
- Raichle, M. E. (2010). Two views of brain function. *Trends in Cognitive Sciences*, *14*, 180–190.
- Rainville, P., Bechara, A., Naqvi, N., & Damasio, A. (2006). Basic emotions are associated with distinct patterns of cardiorespiratory activity. *International Journal of Psychophysiology*, *61*(1), 5–18. doi:10.1016/j.ijpsycho.2005.10.024.
- Raio, C. M., & Phelps, E. A. (2015). Observational fear learning. In A. W. Toga (Ed.), *Brain mapping: An encyclopedic reference* (pp. 137–141). New York: Academic Press.
- Raio, C. M., Brignoni-Perez, E., Goldman, R., & Phelps, E. A. (2014). Acute stress impairs the retrieval of extinction memory in humans. *Neurobiology of Learning & Memory*, *112*, 212–221.
- Raio, C. M., Carmel, D., Carrasco, M., & Phelps, E. A. (2012). Nonconscious fear is quickly acquired but swiftly forgotten. *Current Biology*, *22*(12), R477–R479. doi:10.1016/j.cub.2012.04.023.
- Raio, C. M., O'Rederu, T. A., Palazzolo, L., Shurick, A. A., & Phelps, E. A. (2013). Cognitive emotion regulation fails the stress test. *Proceedings of the National Academy of Sciences of the United States of America*, *110*, 15139–15144.
- Raison, C. L., & Miller, A. H. (2011). Is depression an inflammatory disorder? *Current Psychiatry Reports*, *13*(6), 467–475. http://doi.org/10.1007/s11920-011-0232-0.
- Raison, C. L., & Miller, A. H. (2013). The evolutionary significance of depression in Pathogen Host Defense (PATHOS-D). *Molecular Psychiatry*, *18*(1), 15–37. http://doi.org/10.1038/mp.2012.2.
- Raison, C. L., Borisov, A. S., Majer, M., Drake, D. F., Pagnoni, G., Woolwine, B. J., . . . Miller, A. H. (2009). Activation of central nervous system inflammatory pathways by interferon-alpha: Relationship to monoamines and depression. *Biological Psychiatry*, *65*(4), 296–303.
- Raison, C. L., Demetrashvili, M., Capuron, L., & Miller, A. H. (2005). Neuropsychiatric adverse effects of interferon-alpha: Recognition and management. *CNS Drugs*, *19*(2), 105–123. http://doi.org/10.1172/JCI29404.fundamental.
- Rajkowska, G. (2000). Postmortem studies in mood disorders indicate altered numbers of neurons and glial cells. *Biological Psychiatry*, *48*(8), 766–777.
- Ramirez, G., & Beilock, S. L. (2011). Writing about testing worries boosts exam performance in the classroom. *Science*, *331*, 211–213.
- Rand, D. G., Greene, J. D., & Nowak, M. A. (2012). Spontaneous giving and calculated greed. *Nature*, *489*, 427–430.
- Rangel, A. (2010). Visual fixations and the computation and comparison of value in simple choice. *Nature Neuroscience*, *13*(10), 1292–1298. doi:10.1038/nn.2635.
- Rangel, A., & Hare, T. (2010). Neural computations associated with goal-directed choice. *Current Opinion in Neurobiology*, *20*(2), 262–270.
- Rangel, A., Camerer, C., & Montague, P. R. (2008). A framework for studying the neurobiology of value-based decision making. *Nature Reviews Neuroscience*, *9*, 545–556.
- Rao, R. P., & Ballard, D. H. (1999). Predictive coding in the visual cortex: A functional interpretation of some extra-classical receptive-field effects. *Nature Neuroscience*, *2*(1), 79–87.
- Rao, U., Hammen, C., Ortiz, L. R., Chen, L.-A., & Poland, R. E. (2008). Effects of early and recent adverse experiences on adrenal response to psychosocial stress in depressed adolescents. *Biological Psychiatry*, *64*, 521–526.
- Rapee, R. H., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research & Therapy*, *35*, 741–756.
- Rapoport, A., & Chammah, A. M. (1965). *Prisoner's dilemma: A study in conflict and cooperation* (Vol. 165). Ann Arbor, MI: University of Michigan Press.
- Ratner, K. G., Dotsch, R., Wigboldus, D. H., van Knippenberg, A., & Amodio, D. M. (2014). Visualizing minimal ingroup and outgroup faces: Implications for impressions, attitudes,

- and behavior. *Journal of Personality & Social Psychology*, 106(6), 897.
- Rauch, S. A., Foa, E. B., Furr, J. M., & Filip, J. C. (2004). Imagery vividness and perceived anxious arousal in prolonged exposure treatment for PTSD. *Journal of Traumatic Stress*, 17(6), 461–465.
- Rauch, S. A., King, A. P., Abelson, J., Tuerk, P. W., Smith, E., Rothbaum, B. O., . . . Liberzon, I. (2015). Biological and symptom changes in posttraumatic stress disorder treatment: A randomized clinical trial. *Depression & Anxiety*, 32(3), 204–212.
- Rauch, S. L., Milad, M. R., Orr, S. P., Quinn, B. T., Fischl, B., & Pitman, R. K. (2005). Orbitofrontal thickness, retention of fear extinction, and extraversion. *NeuroReport*, 16(17), 1909–1912.
- Rauch, S. L., Shin, L. M., & Phelps, E. A. (2006). Neurocircuitry models of posttraumatic stress disorder and extinction: Human neuroimaging research—past, present, and future. *Biological Psychiatry*, 60(4), 376–382.
- Raver, C. C., Blair, C., & Garrett-Peters, P., Family Life Project Key Investigators. (2014). Poverty, household chaos, and interparental aggression predict children's ability to recognize and modulate negative emotions. *Development & Psychopathology*, 27(3), 695–708. doi:10.1017/S0954579414000935. Epub 2014 Sep 12.
- Ray, R. D., & Zald, D. H. (2012). Anatomical insights into the interaction of emotion and cognition in the prefrontal cortex. *Neuroscience & Biobehavioral Reviews*, 36, 479–501.
- Ray, R. D., McRae, K., Ochsner, K. N., & Gross, J. J. (2010). Cognitive reappraisal of negative affect: Converging evidence from EMG and self-report. *Emotion*, 10(4), 587.
- AQ: Please update reference. Raz, G., Touroutoglou, A., et al. (under review). Stimulus induced functional connectivity dynamics reveal common networks for different emotions. Manuscript under review.
- Raz, G., Touroutoglou, T., Wilson-Mendenhall, C., Gilam, G., Lin, T., Gonen, T., Jacob, Y., Atzil, S., Admon, R., Bleich-Cohen, M., Maron-Katz, A., Hendler, T., & Barrett, L. F. (2016). Functional connectivity dynamics during film viewing reveal common networks for different emotional experiences. *Cognitive, Affective, and Behavioral Neuroscience*, 16, 709–723.
- Reardon, S. (2015). Neuroscience in court: The painful truth. *Nature*, 518, 474–476.
- Reber, J., Feinstein, J. S., O'Doherty, J. P., Liljeholm, M., Adolphs, R., & Tranel, D. (2017). Selective impairment of goal-directed decision-making following lesions to the human ventromedial prefrontal cortex. *Brain*, 140, 1743–1756.
- Reber, S. O., Siebler, P. H., Donner, N. C., Morton, J. T., Smith, D. G., Kopelman, J. M., . . . Lowry, C. A. (2016). Immunization with a heat-killed preparation of the environmental bacterium *Mycobacterium vaccae* promotes stress resilience in mice. *Proceedings of the National Academy of Sciences of the United States of America*, 113, E3130–E3139.
- Redcay, E., & Carlson, T. A. (2014). Rapid neural discrimination of communicative gestures. *Social Cognitive & Affective Neuroscience*, 10(4), 545–551.
- Reddy, V. (2000). Coyness in early infancy. *Developmental Science*, 3(2), 186–192.
- Reddy, V. (2005). Feeling shy and showing-off: Self-conscious emotions must regulate self-awareness. In J. Nadel & Muir, D. (Eds.), *Emotional development: Recent research advances* (pp. 183–204). Oxford, UK: Oxford University Press.
- Redondo, R. L., Kim, J., Arons, A. L., Ramirez, S., Liu, X., & Tonegawa, S. (2014). Bidirectional switch of the valence associated with a hippocampal contextual memory engram. *Nature*, 513(7518), 426–430.
- Reeb-Sutherland, B. C., Helfenstein, S. M., Degnan, K. A., Pérez-Edgar, K., Henderson, H. A., Lissek, S., Chronis-Tuscano, A., Grillon, C., Pine, D. S., & Fox, N. A. (2009a). Startle response in behaviorally inhibited adolescents with a lifetime occurrence of anxiety disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, 48, 610–617. PMID: PMC2786057.
- Reeb-Sutherland, B. C., Vanderwert, R. E., Degnan, K. A., Marshall, P. J., Pérez-Edgar, K., Chronis-Tuscano, A., . . . Fox, N. A. (2009b). Attention to novelty in behaviorally inhibited adolescents moderates risk for anxiety. *Journal of Child Psychology & Psychiatry*, 50(11), 1365–1372.
- Reeck, C., Ames, D. R., & Ochsner, K. N. (2016). The social regulation of emotion: An integrative, cross-disciplinary model. *Trends in Cognitive Sciences*, 20, 47–63.
- Reed, A. E., Chan, L., & Mikels, J. A. (2014). Meta-analysis of the age-related positivity effect: Age differences in preferences for positive over negative information. *Psychology & Aging*, 29, 1–15. doi:10.1037/a0035194.
- Rees, G. (2007). Neural correlates of the contents of visual awareness in humans. *Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences*, 362, 877–886. doi:10.1098/rstb.2007.2094.
- Rees, G., Kreiman, G., & Koch, C. (2002). Neural correlates of consciousness in humans. *Nature Reviews Neuroscience*, 3, 261–270.
- Reeve, J. (1993). The face of interest. *Motivation & Emotion*, 17(4), 353–375.
- Regan, D. T., Williams, M., & Sparling, S. (1972). Voluntary expiation of guilt: A field experiment.



## 536 REFERENCES

- Journal of Personality & Social Psychology*, 24(1), 42.
- Regier, D. A., Myers, J. K., Kramer, M., Robins, L. N., Blazer, D. G., Hough, R. L., . . . Locke, B. Z. (1984). The NIMH Epidemiologic Catchment Area program: Historical context, major objectives, and study population characteristics. *Archives of General Psychiatry*, 41(10), 934–941. doi:10.1001/archpsyc.1984.01790210016003.
- Regier, D. A., Narrow, W. E., Clarke, D. E., Kraemer, H. C., Kuramoto, S. J., Kuhl, E. A., & Kupfer, D. J. (2013). DSM-5 field trials in the United States and Canada, Part II: test-retest reliability of selected categorical diagnoses. *American Journal of Psychiatry*, 170, 59–70.
- Reiber, C., Shattuck, E. C., Fiore, S., Alperin, P., Davis, V., & Moore, J. (2010). Change in human social behavior in response to a common vaccine. *Annals of Epidemiology*, 20(10), 729–733. http://doi.org/10.1016/j.annepidem.2010.06.014.
- Reich, J. W., Zautra, A., & Hall, J. S. (Eds.). (2010). *Handbook of adult resilience*. New York: Guilford.
- Reichenberg, A., Yirmiya, R., Schuld, A., Kraus, T., Haack, M., Morag, A., & Pollmächer, T. (2001). Cytokine-associated emotional and cognitive disturbances in humans. *Archives of General Psychiatry*, 58(5), 445–452. http://doi.org/10.1001/archpsyc.58.5.445.
- Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and internalizing problems in children: A meta-analysis of longitudinal studies. *Child Abuse & Neglect*, 34, 244–252. doi:10.1016/j.chiabu.2009.07.009.
- Reiman, E. M., Lane, R. D., Ahern, G. L., Schwartz, G. E., Davidson, R. J., Friston, K. J., . . . Chen, K. (1997). Neuroanatomical correlates of externally and internally generated human emotion. *American Journal of Psychiatry*, 154(7), 918–925.
- Reinecke, A., Waldenmaier, L., Cooper, M. J., & Harmer, C. J. (2013). Changes in automatic threat processing precede and predict clinical changes with exposure-based cognitive-behavior therapy for panic disorder. *Biological Psychiatry*, 73, 1064–1070.
- Reinhard, D. A., & Clore, G. L. (2015). Emotional intensity varies with the mental content of affected vs. unaffected domains. Poster presented at Society for Personality and Social Psychology, Feb. 28, Long Beach, CA.
- Reis, H. T., Smith, S. M., Carmichael, C. L., Caprariello, P. A., Tsai, F. F., Rodrigues, A., & Maniaci, M. R. (2010). Are you happy for me? How sharing positive events with others provides personal and interpersonal benefits. *Journal of Personality & Social Psychology*, 99, 311–329. doi:10.1037/a0018344.
- Reisenzein, R., Studtmann, M., & Horstmann, G. (2013). Coherence between emotion and facial expression: Evidence from laboratory experiments. *Emotion Review*, 5, 16–23.
- Rekers, Y., Haun, D. B. M., & Tomasello, M. (2011). Children, but not chimpanzees, prefer to collaborate. *Current Biology*, 21(20), 1756–1758. doi:10.1016/j.cub.2011.08.066.
- Rempel-Clower, N. L., & Barbas, H. (1998). Topographic organization of connections between the hypothalamus and prefrontal cortex in the rhesus monkey. *Journal of Comparative Neurology*, 398(3), 393–419.
- Repacholi, B. M. (1998). Infants' use of attentional cues to identify the referent of another person's emotional expression. *Developmental Psychology*, 34, 1017–1025.
- Repacholi, B. M., & Meltzoff, A. N. (2007). Emotional eavesdropping: Infants selectively respond to indirect emotional signals. *Child Development*, 78, 503–521.
- Repacholi, B. M., Meltzoff, A. N., & Olsen, B. (2008). Infants' understanding of the link between visual perception and emotion: If she can't see me doing it, she won't get angry. *Developmental Psychology*, 44, 561–574.
- Repacholi, B. M., Meltzoff, A. N., Hennings, T. M., & Ruba, A. L. (2016). Transfer of social learning across contexts: Exploring infants' attribution of trait-like emotions to adults. *Infancy*, 21, 785–806.
- Repacholi, B. M., Meltzoff, A. N., Rowe, H., & Toub, T. S. (2014). Infant, control thyself: Infants' integration of multiple social cues to regulate their imitative behavior. *Cognitive Development*, 32, 46–57. http://doi.org/10.1016/j.cogdev.2014.04.004.
- Repacholi, B. M., Meltzoff, A. N., Spiewak Toub, T., & Ruba, A. L. (2016). Infants' generalizations about other people's emotions: Foundations for trait-like attribution. *Developmental Psychology*, 52, 364–378.
- Reschly, A. L., Huebner, E. S., Appleton, J. J., & Antaramian, S. (2008). Engagement as flourishing: The contribution of positive emotions and coping to adolescents' engagement at school and with learning. *Psychology in the Schools*, 45, 419–431. doi:10.1002/pits.20306.
- Rescorla, R. A., & Wagner, A. R. (1972). A theory of Pavlovian conditioning: Variations in the effectiveness of reinforcement and nonreinforcement. In A. H. Black & W. F. Prokasy (Eds.), *Classical conditioning II* (pp. 64–99). New York: Appleton-Century-Crofts.
- Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting & Clinical Psychology*, 60(5), 748–756.
- Resick, P. A., Galovski, T. E., Uhlmansiek, M. O. B., Scher, C. D., Clum, G. A., & Young-Xu, Y. (2008). A

- randomized clinical trial to dismantle components of cognitive processing therapy for posttraumatic stress disorder in female victims of interpersonal violence. *Journal of Consulting & Clinical Psychology*, 76(2), 243–258.
- Resick, P. A., Nishith, P., Weaver, T. L., Astin, M. C., & Feuer, C. A. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting & Clinical Psychology*, 70(4), 867–879.
- Reuben, E., Sapienza, P., & Zingales, L. (2009). Is mistrust self-fulfilling? *Economics Letters*, 104(2), 89–91.
- Reynolds, S. M., & Berridge, K. C. (2008). Emotional environments retune the valence of appetitive versus fearful functions in nucleus accumbens. *Nature Neuroscience*, 11(4), 423–425.
- Rhodes, S. E., & Murray, E. A. (2013). Differential effects of amygdala, orbital prefrontal cortex, and prelimbic cortex lesions on goal-directed behavior in rhesus macaques. *Journal of Neuroscience*, 33, 3380–3389. doi:10.1523/JNEUROSCI.4374-12.2013.
- Rhodes, S. E., Charles, D. P., Howland, E. J., & Murray, E. A. (2012). Amygdala lesions in rhesus monkeys fail to disrupt object choices based on internal context. *Behavioral Neuroscience*, 126, 270–278. doi:10.1037/a0027229. Epub 2012 Feb 20.
- Rhudy, J. L., & Meagher, M. W. (2000). Fear and anxiety: Divergent effects on human pain thresholds. *Pain*, 84(1), 65–75.
- Richard, J. M., & Berridge, K. C. (2011). Nucleus accumbens dopamine/glutamate interaction switches modes to generate desire versus dread: D1 alone for appetitive eating but D1 and D2 together for fear. *Journal of Neuroscience*, 31(36), 12866–12879.
- Richard, J. M., & Berridge, K. C. (2013). Prefrontal cortex modulates desire and dread generated by nucleus accumbens glutamate disruption. *Biological Psychiatry*, 73(4), 360–370.
- Richmond, L. L., & Zacks, J. M. (2017). Constructing experience: Event models from perception to action. *Trends in Cognitive Sciences*, <http://dx.doi.org/10.1016/j.tics.2017.08.005>
- Richards, J. M., Plate, R. C., & Ernst, M. (2013). A systematic review of fMRI reward paradigms used in studies of adolescents vs. adults: The impact of task design and implications for understanding neurodevelopment. *Neuroscience & Biobehavioral Reviews*, 37(5), 976–991. doi:10.1016/j.neubiorev.2013.03.004.
- Richter, T., Shackman, A. J., Aue, T. & Okon-Singer, H. (in press). The neurobiology of emotion-cognition interactions. In Baune, B. & Harmer, C. (Eds.). *Cognitive dimensions of Major Depressive Disorder: Cognitive, emotional and social cognitive processes*. New York, NY: Oxford University Press.
- Rickels, K., Lipman, R. S., Park, L. C., Covi, L., Uhlenhuth, E. H., & Mock, J. E. (1971). Drug, doctor warmth, and clinic setting in the symptomatic response to minor tranquilizers. *Psychopharmacologia*, 20(2), 128–152.
- Riediger, M., Schmiedek, F., Wagner, G. G., & Lindenberger, U. (2009). Seeking pleasure and seeking pain: Differences in prohedonic and contrahedonic motivation from adolescence to old age. *Psychological Science*, 20(12), 1529–1535.
- Rilling, J. K., Gutman, D. A., Zeh, T. R., Pagnoni, G., Berns, G. S., & Kilts, C. D. (2002). A neural basis for social cooperation. *Neuron*, 35(2), 395–405.
- Rilling, J. K., Sanfey, A. G., Aronson, J. A., Nystrom, L. E., & Cohen, J. D. (2004). Opposing BOLD responses to reciprocated and unreciprocated altruism in putative reward pathways. *NeuroReport*, 15(16), 2539–2543.
- Rimé, B. (2009). Emotion elicits the social sharing of emotion: Theory and empirical review. *Emotion Review*, 1, 60–85.
- Risold, P. Y., Thompson, R. H., & Swanson, L. W. (1997). The structural organization of connections between hypothalamus and cerebral cortex. *Brain Research Reviews*, 24(2–3), 197–254.
- Ritchie, S. J., Bates, T. C., Der, G., Starr, J. M., & Deary, I. J. (2013). Education is associated with higher later life IQ scores, but not with faster cognitive processing speed. *Psychology & Aging*, 28(2), 515.
- Ro, T., Shelton, D., Lee, O. L., and Chang, E. (2004). Extrageniculate mediation of unconscious vision in transcranial magnetic stimulation-induced blindsight. *Proceedings of the National Academy of Sciences of the United States of America*, 101, 9933–9935.
- Roberson, D., Damjanovic, L., & Pilling, M. (2007). Categorical perception of facial expressions: Evidence for a “category adjustment” model. *Memory & Cognition*, 35(7), 1814–1829.
- Roberson, D., Davidoff, J., & Braisby, N. (1999). Similarity and categorisation: Neuropsychological evidence for a dissociation in explicit categorisation tasks. *Cognition*, 71(1), 1–42.
- Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin*, 126, 25–30.
- Roberts, B. W., & Mroczek, D. (2008). Personality trait change in adulthood. *Current Directions in Psychological Science*, 17, 31–35.

## 538 REFERENCES

- Roberts, B. W., Kuncel, N. R., Shiner, R., Caspi, A., & Goldberg, L. R. (2007). The power of personality. The comparative validity of personality traits, socioeconomic status, and cognitive ability for predicting important life outcomes. *Perspectives in Psychological Science*, 2, 313–345.
- Roberts, B. W., Luo, J., Briley, D. A., Chow, P. I., Su, R., & Hill, P. L. (2017). A systematic review of personality trait change through intervention. *Psychological Bulletin*, 143, 117–141.
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life course: A meta-analysis of longitudinal studies. *Psychological Bulletin*, 132, 1–25.
- Roberts, N. A., Beer, J. S., Werner, K. H., Scabini, D., Levens, S. M., Knight, R. T., & Levenson, R. W. (2004). The impact of orbital prefrontal cortex damage on emotional activation to unanticipated and anticipated acoustic startle stimuli. *Cognitive, Affective, & Behavioral Neuroscience*, 4, 307–316.
- Robinson, M., & Clore, G. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, 128, 934–960.
- Robinson, O. J., Charney, D. R., Overstreet, C., Vytal, K., & Grillon, C. (2012). The adaptive threat bias in anxiety: Amygdala-dorsomedial prefrontal cortex coupling and aversive amplification. *NeuroImage*, 60, 523–529.
- Robinson, O. J., Vytal, K., Cornwell, B. R., & Grillon, C. (2013). The impact of anxiety upon cognition: Perspectives from human threat of shock studies. *Frontiers in Human Neuroscience*, 7, 203.
- Robinson, T. E., & Berridge, K. C. (1993). The neural basis of drug craving: An incentive-sensitization theory of addiction. *Brain Research: Brain Research Reviews*, 18(3), 247–291.
- Robinson, T. E., & Berridge, K. C. (2003). Addiction. *Annual Review of Psychology*, 54(1), 25–53.
- Röcke, C., Li, S. C., & Smith, J. (2009). Intraindividual variability in positive and negative affect over 45 days: Do older adults fluctuate less than young adults? *Psychology & Aging*, 24, 863–878.
- Roddenberry, G. (1966). Original television broadcast of *Star Trek* episode 3, “Where no man has gone before” (aired Sept. 22, 1966). The episode was written by S. A. Peeples and directed by J. Goldstone.
- Rodebaugh, T. L., Scullin, R. B., Langer, J. K., Dixon, D. J., Huppert, J. D., Bernstein, A., . . . Lenze, E. J. (2016). Unreliability as a threat to understanding psychopathology: The cautionary tale of attentional bias. *Journal of Abnormal Psychology*, 125(6), 840–841.
- Rodgers, R. J. (2010). Animal tests for anxiety. In *Encyclopedia of Behavioral Neuroscience* (pp. 90–100). Burlington, MA: Academic Press.
- Rodgers, A. B., & Bale, T. L. (2015). Germ cell origins of posttraumatic stress disorder risk: The transgenerational impact of parental stress experience. *Biological Psychiatry*, 78(5), 307–314.
- Roelofs, K., Hagens, M. A., & Stins, J. (2010). Facing freeze: Social threat induces bodily freeze in humans. *Psychological Science*, 21(11), 1575–1581.
- Rogan, M. T., Stäubli, U. V., & LeDoux, J. E. (1997). Fear conditioning induces associative long-term potentiation in the amygdala. *Nature*, 390(6660), 604–607.
- Rogers, R. D., Tunbridge, E. M., Bhagwagar, Z., Drevets, W. C., Sahakian, B. J., & Carter, C. S. (2003). Tryptophan depletion alters the decision-making of healthy volunteers through altered processing of reward cues. *Neuropsychopharmacology*, 28(1), 153.
- Rohsenow, D. J., & Marlatt, G. A. (1981). The balanced placebo design: Methodological considerations. *Addictive Behaviors*, 6(2), 107–122.
- Rolls, E. T. (1999). *The brain and emotion*. New York: Oxford University Press.
- Rolls, E. T. (1990). A theory of emotion, and its application to understanding the neural basis of emotion. *Cognition & Emotion*, 4, 161–190.
- Rolls, E. T. (1995). A theory of emotion and consciousness, and its application to understanding the neural basis of emotion. In M. S. Gazzaniga (Ed.), *The cognitive neurosciences* (pp. 1091–1106). Cambridge, MA: MIT Press.
- Rolls, E. T. (1997a). Brain mechanisms of vision, memory, and consciousness. In M. Ito, Y. Miyashita, & E. T. Rolls (Eds.), *Cognition, computation, and consciousness* (pp. 81–120). Oxford, UK: Oxford University Press.
- Rolls, E. T. (1997b). Consciousness in neural networks? *Neural Networks*, 10, 1227–1240.
- Rolls, E. T. (2003). Consciousness absent and present: A neurophysiological exploration. *Progress in Brain Research*, 144, 95–106.
- Rolls, E. T. (2004). A higher order syntactic thought (HOST) theory of consciousness. In R. J. Gennaro (Ed.), *Higher-order theories of consciousness: An anthology* (pp. 137–172). Amsterdam: John Benjamins.
- Rolls, E. T. (2005a). Consciousness absent or present: A neurophysiological exploration of masking. In H. Ogmen & B. G. Breitmeyer (Eds.), *The first half second: The microgenesis and temporal dynamics of unconscious and conscious visual processes* (pp. 89–108, Chapter 106). Cambridge, MA: MIT Press.
- Rolls, E. T. (2005). *Emotion explained*. New York: Oxford University Press.
- Rolls, E. T. (2007a). The affective neuroscience of consciousness: Higher order linguistic thoughts, dual routes to emotion and action, and consciousness.

- In P. Zelazo, M. Moscovitch, & E. Thompson (Eds.), *Cambridge handbook of consciousness* (pp. 831–859). Cambridge, UK: Cambridge University Press.
- Rolls, E. T. (2007b). A computational neuroscience approach to consciousness. *Neural Networks*, *20*, 962–982.
- Rolls, E. T. (2008a). *Emotion*, higher order syntactic thoughts, and consciousness. In L. Weiskrantz & M. K. Davies (Eds.), *Frontiers of consciousness* (pp. 131–167). Oxford, UK: Oxford University Press.
- Rolls, E. T. (2008b). *Memory, attention, and decision-making: A unifying computational neuroscience approach*. Oxford, UK: Oxford University Press.
- Rolls, E. T. (2009). The anterior and midcingulate cortices and reward. In B. A. Vogt (Ed.), *Cingulate neurobiology and disease* (pp. 191–206). Oxford, UK: Oxford University Press.
- Rolls, E. T. (2011). Consciousness, decision-making, and neural computation. In V. Cutsuridis, A. Hussain, & J. G. Taylor (Eds.), *Perception-action cycle: Models, algorithms and systems* (pp. 287–333). Berlin: Springer.
- Rolls, E. T. (2011). Face neurons. In A. J. Calder, G. Rhodes, M. H. Johnson, & J. V. Haxby (Eds.), *The Oxford handbook of face perception* (pp. 51–75). Oxford, UK: Oxford University Press.
- Rolls, E. T. (2012). *Neuroculture. On the implications of brain science*. Oxford, UK: Oxford University Press.
- Rolls, E. T. (2013). A biased activation theory of the cognitive and attentional modulation of emotion. *Frontiers in Human Neuroscience*, *7*, 74.
- Rolls, E. T. (2014). *Emotion and decision-making explained*. Oxford, UK: Oxford University Press.
- Rolls, E. T. (2016a). *Cerebral cortex: Principles of operation*. Oxford, UK: Oxford University Press.
- Rolls, E. T. (2016b). A non-reward attractor theory of depression. *Neuroscience & Biobehavioral Reviews*, *68*, 47–58.
- Rolls, E. T. (2017a). The roles of the orbitofrontal cortex via the habenula in non-reward and depression, and in the responses of serotonin and dopamine neurons. *Neuroscience & Biobehavioral Reviews*, *75*, 331–334.
- Rolls, E. T. (2017b). The orbitofrontal cortex and emotion in health and disease, including depression. *Neuropsychologia*. doi: 10.1016/j.neuropsychologia.2017.09.021.
- Rolls, E.T. (2018). *The Brain, Emotion, and Depression*. Oxford: Oxford University Press.
- Rolls, E. T., & Deco, G. (2010). *The noisy brain: Stochastic dynamics as a principle of brain function*. Oxford, UK: Oxford University Press.
- Rolls, E. T., & Deco, G. (2015). Networks for memory, perception, and decision-making, and beyond to how the syntax for language might be implemented in the brain. *Brain Research*, *1621*, 316–334.
- Rolls, E. T., Grabenhorst, F., 2008. The orbitofrontal cortex and beyond: From affect to decision-making. *Progress in Neurobiology*, *86*, 216–244.
- Rolls, E. T., O’Doherty, J., Kringelbach, M. L., Francis, S., Bowtell, R., & McGlone, F. (2003). Representations of pleasant and painful touch in the human orbitofrontal and cingulate cortices. *Cerebral Cortex*, *13*(3), 308–317.
- Rolls, E. T., Stringer, S. M., 2001. A model of the interaction between mood and memory. *Network: Computation in Neural Systems*, *12*, 111–129.
- Romanski, L. M., Clugnet, M.-C., Bordi, F., and LeDoux, J. E. (1993). Somatosensory and auditory convergence in the lateral nucleus of the amygdala. *Behavioral Neuroscience*, *107*, 444–450.
- Romero, L. M., Platts, S. H., Schoech, S. J., Wada, H., Crespi, E., Martin, L. B., & Buck, C. L. (2015). Understanding stress in the healthy animal—potential paths for progress. *Stress*, *18*, 491–497.
- Rood, L., Roelofs, J., Bogels, S. M., & Nolen-Hoeksema, S. (2009). The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review*, *29*, 607–616.
- Rose, A. (2002). Co-rumination in the friendships of girls and boys. *Child Development*, *73*, 1830–1843.
- Rose, A., Carlson, W., & Walker, E. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: Considering the socio-emotional trade-offs of co-rumination. *Developmental Psychology*, *43*, 1019–1031.
- Roseboom, P. H., Nanda, S. A., Fox, A. S., Oler, J. A., Shackman, A. J., Shelton, S. E., . . . Kalin, N. H. (2014). Neuropeptide Y receptor gene expression in the primate amygdala predicts anxious temperament and brain metabolism. *Biological Psychiatry*, *76*, 850–857.
- Rosebrock, L., Hoxha, D., & Gollan, J. (2015). Affective reactivity differences in pregnant and postpartum women. *Psychiatry Research*, *227*(2), 179–184.
- Roseman, I. J. (1991). Appraisal determinants of discrete emotions. *Cognition & Emotion*, *5*, 161–200.
- Roseman, I. J. (2011). Emotional behaviors, emotivational goals, emotion strategies: Multiple levels of organization integrate variable and consistent responses. *Emotion Review*, *3*(4), 434–443.
- Roseman, I. J. (2013). Appraisal in the emotion system: Coherence in strategies for coping. *Emotion Review*, *5*(2), 141–149.
- Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality & Social*

## 540 REFERENCES

- Psychology*, 67(2), 206–221. <http://dx.doi.org/10.1037/0022-3514.67.2.206>.
- Rosen, H. J., & Levenson, R. W. (2009). The emotional brain: Combining insights from patients and basic science. *Neurocase*, 15, 173–181.
- Rosenbaum, B. L., Bui, E., Marin, M. F., Holt, D. J., Lasko, N. B., Pitman, R. K., . . . Milad, M. R. (2015). Demographic factors predict magnitude of conditioned fear. *International Journal of Psychophysiology*, 98(1), 59–64.
- Rosenberg, M. D., Casey, B. J., & Holmes, A. J. (2018). Prediction complements explanation in understanding the developing brain. *Nat Commun*, 9, 589.
- Rosenkranz, J. A., & Grace, A. A. (2002). Dopamine-mediated modulation of odour-evoked amygdala potentials during Pavlovian conditioning. *Nature*, 417, 282–287.
- Rosenkranz, M. A. (2007). Substance P at the nexus of mind and body in chronic inflammation and affective disorders. *Psychological Bulletin*, 133(6), 1007–1037. Retrieved from [10.1037/0033-2909.133.6.1007](http://dx.doi.org/10.1037/0033-2909.133.6.1007).
- Rosenkranz, M. A., Busse, W. W., Sheridan, J. F., Crisafi, G. M., & Davidson, R. J. (2012). Are there neurophenotypes for asthma? Functional brain imaging of the interaction between emotion and inflammation in asthma. *PLoS One*, 7(8), e40921. <http://doi.org/10.1371/journal.pone.0040921>.
- Rosenkranz, M. A., Davidson, R. J., Maccoon, D. G., Sheridan, J. F., Kalin, N. H., & Lutz, A. (2013). A comparison of mindfulness-based stress reduction and an active control in modulation of neurogenic inflammation. *Brain, Behavior, & Immunity*, 27(1), 174–184. <http://doi.org/10.1016/j.bbi.2012.10.013>.
- Rosenkranz, M. A., Lutz, A., Perlman, D. M., Bachhuber, D. R. W., Schuyler, B. S., MacCoon, D. G., & Davidson, R. J. (2016). Reduced stress and inflammatory responsiveness in experienced meditators compared to a matched healthy control group. *Psychoneuroendocrinology*, 68, 117–125. <http://doi.org/10.1016/j.psyneuen.2016.02.013>.
- Rosenthal, D. M. (1986). Two concepts of consciousness. *Philosophical Studies*, 49, 329–359.
- Rosenthal, D. M. (1990). *A theory of consciousness*. Bielefeld, Germany: ZIF-Zentrum für Interdisziplinäre Forschung.
- Rosenthal, D. M. (1993). Thinking that one thinks. In M. Davies & G. W. Humphreys (Eds.), *Consciousness* (pp. 197–223). Oxford, UK: Blackwell.
- Rosenthal, D. M. (2004). Varieties of higher-order theory. In R. J. Gennaro (Ed.), *Higher order theories of consciousness* (pp. 17–44). Amsterdam: John Benjamins.
- Rosenthal, D. M. (2005). *Consciousness and mind*. Oxford, UK: Oxford University Press.
- Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York: McGraw-Hill.
- Roth, G., & Assor, A. (2012). The costs of parental pressure to express emotions: Conditional regard and autonomy support as predictors of emotion regulation and intimacy. *Journal of Adolescence*, 35, 799–808. doi:10.1016/j.adolescence.2011.11.005.
- Rothbart, M. K. (1989). Temperament in childhood: A framework. In G. A. Kohnstamm, J. E. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 59–73). New York: John Wiley & Sons, Ltd.
- Rothbart, M. K. (1994). Broad dimensions of temperament and personality. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion. Fundamental questions* (pp. 337–341). New York: Oxford University Press.
- Rothbart, M. K. (2011). *Becoming who we are: Temperament and personality in development*. New York: Guilford Press.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon & R. Lerner (Series Eds.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology, Vol. 3. Social, emotional, and personality development* (6th ed., pp. 99–166). New York: Wiley.
- Rothbart, M. K., & Derryberry, D. (1981). Development of individual differences in temperament. In M. E. Lamb & A. L. Brown (Eds.), *Advances in developmental psychology, Vol. 1* (pp. 37–86). Hillsdale, NJ: Erlbaum.
- Rotshtein, P., Henson, R. N. A., Treves, A., Driver, J., & Dolan, R. J. (2005). Morphing Marilyn into Maggie dissociates physical and identity face representations in the brain. *Nature Neuroscience*, 8, 107–113.
- Rotshtein, P., Richardson, M. P., Winston, J. S., Kiebel, S. J., Vuilleumier, P., Eimer, M., . . . Dolan, R. J. (2010). Amygdala damage affects event-related potentials for fearful faces at specific time windows. *Human Brain Mapping*, 31, 1089–1105.
- Rottenstreich, Y., & Hsee, C. K. (2001). Money, kisses, and electric shocks: On the affective psychology of risk. *Psychological Science*, 12(3), 185–190.
- Rotteveel, M., de Groot, P., Geurtskens, A., & Phaf, R. H. (2001). Stronger suboptimal than optimal affective priming? *Emotion*, 1(4), 348–364. doi:10.1037/1528-3542.1.4.348.
- Rounis, E., Maniscalco, B., Rothwell, J. C., Passingham, R. E., & Lau, H. C. (2010). Theta-burst transcranial magnetic stimulation to the prefrontal cortex impairs metacognitive visual awareness. *Cognitive Neuroscience*, 1(3), 165–175. doi:10.1080/17588921003632529.

- Rowe, G., Hirsch, J. B., & Anderson, A. K. (2007). Positive affect increases the breadth of attentional selection. *Proceedings of the National Academy of Sciences*, *104*, 383–388.
- Rowlands, M. (2010). *The new science of the mind: From extended mind to embodied phenomenology*. Boston, MA: MIT Press.
- Rowlett, J. K., Platt, D. M., Lelas, S., Atack, J. R., & Dawson, G. R. (2005). Different GABAA receptor subtypes mediate the anxiolytic, abuse-related, and motor effects of benzodiazepine-like drugs in primates. *Proceedings of the National Academy of Sciences of the United States of America*, *102*(3), 915–920. <https://doi.org/10.1073/pnas.0405621102>.
- Roy, A. K., Shehzad, Z., Margulies, D. S., Kelly, A. C., Uddin, L. Q., Gotimer, K., . . . Milham, M. P. (2009). Functional connectivity of the human amygdala using resting state fMRI. *NeuroImage*, *45*(2), 614–626.
- Roy, M., Shohamy, D., & Wager, T. D. (2012). Ventromedial prefrontal-subcortical systems and the generation of affective meaning. *Trends in Cognitive Sciences*, *16*(3), 147–156. <http://doi.org/10.1016/j.tics.2012.01.005>.
- Rozin, P., & Cohen, A. B. (2003). High frequency of facial expressions corresponding to confusion, concentration, and worry in an analysis of naturally occurring facial expressions of Americans. *Emotion*, *3*(1), 68.
- Rozin, P., & Fallon, A. E. (1987). A perspective on disgust. *Psychological Review*, *94*, 23–41.
- Rozin, P., Haidt, J., & McCauley, C. (2000). Disgust. In M. Lewis, J. M. Haviland-Jones (Eds.), *Handbook of Emotions* (pp. 637–653). New York: Guilford.
- Rozin, P., Haidt, J., & McCauley, C. R. (2008). Disgust. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions* (pp. 757–776). New York: Guilford Press.
- Rozin, P., Lowery, L., & Ebert, R. (1994). Varieties of disgust faces and the structure of disgust. *Journal of Personality & Social Psychology*, *66*, 870–881. doi:10.1037/0022-3514.66.5.870.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed., pp. 571–645). Hoboken, NJ: John Wiley & Sons.
- Ruby, F. J. M., Smallwood, J., Engen, H., & Singer, T. (2013). How self-generated thought shapes mood—the relation between mind-wandering and mood depends on the socio-temporal content of thoughts. *PLoS One*, *8*(10), e77554. doi:10.1371/journal.pone.0077554.
- Ruch, W., & Ekman, P. (2001). The expressive pattern of laughter. In A. W. Kaszniak (Ed.), *Emotions, qualia, and consciousness: Proceedings of the International School of Biocybernetics, Casamicciola, Napoli, Italy, 19–24 October 1998* (Vol. 10, pp. 426–443). Singapore: World Scientific.
- Rudaizky, D., Basanovic, J., & MacLeod, C. (2014). Biased attentional engagement with, and disengagement from, negative information: Independent cognitive pathways to anxiety vulnerability? *Cognition & Emotion*, *28*, 245–259.
- Rudebeck, P. H., Mitz, A. R., Chacko, R. V., & Murray, E. A. (2013). Effects of amygdala lesions on reward-value coding in orbital and medial prefrontal cortex. *Neuron*, *80*(6), 1519–1531.
- Rudebeck, P. H., Putnam, P. T., Daniels, T. E., Yang, T., Mitz, A. R., Rhodes, S. E., & Murray, E. A. (2014). A role for primate subgenual cingulate cortex in sustaining autonomic arousal. *Proceedings of the National Academy of Sciences*, *111*(14), 5391–5396.
- Rudebeck, P. H., Saunders, R. C., Prescott, A. T., Chau, L. S., & Murray, E. A. (2013). Prefrontal mechanisms of behavioral flexibility, emotion regulation and value updating. *Nature Neuroscience*, *16*(8), 1140–1145.
- Rudolph, K. D., & Hammen, C. (1999). Age and gender as determinants of stress exposure, generation, and reactions in youngsters: A transactional perspective. *Child Development*, *70*, 660–677.
- Rudolph, K. D., Hammen, C., Burge, D., Lindberg, N., Herzberg, D. S., & Daley, S. E. (2000). Toward an interpersonal life-stress model of depression: The developmental context of stress generation. *Development & Psychopathology*, *12*, 215–234.
- Rudolph, U., Crestani, F., Benke, D., Brünig, I., Benson, J. A., Fritschy, J. M., . . . Möhler, H. (1999). Benzodiazepine actions mediated by specific gamma-aminobutyric acid(A) receptor subtypes. *Nature*, *401*(6755), 796–800. <https://doi.org/10.1038/44579>
- Rudolph, U., Crestani, F., Benke, D., Brünig, I., Benson, J. A., Fritschy, J. M., . . . Möhler, H. (2000). Erratum: Benzodiazepine actions mediated by specific  $\gamma$ -aminobutyric acidA receptor subtypes. *Nature*, *404*(6778), 629–629.
- Rueda, M. R. (2012). Effortful control. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 145–167). New York: Guilford Press.
- Rumpel, S., LeDoux, J., Zador, A., and Malinow, R. (2005). Postsynaptic receptor trafficking underlying a form of associative learning. *Science*, *308*, 83–88.
- Rushworth, M. F., Noonan, M. P., Boorman, E. D., Walton, M. E., & Behrens, T. E. (2011). Frontal

## 542 REFERENCES

- cortex and reward-guided learning and decision-making. *Neuron*, 70, 1054–1069.
- Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality & Social Psychology*, 39, 1161–1178.
- Russell, J. A. (1991). Culture and the categorization of emotions. *Psychological Bulletin*, 110(3), 426–450. doi:10.1037/0033-2909.110.3.426.
- Russell, J. A. (1997). Reading emotions from and into faces: Resurrecting a dimensional-contextual perspective. In J. A. Russell & J. M. Fernández-Dols (Eds.), *Studies in emotion and social interaction, 2nd series. The psychology of facial expression* (pp. 295–320). <http://dx.doi.org/10.1017/CBO9780511659911.015>.
- Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychological Review*, 110, 145–172.
- Russell, J. A., & Barrett, L. F. (1999). Core affect, prototypical emotional episodes, and other things called emotion: Dissecting the elephant. *Journal of Personality & Social Psychology*, 76, 805–819.
- Russell, J. A., & Carroll, J. M. (1999). On the bipolarity of positive and negative affect. *Psychological Bulletin*, 125(1), 3–30.
- Russell, J. A., & Fehr, B. (1994). Fuzzy concepts in a fuzzy hierarchy: Varieties of anger. *Journal of Personality & Social Psychology*, 67, 186–205.
- Russell, J. A., & Mehrabian, A. (1977). Evidence for a three-factor theory of emotions. *Journal of Research in Personality*, 11, 273–294.
- Russell, J. A., Bachorowski, J. A., & Fernández-Dols, J. M. (2003). Facial and vocal expressions of emotion. *Annual Review of Psychology*, 54(1), 329–349.
- Rutledge, R. B., Skandali, N., Dayan, P., & Dolan, R. J. (2014). A computational and neural model of momentary subjective well-being. *Proceedings of the National Academy of Sciences*, 111(33), 12252–12257.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality & Social Psychology*, 57, 1069–1081.
- Ryff, C. D. (2014). Psychological well-being: Advances in the science and practice of eudaimonia. *Psychotherapy & Psychosomatics*, 83, 10–28.
- Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9(1), 1–28.
- Ryff, C. D., Love, G. D., Miyamoto, Y., Markus, H. R., Curhan, K. B., Kitayama, S., . . . Karasawa, M. (2014). Culture and the promotion of well-being in East and West: Understanding varieties of attunement to the surrounding context. In G. A. Fava & C. Ruini (Eds.), *Increasing psychological well-being in clinical and education settings: Interventions and cultural contexts* (pp. 1–19). New York: Springer.
- Saarimäki, H., Gotsopoulos, A., Jääskeläinen, I. P., Lampinen, J., Vuilleumier, P., Hari, R., . . . Nummenmaa, L. (2015). Discrete neural signatures of basic emotions. *Cerebral Cortex*, 26(6), 2563–2573.
- Saarni, C., & Harris, P. L. (Eds.). (1989). *Children's understanding of emotion. Cambridge studies in social and emotional development*. New York: Cambridge University Press.
- Saarni, C., Campos, J. J., Camras, L. A., & Witherington, D. (2008). Principles of emotion and emotional competence. In W. Damon & R. M. Lerner (Eds.), *Child and adolescent development: An advanced course* (pp. 361–405). New York: Wiley.
- Saarni, C., Mumme, D., & Campos, J. (1998). Emotional development: Action, communication and understanding. In W. Damon (Series Ed.), & N. Eisenberg (Vol. Ed.), *Handbook of child development. Vol. 3. Social, emotional and personality development* (5th ed., pp. 237–309). New York: Wiley.
- Sabatinielli, D., Bradley, M. M., Fitzsimmons, J. R., & Lang, P. J. (2005). Parallel amygdala and inferotemporal activation reflect emotional intensity and fear relevance. *NeuroImage*, 24, 1265–1270.
- Sabatinielli, D., Fortune, E. E., Li, Q., Siddiqui, A., Krafft, C., Oliver, W. T., . . . Jeffries, J. (2011). Emotional perception: Meta-analyses of face and natural scene processing. *NeuroImage*, 54(3), 2524–2533. doi:10.1016/j.neuroimage.2010.10.011.
- Sabatinielli, D., Lang, P. J., Bradley, M. M., & Flaisch, T. (2006). The neural basis of narrative imagery: Emotion and action. *Progress in Brain Research*, 156, 93–103.
- Sabatinielli, D., Lang, P. J., Costa, V. D., Bradley, M. M., & Keil, A. (2009). The timing of emotional discrimination in human amygdala and ventral visual cortex. *Journal of Neuroscience*, 29, 14864–14868.
- Sabatinielli, D., Lang, P. J., Keil, A., & Bradley, M. M. (2007). Emotional perception. *Cerebral Cortex*, 17, 1085–1091.
- Sacco, T., & Sacchetti, B. (2010). Role of secondary sensory cortices in emotional memory storage and retrieval in rats. *Science*, 329(5992), 649–656. doi:329/5992/649.
- Safdar, S., Friedlmeier, W., Matsumoto, D., Yoo, S. H., Kwantes, C. T., & Kakai, H. (2009). Variations of emotional display rules within and across cultures: A comparison between Canada, USA, and Japan. *Canadian Journal of Behavioural Science*, 41, 1–10.
- Saffran, J. R. (2003). Statistical language learning: Mechanisms and constraints. *Current Directions in Psychological Science*, 12, 110–114.
- Sagi, A., & Hoffman, M. L. (1976). Empathic distress in the newborn. *Developmental Psychology*,

- 12(2), 175–176. <https://doi.org/10.1037/0012-1649.12.2.175>.
- Sahay, A., & Hen, R. (2007). Adult hippocampal neurogenesis in depression. *Nature Neuroscience*, *10*, 1110–1115.
- Said, C. P., Haxby, J. V., & Todorov, A. (2011). Brain systems for assessing the affective value of faces. *Philosophical Transactions of the Royal Society of London, Series B: Biological Sciences*, *366*(1571), 1660–1670. doi:10.1098/rstb.2010.0351.
- Said, C. P., Moore, C. D., Engell, A. D., Todorov, A., & Haxby, J. V. (2010). Distributed representations of dynamic facial expressions in the superior temporal sulcus. *Journal of Vision*, *10*(5), 11. doi:10.1167/10.5.11.
- Said, C. P., Sebe, N., & Todorov, A. (2009). Structural resemblance to emotional expressions predicts evaluation of emotionally neutral faces. *Emotion*, *9*, 260–264.
- Saleem, K. S., Miller, B., & Price, J. L. (2014). Subdivisions and connective networks of the lateral prefrontal cortex in the macaque monkey. *Journal of Comparative Neurology*, *522*, 1641–1690. doi:10.1002/cne.23498.
- Salemink, E., van den Hout, M., & Kindt, M. (2007). Trained interpretive bias: Validity and effects on anxiety. *Journal of Behavior Therapy & Experimental Psychiatry*, *38*(2), 212–224.
- Salimi-Khorshidi, G., Douaud, G., Beckmann, C. F., Glasser, M. F., Griffanti, L., & Smith, S. M. (2014). Automatic denoising of functional MRI data: Combining independent component analysis and hierarchical fusion of classifiers. *NeuroImage*, *90*, 449–468. <http://doi.org/10.1016/j.neuroimage.2013.11.046>.
- Salimpoor, V. N., van den Bosch, I., Kovacevic, N., McIntosh, A. R., Dagher, A., & Zatorre, R. J. (2013). Interactions between the nucleus accumbens and auditory cortices predict music reward value. *Science*, *340*(6129), 216–219.
- Sallquist, J. V., DiDonato, M. D., Hanish, L. D., Martin, C. L., & Fabes, R. A. (2012). The importance of mutual positive expressivity in social adjustment: Understanding the role of peers and gender. *Emotion*, *12*, 304–313. doi:10.1037/a0025238.
- Sallquist, J. V., Eisenberg, N., Spinrad, T. L., Gaertner, B. M., Eggum, N. D., & Zhou, N. (2010). Mothers' and children's positive emotion: Relations and trajectories across four years. *Social Development*, *19*, 799–821. doi:10.1111/j.1467-9507.2009.00565.x.
- Sallquist, J. V., Eisenberg, N., Spinrad, T. L., Reiser, M. H., Hofer, C., Zhou, Q., . . . Eggum, N. (2009). Positive and negative emotionality: Trajectories across six years and relations with social competence. *Emotion*, *9*(1), 15–28.
- Salomons, T. V. (2016). Comparing painful stimulation vs rest in studies of pain-reply. *Journal of the American Medical Association: Neurology*, *73*, 1259–1260.
- Salomons, T. V., Iannetti, G. D., Liang, M., & Wood, J. N. (2016). The “pain matrix” in pain-free individuals. *Journal of the American Medical Association: Neurology*, *73*, 755–756.
- Salomons, T. V., Nusslock, R., Detloff, A., Johnstone, T., & Davidson, R. J. (2015). Neural emotion regulation circuitry underlying anxiolytic effects of perceived control over pain. *Journal of Cognitive Neuroscience*, *27*(2), 222–233. [http://doi.org/10.1162/jocn\\_a\\_00702](http://doi.org/10.1162/jocn_a_00702).
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition, & Personality*, *9*, 185–211.
- Samanez-Larkin, G. R., & Carstensen, L. L. (2011). Socioemotional functioning and the aging brain. In J. Decety & J. T. Cacioppo (Eds.), *The handbook of social neuroscience* (pp. 507–521). New York: Oxford University Press.
- Samanez-Larkin, G. R., & Knutson, B. (2015). Decision making in the ageing brain: Changes in affective and motivational circuits. *Nature Reviews Neuroscience*, *16*(5), 278–289.
- Samson, A. C., Kreibig, S. D., Soderstrom, B., Wade, A. A., & Gross, J. J. (2015). Eliciting positive, negative and mixed emotional states: A film library for affective scientists. *Cognition & Emotion*, *30*, 827–856.
- Samuelson, P. A. (1947). *Foundations of economic analysis*. Cambridge, MA: Harvard University Press.
- Sánchez, M. M., Young, L. J., Plotsky, P. M., & Insel, T. R. (2000). Distribution of corticosteroid receptors in the rhesus brain: Relative absence of glucocorticoid receptors in the hippocampal formation. *Journal of Neuroscience*, *20*(12), 4657–4668.
- Sander, D., Grandjean, D., Kaiser, S., Wehrle, T., & Scherer, K. R. (2007). Interaction effects of perceived gaze direction and dynamic facial expression: Evidence for appraisal theories of emotion. *European Journal of Cognitive Psychology*, *19*(3), 470–480.
- Sanfey, A. G., Rilling, J. K., Aronson, J. A., Nystrom, L. E., & Cohen, J. D. (2003). The neural basis of economic decision-making in the Ultimatum Game. *Science*, *300*, 1755–1758.
- Sano, A., Phillips, A. J., Yu, A. Z., McHill, A. W., Taylor, S., Jaques, N., . . . Picard, R. W. (2015). Recognizing academic performance, sleep quality, stress level, and mental health using personality traits, wearable sensors and mobile phones. Paper presented at the 12th International IEEE Conference on Wearable and Implantable Body Sensor Networks.
- Santarelli, L., Saxe, M., Gross, C., Surget, A., Battaglia, F., Dulawa, S., . . . Hen, R. (2003). Requirement



## 544 REFERENCES

- of hippocampal neurogenesis for the behavioral effects of antidepressants. *Science*, 301, 805–809.
- Saper, C. B. (2002). The central autonomic nervous system: Conscious visceral perception and autonomic pattern generation. *Annual Review of Neuroscience*, 25(1), 433–469.
- Sari, B. A., Koster, E. H., Pourtois, G., & Derakshan, N. (2016). Training working memory to improve attentional control in anxiety: A proof-of-principle study using behavioral and electrophysiological measures. *Biological Psychology*, 121, 203–212.
- Sarrieau, A., Dussaillant, M., Sapolsky, R. M., Aitken, D. H., Olivier, A., Lal, S., . . . Meaney, M. J. (1988). Glucocorticoid binding sites in human temporal cortex. *Brain Research*, 442(1), 157–160.
- Sarter, M., Berntson, G. G., & Cacioppo, J. T. (1996). Brain imaging and cognitive neuroscience. Toward strong inference in attributing function to structure. *American Psychologist*, 51(1), 13–21.
- Satpute, A. B., Wager, T. D., Cohen-Adad, J., Bianciardi, M., Choi, J. K., Buhle, J. T., . . . Barrett, L. F. (2013). Identification of discrete functional subregions of the human periaqueductal gray. *Proceedings of the National Academy of Sciences*, 110(42), 17101–17106.
- Saudino, K. J., & Wang, M. (2012). Quantitative and molecular genetic studies of temperament. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 315–346). New York: Guilford Press.
- Saunders, E. M. (1993). Stock prices and Wall Street weather. *The American Economic Review*, 83(5), 1337–1345.
- Sauter, D. (2010). More than happy: The need for disentangling positive emotions. *Current Directions in Psychological Science*, 19(1), 36–40.
- Sauter, D. A. (2017). The nonverbal communication of positive emotions: An emotion family approach. *Emotion Review*, 9, 222–234.
- Sauter, D. A., & Scott, S. K. (2007). More than one kind of happiness: Can we recognize vocal expressions of different positive states? *Motivation & Emotion*, 31(3), 192–199.
- Sauter, D. A., Eisner, F., Calder, A. J., & Scott, S. K. (2010). Perceptual cues in non-verbal vocal expressions of emotion. *The Quarterly Journal of Experimental Psychology*, 63(11), 2251–2272.
- Sauter, D. A., Eisner, F., Ekman, P., & Scott, S. K. (2010). Cross-cultural recognition of basic emotions through nonverbal emotional vocalizations. *Proceedings of the National Academy of Sciences*, 107(6), 2408–2412.
- Sauter, D. A., Eisner, F., Ekman, P., & Scott, S. K. (2015). Emotional vocalizations are recognized across cultures regardless of the valence of distractors. *Psychological Science*, 26(3), 354–356.
- Sauter, D. A., Gangi, D., McDonald, N., & Messinger, D. S. (2014). Nonverbal expressions of positive emotions. In M. N. Shiota, M. M. Tugade, & L. D. Kirby (Eds.), *Handbook of positive emotion* (pp. 179–200). New York: Guilford Press.
- Savage, L. J. (1954). *Foundations of statistics*. New York: John Wiley & Sons.
- Savazzi, S., & Marzi, C. A. (2002). Speeding up reaction time with invisible stimuli. *Current Biology*, 12, 403–407.
- Saver, J. L., & Damasio, A. R. (1991). Preserved access and processing of social knowledge in a patient with acquired sociopathy due to ventromedial frontal damage. *Neuropsychologia*, 29(12), 1241–1249.
- Savitz, J., Frank, M. B., Victor, T., Bebak, M., Marino, J. H., Bellgowan, P. S., . . . Drevets, W. C. (2013). Inflammation and neurological disease-related genes are differentially expressed in depressed patients with mood disorders and correlate with morphometric and functional imaging abnormalities. *Brain, Behavior, & Immunity*, 31, 161–171.
- Savitz, J. B., Rauch, S. L., & Drevets, W. C. (2013). Clinical application of brain imaging for the diagnosis of mood disorders: the current state of play. *Molecular Psychiatry*, 18, 528–539.
- Scarr, S., & Salapatek, P. (1970). Patterns of fear development during infancy. *Merrill-Palmer Quarterly*, 16, 53–90.
- Schaafsma, S. M., Pfaff, D. W., Spunt, R. P., & Adolphs, R. (2015). Deconstructing and reconstructing theory of mind. *Trends in Cognitive Sciences*, 19, 65–72.
- Schachter, S., & Singer, J. E. (1962). Cognitive, social, and physiological determinants of emotional state. *Psychological Review*, 69(5), 379–399.
- Schacter, D. L., Addis, D. R., & Buckner, R. L. (2007). Remembering the past to imagine the future: The prospective brain. *Nature Reviews Neuroscience*, 8(9), 657–661.
- Schaefer, A., & Gray, J. R. (2007). A role for the human amygdala in higher cognition. *Reviews in the Neurosciences*, 18, 355–364.
- Schaefer, M., Engelbrechta, M. A., Gut, O., Fiebich, B. L., Bauer, J., Schmidt, F., . . . Lieb, K. (2002). Interferon alpha (IFN $\alpha$ ) and psychiatric syndromes: A review. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 26(4), 731–746.
- Schaefer, S. M., Jackson, D. C., Davidson, R. J., Aguirre, G. K., Kimberg, D. Y., & Thompson-Schill, S. L. (2002). Modulation of amygdalar activity by the conscious regulation of negative emotion. *Journal of Cognitive Neuroscience*, 14(6), 913–921.
- Schafer, S. M., Geuter, S., & Wager, T. D. (2018). Mechanisms of placebo analgesia: A dual-process

- model informed by insights from cross-species comparisons. *Progress in Neurobiology*, 160, 101–122.
- Schapira, K., McClelland, H. A., Griffiths, N. R., & Newell, D. J. (1970). Study on the effects of tablet colour in the treatment of anxiety states. *British Medical Journal*, 1(5707), 446–449.
- Scharfman, H. E. (1997). Hyperexcitability in combined entorhinal/hippocampal slices of adult rat after exposure to brain-derived neurotrophic factor. *Journal of Neurophysiology*, 78(2), 1082–1095.
- Schedlowski, M., Engler, H., & Grigoleit, J.-S. (2014). Endotoxin-induced experimental systemic inflammation in humans: A model to disentangle immune-to-brain communication. *Brain, Behavior, & Immunity*, 35, 1–8. <http://doi.org/10.1016/j.bbi.2013.09.015>.
- Scheibe, S., English, T., Tsai, J. L., & Carstensen, L. L. (2013). Striving to feel good: Ideal affect, actual affect, and their correspondence across adulthood. *Psychology & Aging*, 28, 160–171. doi:10.1037/a0030561.
- Scheller, E., Buchel, C., & Gamer, M. (2012). Diagnostic features of emotional expressions are processed preferentially. *PLoS One*, 7, e41792.
- Schenk, L. A., Sprenger, C., Geuter, S., & Büchel, C. (2014). Expectation requires treatment to boost pain relief: An fMRI study. *Pain*, 155(1), 150–157.
- Scherer, K. R. (1982). Emotion as a Process - Function, Origin and Regulation. *Social Science Information Sur Les Sciences Sociales*, 21(4–5), 555–570. doi:10.1177/053901882021004004.
- Scherer, K. R. (1984). On the nature and function of emotion: A component process approach. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 293–317). Hillsdale, NJ: Lawrence Erlbaum.
- Scherer, K. R. (1993). Neuroscience projections to current debates in emotion psychology. *Cognition & Emotion*, 7, 1–41.
- Scherer, K. R. (1994). Emotion serves to decouple stimulus and response. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion* (pp. 127–130). New York: Oxford University Press.
- Scherer, K. R. (2005). What are emotions? And how can they be measured? *Social Science Information*, 44(4), 695–729.
- Scherer, K. R. (2009a). Emotions are emergent processes: They require a dynamic computational architecture. *Philosophical Transactions of the Royal Society of London*, 364, 3459–3474.
- Scherer, K. R. (2009b). The dynamic architecture of emotion: Evidence for the component process model. *Cognition & Emotion*, 23, 1307–1351.
- Scherer, K. R., & Ellgring, H. (2007). Multimodal expression of emotion: Affect programs or componential appraisal patterns? *Emotion*, 7(1), 158.
- Scherer, K. R., & Tannenbaum, P. H. (1986). Emotional experiences in everyday life: A survey approach. *Motivation & Emotion*, 10, 295–314.
- Scherer, K. R., & Wallbott, H. G. (1994). Evidence for universality and cultural variation of differential emotion response patterning. *Journal of Personality & Social Psychology*, 66, 310–328.
- Scherer, K. R., Schorr, A., & Johnstone, T. (Eds.). (2001). *Appraisal processes in emotion: Theory, methods, research*. Cary, NC: Oxford University Press.
- Schieve, L. A., Tian, L. H., Baio, J., Rankin, K., Rosenberg, D., Wiggins, L., . . . King, L. (2014). Population attributable fractions for three perinatal risk factors for autism spectrum disorders, 2002 and 2008 autism and developmental disabilities monitoring network. *Annals of Epidemiology*, 24(4), 260–266.
- Schiffman, S. S. (1974). Physicochemical correlates of olfactory quality. *Science*, 185(4146), 112–117.
- Schiller, D., & Delgado, M. R. (2010). Overlapping neural systems mediating extinction, reversal and regulation of fear. *Trends in Cognitive Sciences*, 14(6), 268–276. <http://doi.org/10.1016/j.tics.2010.04.002>.
- Schiller, D., & Phelps, E. A. (2011). Does reconsolidation occur in humans? *Frontiers in behavioral neuroscience*, 5(24), 1–12.
- Schimitel, F. G., de Almeida, G. M., Pitol, D. N., Armini, R. S., Tufik, S., & Schenberg, L. C. (2012). Evidence of a suffocation alarm system within the periaqueductal gray matter of the rat. *Neuroscience*, 200, 59–73. <https://doi.org/10.1016/j.neuroscience.2011.10.032>.
- Schindler, B., Vriends, N., Margraf, J., & Stieglitz, R.-D. (2016). Ways of acquiring flying phobia. *Depression & Anxiety*, 33, 136–142.
- Schmidt, K., Cowen, P. J., Harmer, C. J., Tzortzis, G., Errington, S., & Burnet, P. W. J. (2014). Probiotic intake reduces the waking cortisol response and alters emotional bias in healthy volunteers. *Psychopharmacology*, 232(10), 1793–1801. doi:10.1007/s00213-014-3810-0. Epub 2014 Dec 3.
- Schmidt, N. B., Richey, J. A., Buckner, J. D., & Timpano, K. R. (2009). Attention training for generalized social anxiety disorder. *Journal of Abnormal Psychology*, 118, 5–14. doi:10.1037/a0013643.
- Schmitter, A. M. (2014). “17th and 18th century theories of emotions,” in Stanford Encyclopedia of Philosophy, ed. E. N. Zalta (Stanford, CA: Stanford University). Available at: <http://plato.stanford.edu/entries/emotions-17th18th/>.
- Schmitz, A., & Grillon, C. (2012). Assessing fear and anxiety in humans using the threat of predictable and unpredictable aversive events (the NPU-threat

## 546 REFERENCES

- test). *Nature Protocols*, 7(3), 527–532. doi:10.1038/nprot.2012.001.
- Schmitz, T. W., De Rosa, E., & Anderson, A. K. (2009). Opposing influences of affective state valence on visual cortical encoding. *Journal of Neuroscience*, 29(22), 7199–7207.
- Schnall, S., Haidt, J., Clore, G., & Jordan, A. (2008). Disgust as embodied moral judgment. *Personality & Social Psychology Bulletin*, 34, 1096–1109.
- Schnack, H. G., & Kahn, R. S. (2016). Detecting neuroimaging biomarkers for psychiatric disorders: Sample size matters. *Front Psychiatry*, 7, 50.
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology*, 1, 607–628. <http://doi.org/10.1146/annurev.clinpsy.1.102803.144141>.
- Schneirla, T. (1959). An evolutionary and developmental theory of biphasic processes underlying approach and withdrawal. In M. Jones (Ed.), *Nebraska symposium on motivation* (pp. 1–42). Lincoln, NE: University of Nebraska Press.
- Schnurr, P. P., Friedman, M. J., Engel, C. C., Foa, E. B., Shea, M. T., Chow, B. K., . . . Haug, R. (2007). Cognitive behavioral therapy for posttraumatic stress disorder in women: A randomized controlled trial. *Journal of the American Medical Association*, 297(8), 820–830.
- Schnyer, D. M., Beevers, C. G., deBettencourt, M. T., Sherman, S. M., Cohen, J. D., Norman, K. A., & Turk-Browne, N. B. (2015). Neurocognitive therapeutics: From concept to application in the treatment of negative attention bias. *Biology of Mood & Anxiety Disorders*, 5, 1.
- Schonberg, T., Daw, N. D., Joel, D., & O'Doherty, J. P. (2007). Reinforcement learning signals in the human striatum distinguish learners from nonlearners during reward-based decision making. *Journal of Neuroscience*, 27(47), 12860–12867. doi:10.1523/JNEUROSCI.2496-07.2007.
- Schönbrodt, F. D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality*, 47, 609–612.
- Schröder, M. (2003). Experimental study of affect bursts. *Speech Communication*, 40(1), 99–116.
- Schultz, D., Ambike, A., Logie, S. K., Bohner, K. E., Stapleton, L. M., VanderWalde, H., . . . Betkowski, J. A. (2010). Assessment of social information processing in early childhood: Development and initial validation of the Schultz test of emotion processing—Preliminary version. *Journal of Abnormal Child Psychology*, 38(5), 601–613. doi:10.1007/s10802-010-9390-5
- Schultz, W. (2002). Getting formal with dopamine and reward. *Neuron*, 36(2), 241–263.
- Schultz, W., & Dickinson, A. (2000). Neuronal coding of prediction errors. *Annual Review of Neuroscience*, 23, 473–500.
- Schultz, W., Dayan, P., & Montague, P. R. (1997). A neural substrate of prediction and reward. *Science*, 275(5306), 1593–1599.
- Schulz, R. (1985). Emotion and affect. In J. E. Birren & K. W. Schaie (Eds.), *Handbook of the psychology of aging* (2nd ed., pp. 531–543). New York: Van Nostrand Reinhold.
- Schupp, H. T., Cuthbert, B. N., Bradley, M. M., Cacioppo, J. T., Ito, T., & Lang, P. J. (2000). Affective picture processing: The late positive potential is modulated by motivational relevance. *Psychophysiology*, 37(2), 257–261. <http://doi.org/10.1111/1469-8986.3720257>.
- Schutter, D. J. L. G., Van Honk, J., & Panksepp, J. (2004). Introducing repetitive transcranial magnetic stimulation (rTMS) and its property of causal inference in investigating the brain-function relationship. *Synthese*, 141, 155–173.
- Schuyler, B. S., Kral, T. R., Jacquart, J., Burghy, C. A., Weng, H. Y., Perlman, D. M., . . . Davidson, R. J. (2012). Temporal dynamics of emotional responding: Amygdala recovery predicts emotional traits. *Social Cognitive & Affective Neuroscience*, 9(2), 176–181.
- Schwaba, T., & Bleidorn, W. (in press). Individual differences in personality change across the adult life span. *Journal of Personality*.
- Schwabe, L., & Wolf, O. T. (2009). “Stress Prompts Habit Behavior in Humans.” *Journal of Neuroscience*, 29(22), 7191–7198.
- Schwabe, L., & Wolf, O. T. (2013). Stress and multiple memory systems: From “thinking” to “doing.” *Trends in Cognitive Sciences*, 17, 60–68.
- Schwartz, C. E., Kunwar, P. S., Greve, D. N., Kagan, J., Snidman, N. C., & Bloch, R. B. (2012). A phenotype of early infancy predicts reactivity of the amygdala in male adults. *Molecular Psychiatry*, 17, 1042–1050.
- Schwartz, C. E., Kunwar, P. S., Greve, D. N., Moran, L. R., Viner, J. C., Covino, J. M., . . . Wallace, S. R. (2010). Structural differences in adult orbital and ventromedial prefrontal cortex predicted by infant temperament at 4 months of age. *Archives of General Psychiatry*, 67(1), 78–84.
- Schwartz, C. E., Wright, C. I., Shin, L. M., Kagan, J., & Rauch, S. L. (2003). Inhibited and uninhibited infants “grown up”: Adult amygdala response to novelty. *Science*, 300, 1952–1953.
- Schwartz, S. J., Lilienfeld, S. O., Meca, A., & Sauvignè, K. C. (2016). The role of neuroscience within psychology: A call for inclusiveness over exclusiveness. *American Psychologist*, 71, 52–70.
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of wellbeing: Informative and

- directive functions of affective states. *Journal of Personality & Social Psychology*, 45, 513–523.
- Schwarz, N., & Clore, G. L. (2007). In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: A handbook of basic principles* (2nd ed., pp. 385–407). New York: Guilford Press.
- Schweinhart, P., Seminowicz, D. A., Jaeger, E., Duncan, G. H., & Bushnell, M. C. (2009). The anatomy of the mesolimbic reward system: A link between personality and the placebo analgesic response. *Journal of Neuroscience*, 29(15), 4882–4887. doi:10.1523/JNEUROSCI.5634-08.2009.
- Schyns, P. G., Petro, L. S., & Smith, M. L. (2007). Dynamics of visual information integration in the brain for categorizing facial expressions. *Current Biology*, 17(18), 1580–1585.
- Scott, D. J., Stohler, C. S., Egnatuk, C. M., Wang, H., Koepp, R. A., & Zubieta, J.-K. (2007). Individual differences in reward responding explain placebo-induced expectations and effects. *Neuron*, 55(2), 325–336. doi:10.1016/j.neuron.2007.06.028.
- Scott, S. K., Sauter, D., & McGettigan, C. (2010). Brain mechanisms for processing perceived emotional vocalizations in humans. *Handbook of Mammalian Vocalization: An Integrative Neuroscience Approach*, 19, 187–197. doi:10.1016/B978-0-12-374593-4.00019-X.
- Scott, S. K., Young, A. W., Calder, A. J., Hellawell, D. J., Aggleton, J. P., & Johnson, M. (1997). Impaired auditory recognition of fear and anger following bilateral amygdala lesions. *Nature*, 385(6613), 254–257. doi:10.1038/385254a0.
- Scoville, W. B., & Milner, B. (1957). Loss of recent memory after bilateral hippocampal lesions. *Journal of Neurology, Neurosurgery & Psychiatry*, 20, 11–21.
- Searle, J. R. (1995). *The construction of social reality*. New York: Simon & Schuster.
- Sebastian, C., Viding, E., Williams, K. D., & Blakemore, S. J. (2010). Social brain development and the affective consequences of ostracism in adolescence. *Brain & Cognition*, 72, 134–135.
- See, J., MacLeod, C., & Bridle, R. (2009). The reduction of anxiety vulnerability through the modification of attentional bias: A real-world study using a home-based cognitive bias modification procedure. *Journal of Abnormal Psychology*, 118(1), 65.
- Seeley, W. W., Menon, V., Schatzberg, A. F., Keller, J., Glover, G. H., Kenna, H., . . . Greicius, M. D. (2007). Dissociable intrinsic connectivity networks for salience processing and executive control. *Journal of Neuroscience*, 27(9), 2349–2349.
- Seeman, T. E., Singer, B. H., Ryff, C. D., Love, G. D., & Levy-Storms, L. (2002). Social relationships, gender, and allostatic load across two age cohorts. *Psychosomatic Medicine*, 64(3), 395–406.
- Seidman, E., Allen, L., Aber, J. L., Mitchell, C., & Feiman, J. (1994). The impact of school transitions in early adolescence on the self-system and perceived social context of poor urban youth. *Child Development*, 65, 507–522.
- Semba, K. (2000). Multiple output pathways of the basal forebrain: Organization, chemical heterogeneity, and roles in vigilance. *Behavioural Brain Research*, 115(2), 117–141.
- Sender, R., Fuchs, S., & Milo, R. (2016). Revised estimates for the number of human and bacteria cells in the body. *PLoS Biology*, 14(8), e1002533.
- Senécal, S., Murard, N., & Hess, U. (2003). Do you know what I feel? Partners' predictions and judgments of each other's emotional reactions to emotion-eliciting situations. *Sex Roles*, 48, 21–37.
- Senn, V., Wolff, S. B., Herry, C., Grenier, F., Ehrlich, I., Grundemann, J., . . . Luthi, A. (2014). Long-range connectivity defines behavioral specificity of amygdala neurons. *Neuron*, 81, 428–437.
- Serences, J. T., & Yantis, S. (2006). Selective visual attention and perceptual coherence. *Trends in Cognitive Sciences*, 10(1), 38–45.
- Sergerie, K., Chochol, C., & Armony, J. L. (2008). The role of the amygdala in emotional processing: A quantitative meta-analysis of functional neuroimaging studies. *Neuroscience & Biobehavioral Reviews*, 32, 811–830.
- Sescousse, G., Caldu, X., Segura, B., & Dreher, J. C. (2013). Processing of primary and secondary rewards: A quantitative meta-analysis and review of human functional neuroimaging studies. *Neuroscience & Biobehavioral Reviews*, 37, 681–696.
- Seth, A. K. (2013). “Interoceptive inference, emotion, and the embodied self.” *Trends in Cognitive Sciences*, 17(11), 565–573.
- Seth, A. K. (2014). A predictive processing theory of sensorimotor contingencies: Explaining the puzzle of perceptual presence and its absence in synesthesia. *Cognitive Neuroscience* 5(2), 97–118.
- Seth, A. K. (2015). *The cybernetic Bayesian brain: from interoceptive inference to sensorimotor contingencies*. In: Metzinger, Thomas K., & Windt, Jennifer M. (Eds.), Open MIND. MIND Group, Frankfurt am Main, pp. 1–24. ISBN 9783958571020.
- Seth, A. K., Suzuki & Critchley, H. D. (2011). An interoceptive predictive coding model of conscious presence. *Frontiers in Psychology*, 2, 395.
- Seubert, J., Kellermann, T., Loughhead, J., Boers, F., Brensing, C., Schneider, F., & Habel, U. (2010). Processing of disgusted faces is facilitated by odor primes: A functional MRI study. *NeuroImage*, 53(2), 746–756. doi:10.1016/j.neuroimage.2010.07.012.

## 548 REFERENCES

- Seyfarth, R. M., & Cheney, D. L. (2012). The evolutionary origins of friendship. *Annual Review of Psychology*, 63, 153–177. doi:10.1146/annurev-psych-120710-100337.
- Seymour, B., & Dolan, R. (2008). Emotion, decision making, and the amygdala. *Neuron*, 58(5), 662–671. doi:10.1016/j.neuron.2008.05.020.
- Seymour, B., & McClure, S. M. (2008). Anchors, scales and the relative coding of value in the brain. *Current Opinion in Neurobiology*, 18(2), 173–178. doi:10.1016/j.conb.2008.07.010.
- Seymour, B., Daw, N. D., Roiser, J. P., Dayan, P., & Dolan, R. (2012). Serotonin selectively modulates reward value in human decision-making. *Journal of Neuroscience*, 32(17), 5833–5842.
- Shabel, S. J., & Janak, P. H. (2009). Substantial similarity in amygdala neuronal activity during conditioned appetitive and aversive emotional arousal. *Proceedings of the National Academy of Sciences*, 106, 15031–15036.
- Shackman, A. J., & Fox, A. S. (2016). Contributions of the central extended amygdala to fear and anxiety. *Journal of Neuroscience*, 36, 8050–8063.
- Shackman, A. J., & Fox, A. S. (in press). Getting serious about variation: Lessons for clinical neuroscience. *Trends in Cognitive Sciences*.
- Shackman, A. J., Fox, A. S., & Seminowicz, D. A. (2015). The cognitive-emotional brain: Opportunities and challenges for understanding neuropsychiatric disorders. *Behavioral & Brain Sciences*, 38, e86.
- Shackman, A. J., Fox, A. S., Oler, J. A., Shelton, S. E., Davidson, R. J., & Kalin, N. H. (2013). Neural mechanisms underlying heterogeneity in the presentation of anxious temperament. *Proceedings of the National Academy of Sciences of the United States of America*, 110, 6145–6150.
- Shackman, A. J., Fox, A. S., Oler, J. A., Shelton, S. E., Oakes, T. R., Davidson, R. J., & Kalin, N. H. (2017). Heightened extended amygdala metabolism following threat characterizes the early phenotypic risk to develop anxiety-related psychopathology. *Molecular Psychiatry*, 22, 724–732.
- Shackman, A. J., Kaplan, C. M., Stockbridge, M. D., Tillman, R. M., Tromp, D. P. M., Fox, A. S., & Gamer, M. (2016). The neurobiology of anxiety and attentional biases to threat: Implications for understanding anxiety disorders in adults and youth. *Journal of Experimental Psychopathology*, 7, 311–342.
- Shackman, A. J., Maxwell, J. S., McMenamin, B. W., Greischar, L. L., & Davidson, R. J. (2011). Stress potentiates early and attenuates late stages of visual processing. *Journal of Neuroscience*, 31, 1156–1161.
- Shackman, A. J., Salomons, T. V., Slagter, H. A., Fox, A. S., Winter, J. J., & Davidson, R. J. (2011). The integration of negative affect, pain and cognitive control in the cingulate cortex. *Nature Reviews Neuroscience*, 12(3), 154–167. doi:10.1038/nrn2994.
- Shackman, A. J., Sarinopoulos, I., Maxwell, J. S., Pizzagalli, D. A., Lavric, A., & Davidson, R. J. (2006). Anxiety selectively disrupts visuospatial working memory. *Emotion*, 6(1), 40–61. http://doi.org/10.1037/1528-3542.6.1.40.
- Shackman, A. J., Stockbridge, M. D., Tillman, R. M., Kaplan, C. M., Tromp, D. P. M., Fox, A. S., & Gamer, M. (2016). The neurobiology of dispositional negativity and attentional biases to threat: Implications for understanding anxiety disorders in adults and youth. *Journal of Experimental Psychopathology*, 7(3), 311–342. https://doi.org/10.5127/jep.054015.
- Shackman, A. J., Tromp, D. P. M., Stockbridge, M. D., Kaplan, C. M., Tillman, R. M., & Fox, A. S. (2016). Dispositional negativity: An integrative psychological and neurobiological perspective. *Psychological Bulletin*, 142, 1275–1314.
- Shackman, A. J., Weinstein, J. S., Hudja, S. N., Bloomer, C. D., Barstead, M. G., Lemay, E., & Fox, A. S. (in press). Dispositional negativity in the wild: Social environment governs momentary emotional experience. *Emotion*. Advanced online publication. doi:10.1037/emo0000339.
- Shah, J. Y., Friedman, R., & Kruglanski, A. W. (2002). Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality & Social Psychology*, 83(6), 1261.
- Shallice, T. (1988). *From neuropsychology to mental structure*. New York: Cambridge University Press.
- Shallice, T., & Cooper, R. P. (2011). *The organisation of mind*. Oxford, UK: Oxford University Press.
- Shariff, A. F., & Tracy, J. L. (2009). Knowing who's boss: Implicit perceptions of status from the non-verbal expression of pride. *Emotion*, 9(5), 631.
- Shariff, A. F., & Tracy, J. L. (2011). What are emotion expressions for? *Current Directions in Psychological Science*, 20(6), 395–399.
- Sharma, L., Markon, K. E., & Clark, L. A. (2014). Toward a theory of distinct types of “impulsive” behaviors: A meta-analysis of self-report and behavioral measures. *Psychological Bulletin*, 140, 374–408.
- Shaver, P., Wu, S., & Schwartz, J. C. (1992). Cross-cultural similarities and differences in emotion and its representation: A prototype approach. In M. S. Clark (Ed.), *Review of personality and social psychology* (Vol. 11, pp. 175–212). Beverly Hills, CA: Sage.
- Shearn, D., Bergman, E., Hill, K., Abel, A., & Hinds, L. (1992). Blushing as a function of audience size. *Psychophysiology*, 29(4), 431–436.
- Shechner, T., Pelc, T., Pine, D. S., Fox, N. A., & Bar-Haim, Y. (2012). Flexible attention deployment in

- threatening contexts: An instructed fear conditioning study. *Emotion*, 12(5), 1041–1049.
- Sheline, Y. I. (1996). Hippocampal atrophy in major depression: A result of depression-induced neurotoxicity? *Molecular Psychiatry*, 1, 298–299.
- Sheline, Y. I. (2003). Neuroimaging studies of mood disorder effects on the brain. *Biological Psychiatry*, 54(3), 338–352.
- Sheppes, G., Suri, G., & Gross, J. J. (2015). Emotion regulation and psychopathology. *Annual Review of Clinical Psychology*, 11, 379–405.
- Sherman, G. D., Haidt, J., & Clore, G. L. (2012). The faintest speck of dirt: Disgust enhances the detection of impurity. *Psychological Science*, 23, 1506–1514.
- Shermohammed, M., Mehta, P. H., Zhang, J., Brandes, C. M., Chang, L. J., & Somerville, L. H. (2017). Does psychosocial stress impact cognitive reappraisal? Behavioral and neural evidence. *Journal of Cognitive Neuroscience*, 29, 1803–1816.
- Sherrington, C. S. (1903). Qualitative difference of spinal reflex corresponding with qualitative difference of cutaneous stimulus. *Journal of Physiology*, 30, 39–46.
- Shevrin, H., Panksepp, J., Brakel, L. L. A. W., & Snodgrass, M. (2012). Subliminal affect valence words change conscious mood potency but not valence: Is this evidence for unconscious valence affect? *Brain Science*, 2, 504–522.
- Shewmon, D. A., Holmes, G. L., & Byrne, P. A. (1999). Consciousness in congenitally decorticate children: Developmental vegetative state as self-fulfilling prophecy. *Developmental Medicine & Child Neurology*, 41, 364–374.
- Shi, C. J., and Cassell, M. d. (1998). Cascade projections from somatosensory cortex to the rat basolateral amygdala via the parietal insular cortex. *Journal of Comparative Neurology*, 399, 469–491.
- Shields, S. A. (2005). The politics of emotion in everyday life: “Appropriate” emotion and claims on identity. *Review of General Psychology*, 9, 3–15.
- Shin, L. M., & Liberzon, I. (2010). The neurocircuitry of fear, stress, and anxiety disorders. *Neuropsychopharmacology*, 35(1), 169–191.
- Shin, L. M., Wright, C. I., Cannistraro, P. A., Wedig, M. M., McMullin, K., Martis, B., . . . Rauch, S. L. (2005). A functional magnetic resonance imaging study of amygdala and medial prefrontal cortex responses to overtly presented fearful faces in posttraumatic stress disorder. *Archives of General Psychiatry*, 62(3), 273–281. doi:10.1001/archpsyc.62.3.273.
- Shiner, R. L. (2014). The development of temperament and personality traits in childhood and adolescence. In M. Mikulincer, & P. Shaver (Eds.), M. L. Cooper, & R. Larsen (Assoc. Eds.), *APA handbook of personality and social psychology: Vol. 3. Personality processes and individual differences* (pp. 85–105). Washington, DC: American Psychological Association.
- Shiner, R. L., & Caspi, A. (2012). Temperament and the development of personality traits, adaptations, and narratives. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 497–516). New York: Guilford Press.
- Shiner, R. L., & DeYoung, C. G. (2013). The structure of temperament and personality traits: A developmental perspective. In P. Zelazo (Ed.), *Oxford handbook of developmental psychology* (pp. 113–141). New York: Oxford University Press.
- Shiner, R. L., Allen, T. A., & Masten, A. S. (2017). Adversity in adolescence predicts personality trait change from childhood to adulthood. *Journal of Research in Personality* / *Journal of Research in Personality*, 67, 171–182.
- Shiner, R. L., Buss, K. A., McClowry, S. G., Putnam, S. P., Saudino, K. J., & Zentner, M. (2012). What is temperament now? Assessing progress in temperament research on the twenty-fifth anniversary of Goldsmith et al. (1987). *Child Development Perspectives*, 6(4), 436–444.
- Shiota, M. N., & Levenson, R. W. (2009). Effects of aging on experimentally instructed detached reappraisal, positive reappraisal, and emotional behavior suppression. *Psychology & Aging*, 24, 890–900. doi:10.1037/a0017896.
- Shiota, M. N., Campos, B., & Keltner, D. (2003). The faces of positive emotion: Prototype displays of awe, amusement, and pride. *Annals of the New York Academy of Sciences*, 1000, 296.
- Shiota, M. N., Keltner, D., & Mossman, A. (2007). The nature of awe: Elicitors, appraisals, and effects on self-concept. *Cognition & Emotion*, 21(5), 944–963.
- Shipp, S. (2004). The brain circuitry of attention. *Trends in Cognitive Sciences*, 8(5), 223–230.
- Shipp, S., Adams, R. A., & Friston, K. J. (2013). Reflections on agranular architecture: Predictive coding in the motor cortex. *Trends in Neuroscience*, 36(12), 706–716.
- Shirtcliff, E. A., Dahl, R. E., & Pollak, S. D. (2009). Pubertal development: Correspondence between hormonal and physical development. *Child Dev*, 80(2), 327–337.
- Shrout, P. E., & Rodgers, J. L. (2018). Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis. *Annual Review of Psychology*, 69, 487–510.
- Shultz, S., Opie, C., & Atkinson, Q. D. (2011). Stepwise evolution of stable sociality in primates. *Nature*, 479, 219–222. doi:10.1038/nature10601.
- Shweder, R. A. (1994). You’re not sick, you’re just in love”: Emotion as an interpretive system. In

## 550 REFERENCES

- P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 32–44). New York: Oxford University Press.
- Siegel, A. (2005). *The neurobiology of aggression and rage*. Boca Raton, FL: CRC Press.
- Siegel, E., Wormwood, J. B., Kopec, J., Sears, L., Quigley, K., & Barrett, L. F. (in preparation). Beyond what the eye can see: How what you feel influences what you see.
- Siegel, E. H., Wormwood, J. B., Quigley, K. S., & Barrett, L. F. (in press). Seeing what you feel: Affect drives visual perception of structurally neutral faces. *Psychological Science*. Doi:10.1177/0956797617741718
- Siegle, G. J., Carter, C. S., & Thase, M. E. (2006). Use of fMRI to predict recovery from unipolar depression with cognitive behavior therapy. *The American Journal of Psychiatry*, 163(4), 735–738. <http://doi.org/10.1176/appi.ajp.163.4.735>.
- Siegle, G. J., Steinhauer, S. R., Thase, M. E., Stenger, V. A., & Carter, C. S. (2002). Can't shake that feeling: Event-related fMRI assessment of sustained amygdala activity in response to emotional information in depressed individuals. *Biological Psychiatry*, 51(9), 693–707. [http://doi.org/10.1016/S0006-3223\(02\)01314-8](http://doi.org/10.1016/S0006-3223(02)01314-8).
- Siegle, G. J., Thompson, W., Carter, C. S., Steinhauer, S. R., & Thase, M. E. (2007). Increased amygdala and decreased dorsolateral prefrontal BOLD responses in unipolar depression: Related and independent features. *Biological Psychiatry*, 61, 198–209.
- Siemer, M. (2009). Mood experience: Implications of a dispositional theory of moods. *Emotion Review*, 1, 256–263.
- Sievers, B., Polansky, L., Casey, M., & Wheatley, T. (2013). Music and movement share a dynamic structure that supports universal expressions of emotion. *Proceedings of the National Academy of Sciences*, 110(1), 70–75.
- Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behaviors. *Child Development*, 74, 1869–1880.
- Silk, J. S., Stroud, L. R., Siegle, G. J., Dahl, R. E., Lee, K. H., & Nelson, E. E. (2012). Peer acceptance and rejection through the eyes of youth: Pupillary, eyetracking and ecological data from the Charoom Interact task. *Social Cognitive & Affective Neuroscience*, 7, 93–105.
- Silvers, J. A., McRae, K., Gabrieli, J. D. E., Gross, J. J., Remy, K. A., & Ochsner, K. N. (2012). Age-related differences in emotional reactivity, regulation, and rejection sensitivity in adolescence. *Emotion*, 12(6), 1235–1247.
- Silvers, J. A., Shu, J., Hubbard, A. D., Weber, J., & Ochsner, K. N. (2015). Concurrent and lasting effects of emotion regulation on amygdala response in adolescence and young adulthood. *Developmental Science*, 18(5), 771–784.
- Silvert, L., Lepsien, J., & Fragopanagos, N. (2007). Influence of attentional demands on the processing of emotional facial expressions in the amygdala. *NeuroImage*, 38, 357–366.
- Silvia, P. J. (2008). Interest—The curious emotion. *Current Directions in Psychological Science*, 17(1), 57–60.
- Simmons, R. G., & Blythe, D. A. (1987). *Moving into adolescence: The impact of pubertal change and school context*. Hawthorne, NY: Aldine de Gruyter.
- Simmons, W. K., Avery, J. A., Barcalow, J. C., Bodurka, J., Drevets, W. C., & Bellgowan, P. (2013). Keeping the body in mind: Insula functional organization and functional connectivity integrate interoceptive, exteroceptive, and emotional awareness. *Human Brain Mapping*, 34(11), 2944–2958. <http://doi.org/10.1002/hbm.22113>.
- Simner, M. L. (1971). Newborn's response to the cry of another infant. *Developmental Psychology*, 5(1), 136–150. <https://doi.org/10.1037/h0031066>.
- Simon, H. (1983). *Reason in human affairs*. Stanford, CA: Stanford University Press.
- Simon, H. A. (1967). Motivational and emotional controls of cognition. *Psychological Review*, 74, 29–39.
- Simons, R. L., Murry, V., McLoyd, V., Lin, K. H., Cutrona, C., & Conger, R. D. (2002). Discrimination, crime, ethnic identity, and parenting as correlates of depressive symptoms among African American children: A multilevel analysis. *Development & Psychopathology*, 14, 371–393. doi:10.1017/S0954579402002109.
- Simonson, I. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of Consumer Research*, 19(1), 105–118.
- Simon-Thomas, E. R., Keltner, D. J., Sauter, D., Sinicropi-Yao, L., & Abramson, A. (2009). The voice conveys specific emotions: Evidence from vocal burst displays. *Emotion (Washington, D.C.)*, 9(6), 838–846. <http://doi.org/10.1037/a0017810>.
- Sinaceur, M., & Tiedens, L. Z. (2006). Get mad and get more than even: When and why anger expression is effective in negotiations. *Journal of Experimental Social Psychology*, 42(3), 314–322.
- Singer, B., Friedman, E., Seeman, T., Fava, G. A., & Ryff, C. D. (2005). Protective environments and health status: Cross-talk between human and animal studies. *Neurobiology of Aging*, 26(1), 113–118.
- Singer, T. (2006). The neuronal basis and ontogeny of empathy and mind reading: Review of literature and implications for future research. *Neuroscience & Biobehavioral Reviews*, 30, 855–863. doi:10.1016/j.neubiorev.2006.06.011.

- Singer, T. (2012). The past, present and future of social neuroscience: A European perspective. *NeuroImage*, 61(2), 437–449. doi:10.1016/j.neuroimage.2012.01.109.
- Singer, T., & Klimecki, O. M. (2014). Empathy and compassion. *Current Biology: CB*, 24(18), R875–R878. http://doi.org/10.1016/j.cub.2014.06.054.
- Singer, T., & Lamm, C. (2009). The social neuroscience of empathy. *1156*, 81–96. doi:10.1111/j.1749-6632.2009.04418.x.
- Singer, T., Critchley, H. D., & Preuschoff, K. (2009). A common role of insula in feelings, empathy and uncertainty. *Trends in Cognitive Sciences*, 13(8), 334–340.
- Singer, T., Seymour, B., O'Doherty, J. P., Stephan, K. E., Dolan, R. J., & Frith, C. D. (2006). Empathic neural responses are modulated by the perceived fairness of others. *Nature*, 439(7075), 466–469.
- Singer, T., Seymour, B., O'Doherty, J., Kaube, H., Dolan, R. J., & Frith, C. D. (2004). Empathy for pain involves the affective but not sensory components of pain. *Science (New York, N.Y.)*, 303(5661), 1157–1162. https://doi.org/10.1126/science.1093535.
- Singhal, A., Ross, J., Seminog, O., Hawton, K., & Goldacre, M. J. (2014). Risk of self-harm and suicide in people with specific psychiatric and physical disorders: Comparisons between disorders using English national record linkage. *Journal of the Royal Society of Medicine*, 107(5), 194–204. http://doi.org/10.1177/0141076814522033.
- Sisk, C. L., & Zehr, J. L. (2005). Pubertal hormones organize the adolescent brain and behavior. *Frontiers in Neuroendocrinology*, 26(3–4), 163–174.
- Sitaram, R., Ros, T., Stoeckel, L., Haller, S., Scharnowski, F., Lewis-Peacock, J., . . . Sulzer, J. (2017). Closed-loop brain training: The science of neurofeedback. *Nature Reviews Neuroscience*, 18, 86–100.
- Sjouwerman, R., Scharfenort, R., & Lonsdorf, T. B. (2017). Individual differences in fear learning: Specificity to trait-anxiety beyond other measures of negative affect, and mediation via amygdala activation. *bioRxiv*.
- Skewes, J. C., Jegindo, E. M., & Gebauer, L. (2014). Perceptual inference and autistic traits. *Autism*: [Epub ahead of print].
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology*, 58, 119–144.
- Skinner, M. K. (2015). Environmental epigenetics and a unified theory of the molecular aspects of evolution: A neo-Lamarckian concept that facilitates neo-Darwinian evolution. *Genome Biology & Evolution*, 7(5), 1296–1302.
- Slavich, G. M., Way, B. M., Eisenberger, N. I., & Taylor, S. E. (2010). Neural sensitivity to social rejection is associated with inflammatory responses to social stress. *Proceedings of the National Academy of Sciences of the United States of America*, 107(33), 14817–14822. http://doi.org/10.1073/pnas.1009164107.
- Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2004). Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality. *Risk Analysis*, 24(2), 311–322.
- Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European Journal of Operational Research*, 177(3), 1333–1352.
- Smallwood, J., & Schooler, J. W. (2015). The science of mind wandering: Empirically navigating the stream of consciousness. *Annual Review of Psychology*, 66(1), 487–518. http://doi.org/10.1146/annurev-psych-010814-015331.
- Smith, A., Lohrenz, T., King, J., Montague, P. R., & Camerer, C. F. (2014). Irrational exuberance and neural crash warning signals during endogenous experimental market bubbles. *Proceedings of the National Academy of Sciences*, 111(29), 10503–10508.
- Smith, C. A., & Ellsworth, P. C. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality & Social Psychology*, 48(4), 813.
- Smith, S. M., & Nichols, T. E. (2018). Statistical challenges in "Big Data" human neuroimaging. *Neuron*, 97, 263–268.
- Smith, D. V., Hayden, B. Y., Truong, T. K., Song, A. W., Platt, M. L., & Huettel, S. A. (2010). Distinct value signals in anterior and posterior ventromedial prefrontal cortex. *Journal of Neuroscience*, 30(7), 2490–2495.
- Smith, F. W., & Schyns, P. G. (2009). Smile through your fear and sadness: Transmitting and identifying facial expression signals over a range of viewing distances. *Psychological Science*, 20, 1202–1208.
- Smith, K. S., & Berridge, K. C. (2007). Opioid limbic circuit for reward: Interaction between hedonic hotspots of nucleus accumbens and ventral pallidum. *Journal of Neuroscience*, 27(7), 1594–1605.
- Smith, K. S., Berridge, K. C., & Aldridge, J. W. (2011). Disentangling pleasure from incentive salience and learning signals in brain reward circuitry. *Proceedings of the National Academy of Sciences of the United States of America*, 108(27), E255–E264.
- Smith, M. L., Cottrell, G. W., Gosselin, F., & Schyns, P. G. (2005). Transmitting and decoding facial expressions. *Psychological Science*, 16(3), 184–189.
- Smith, J. F., Hur, J., Kaplan, C. M., & Shackman, A. J. (2018). The impact of spatial normalization for functional magnetic resonance imaging data analyses revisited. *bioRxiv*.
- Smith, R. H. (2008). *Envy: Theory and research*. Oxford, UK: Oxford University Press.

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## 552 REFERENCES

- Smith, S. M., Fox, P. T., Miller, K. L., Glahn, D. C., Fox, P. M., Mackay, C. E., . . . Beckmann, C. F. (2009). Correspondence of the brain's functional architecture during activation and rest. *Proceedings of the National Academy of Sciences*, *106*(31), 13040–13045.
- Smith, S. M., Vidaurre, D., Beckmann, C. F., Glasser, M. F., Jenkinson, M., Miller, K. L., . . . Barch, D. M. (2013). Functional connectomics from resting-state fMRI. *Trends in Cognitive Sciences*, *17*(12), 666–682.
- Snow, M. E., Hertzog, M. E., & Shapiro, T. (1987). Expression of emotion in young autistic children. *Journal of the American Academy of Child & Adolescent Psychiatry*, *26*(6), 836–838.
- Snowdon, C. T. (2003). Expression of emotion in nonhuman animals. In R. J. Davidson & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 457–534). New York: Oxford University Press.
- Snowdon, C. T., & Teie, D. (2010). Affective responses in tamarins elicited by species-specific music. *Biology Letters*, *6*(1), 30–32.
- Snyder, D. K., & Halford, W. K. (2012). Evidence-based couple therapy: Current status and future directions. *Journal of Family Therapy*, *34*, 229–249.
- Snyder, J., Stoolmiller, M., Wilson, M., & Yamamoto, M. (2003). Child anger regulation, parental responses to children's anger displays, and early child antisocial behavior. *Social Development*, *12*, 335–360. doi:10.1111/1467-9507.00237.
- Snyder, M. A., Smejkalova, T., Forlano, P. M., & Woolley, C. S. (2010). Multiple ER $\beta$  antisera label in ER $\beta$  knockout and null mouse tissues. *Journal of Neuroscience Methods*, *188*(2), 226–234.
- Soderstrom, H., Blennow, K., Manhem, A., & Forsman, A. (2001). CSF studies in violent offenders ¶ I. 5-HIAA as a negative and HVA as a positive predictor of psychopathy. *Journal of Neural Transmission*, *108*(7), 869–878.
- Sokol-Hessner, P., Hartley, C. A., Hamilton, J. R., & Phelps, E. A. (2015). Interoceptive ability predicts aversion to losses. *Cognition and Emotion*, *Cognition & Emotion*, *29*(4), 695–701.
- Sokol-Hessner, P., Hsu, M., Curley, N. G., Delgado, M. R., Camerer, C. F., & Phelps, E. A. (2009). Thinking like a trader selectively reduces individuals' loss aversion. *Proceedings of the National Academy of Sciences*, *106*(13), 5035–5040.
- Sokol-Hessner, P., Lackovic, S. F., Tobe, R. H., Camerer, C. F., Leventhal, B. L., & Phelps, E. A. (2015). Determinants of propranolol's selective effect on loss aversion. *Psychological science*, *Psychological Science*, *26*(7), 1123–1130.
- Sokolov, E. N. (1963). *Perception and the conditioned reflex*. New York: Macmillan.
- Sokolov, E. N., & Boucsein, W. (2000). A psychophysiological model of emotion space. *Integrative Physiology & Behavioral Science*, *35*, 81–119.
- Solms, M., & Panksepp, J. (2012). The “Id” knows more than the “Ego” admits: Neuropsychoanalytic and primal consciousness perspectives on the interface between affective and cognitive neuroscience. *Brain Science*, *2*, 147–175.
- Solomon, R. C. (1993). *The passions: Emotions and the meaning of life*. Indianapolis, IN: Hackett Publishing Co.
- Somerville, L. H., Heatherton, T. F., & Kelley, W. M. (2006). Anterior cingulate cortex responds differentially to expectancy violation and social rejection. *Nature Neuroscience*, *9*(8), 1007–1008. doi:10.1038/nn1728.
- Somerville, L. H., Jones, R. M., & Casey, B. J. (2010). A time of change: Behavioral and neural correlates of adolescent sensitivity to appetitive and aversive environmental cues. *Brain & Cognition*, *72*(1), 124–133. doi:10.1016/j.bandc.2009.07.003.
- Somerville, L. H., Jones, R. M., Ruberry, E. J., Dyke, J. P., Glover, G., & Casey, B. J. (2013). The medial prefrontal cortex and the emergence of self-conscious emotion in adolescence. *Psychological Science*, *24*, 1554–1562.
- Somerville, L. H., Wagner, D. D., Wig, G. S., Moran, J. M., Whalen, P. J., & Kelley, W. M. (2012). Interactions between transient and sustained neural signals support the generation and regulation of anxious emotion. *Cerebral Cortex*, *23*(1), 49–60. http://doi.org/10.1093/cercor/bhr373.
- Somerville, L. H., Whalen, P. J., & Kelley, W. M. (2010). Human bed nucleus of the stria terminalis indexes hypervigilant threat monitoring. *Biological Psychiatry*, *68*, 416–424.
- Sominsky, L., Fuller, E. A., Bondarenko, E., Ong, L. K., Averell, L., Nalivaiko, E., . . . Hodgson, D. M. (2013). Functional programming of the autonomic nervous system by early life immune exposure: Implications for anxiety. *PLoS One*, *8*(3), e57700.
- Sominsky, L., Walker, A. K., Ong, L. K., Tynan, R. J., Walker, F. R., & Hodgson, D. M. (2012). Increased microglial activation in the rat brain following neonatal exposure to a bacterial mimetic. *Behavioural Brain Research*, *226*(1), 351–356. http://doi.org/10.1016/j.bbr.2011.08.038.
- Sonnby-Borgström, M. (2002). Automatic mimicry reactions as related to differences in emotional empathy. *Scandinavian Journal of Psychology*, *43*(5), 433–443.
- Sonnemans, J., & Frijda, N. H. (1994). The structure of subjective emotional intensity. *Cognition & Emotion*, *8*(4), 329–350. http://doi.org/10.1080/02699939408408945.

- Sorce, J. F., Emde, R. N., Campos, J., & Klinnert, M. D. (1985). Maternal emotional signaling: Its effect on the visual cliff behavior of 1-year-olds. *Developmental Psychiatry*, 21(1), 195–200.
- Soskin, W. F., & Kauffman, P. E. (1961). Judgment of emotion in word-free voice samples. *Journal of Communication*, 11, 73–80.
- Soto, C. J., & John, O. P. (2013). Traits in transition: The structure of parent-reported personality traits from early childhood to early adulthood. *Journal of Personality*, 82, 182–199.
- Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 Facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, 113, 117–143.
- Soto, C. J., & Tackett, J. L. (2015). Personality traits in childhood and adolescence: Structure, development, and outcomes. *Current Directions in Psychological Science*, 24(5), 358–362.
- Soto, C. J., John, O. P., Gosling, S. D., & Potter, J. (2011). Age differences in personality traits from 10 to 65: Big Five domains and facets in a large cross-sectional sample. *Journal of Personality and Social Psychology*, 100, 330–348.
- Soubrie, P. (1986). Reconciling the role of central serotonin neurons in human and animal behavior. *Behavioral & Brain Sciences*, 9(2), 319–335.
- Soussignan, R. (2002). Duchenne smile, emotional experience, and autonomic reactivity: A test of the facial feedback hypothesis. *Emotion*, 2, 52–74.
- Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: Implications for prevention and treatment. *Annual Review of Clinical Psychology*, 1(1), 255–291. <http://doi.org/10.1146/annurev.clinpsy.1.102803.143948>.
- Sowden, S., Brewer, R., Catmur, C., & Bird, G. (2016). The specificity of the link between alexithymia, interoception and imitation. *Journal of Experimental Psychology: Human Perception and Performance*, 42(11), 1687–1692. <http://doi.org/10.1037/xhp0000310>.
- Speer, M. E., Bhanji, J. P., & Delgado, M. R. (2014). Savoring the past: Positive memories evoke value representations in the striatum. *Neuron*, 84(4), 847–856.
- Spellman, B. A. (2015). A short (personal) future history of revolution 2.0. *Perspectives on Psychological Science*, 10, 886–899.
- Spence, K. W. (1956). *Behavior theory and conditioning*. New Haven, CT: Yale University Press.
- Spezio, M. L., Huang, P. Y., Castelli, F., & Adolphs, R. (2007). Amygdala damage impairs eye contact during conversations with real people. *Journal of Neuroscience*, 27, 3994–3997.
- Spielberger, C. D., Gorsuch, R. L., Lushene, R., Vagg, P. R., & Jacobs, G. A. (2010). In *Manual for the state-trait anxiety inventory* (Mind Garden, Palo Alto, CA 1983).
- Spinhoven, P., Elzinga, B. M., van Hemert, A. M., de Rooij, M., & Penninx, B. W. (2014). A longitudinal study of facets of extraversion in depression and social anxiety. *Personality & Individual Differences*, 71, 39–44.
- Spinoza, B. (1675/2000). *Ethics*. New York: Oxford University Press.
- Spinrad, T. L., Eisenberg, N., Harris, E., Hanish, L., Fabes, R. A., Kupanoff, K., . . . Holmes, J. (2004). The relation of children's everyday nonsocial peer play behavior to their emotionality, regulation, and social functioning. *Developmental Psychology*, 40, 67–80. doi:10.1037/0012-1649.40.1.67.
- Spivey, M. J., & Dale, R. (2006). Continuous dynamics in real-time cognition. *Current Directions in Psychological Science*, 15(5), 207–211.
- Spolidoro, M., Baroncelli, L., Putignano, E., Maya-Vetencourt, J. F., Viegi, A., & Maffei, L. (2011). Food restriction enhances visual cortex plasticity in adulthood. *Nature Communications*, 2, 320.
- Sporns, O. (2011). *Networks of the brain*. Cambridge, MA: MIT Press.
- Spreng, R. N., Sepulcre, J., Turner, G. R., Stevens, W. D., & Schacter, D. L. (2013). Intrinsic architecture underlying the relations among the default, dorsal attention, and frontoparietal control networks of the human brain. *Journal of Cognitive Neuroscience*, 25(1), 74–86. doi:10.1162/jocn\_a\_00281.
- Sprengelmeyer, R., Young, A. W., Calder, A. J., & Karnat, A. (1996). Loss of disgust: Perception of faces and emotions in Huntington's disease. *Brain*, 119, 1647–1665.
- Sprengelmeyer, R., Young, A. W., Sprengelmeyer, A., Calder, A. J., Rowland, D., Perrett, D., . . . Lange, H. (1997). Recognition of facial expressions: Selective impairment of specific emotions in Huntington's disease. *Cognitive Neuropsychology*, 14, 839–879.
- Springer, U. S., Rosas, A., McGettrick, J., & Bowers, D. (2007). Differences in startle reactivity during the perception of angry and fearful faces. *Emotion*, 7, 516–525.
- Spunt, R. P., Elison, J. T., Dufour, N., Hurlemann, R., Saxe, R., & Adolphs, R. (2015). Amygdala lesions do not compromise the cortical network for false-belief reasoning. *Proceedings of the National Academy of Sciences of the United States of America*, 112, 4827–4832.
- Srinivasjois, R., Rao, S., & Patole, S. (2015). Probiotic supplementation in children with autism spectrum disorder. *Archives of Disease in Childhood*,

## 554 REFERENCES

- 100(5), 505–506. <http://doi.org/10.1136/archdischild-2014-308002>.
- Sripada, R. K., & Rauch, S. A. (2015). Between-session and within-session habituation in prolonged exposure therapy for posttraumatic stress disorder: A hierarchical linear modeling approach. *Journal of Anxiety Disorders, 30*, 81–87. doi:10.1016/j.janxdis.2015.01.002. Epub 2015 Jan 13.
- Stamper, C. E., Hoisington, A. J., Gomez, O. M., Halweg-Edwards, A. L., Smith, D. G., Bates, K. L., . . . Lowry, C. A. (2016). The microbiome of the built environment and human behavior: Implications for emotional health and well-being in postmodern Western societies. *International Review of Neurobiology, 131*, 289–323.
- Stanley, D. A., & Adolphs, R. (2013). Toward a neural basis for social behavior. *Neuron, 80*(3), 816–826. <https://doi.org/10.1016/j.neuron.2013.10.038>.
- Stanley, D. A., Sokol-Hessner, P., Fareri, D. S., Perino, M. T., Delgado, M. R., Banaji, M. R., & Phelps, E. A. (2012). Race and reputation: Perceived racial group trustworthiness influences the neural correlates of trust decisions. *Philosophical Transactions of the Royal Society of London B: Biological Sciences, 367*(1589), 744–753.
- Stanton, K., Rozek, D. C., Stasik, S. M., Ellickson-Larew, S., & Watson, D. (2016). A transdiagnostic approach to examining the incremental predictive power of emotion regulation and basic personality dimensions. *Journal of Abnormal Psychology, 125*, 960–975.
- Starkweather, J. A. (1961). Vocal communication of personality and human feelings. *Journal of Communication, 11*, 63–72.
- Steele, C. M., & Liu, T. J. (1983). Dissonance processes as self-affirmation. *Journal of Personality & Social Psychology, 45*, 5–19.
- Steenbergen, L., Sellaro, R., van Hemert, S., Bosch, J. A., & Colzato, L. S. (2015). A randomized controlled trial to test the effect of multispecies probiotics on cognitive reactivity to sad mood. *Brain, Behavior, & Immunity, 48*, 258–264. <http://doi.org/10.1016/j.bbi.2015.04.003>.
- Stefanucci, J. K., & Storbeck, J. (2009). Don't look down: Emotional arousal elevates height perception. *Journal of Experimental Psychology: General, 138*, 131–145.
- Stein, B. E., & Meredith, M. A. (1993). *The merging of the senses*. Cambridge, MA: MIT.
- Stein, M. B., Goldin, P. R., Sareen, J., Zorrilla, L. T. E., & Brown, G. G. (2002). Increased amygdala activation to angry and contemptuous faces in generalized social phobia. *Archives of General Psychiatry, 59*(11), 1027–1034.
- Stein, M. B., Simmons, A. N., Feinstein, J. S., & Paulus, M. P. (2007). Increased amygdala and insula activation during emotion processing in anxiety-prone subjects. *American Journal of Psychiatry, 164*, 318–327.
- Steinbeis, N., Bernhardt, B. C., & Singer, T. (2012). Impulse control and underlying functions of the left DLPFC mediate age-related and age-independent individual differences in strategic social behavior. *Neuron, 73*(5), 1040–1051. doi:10.1016/j.neuron.2011.12.027.
- Steinberg, C., Brockelmann, A. K., Rehbein, M., Dobel, C., & Junghofer, M. (2013). Rapid and highly resolving associative affective learning: Convergent electro- and magnetoencephalographic evidence from vision and audition. *Biological Psychology, 92*(3), 526–540. doi:10.1016/j.biopsycho.2012.02.009.
- Steinberg, L. A. (2008). Social neuroscience perspective on adolescent risk-taking. *Developmental Review, 28*, 78–106.
- Steinberg, L., Albert, D., Cauffman, E., Banich, M., Graham, S., & Woolard, J. (2008). Age differences in sensation seeking and impulsivity as indexed by behavior and self-report: Evidence for a dual systems model. *Developmental Psychology, 44*(6), 1764–1778.
- Steiner, A. P., & Redish, A. D. (2014). Behavioral and neurophysiological correlates of regret in rat decision-making on a neuroeconomic task. *Nature Neuroscience, 17*(7), 995–1002.
- Steiner, J. E. (1973). The gustofacial response: Observation on normal and anencephalic newborn infants. [Review]. *Symposium on Oral Sensation & Perception, 4*, 254–278.
- Steiner, J. E., Glaser, D., Hawilo, M. E., & Berridge, K. C. (2001). Comparative expression of hedonic impact: Affective reactions to taste by human infants and other primates. [Comparative study.] *Neuroscience & Biobehavioral Reviews, 25*(1), 53–74.
- Stellar, J. E., & Keltner, D. (2014). Compassion. In M. M. Tugade, M. N. Shiota, & L. D. Kirby (Eds.), *Handbook of positive emotion* (pp. 329–341). New York: Guilford Press.
- Stemmler, G., & Wacker, J. (2010). Personality, emotion, and individual differences in physiological responses. *Biological Psychology, 84*(3), 541–551. doi:10.1016/j.biopsycho.2009.09.012.
- Stemmler, G., Aue, T., & Wacker, J. (2007). Anger and fear: Separable effects of emotion and motivational direction on somatovisceral responses. *International Journal of Psychophysiology, 66*(2), 141–153. doi:10.1016/j.ijpsycho.2007.03.019.
- Stemmler, G., Heldmann, M., Pauls, C. A., & Scherer, T. (2001). Constraints for emotion specificity in fear

- and anger? The context counts. *Psychophysiology*, 38, 275–291.
- Stephan, K. E., Penny, W. D., Moran, R. J., den Ouden, H. E. M., Daunizeau, J., & Friston, K. J. (2010). Ten simple rules for dynamic causal modeling. *NeuroImage*, 49(4), 3099–3109. <http://doi.org/10.1016/j.neuroimage.2009.11.015>.
- Stephens, C. L., Christie, I. C., & Friedman, B. H. (2010). Autonomic specificity of basic emotions: Evidence from pattern classification and cluster analysis. *Biological Psychology*, 84(3), 463–473. <http://doi.org/10.1016/j.biopsycho.2010.03.014>.
- Stephens, G. J., Silbert, L. J., & Hasson, U. (2010). Speaker-listener neural coupling underlies successful communication. *Proceedings of the National Academy of Sciences*, 107(32), 14425–14430.
- Sternberg, D. R. (1965). Age-related memory deficits in rats and mice: Enhancement with peripheral injections of epinephrine. *Behavioral and Neural Biology*, 44, 213–220.
- Sterling, P. (2012). Allostasis: a model of predictive regulation. *Physiology and Behavior*, 106(1), 5–15.
- Sterling, P., & Laughlin, S. (2015). *Principles of Neural Design*. Cambridge: MIT Press.
- Stewart, M. A. (1995). Effective physician-patient communication and health outcomes: A review. *CMAJ: Canadian Medical Association Journal*, 152(9), 1423.
- Steyer, R., Schmitt, M., & Eid, M. (1999). Latent state-trait theory and research in personality and individual differences. *European Journal of Personality*, 13, 389–408.
- Stich, S., & Nichols, S. (2003). Folk psychology. In S. Stich & T. Warfield (Eds.), *The Blackwell guide to philosophy of mind* (pp. 235–255). Oxford, UK: Blackwell.
- Stilling, R. M., Bordenstein, S. R., Dinan, T. G., & Cryan, J. F. (2014). Friends with social benefits: Host-microbe interactions as a driver of brain evolution and development? *Frontiers in Cellular and Infection Microbiology*, 4(Oct.), 1–17. <http://doi.org/10.3389/fcimb.2014.00147>.
- Stilling, R. M., Dinan, T. G., & Cryan, J. F. (2016). The brain's Geppetto—microbes as puppeteers of neural function and behaviour? *Journal of Neurovirology*, 22(1), 14–21.
- Stilling, R. M., Ryan, F. J., Hoban, A. E., Shanahan, F., Clarke, G., Claesson, M. J., . . . Cryan, J. F. (2015). Microbes & neurodevelopment—Absence of microbiota during early life increases activity-related transcriptional pathways in the amygdala. *Brain, Behavior, & Immunity*, 50, 209–220.
- Stockmeier, C. A., Mahajan, G. J., Konick, L. C., Overholser, J. C., Jurjus, G. J., Meltzer, H. Y., . . . Rajkowska, G. (2004). Cellular changes in the postmortem hippocampus in major depression. *Biological Psychiatry*, 56(9), 640–650.
- Stolier, R. M., & Freeman, J. B. (2016). Neural pattern similarity reveals the inherent intersection of social categories. *Nature Neuroscience*, 19(6), 795–797.
- Storbeck, J., & Clore, G. L. (2008). The affective regulation of semantic and affective priming. *Emotion*, 8, 208–215. PMID: PMC2376275.
- Stout, D. M., Shackman, A. J., & Larson, C. L. (2013). Failure to filter: Anxious individuals show inefficient gating of threat from working memory. *Frontiers in Human Neuroscience*, 7(58), 1–10. doi:10.3389/fnhum.2013.00058.
- Stout, D. M., Shackman, A. J., Johnson, J. S., & Larson, C. L. (2014). Worry is associated with impaired gating of threat from working memory. *Emotion*, 15, 6–11.
- Stout, D. M., Shackman, A. J., Pedersen, W. S., Miskovich, T. A., & Larson, C. L. (2017). Neural circuitry governing anxious individuals' misallocation of working memory to threat. *Scientific Reports*, 7, 8742.
- Strack, F., Martin, L., & Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality & Social Psychology*, 54, 768–777.
- Strausfeld, N. J., & Hirth, F. (2013). Deep homology of arthropod central complex and vertebrate basal ganglia. *Science (New York, N.Y.)*, 340(6129), 157–161. <https://doi.org/10.1126/science.1231828>.
- Strelau, J. (2001). The concept and status of trait in research on temperament. *European Journal of Personality*, 15, 311–325.
- Strigo, I. A., Matthews, S. C., & Simmons, A. N. (2013). Decreased frontal regulation during pain anticipation in unmedicated subjects with major depressive disorder. *Translational Psychiatry*, 3(3), e239. <http://doi.org/10.1038/tp.2013.15>.
- Strohming, N. (2014). Disgust talked about. *Philosophy Compass*, 9, 478–493.
- Strombach, T., Weber, B., Hangebrauk, Z., Kenning, P., Karipidis, I. I., Tobler, P. N., & Kalenscher, T. (2015). Social discounting involves modulation of neural value signals by temporoparietal junction. *Proceedings of the National Academy of Sciences of the United States of America*, 112(5), 1619–1624. doi:10.1073/pnas.1414715112.
- Stroud, L. R., Foster, E., Papandonatos, G. D., Handwerker, K., Granger, D. A., Kivlighan, K. T., & Niaura, R. (2009). Stress response and the adolescent transition: Performance versus peer rejection stressors. *Development & Psychopathology*, 21, 47–68.
- Stuber, G. D., Sparta, D. R., Stamatakis, A. M., Van Leeuwen, W. A., Hardjoprajitno, J. E., Cho,

## 556 REFERENCES

- S., . . . Bonci, A. (2011). Excitatory transmission from the amygdala to nucleus accumbens facilitates reward seeking. *Nature*, *475*(7356), 377–380.
- Sturm, V. E., McCarthy, M. E., Yun, I., Madan, A., Yuan, J. W., Holley, S. R., . . . Levenson, R. W. (2011). Mutual gaze in Alzheimer's disease, frontotemporal and semantic dementia couples. *Social Cognitive & Affective Neuroscience*, *6*, 359–367.
- Sturm, V. E., Sollberger, M., Seeley, W. W., Rankin, K. P., Ascher, E. A., Rosen, H. J., . . . Levenson, R. W. (2013). Role of right pregenual anterior cingulate cortex in self-conscious emotional reactivity. *Social Cognitive & Affective Neuroscience*, *8*, 468–474.
- Suddendorf, T., Addis, D. R., & Corballis, M. C. (2009). Mental time travel and the shaping of the human mind. *Philosophical Transactions of the Royal Society of London, Series B Biological Sciences*, *364*(1521), 1317–1324.
- Sudo, N., Chida, Y., Aiba, Y., Sonoda, J., Oyama, N., Yu, X. N., . . . Koga, Y. (2004). Postnatal microbial colonization programs the hypothalamic-pituitary-adrenal system for stress response in mice. *The Journal of Physiology*, *558*(1), 263–275.
- Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, *62*(4), 271.
- Suh, G. S., Wong, A. M., Hergarden, A. C., Wang, J. W., Simon, A. F., Benzer, S., . . . Anderson, D. J. (2004). A single population of olfactory sensory neurons mediates an innate avoidance behaviour in *Drosophila*. *Nature*, *431*(7010), 854–859.
- Sullivan, P. F., Agrawal, A., Bulik, C. M., Andreassen, O. A., Borglum, A. D., Breen, G., . . . Psychiatric Genomics, C. (2018). Psychiatric genomics: An update and an agenda. *American Journal of Psychiatry*, *175*, 15–27.
- Suls, J., & Martin, R. (2005). The daily life of the garden-variety neurotic: Reactivity, stressor exposure, mood spillover, and maladaptive coping. *Journal of Personality*, *73*, 1485–1509.
- Summerfield, C., & Egner, T. (2009). Expectation (and attention) in visual cognition. *Trends in Cognitive Sciences*, *13*(9), 403–409.
- Suslow, T., Konrad, C., Kugel, H., Rustadt, D., Zwitterlood, P., Schoning, S., . . . Dannlowski, U. (2010). Automatic mood-congruent amygdala responses to masked facial expressions in major depression. *Biological Psychiatry*, *67*, 155–160.
- Susskind, J. M., & Anderson, A. K. (2008). Facial expression form and function. *Communicative & Integrative Biology*, *1*(2), 148–149. <http://doi.org/10.1038/nn.2138.148>.
- Susskind, J. M., Lee, D. H., Cusi, A., Feiman, R., Grabski, W., & Anderson, A. K. (2008). Expressing fear enhances sensory acquisition. *Nature Neuroscience*, *11*, 843–850.
- Susskind, J. M., Littlewort, G., Bartlett, M. S., Movellan, J., & Anderson, A. K. (2007). Human and computer recognition of facial expressions of emotion. *Neuropsychologia*, *45*, 152–162.
- Sutton, R. S. (1988). Learning to predict by the methods of temporal differences. *Machine Learning*, *3*(1), 9–44.
- Sutton, R. S., & Barto, A. G. (1998). *Reinforcement learning: An introduction* (Vol. 1, No. 1). Cambridge, MA: MIT Press.
- Suway, J. G., Degnan, K. A., Sussman, A. L., & Fox, N. A. (2012). The relations among theory of mind, behavioral inhibition, and peer interactions in early childhood. *Social Development*, *21*, 331–342. doi:10.1111/j.1467-9507.2011.00634.x.
- Swanson, J., Valiente, C., Lemery-Chalfant, K., Bradley, R. H., & Eggum-Wilkens, N. D. (2014). Longitudinal relations among parents' reactions to children's negative emotions, effortful control, and math achievement in early elementary school. *Child Development*, *85*, 1932–1947. doi: 10.1111/cdev.12260.
- Swanson, L. W. (2000). Cerebral hemisphere regulation of motivated behavior. *Brain Research*, *886*(1–2), 113–164.
- Swanson, L. W., & Petrovich, G. D. (1998). What is the amygdala? *Trends in Neuroscience*, *21*, 323–331.
- Swartz, J. R., Knodt, A. R., Radtke, S. R., & Hariri, A. R. (2015). A neural biomarker of psychological vulnerability to future life stress. *Neuron*, *85*(3), 505–511.
- Sweeny, T. D., Grabowecky, M., Suzuki, S., & Paller, K. A. (2009). Long-lasting effects of subliminal affective priming from facial expressions. *Consciousness & Cognition*, *18*(4), 929–938.
- Swim, J. K., Hyers, L. L., Cohen, L. L., Fitzgerald, D. C., & Bylsma, W. H. (2003). African American college students' experiences with everyday racism: Characteristics of and responses to these incidents. *Journal of Black Psychology*, *29*, 38–67. doi: 10.1177/0095798402239228.
- Szucs, D., & Ioannidis, J. P. (2017). Empirical assessment of published effect sizes and power in the recent cognitive neuroscience and psychology literature. *PLoS Biol*, *15*, e2000797.
- Taber-Thomas, B. C., Asp, E. W., Koenigs, M., Sutterer, M., Anderson, S. W., & Tranel, D. (2014). Arrested development: Early prefrontal lesions impair the maturation of moral judgement. *Brain*, *137*(4), 1254–1261.

- Tabibnia, G., Lieberman, M. D., & Craske, M. G. (2008). The lasting effect of words on feelings: Words may facilitate exposure effects to threatening images. *Emotion, 8*, 307–317.
- Tabibnia, G., Satpute, A. B., & Lieberman, M. D. (2008). The sunny side of fairness: Preference for fairness activates reward circuitry (and disregarding unfairness activates self-control circuitry). *Psychological Science, 19*(4), 339–347.
- Tackett, J. L., Kushner, S. C., De Fruyt, F., & Mervielde, I. (2013). Delineating personality traits in childhood and adolescence: Associations across measures, temperament, and behavioral problems. *Assessment, 20*(6), 738–751.
- Tackett, J. L., Lahey, B. B., van Hulle, C., Waldman, I., Krueger, R. F., & Rathouz, P. J. (2013). Common genetic influences on negative emotionality and a general psychopathology factor in childhood and adolescence. *Journal of Abnormal Psychology, 122*(4), 1142–1153.
- Tackett, J. L., Lilienfeld, S. O., Patrick, C. J., Johnson, S. L., Krueger, R. F., Miller, J. D., . . . Shrout, P. E. (2017). It's time to broaden the replicability conversation: Thoughts for and from clinical psychological science. *Perspectives in Psychological Science, 12*, 742–756.
- Tahmasebi, A. M., Artiges, E., Banaschewski, T., Barker, G. J., Bruhl, R., Buchel, C., . . . Consortium, I. (2012). Creating probabilistic maps of the face network in the adolescent brain: A multicentre functional MRI study. *Human Brain Mapping, 33*(4), 938–957.
- Takahara, D., Inoue, K. I., Hirata, Y., Miyachi, S., Nambu, A., Takada, M., & Hoshi, E. (2012). Multisynaptic projections from the ventrolateral prefrontal cortex to the dorsal premotor cortex in macaques—anatomical substrate for conditional visuomotor behavior. *European Journal of Neuroscience, 36*(10), 3365–3375.
- Talbot, J. D., Marrett, S., Evans, A. C., Meyer, E., Bushnell, M. C., & Duncan, G. H. (1991). Multiple representations of pain in human cerebral cortex. *Science, 251*(4999), 1355–1359.
- Talmi, D., Dayan, P., Kiebel, S. J., Frith, C. D., & Dolan, R. J. (2009). How humans integrate the prospects of pain and reward during choice. *Journal of Neuroscience, 29*(46), 14617–14626.
- Talmi, D., Seymour, B., Dayan, P., & Dolan, R. J. (2008). Human Pavlovian—instrumental transfer. *Journal of Neuroscience, 28*(2), 360–368.
- Tambini, A., Rimmele, U., Phelps, E. A., & Davachi, L. (2017). Emotional brain states carry over and enhance future memory formation. *Nature Neuroscience, 20*, 271–278.
- Tamietto, M., & de Gelder, B. (2008a). Affective blindsight in the intact brain: Neural interhemispheric summation for unseen fearful expressions. *Neuropsychologia, 46*, 820–828.
- Tamietto, M., & de Gelder, B. (2008b). Emotional contagion for unseen bodily expressions: Evidence from facial EMG. 2008 8th IEEE International Conference on Automatic Face and Gesture Recognition, FG 2008, Article number 4813317.
- Tamietto, M., & de Gelder, B. (2010). Neural bases of the non-conscious perception of emotional signals. *Nature Reviews Neuroscience, 11*, 697–709.
- Tamietto, M., Castelli, L., Vighetti, S., Perozzo, P., Geminiani, G., Weiskrantz, L., & de Gelder, B. (2009). Unseen facial and bodily expressions trigger fast emotional reactions. *Proceedings of the National Academy of Sciences of the United States of America, 106*(42), 17661–17666.
- Tamietto, M., Cauda, F., Celegghin, A., Diano, M., Costa, T., Cossa, F. M., . . . de Gelder, B. (2015). Once you feel it, you see it: Insula and sensory-motor contribution to visual awareness for fearful bodies in parietal neglect. *Cortex: A Journal Devoted to the Study of the Nervous System & Behavior, 62*, 56–72.
- Tamietto, M., Geminiani, G., Genero, R., & de Gelder, B. (2007). Seeing fearful body language overcomes attentional deficits in patients with neglect. *Journal of Cognitive Neuroscience, 19*, 445–454.
- Tamietto, M., Latini Corazzini, L., Pia, L., Zettin, M., Gionco, M., & Geminiani, G. (2005). Effects of emotional face cueing on line bisection in neglect: A single case study. *Neurocase, 11*, 399–404.
- Tamir, D. I., & Mitchell, J. P. (2012). Disclosing information about the self is intrinsically rewarding. *Proceedings of the National Academy of Sciences of the United States of America, 109*, 8038–8043.
- Tamir, M., & Mauss, I. B. (2011). Social cognitive factors in emotion regulation: Implications for well-being. In *Emotion regulation and well-being* (pp. 31–47). New York: Springer.
- Tamir, M., John, O. P., Srivastava, S., & Gross, J. J. (2007). Implicit theories of emotion: Affective and social outcomes across a major life transition. *Journal of Personality & Social Psychology, 92*(4), 731.
- Tamir, M., Mitchell, C., & Gross, J. J. (2008). Hedonic and instrumental motives in anger regulation. *Psychological Science, 19*(4), 324–328.
- Tamis-LeMonda, C. S., Adolph, K. E., Lobo, S. A., Karasik, L. B., Ishak, S., & Dimitropoulou, K. A. (2008). When infants take mothers' advice: 18-month-olds integrate perceptual and social information to guide motor action. *Developmental Psychology, 44*, 734–746.
- Tan, P. Z., Lee, K. H., Dahl, R. E., Nelson, E. E., Stroud, L. J., Siegle, G. J., . . . Silk, J. S. (2014). Associations between maternal negative affect and adolescent's neural response to peer evaluation. *Developmental*

- Cognitive Neuroscience*, 8, 28–39. doi:10.1016/j.dcn.2014.01.006.
- Tanaka, A., Koizumi, A., Imai, H., Hiramatsu, S., Hiramoto, E., & de Gelder, B. (2010). I feel your voice: Cultural differences in the multisensory perception of emotion. *Psychological Science*, 21(9), 1259–1262.
- Tang, D. W., Fellows, L. K., Small, D. M., & Dagher, A. (2012). Food and drug cues activate similar brain regions: A meta-analysis of functional MRI studies. *Physiology & Behavior*, 106, 317–324.
- Tang, Y. Y., Holzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, 16, 213–225.
- Tangney, J. P. (1996). Conceptual and methodological issues in the assessment of shame and guilt. *Behaviour Research & Therapy*, 34(9), 741–754.
- Tangney, J. P., Miller, R. S., Flicker, L., & Barlow, D. H. (1996). Are shame, guilt, and embarrassment distinct emotions? *Journal of Personality & Social Psychology*, 70(6), 1256–1269.
- Tangney, J. P., Wagner, P., Fletcher, C., & Gramzow, R. (1992). Shamed into anger? The relation of shame and guilt to anger and self-reported aggression. *Journal of Personality & Social Psychology*, 62(4), 669–675.
- Tataranni, P. A., Gautier, J. F., Chen, K., Uecker, A., Bandy, D., Salbe, A. D., . . . Ravussin, E. (1999). Neuroanatomical correlates of hunger and satiation in humans using positron emission tomography. *Proceedings of the National Academy of Sciences of the United States of America*, 96, 4569–4574.
- Tavor, I., Parker Jones, O., Mars, R. B., Smith, S. M., Behrens, T. E., & Jbabdi, S. (2016). Task-free MRI predicts individual differences in brain activity during task performance. *Science*, 352(6282), 216–220.
- Taylor, C. T., & Alden, L. E. (2011). To see ourselves as others see us: An experimental integration of the intra and interpersonal consequences of self-protection in social anxiety disorder. *Journal of Abnormal Psychology*, 120(1), 129–141.
- Taylor, Z. E., Eisenberg, N., Eggum, N. D., Sulik, M. J., & Spinrad, T. L. (2013). The relations of ego-resiliency and emotion socialization to the development of empathy and prosocial behavior across early childhood. *Emotion*, 13, 822–831. doi:10.1037/a0032894.
- Taylor, Z. E., Spinrad, T. L., VanSchyndel, S. K., Eisenberg, N., Huynh, J., Sulik, M. J., & Granger, D. A. (2013). Sociodemographic risk, parenting, and effortful control: Relations to salivary alpha-amylase and cortisol in early childhood. *Developmental Psychobiology*, 55, 869–880. doi:10.1002/dev.21079.
- Tedeschi, R. G., Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (Eds.). (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. London: Routledge.
- Teitelbaum, P., & Epstein, A. N. (1962). The lateral hypothalamic syndrome: Recovery of feeding and drinking after lateral hypothalamic lesions. *Psychological Review*, 69, 74–90.
- Telzer, E. H., Fuligni, A. J., Lieberman, M. D., & Galvan, A. (2014). Neural sensitivity to eudaimonic and hedonic rewards differentially predict adolescent depressive symptoms over time. *Proceedings of the National Academy of Sciences of the United States of America*, 111(18), 6600–6605. doi:10.1073/pnas.1323014111.
- Telzer, E. H., Masten, C. L., Berkman, E. T., Lieberman, M. D., & Fuligni, A. J. (2010). Gaining while giving: An fMRI study of the rewards of family assistance among white and Latino youth. *Society for Neuroscience*, 5(5–6), 508–518. doi:10.1080/17470911003687913.
- Teplov, B. M. (1964). Problems in the study of general types of higher nervous activity in man and animals. In J. A. Gray (Ed.), *Pavlov's typology: Recent theoretical and experimental developments from the laboratory of B. M. Teplov* (pp. 3–153). Oxford, UK: Pergamon Press.
- Teslovich, T., Mulder, M., Franklin, N. T., Ruberry, E. J., Millner, A., Somerville, L. H., . . . Casey, B. J. (2014). Adolescents let sufficient evidence accumulate before making a decision when large incentives are at stake. *Developmental Science*, 17(1), 59–70. doi:10.1111/desc.12092.
- Tessitore, A., Hariri, A. R., Fera, F., Smith, W. G., Das, S., Weinberger, D. R., & Mattay, V. S. (2005). Functional changes in the activity of brain regions underlying emotion processing in the elderly. *Psychiatry Research: Neuroimaging*, 139(1), 9–18.
- Thayer, J. F. (2009). Vagal tone and the inflammatory reflex. *Cleveland Clinic Journal of Medicine*, 76, S23–S26.
- Thayer, J. F., & Sternberg, E. (2006). Beyond heart rate variability: Vagal regulation of allostatic systems. *Annals of the New York Academy of Sciences*, 1088(1), 361–372.
- Thayer, R. E. (1996). *The origin of everyday moods: Managing energy, tension, and stress*. New York: Oxford University Press.
- Thibault, P., Bourgeois, P., & Hess, U. (2006). The effect of group-identification on emotion recognition: The case of cats and basketball players. *Journal of Experimental Social Psychology*, 42, 676–683.
- Thiruchselvam, R., Hajcak, G., & Gross, J. J. (2012). Looking inward: Shifting attention within working memory representations alters emotional responses. *Psychological Science*, 23, 1461–1466.

- Thomas, F., Adamo, S., & Moore, J. (2005). Parasitic manipulation: Where are we and where should we go? *Behavioural Processes*, *68*(3), 185–199. <http://doi.org/10.1016/j.beproc.2004.06.010>.
- Thomas, K. M., Drevets, W. C., Dahl, R. E., Ryan, N. D., Birmaher, B., Eccard, C. H., . . . Casey, B. J. (2001). Amygdala response to fearful faces in anxious and depressed children. *Archives of General Psychiatry*, *58*, 1057–1063.
- Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of the mind*. Cambridge, MA: Harvard University Press.
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, *59*(2–3), 25–52.
- Thorndike, E. L. (1904). *An introduction to the theory of mental and social measurements*. New York: Teachers College, Columbia University.
- Tice, D. M., Bratslavsky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over impulse control: If you feel bad, do it! *Journal of Personality & Social Psychology*, *80*(1), 53–67.
- Tiedens, L. Z. (2001). Anger and advancement versus sadness and subjugation: The effect of negative emotion expressions on social status conferral. *Journal of Personality & Social Psychology*, *80*, 86–94.
- Tillisch, K., Labus, J., Kilpatrick, L., Jiang, Z., Stains, J., Ebrat, B., . . . Mayer, E. A. (2013). Consumption of fermented milk product with probiotic modulates brain activity. *Gastroenterology*, *144*, 1394–1401, 1401, e1391–1394. doi:10.1053/j.gastro.2013.02.043. Epub 2013 Mar 6.
- Tirindelli, R., Dibattista, M., Pifferi, S., & Menini, A. (2009). From pheromones to behavior. *Physiological Reviews*, *89*(3), 921–956. doi:10.1152/physrev.00037.2008.
- Titchener, E. B. (1908). *Lectures on the elementary psychology of feeling and attention*. New York: MacMillan Company.
- Tobon, J. I., Ouimet, A. J., & Dozois, D. J. (2011). Attentional bias in anxiety disorders following cognitive behavioral treatment. *Journal of Cognitive Psychotherapy*, *25*(2), 114–129.
- Todd, R. M., & Anderson, A. K. (2013). Salience, state, and expression: The influence of specific aspects of emotion on attention and perception. In K. N. Ochsner & S. M. Kosslyn (Eds.), *Oxford handbook of cognitive neuroscience* (Vol. 2, pp. 11–30). New York: Oxford University Press.
- Todorov, A. (2008). Evaluating faces on trustworthiness. *Annals of the New York Academy of Sciences*, *1124*(The Year in Cognitive Neuroscience 2008), 208–224. <https://doi.org/10.1196/annals.1440.012>.
- Tomarken, A. J. (1995). A psychometric perspective on psychophysiological measures. *Psychological Assessment*, *7*, 387–395.
- Tomkins, S. S. (1962). *Affect, imagery, consciousness: Vol. 1. The positive affects*. New York: Springer.
- Tomkins, S. S. (1984). Affect theory. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 163–195). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Tomkins, S. S., & McCarter, R. (1964). What and where are the primary affects: Some evidence for a theory. *Perceptual & Motor Skills*, *18*, 119–158.
- Tomova, A., Husarova, V., Lakatosova, S., Bakos, J., Vlkova, B., Babinska, K., & Ostatnikova, D. (2015). Gastrointestinal microbiota in children with autism in Slovakia. *Physiology & Behavior*, *138*, 179–187. <http://doi.org/10.1016/j.physbeh.2014.10.033>.
- Tong, F., Meng, M., & Blake, R. (2006). Neural bases of binocular rivalry. *Trends in Cognitive Sciences*, *10*, 502–511.
- Tononi, G. (2008). Consciousness as integrated information: A provisional manifesto. *Biological Bulletin*, *215*, 216–242.
- Tononi, G., Sporns, O., & Edelman, G. M. (1999). Measures of degeneracy and redundancy in biological networks. *Proceedings of the National Academy*, *96*, 3157–3262.
- Tooby, J., & Cosmides, L. (1990). The past explains the present: Emotional adaptations and the structure of ancestral environments. *Ethology & Sociobiology*, *11*(4), 375–424.
- Törnqvist, E., Månsson, Å., Larsson, E. M., & Hallström, I. (2006). It's like being in another world—patients' lived experience of magnetic resonance imaging. *Journal of Clinical Nursing*, *15*, 954–961.
- Torre, J. B., Stanton, A. L., Inagaki, T. K., Haltom, C. M., & Lieberman, M. D. (under review). Common neural mechanism for distinct forms of self-control in right ventrolateral prefrontal cortex.
- Torrisi, S. J., Lieberman, M. D., Bookheimer, S. Y., & Althler, L. L. (2013). Advancing understanding of affect labeling with dynamic causal modeling. *NeuroImage*, *82*, 481–488.
- Touhara, K., & Vosshall, L. B. (2009). Sensing odorants and pheromones with chemosensory receptors. *Annual Review of Physiology*, *71*, 307–332. doi:10.1146/annurev.physiol.010908.163209.
- Touroutoglou, A., Andreano, J. M., Barrett, L. F., & Dickerson, B. C. (2015). Brain network connectivity-behavioral relationships exhibit trait-like properties: evidence from hippocampal connectivity and memory. *Hippocampus*, *25*, 1591–1598.
- Touroutoglou, A., Bickart, K. C., Barrett, L. F., & Dickerson, B. C. (2014). Amygdala task-evoked activity and task-free connectivity independently

AQ: Please update reference.



## 560 REFERENCES

- contribute to feelings of arousal. *Human Brain Mapping*, 35(10), 5316–5327.
- Touroutoglou, A., Hollenbeck, M., Dickerson, B. C., & Barrett, L. F. (2012). Dissociable large-scale networks anchored in the anterior insula subserve affective experience and attention/executive function. *NeuroImage*, 60, 1947–1958.
- Touroutoglou, A., Lindquist, K. A., Dickerson B. C., & Barrett, L. F. (2015). Intrinsic connectivity in the human brain does not reveal networks for “basic” emotions. *Social Cognitive & Affective Neuroscience*, 10(9), 1257–1265. <http://doi.org/10.1093/scan/nsv013>
- Tovote, P., Esposito, M. S., Botta, P., Chaudun, F., Fadok, J. P., Markovic, M., . . . Luthi, A. (2016). Midbrain circuits for defensive behaviour. *Nature*, 534, 206–212.
- Tovote, P., Esposito, M. S., Botta, P., Chaudun, F., Fadok, J. P., Markovic, M., . . . Herry, C. (2016). Midbrain circuits for defensive behaviour. *Nature*, 534(7606), 206–212.
- Tovote, P., Fadok, J. P., & Luthi, A. (2015). Neuronal circuits for fear and anxiety. *Nature Reviews Neuroscience*, 16, 317–331.
- Tovote, P., Fadok, J. P., & Luthi, A. (2015). Neuronal circuits for fear and anxiety. *Nature Reviews Neuroscience*, 16, 317–331.
- Tracy, J. L. (2014). An evolutionary approach to understanding distinct emotions. *Emotion Review*, 6(4), 308–312.
- Tracy, J. L., & Matsumoto, D. (2008). The spontaneous expression of pride and shame: Evidence for biologically innate nonverbal displays. *Proceedings of the National Academy of Sciences*, 105(33), 11655–11660.
- Tracy, J. L., & Randles, D. (2011). Four models of basic emotions. *Emotion Review*, 3, 397–405.
- Tracy, J. L., & Robins, R. W. (2004). Show your pride: Evidence for a discrete emotion expression. *Psychological Science: A Journal of the American Psychological Society/APS*, 15(3), 194–197. <http://doi.org/10.1111/j.0956-7976.2004.01503008.x>.
- Tracy, J. L., & Robins, R. W. (2007). *The self-conscious emotions: Theory and research*. New York: The Guilford Press.
- Tracy, J. L., & Robins, R. W. (2008b). The nonverbal expression of pride: Evidence for cross-cultural recognition. *Journal of Personality & Social Psychology*, 94(3), 516.
- Tracy, J. L., Klonsky, E. D., & Proudfit, G. H. (2014). How affective science can inform clinical science: An introduction to the special series on emotions and psychopathology. *Clinical Psychological Science*, 2, 371–386.
- Tracy, J. L., Robins, R. W., & Lagattuta, K. H. (2005). Can children recognize pride?. *Emotion*, 5(3), 251.
- Tracy, J. L., Robins, R. W., & Tangney, J. P. (Eds.). (2007). *The self-conscious emotions*. New York: Guilford.
- Tracy, J. L., Shariff, A. F., Zhao, W., & Henrich, J. (2013). Cross-cultural evidence that the nonverbal expression of pride is an automatic status signal. *Journal of Experimental Psychology: General*, 142(1), 163.
- Trammel, J. P., & Clore, G. L. (2014). Does stress enhance or impair memory consolidation? *Cognition & Emotion*, 28, 361–374. doi:10.1080/02699931.2013.822346.
- Treadway, M. T., & Zald, D. H. (2013). Parsing anhedonia: Translational models of reward-processing deficits in psychopathology. *Current Directions in Psychological Science*, 22(3), 244–249.
- Treede, R. D., Kenshalo, D. R., Gracely, R. H., & Jones, A. K. (1999). The cortical representation of pain. *Pain*, 79(2), 105–111.
- Treit, D., & Berridge, K. C. (1990). A comparison of benzodiazepine, serotonin, and dopamine agents in the taste-reactivity paradigm. *Pharmacology, Biochemistry & Behavior*, 37(3), 451–456.
- Tremblay, L., & Schultz, W. (1999). Relative reward preference in primate orbitofrontal cortex. *Nature*, 398, 704–708.
- Tremblay, R. E., & Nagin, D. S. (2005). The developmental origins of physical aggression in humans. In R. E. Tremblay, W. W. Hartup, & J. Archer (Eds.), *Developmental origins of aggression* (pp. 83–106). New York: Guilford Press.
- Trentacosta, C. J., & Fine, S. E. (2010). Emotion knowledge, social competence, and behavior problems in childhood and adolescence: A meta-analytic review. *Social Development*, 19, 1–29. doi:10.1111/j.1467-9507.2009.00543.x.
- Tricomi, E., Rangel, A., Camerer, C. F., & O’Doherty, J. P. (2010). Neural evidence for inequality-averse social preferences. *Nature*, 463, 1089–1091.
- Tromp, D. P., Grupe, D. W., Oathes, D. J., McFarlin, D. R., Hernandez, P. J., Kral, T. R., . . . Nitschke, J. B. (2012). Reduced structural connectivity of a major frontolimbic pathway in generalized anxiety disorder. *Archives of General Psychiatry*, 69(9), 925–934.
- Tronick, E. Z. (1989). Emotions and emotional communications in infants. *American Psychologist*, 44, 112–119.
- Trope, Y. (1986). Identification and inferential processes in dispositional attribution. *Psychological Review*, 93, 239–257.
- Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440–463. doi:10.1037/a0018963.
- Tsai, J. L., Levenson, R. W., & Carstensen, L. L. (2000). Autonomic, subjective, and expressive responses to emotional films in older and younger Chinese

- Americans and European Americans. *Psychology & Aging*, 15, 684–693.
- Tsuchiya, N., & Adolphs, R. (2007). Emotion and consciousness. *Trends in Cognitive Sciences*, 11, 158–167.
- Tsuchiya, N., Moradi, F., Felsen, C., Yamazaki, M., & Adolphs, R. (2009). Intact rapid detection of fearful faces in the absence of the amygdala. *Nature Neuroscience*, 12(10), 1224–1225. Retrieved from [http://www.nature.com/neuro/journal/v12/n10/supinfo/nn.2380\\_S1.html](http://www.nature.com/neuro/journal/v12/n10/supinfo/nn.2380_S1.html).
- Tsujimoto, S., & Postle, B. R. (2012). The prefrontal cortex and oculomotor delayed response: A reconsideration of the “mnemonic scotoma.” *Journal of Cognitive Neuroscience*, 24(September 2004), 627–635. doi:10.1162/jocn\_a\_00171. Epub 2011 Nov 18.
- Tsujimoto, S., Genovesio, A., & Wise, S. P. (2011). Comparison of strategy signals in the dorso-lateral and orbital prefrontal cortex. *Journal of Neuroscience*, 31, 4–583–4592.
- Tsushima, Y., Sasaki, Y., & Watanabe, T. (2006). Greater disruption due to failure of inhibitory control on an ambiguous distractor. *Science (New York, N.Y.)*, 314(5806), 1786–1788. doi:10.1126/science.1133197.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality & Social Psychology*, 86(2), 320–333.
- Turiel, E. (1983). *The development of social knowledge: Morality and convention*. Cambridge, UK: Cambridge University Press.
- Turnbaugh, P. J., Ley, R. E., Hamady, M., Fraser-Liggett, C., Knight, R., & Gordon, J. I. (2007). The human microbiome project: Exploring the microbial part of ourselves in a changing world. *Nature*, 449(7164), 804–810. <http://doi.org/10.1038/nature06244>.The.
- Turner, B. H., Mishkin, M., & Knapp, M. (1980). Organization of the amygdalopetal projections from modality-specific cortical association areas in the monkey. *Journal of Comparative Neurology*, 191(4), 515–543. <https://doi.org/10.1002/cne.901910402>.
- Turner, W. (1890). The convolutions of the brain: A study in comparative anatomy. *Journal of Anatomy & Physiology*, 25(Pt 1), 105–153.
- Turpin, G. (1986). Effects of stimulus intensity on automatic responding: The problem of differentiating orienting and defense reflexes. *Psychophysiology*, 23, 1–14.
- Tusche, A., Bode, S., & Haynes, J. D. (2010). Neural responses to unattended products predict later consumer choices. *Journal of Neuroscience*, 30(23), 8024–8031.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453–458.
- Twenge, J. M., & Nolen-Hoeksema, S. (2002). Age, gender, race, socioeconomic status, and birth cohort differences on the children’s depression inventory: A meta-analysis. *Journal of Abnormal Psychology*, 111(4), 578–588.
- Tye, K. M., Prakash, R., Kim, S.-Y., Fenno, L. E., Grosenick, L., Zarabi, H., . . . Deisseroth, K. (2011). Amygdala circuitry mediating reversible and bidirectional control of anxiety. *Nature*, 471, 358–362.
- Tye, K. M., Stuber, G. D., De Ridder, B., Bonci, A., & Janak, P. H. (2008). Rapid strengthening of thalamo-amygdala synapses mediates cue-reward learning. *Nature*, 453, 1253–1257.
- Tye, K. M., Tye, L. D., Cone, J. J., Hekkelman, E. F., Janak, P. H., & Bonci, A. (2010). Methylphenidate facilitates learning-induced amygdala plasticity. *Nature Neuroscience*, 13, 475–481.
- Tye, N. C., Everitt, B. J., & Iversen, S. D. (1977). 5-Hydroxytryptamine and punishment. *Nature*, 268(5622), 741–743.
- Tymula, A., Belmaker, L. A. R., Ruderman, L., Glimcher, P. W., & Levy, I. (2013). Like cognitive function, decision making across the life span shows profound age-related changes. *Proceedings of the National Academy of Sciences*, 110(42), 17143–17148.
- Tyszka, J. M., Kennedy, D. P., Adolphs, R., & Paul, L. K. (2011). Intact bilateral resting-state networks in the absence of the corpus callosum. *Journal of Neuroscience*, 31(42), 15154–15162. doi:10.1523/jneurosci.1453-11.2011.
- Tzschentke, T. M. (2007). Measuring reward with the conditioned place preference (CPP) paradigm: Update of the last decade. *Addiction Biology*, 12, 227–462.
- Uchida, M., Biederman, J., Gabrieli, J. D., Micco, J., de Los Angeles, C., Brown, A., . . . Whitfield-Gabrieli, S. (2015). Emotion regulation ability varies in relation to intrinsic functional brain architecture. *Social Cognitive & Affective Neuroscience*, 10(12), 1738–1748.
- Uchino, B. N. (2009). Understanding the links between social support and physical health. *Perspectives on Psychological Science*, 4, 236–255.
- Uddin, L. Q. (2015). Salience processing and insular cortical function and dysfunction. *Nature Reviews Neuroscience*, 16(1), 55–61.
- Uddin, L. Q., Iacoboni, M., Lange, C., & Keenan, J. P. (2007). The self and social cognition: The role of cortical midline structures and mirror neurons. *Trends in Cognitive Sciences*, 11(4), 153–157.
- Uddin, L. Q., Kinnison, J., Pessoa, L., & Anderson, M. L. (2013). Beyond the tripartite

## 562 REFERENCES

- cognition-emotion-interoception model of the human insular cortex. *Journal of Cognitive Neuroscience*, 26(1), 16–27. doi:10.1162/jocn\_a\_00462.
- Udina, M., Castellví, P., Moreno-España, J., Navinés, R., Valdés, M., Forns, X., . . . Martín-Santos, R. (2012). Interferon-induced depression in chronic hepatitis C: A systematic review and meta-analysis. *Journal of Clinical Psychiatry*, 73(8), 1128–1138. doi:10.4088/JCP.12r07694.
- Ugazio, G., Lamm, C., & Singer, T. (2012). The role of emotions for moral judgments depends on the type of emotion and moral scenario. *Emotion*, 12, 579–590.
- Uher, R., Brooks, S. J., Bartholdy, S., Tchanturia, K., & Campbell, I. C. (2014). Increasing cognitive load reduces interference from masked appetitive and aversive but not neutral stimuli. *PLoS One*, 9(4), e94417. http://doi.org/10.1371/journal.pone.0094417.
- Uleman, J. S., & Bargh, J. A. (1989). *Unintended thought*. New York: Guilford Publications.
- Uljarevic, M., & Hamilton, A. (2013). Recognition of emotions in autism: A formal meta-analysis. *Journal of Autism & Developmental Disorders*, 43, 1517–1526.
- Unger, L. S., & Thumhuri, L. K. (1997). Trait empathy and continuous helping: The case of voluntarism. *Journal of Social Behavior & Personality*, 12, 785–800.
- Ungerleider, L. G., & Mishkin, M. (1982). Two cortical visual systems. In D. J. Ingle, M. A. Goodale, R. J. Mansfield (Eds.), *Analysis of visual behavior* (pp. 549–586). Cambridge, MA: MIT Press.
- Urban, D. J., & Roth, B. L. (2015). DREADDs (designer receptors exclusively activated by designer drugs): Chemogenetic tools with therapeutic utility. *Annual Review of Pharmacology & Toxicology*, 55, 399–417.
- Urry, H. L. (2010). Seeing, thinking, and feeling: Emotion-regulating effects of gaze-directed cognitive reappraisal. *Emotion*, 10(1), 125–135. http://doi.org/10.1037/a0017434.
- Urry, H. L., Van Reekum, C. M., Johnstone, T., Kalin, N. H., Thurow, M. E., Schaefer, H. S., . . . Davidson, R. J. (2006). Amygdala and ventromedial prefrontal cortex are inversely coupled during regulation of negative affect and predict the diurnal pattern of cortisol secretion among older adults. *Journal of Neuroscience*, 26(16), 4415–4425.
- Usher, M., & McClelland, J. L. (2003). The time course of perceptual choice: The leaky, competing accumulator model. *Psychological Review*, 108, 550–592.
- Vacharkulksemsuk, T., & Fredrickson, B. L. (2012). Strangers in sync: Achieving embodied rapport through shared movements. *Journal of Experimental Social Psychology*, 48(1), 399–402.
- Vaillancourt, T., Brittain, H. L., McDougall, P., & Duku, E. (2013). Longitudinal links between childhood peer victimization, internalizing and externalizing problems, and academic functioning: Developmental cascades. *Journal of Abnormal Child Psychology*, 41, 1203–1215. doi:10.1007/s10802-013-9781-5.
- Vaisvaser, S., Lin, T., Admon, R., Podlipsky, I., Greenman, Y., Stern, N., . . . Hendler, T. (2013). Neural traces of stress: Cortisol related sustained enhancement of amygdala-hippocampal functional connectivity. *Frontiers in Human Neuroscience*, 7, 313.
- Valente, N. L. M., Vallada, H., Cordeiro, Q., Bressan, R. A., Andreoli, S. B., Mari, J. J., & Mello, M. F. (2011). Catechol-O-methyltransferase (COMT) val158met polymorphism as a risk factor for PTSD after urban violence. *Journal of Molecular Neuroscience*, 43(3), 516–523.
- Valiente, C., Eisenberg, N., Fabes, R. A., Shepard, S. A., Cumberland, A., & Losoya, S. H. (2004). Prediction of children's empathy-related responding from their effortful control and parents' expressivity. *Developmental Psychology*, 40, 911–926. doi:10.1037/0012-1649.40.6.911.
- Valiente, C., Eisenberg, N., Spinrad, T. L., Reiser, M., A., Cumberland, Losoya, S., & Liew, J. (2006). Relations among mothers' expressivity, children's effortful control, and their problem behaviors: A four-year longitudinal study. *Emotion*, 6, 459–472. doi:10.1037/1528-3542.6.3.459.
- Valiente, C., Swanson, J., & Lemery-Chalfant, K. (2012). Kindergartners' temperament, classroom engagement, and student-teacher relationship: Moderation by effortful control. *Social Development*, 21, 558–576. doi:10.1111/j.1467-9507.2011.00640.x.
- Vallerand, R. J. (2015). *The psychology of passion: A dualistic model*. New York: Oxford University Press.
- van Bockstaele, B., Verschuere, B., Tibboel, H., De Houwer, J., Crombez, G., & Koster, E. H. (2014). A review of current evidence for the causal impact of attentional bias on fear and anxiety. *Psychological Bulletin*, 140, 682–721.
- van Boven, L., & Loewenstein, G. (2003). Social projection of transient drive states. *Personality & Social Psychological Bulletin*, 29(9), 1159–1168. doi:10.1177/0146167203254597. PubMed PMID: 15189611.
- van de Cruys, S., Evers, K., Van der Hallen, R., Van Eylen, L., Boets, B., de-Wit, L., & Wagemans, J. (2014). Precise minds in uncertain worlds: Predictive coding in autism. *Psychological Review*, 121(4), 649–675.

- van den Bos, W., Cohen, M. X., Kahnt, T., & Crone, E. A. (2012). Striatum–medial prefrontal cortex connectivity predicts developmental changes in reinforcement learning. *Cerebral Cortex*, *22*(6), 1247–1255.
- van den Heuvel, M. P., & Sporns, O. (2013). An anatomical substrate for integration among functional networks in human cortex. *Journal of Neuroscience*, *33*(36), 14489–14500.
- van den Heuvel, M. P., Mandl, R. C., Kahn, R. S., & Hulshoff Pol, H. E. (2009). Functionally linked resting-state networks reflect the underlying structural connectivity architecture of the human brain. *Human Brain Mapping*, *30*(10), 3127–3141.
- Van den Stock, J., Righart, R., & De Gelder, B. (2007). Body expressions influence recognition of emotions in the face and voice. *Emotion*, *7*, 487–494.
- van Dijk, C., de Jong, P. J., & Peters, M. L. (2009). The remedial value of blushing in the context of transgressions and mishaps. *Emotion*, *9*, 287–291.
- Van Dijk, W. W., & Ouwkerk, J. W. (2014). *Schadenfreude: Understanding pleasure at the misfortune of others*. New York: University of Cambridge Press.
- Van Dijk, W., Ouwkerk, J. W., & Goslinga, S. (2009). The impact of deservingness on schadenfreude and sympathy: Further evidence. *Journal of Social Psychology*, *149*(3), 290–292.
- Van Dillen, L. F., & Derks, B. (2012). Working memory load reduces facilitated processing of threatening faces: An ERP study. *Emotion*, *12*, 1340–1349.
- Van Dillen, L. F., & Koole, S. L. (2009). How automatic is “automatic vigilance”? The role of working memory in attentional interference of negative information. *Cognition & Emotion*, *23*, 1106–1117.
- Van Dillen, L. F., Harris, L. T., Van Dijk, W. W., & Rotteveel, M. (2015). Looking with different eyes: Categorization goals moderate facial reactions to negative facial expressions. *Cognition & Emotion*, *29*(8), 1382–1400. doi:10.1080/02699931.2014.982514. Epub 2014 Dec 1.
- Van Dillen, L. F., Heslenfeld, D. J., & Koole, S. L. (2009). Tuning down the emotional brain: An fMRI study of the effects of cognitive load on the processing of affective images. *NeuroImage*, *45*(4), 1212–1219. http://doi.org/10.1016/j.neuroimage.2009.01.016.
- Van Dooren, M., de Vries, J. J., & Janssen, J. H. (2012). Emotional sweating across the body: Comparing 16 different skin conductance measurement locations. *Physiology & Behavior*, *106*(2), 298–304. doi:10.1016/j.physbeh.2012.01.020.
- van Gaal, S., de Lange, F. P., & Cohen, M. X. (2012). The role of consciousness in cognitive control and decision making. *Frontiers in Human Neuroscience*, *6*(May), 1–15. doi:10.3389/fnhum.2012.00121.
- van Gaal, S. V., Floris, P., Lange, D., & Cohen, M. X. (2012). The role of consciousness in cognitive control and decision making. *Frontiers in Human Neuroscience*, *6*, 1–15. doi:10.3389/fnhum.2012.00121
- van Honk, J., Eisenegger, C., Terburg, D., Stein, D. J., & Morgan, B. (2013). Generous economic investments after basolateral amygdala damage. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(7), 2506–2510. https://doi.org/10.1073/pnas.1217316110.
- van Honk, J., Tuiten, A., de Haan, E., van den Hout, M., & Stam, H. (2001). Attentional biases for angry faces: Relationships to trait anger and anxiety. *Cognition & Emotion*, *15*(3), 279–297.
- van Hoorn, J., Dijk, E., Meuwese, R., Rieffe, C., & Crone, E. A. (2016). Peer influence on prosocial behavior in adolescence. *Journal of Research on Adolescence*, *26*(1), 90–100.
- Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*, 184–188.
- Van Kleef, G. A., & Côté, S. (2007). Expressing anger in conflict: When it helps and when it hurts. *Journal of Applied Psychology*, *92*(6), 1557.
- Van Kleef, G. A., De Dreu, C. K., Pietroni, D., & Manstead, A. S. (2006). Power and emotion in negotiation: Power moderates the interpersonal effects of anger and happiness on concession making. *European Journal of Social Psychology*, *36*(4), 557–581.
- Van Leijenhorst, L., Moor, B. G., Op de Macks, Z. A., Rombouts, S. A., Westenberg, P. M., & Crone, E. A. (2010). Adolescent risky decision-making: Neurocognitive development of reward and control regions. *NeuroImage*, *51*(1), 345–355.
- Van Leijenhorst, L., Zanolie, K., Van Meel, C. S., Westenberg, P. M., Rombouts, S. A., & Crone, E. A. (2010). What motivates the adolescent? Brain regions mediating reward sensitivity across adolescence. *Cerebral Cortex*, *20*(1), 61–69.
- van Lier, P. A., Vitaro, F., Barker, E. D., Brendgen, M., Tremblay, R. E., & Boivin, M. (2012). Peer victimization, poor academic achievement, and the link between childhood externalizing and internalizing problems. *Child Development*, *83*, 1775–1788. doi:10.1111/j.1467-8624.2012.01802.x.
- van Marle, H. J., Hermans, E. J., Qin, S., & Fernandez, G. (2009). From specificity to sensitivity: How acute stress affects amygdala processing of biologically salient stimuli. *Biological Psychiatry*, *66*, 649–655.
- van Marle, H. J., Hermans, E. J., Qin, S., & Fernandez, G. (2010). Enhanced resting-state connectivity of

## 564 REFERENCES

- amygdala in the immediate aftermath of acute psychological stress. *NeuroImage*, 53, 348–354.
- van Praag, H., Christie, B. R., Sejnowski, T. J., & Gage, F. H. (1999). Running enhances neurogenesis, learning, and long-term potentiation in mice. *Proceedings of the National Academy of Sciences of the United States of America*, 96, 13427–13431.
- van Reekum, C. M., Johnstone, T., Banse, R., Etter, A., Wehrle, T., & Scherer, K. R. (2004). Psychophysiological responses to appraisal dimensions in a computer game. *Cognition & Emotion*, 18(5), 663–688.
- van Reekum, C. M., Johnstone, T., Urry, H. L., Thurow, M. E., Schaefer, H. S., Alexander, A. L., & Davidson, R. J. (2007). Gaze fixations predict brain activation during the voluntary regulation of picture-induced negative affect. *NeuroImage*, 36(3), 1041–1055.
- van Reekum, C. M., Schaefer, S. M., Lapate, R. C., Norris, C. J., Greischar, L. L., & Davidson, R. J. (2011). Aging is associated with positive responding to neutral information but reduced recovery from negative information. *Social Cognitive & Affective Neuroscience*, 6(2), 177–185. <http://doi.org/10.1093/scan/nsq031>.
- Van Snellenberg, J. X., & Wager, T. D. (2010). Cognitive and motivational functions of the human prefrontal cortex. In A.-L. Christensen, E. Goldberg, & D. Bougakov (Eds.), *Luria's legacy in the 21st century* (pp. 30–60). Oxford, UK: Oxford University Press.
- van Tol, M. J., Veer, I. M., van der Wee, N. J., Aleman, A., van Buchem, M. A., Rombouts, S. A., . . . Johnstone, T. (2013). Whole-brain functional connectivity during emotional word classification in medication-free Major Depressive Disorder: Abnormal salience circuitry and relations to positive emotionality. *NeuroImage: Clinical*, 2, 790–796.
- van Winden, F., Stallen, M., & Ridderinkhof, K. R. (2008). On the nature, modeling, and neural bases of social ties. In *Neuroeconomics* (pp. 125–159). West Yorkshire, UK: Emerald Group Publishing Limited.
- van't Wout, M., & Sanfey, A. G. (2008). Friend or foe: The effect of implicit trustworthiness judgments in social decision-making. *Cognition*, 108(3), 796–803.
- van't Wout, M., Chang, L. J., & Sanfey, A. G. (2010). The influence of emotion regulation on social interactive decision-making. *Emotion*, 10(6), 815.
- Van't Wout, M., Kahn, R. S., Sanfey, A. G., & Aleman, A. (2006). Affective state and decision-making in the ultimatum game. *Experimental Brain Research*, 169(4), 564–568.
- Vanberg, C. (2008). Why do people keep their promises? An experimental test of two explanations. *Econometrica*, 76(6), 1467–1480.
- Vandekerckhove, M., & Panksepp, J. (2009). The flow of anoetic to noetic and autoanoetic consciousness: A vision of unknowing (anoetic) and knowing (noetic) consciousness in the remembrance of things past and imagined futures. *Consciousness & Cognition*, 18, 1018–1028.
- VanElzakker, M. B., Kathryn Dahlgren, M., Caroline Davis, F., Dubois, S., & Shin, L. M. (2014). From Pavlov to PTSD: The extinction of conditioned fear in rodents, humans, and anxiety disorders. *Neurobiology of Learning & Memory*, 113, 3–18. <http://doi.org/10.1016/j.nlm.2013.11.014>.
- Vasconcelos, M., Hollis, K., Nowbahari, E., & Kacelnik, A. (2012). Pro-sociality without empathy. *Biology Letters*, 8(6), 910–912. doi:10.1098/rsbl.2012.0554.
- Vase, L., Riley, J. L., & Price, D. D. (2002). A comparison of placebo effects in clinical analgesic trials versus studies of placebo analgesia. *Pain*, 99(3), 443–452.
- Vase, L., Robinson, M. E., Verne, G. N., & Price, D. D. (2005). Increased placebo analgesia over time in irritable bowel syndrome (IBS) patients is associated with desire and expectation but not endogenous opioid mechanisms. *Pain*, 115(3), 338–347. doi:10.1016/j.pain.2005.03.014.
- Vasterling, J. J., Duke, L. M., Brailey, K., Constans, J. I., Allain Jr., A. N., & Sutker, P. B. (2002). Attention, learning, and memory performances and intellectual resources in Vietnam veterans: PTSD and no disorder comparisons. *Neuropsychology*, 16(1), 5.
- Velten, E., Jr. (1968). A laboratory task for induction of mood states. *Behaviour Research & Therapy*, 6, 473–482.
- Venkatraman, V., Dimoka, A., Pavlou, P. A., Vo, K., Hampton, W., Bollinger, B., . . . Winer, R. S. (2015). Predicting advertising success beyond traditional measures: New insights from neurophysiological methods and market response modeling. *Journal of Marketing Research*, 52(4), 436–452.
- Verbruggen, F., & De Houwer, J. (2007). Do emotional stimuli interfere with response inhibition? Evidence from the stop signal paradigm. *Cognition & Emotion*, 21, 391–403.
- Verduyn, P., Delvaux, E., Van Coillie, H., Tuerlinckx, F., & Van Mechelen, I. (2009). Predicting the duration of emotional experience: Two experience sampling studies. *Emotion*, 9(1), 83–91. <http://doi.org/10.1037/a0014610>.
- Verduyn, P., Van Mechelen, I., Kross, E., Chezzi, C., & Van Bever, F. (2012). The relationship between self-distancing and the duration of negative and positive emotional experiences in daily life. *Emotion*, 12, 1248–1263.

- Verschuere, B., Crombez, G., & Koster, E. (2001). The International Affective Picture System: A Flemish validation study. *Psychologica Belgica*, *41*, 205–217.
- Verstaen, A., Eckart, J. A., Muhtadie, L., Otero, M. C., Sturm, V. E., Haase, C. M., . . . Levenson, R. W. (2016). Insular atrophy and diminished disgust reactivity. *Emotion*, *16*(6), 903.
- Vetencourt, J. F. M., Sale, A., Viegi, A., Baroncelli, L., De Pasquale, R., O'Leary, O. F., . . . Maffei, L. (2008). The antidepressant fluoxetine restores plasticity in the adult visual cortex. *Science*, *320*(5874), 385–388.
- Vidal-Gonzalez, I., Vidal-Gonzalez, B., Rauch, S. L., & Quirk, G. J. (2006). Microstimulation reveals opposing influences of prelimbic and infralimbic cortex on the expression of conditioned fear. *Learning & Memory*, *13*(6), 728–733.
- Villalta-Gil, V., Hinton, K. E., Landman, B. A., Yvernault, B. C., Perkins, S. F., Katsantonis, A. S., . . . Zald, D. H. (2017). Convergent individual differences in visual cortices, but not the amygdala across standard amygdala fMRI probe tasks. *Neuroimage*, *146*, 312–319.
- Vincent, J. L., Kahn, I., Snyder, A. Z., Raichle, M. E., & Buckner, R. L. (2008). Evidence for a frontoparietal control system revealed by intrinsic functional connectivity. *Journal of Neurophysiology*, *100*(6), 3328–3342.
- Vogel, K., & Bente, G. (2010). “Artificial humans”: Psychology and neuroscience perspectives on embodiment and nonverbal communication. *Neural Networks*, *23*(8–9), 1077–1090. doi:10.1016/j.neunet.2010.06.003.
- Vogt, B. A. (2005). Pain and emotion interactions in subregions of the cingulate gyrus. *Nature Reviews Neuroscience*, *6*(7), 533–544.
- Vogt, B. A., & Vogt, L. J. (2009). Mu-opioid receptors, placebo map, descending systems, and cingulate-mediated control of vocalization and pain. In B. A. Vogt (Ed.), *Cingulate neurobiology and disease* (pp. 339–364). Oxford, UK: Oxford University Press.
- von Neumann, J., & Morgenstern, O. (1944). *Theory of games and economic behavior*. Princeton, NJ: Princeton University Press.
- von Scheve, C., & Ismer, S. (2013). Towards a theory of collective emotions. *Emotion Review*, *5*(4), 406–413. <https://doi.org/10.1177/1754073913484170>.
- Voon, V., Mole, T. B., Banca, P., Porter, L., Morris, L., Mitchell, S., . . . Irvine, M. (2014). Neural correlates of sexual cue reactivity in individuals with and without compulsive sexual behaviours. *PLoS One*, *9*(7), e102419.
- Voudouris, N. J., Peck, C. L., & Coleman, G. (1985). Conditioned placebo responses. *Journal of Personality & Social Psychology*, *48*(1), 47–53.
- Voudouris, N. J., Peck, C. L., & Coleman, G. (1989). Conditioned response models of placebo phenomena: Further support. *Pain*, *38*(1), 109–116.
- Vrana, S. R., Cuthbert, B. N., & Lang, P. J. (1986). Fear imagery and text processing. *Psychophysiology*, *23*, 247–253.
- Vriends, N., Michael, T., Blechert, J., Meyer, A. H., Margraf, J., & Wilhelm, F. H. (2011). The influence of state anxiety on the acquisition and extinction of fear. *Journal of Behavior Therapy & Experimental Psychiatry*, *42*(1), 46–53.
- Vu, M. T., Adali, T., Ba, D., Buzsaki, G., Carlson, D., Heller, K., . . . Dzirasa, K. (2018). A shared vision for machine learning in neuroscience. *Journal of Neuroscience*, *38*, 1601–1607.
- Vuilleumier, P. (2005). How brains beware: Neural mechanisms of emotional attention. *Trends in Cognitive Sciences*, *9*, 585–594.
- Vuilleumier, P., & Pourtois, G. (2007). Distributed and interactive brain mechanisms during emotion face perception: Evidence from functional neuroimaging. *Neuropsychologia*, *45*(1), 174–194. doi:10.1016/j.neuropsychologia.2006.06.003.
- Vuilleumier, P., & Schwartz, S. (2001a). Beware and be aware: Capture of spatial attention by fear-related stimuli in neglect. *NeuroReport*, *12*, 1119–1122.
- Vuilleumier, P., & Schwartz, S. (2001b). Emotional facial expressions capture attention. *Neurology*, *56*, 153–158.
- Vuilleumier, P., Armony, J. L., Clarke, K., Husain, M., Driver, J., & Dolan, R. J. (2002). Neural response to emotional faces with and without awareness: Event-related fMRI in a parietal patient with visual extinction and spatial neglect. *Neuropsychologia*, *40*(12), 2156–2166.
- Vuilleumier, P., Armony, J. L., Driver, J., & Dolan, R. J. (2001). Effects of attention and emotion on face processing in the human brain: An event-related fMRI study. *Neuron*, *30*, 829–841.
- Vuilleumier, P., Richardson, M. P., Armony, J. L., Driver, J., & Dolan, R. J. (2004). Distant influences of amygdala lesion on visual cortical activation during emotional face processing. *Nature Neuroscience*, *7*(11), 1271–1278.
- Vukasovic, T., & Bratko, D. (2015). Heritability of personality: A meta-analysis of behavior genetic studies. *Psychological Bulletin*, *141*, 769–785.
- Vuong, H. E., Yano, J. M., Fung, T. C., & Hsiao, E. Y. (2017). The microbiome and host behavior. *Annual Review of Neuroscience*, *40*, 21–49.
- Vurbic, D., & Bouton, M. E. (2014). A contemporary behavioral perspective on extinction. In F. K. McSweeney & E. S. Murphy (Eds.), *The Wiley Blackwell handbook of operant and classical conditioning* (pp. 53–76). Oxford, UK: John Wiley &

## 566 REFERENCES

- Sons, Ltd. Retrieved from <http://doi.wiley.com/10.1002/9781118468135.ch3>.
- Vyas, A., Kim, S.-K., Giacomini, N., Boothroyd, J. C., & Sapolsky, R. M. (2007). Behavioral changes induced by *Toxoplasma* infection of rodents are highly specific to aversion of cat odors. *Proceedings of the National Academy of Sciences of the United States of America*, *104*(15), 6442–6447. <http://doi.org/10.1073/pnas.0608310104>.
- Vytal, K., & Hamann, S. (2010). Neuroimaging support for discrete neural correlates of basic emotions: A voxel-based meta-analysis. *Journal of Cognitive Neuroscience*, *22*(12), 2864–2885.
- Vytal, K., Cornwell, B., Arkin, N., & Grillon, C. (2012). Describing the interplay between anxiety and cognition: From impaired performance under low cognitive load to reduced anxiety under high load. *Psychophysiology*, *49*, 842–852.
- Vytal, K., Overstreet, C., Charney, D. R., Robinson, O. J., & Grillon, C. (2014). Sustained anxiety increases amygdala-dorsomedial prefrontal coupling: A mechanism for maintaining an anxious state in healthy adults. *Journal of Psychiatry & Neuroscience*, *39*, 321–329.
- Vythilingam, M., Vermetten, E., Anderson, G. M., Luckenbaugh, D., Anderson, E. R., Snow, J., . . . Bremner, J. D. (2004). Hippocampal volume, memory, and cortisol status in major depressive disorder: Effects of treatment. *Biological Psychiatry*, *56*(2), 101–112.
- Wachen, J. S., Jimenez, S., Smith, K., & Resick, P. A. (2014). Long-term functional outcomes of women receiving cognitive processing therapy and prolonged exposure. *Psychological Trauma: Theory, Research, Practice, & Policy*, *6*(S1), S58.
- Waddington, C. H. (1942). The epigenotype. *International Journal of Epidemiology*, *41*(1), 1 February 2012, Pages 10–13, <https://doi.org/10.1093/ije/dyr184>.
- Wadlinger, H. A., & Isaacowitz, D. M. (2006). Positive mood broadens visual attention to positive stimuli. *Motivation & Emotion*, *30*(1), 87–99.
- Wager, T. D. (2005). Expectations and anxiety as mediators of placebo effects in pain. *Pain*, *115*(3), 225–226. doi:10.1016/j.pain.2005.03.018.
- Wager, T. D., & Atlas, L. Y. (2015). The neuroscience of placebo effects: Connecting context, learning and health. *Nature Reviews Neuroscience*, *16*, 403–418.
- Wager, T. D., Atlas, L. Y., Botvinick, M. M., Chang, L. J., Coghill, R. C., Davis, K. D., . . . Yarkoni, T. (2016). Pain in the ACC? *Proceedings of the National Academy of Sciences of the United States of America*, *113*, E2474–E2475.
- Wager, T. D., Atlas, L. Y., Leotti, L. A., & Rilling, J. K. (2011). Predicting individual differences in placebo analgesia: Contributions of brain activity during anticipation and pain experience. *Journal of Neuroscience*, *31*(2), 439–452. doi:10.1523/JNEUROSCI.3420-10.2011.
- Wager, T. D., Atlas, L. Y., Lindquist, M. A., Roy, M., Woo, C.-W., & Kross, E. (2013). An fMRI-based neurologic signature of physical pain. *New England Journal of Medicine*, *368*(15), 1388–1397.
- Wager, T. D., Davidson, M. L., Hughes, B. L., Lindquist, M. A., & Ochsner, K. N. (2008). Prefrontal-subcortical pathways mediating successful emotion regulation. *Neuron*, *59*(6), 1037–1050. <http://doi.org/10.1016/j.neuron.2008.09.006>.
- Wager, T. D., Kang, J., Johnson, T. D., Nichols, T. E., Satpute, A. B., & Barrett, L. F. (2015). A Bayesian model of category-specific emotional brain responses. *PLoS Computational Biology*, *11*(4), e1004066. doi:10.1371/journal.pcbi.1004066.
- Wager, T. D., Phan, K. L., Liberzon, I., & Taylor, S. F. (2003). Valence, gender, and lateralization of functional brain anatomy in emotion: A meta-analysis of findings from neuroimaging. *NeuroImage*, *19*, 513–531.
- Wagner, D. D., & Heatherton, T. F. (2014). Self-regulation and its failures. In M. S. Gazzaniga & G. R. Mangun (Eds.), *The cognitive neurosciences* (5th ed., pp. 709–717). Cambridge, MA: MIT Press.
- Wagner, U., Galli, L., Schott, B. H., Wold, A., van der Schalk, J., Manstead, A. S., . . . Walter, H. (2014). Beautiful friendship: Social sharing of emotions improves subjective feelings and activates the neural reward circuitry. *Social Cognitive & Affective Neuroscience*, *10*(6), 801–808.
- Wake, S. J., & Izuma, K. (2017). A common neural code for social and monetary rewards in the human striatum. *Social Cognitive and Affective Neuroscience*, *12*(10), 1558–1564.
- Wakefield, J. C. (1992). The concept of mental disorder: On the boundary between biological facts and social values. *American Psychologist*, *47*(3), 373–388. <http://doi.org/10.1037/0003-066X.47.3.373>.
- Wald, I., Lubin, G., Holoshitz, Y., Muller, D., Fruchter, E., Pine, D., . . . Bar-Haim, Y. (2011). Battlefield-like stress following simulated combat and suppression of attention bias to threat. *Psychological Medicine*, *41*(04), 699–707.
- Walenski, H. R., & Lachman, M. E. (2000). Social support and strain from partner, family, and friends: Costs and benefits for men and women in adulthood. *Journal of Social & Personal Relationships*, *17*(1), 5–30.
- Walker, A., Nakamura, T., & Hodgson, D. (2010). Neonatal lipopolysaccharide exposure alters central cytokine responses to stress in adulthood in Wistar rats. *Stress (Amsterdam, Netherlands)*,

- 13(6), 506–515. <http://doi.org/10.3109/10253890.2010.489977>.
- Walker, F. R., March, J., & Hodgson, D. M. (2004). Endotoxin exposure in early life alters the development of anxiety-like behaviour in the Fischer 344 rat. *Behavioural Brain Research*, 154(1), 63–69. <http://doi.org/10.1016/j.bbr.2004.01.019>.
- Walker, O. L., Degnan, K. A., Fox, N. A., & Henderson, H. A. (2013). Social problem solving in early childhood: Developmental change and the influence of shyness. *Journal of Applied Developmental Psychology*, 34, 185–193.
- Wallace, B. A., & Wilhelm, S. (1993). *Tibetan Buddhism from the ground up: A practical approach for modern life*. Somerville, MA: Simon and Schuster.
- Wallace, M. T., Perrault, T. J., Jr., Hairston, W. D., & Stein, B. E. (2004). Visual experience is necessary for the development of multisensory integration. *Journal of Neuroscience*, 24(43), 9580–9584. doi:10.1523/JNEUROSCI.2535-04.2004.
- Wallbott, H. G. (1988). In and out of context: Influences of facial expression and context information on emotion attributions. *British Journal of Social Psychology*, 27, 357–369.
- Wallbott, H. G. (1998). Bodily expression of emotion. *European Journal of Social Psychology*, 28, 879–896.
- Wallis, J. D., & Miller, E. K. (2003). Neuronal activity in primate dorsolateral and orbital prefrontal cortex during performance of a reward preference task. *European Journal of Neuroscience*, 18, 2069–2081.
- Wang, S. W., Repetti, R. L., & Campos, B. (2011). Job stress and family social behavior: The moderating role of neuroticism. *Journal of Occupational Health Psychology*, 16, 441–456.
- Wang, S., Tudusciuc, O., Mamelak, A. N., Ross, I. B., Adolphs, R., & Rutishauser, U. (2014). Neurons in the human amygdala selective for perceived emotion. *Proceedings of the National Academy of Sciences of the United States of America*, 111, E3110–E3119.
- Wang, X. J. (2002). Probabilistic decision making by slow reverberation in cortical circuits. *Neuron*, 36, 955–968.
- Wang, Z., Gerstein, M., and Snyder, M. (2009). RNA-Seq: A revolutionary tool for transcriptomics. *Nature Reviews Genetics*, 10, 57–63.
- Ward, R., Calder, A. J., Parker, M., & Arend, I. (2007). Emotion recognition following human pulvinar damage. *Neuropsychologia*, 45(8), 1973–1978.
- Ward, R., Danziger, S., & Bamford, S. (2005). Response to visual threat following damage to the pulvinar. *Current Biology*, 15(6), 571–573.
- Waters, A. M., Mogg, K., & Bradley, B. P. (2012). Direction of threat attention bias predicts treatment outcome in anxious children receiving cognitive-behavioural therapy. *Behaviour Research & Therapy*, 50(6), 428–434. doi:10.1016/j.brat.2012.03.006.
- Waters, A. M., Wharton, T. A., Zimmer-Gembeck, M. J., & Craske, M. G. (2008). Threat-based cognitive biases in anxious children: Comparison with non-anxious children before and after cognitive behavioural treatment. *Behaviour Research & Therapy*, 46(3), 358–374.
- Waters, S. F., West, T. V., & Mendes, W. B. (2014). Stress contagion: Physiological covariation between mothers and infants. *Psychological Science*, 25(4), 1–9. doi:10.1177/0956797613518352.
- Watkins, E. R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin*, 134, 163–206.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465–490.
- Watson, D., & Clark, L. A. (1994). Emotions, moods, traits, and temperaments: Conceptual distinctions and empirical findings. In P. Ekman & R. Davidson (Eds.), *The nature of emotion* (pp. 56–58). New York: Oxford University Press.
- Watson, D., & Naragon-Gainey, K. (2014). Personality, emotions, and the emotional disorders. *Clinical Psychological Science*, 2, 422–442.
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, 98, 219–235.
- Watson, D., Stanton, K., & Clark, L. A. (2017). Self-report indicators of negative valence constructs within the research domain criteria (RDoC): A critical review. *Journal of Affective Disorders*, 216, 58–69.
- Watson, D., & Stasik, S. M. (2014). Examining the comorbidity between depression and the anxiety disorders from the perspective of the quadripartite model. In C. S. Richards & M. W. O'Hara (Eds.), *Oxford handbook of depression and comorbidity* (pp. 46–65). NY: Oxford University Press.
- Watson, D., Stasik, S. M., Chmielewski, M., & Naragon-Gainey, K. (2015). Development and validation of the Temperament and Affectivity Inventory (TAI). *Assessment*, 22(5), 540–560.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality & Social Psychology*, 76(5), 820.
- Watson, J. B. (1930). *Behaviorism*. Chicago, IL: University of Chicago Press.
- Watts, R. J., Griffith, D. M., & Abdul-Adil, J. (1999). Sociopolitical development as an antidote for



## 568 REFERENCES

- oppression—theory and action. *American Journal of Community Psychology*, 27(2), 255–271.
- Waugh, C. E., & Fredrickson, B. L. (2006). Nice to know you: Positive emotions, self-other overlap, and complex understanding in the formation of a new relationship. *The Journal of Positive Psychology*, 1(2), 93–106.
- Webster, M. J., Bachevalier, J., & Ungerleider, L. G. (1994). Connections of inferior temporal areas TEO and TE with parietal and frontal cortex in macaque monkeys. *Cerebral Cortex*, 4(5), 470–483.
- Weidman, A. C., Steckler, C. M., & Tracy, J. L. (2017). The jingle and jangle of emotion assessment: Imprecise measurement, casual scale usage, and conceptual fuzziness in emotion research. *Emotion*, 17, 267–295. doi:10.1037/emo0000226.
- Weierich, M. R., Treat, T. A., & Hollingworth, A. (2008). Theories and measurement of visual attentional processing in anxiety. *Cognition & Emotion*, 22, 985–1018.
- Weinberg, A., & Hajcak, G. (2011). The late positive potential predicts subsequent interference with target processing. *Journal of Cognitive Neuroscience*, 23(10), 2994–3007. http://doi.org/10.1162/jocn.2011.21630.
- Weinberger, N. M. (2007). Associative representational plasticity in the auditory cortex: A synthesis of two disciplines. *Learning & Memory*, 14(1–2), 1–16.
- Weinberger, N. M., & Bieszczad, K. M. (2011). Introduction: From traditional fixed cortical sensationism to contemporary plasticity of primary sensory cortical representations. In J. A. Gottfried (Ed.), *Neurobiology of sensation and reward* (pp. 3–13). Boca Raton, FL: CRC Press.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York: Springer.
- Weiner, B., & Graham, S. (1984). An attributional approach to emotional development. In C. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotion, cognition, and behavior* (pp. 167–191). New York: Cambridge University Press.
- Weisfeld, G. E., Czilli, T., Phillips, K. A., Gall, J. A., & Lichtman, C. M. (2003). Possible olfaction-based mechanisms in human kin recognition and inbreeding avoidance. *Journal of Experimental Child Psychology*, 85(3), 279–295.
- Weiskrantz, L. (1956). Behavioral changes associated with ablation of the amygdaloid complex in monkeys. *Journal of Comparative & Physiological Psychology*, 49, 381–391.
- Weisz, E., & Zaki, J. (2017). Empathy building interventions: A review of existing work and suggestions for future directions. In J. Doty, E. Seppala, E. Simon-Thomas, D. Cameron, S. Brown, & M. Worline (Eds.), *Oxford handbook of compassion science* (pp. 205–218). New York: Oxford University Press.
- Wellman, H. M., & Liu, D. (2004). Scaling of theory-of-mind tasks. *Child Development*, 75, 523–541.
- Wellman, H. M., Lane, J. D., LaBounty, J., & Olson, S. L. (2011). Observant, nonaggressive temperament predicts theory of mind development. *Developmental Science*, 14, 319–326. doi:10.1111/j.1467-7687.2010.00977.x.
- Wellman, L. L., Gale, K., & Malkova, L. (2005). GABAA-mediated inhibition of basolateral amygdala blocks reward devaluation in macaques. *Journal of Neuroscience*, 25, 4577–4586.
- Wendt, J., Neubert, J., Lindner, K., Ernst, F. D., Homuth, G., Weike, A. I., & Hamm, A. O. (2015). Genetic influences on the acquisition and inhibition of fear. *International Journal of Psychophysiology*, 98(3), 499–505.
- Weng, H. Y., Fox, A. S., Hesselthaler, H. C., Stodola, D. E., & Davidson, R. J. (2015). The role of compassion in altruistic helping and punishment behavior. *PLoS One*, 10(12), e0143794. https://doi.org/10.1371/journal.pone.0143794.
- Weng, H. Y., Fox, A. S., Shackman, A. J., Stodola, D. E., Caldwell, J. Z., Olson, M. C., . . . Davidson, R. J. (2013). Compassion training alters altruism and neural responses to suffering. *Psychological Science*, 24(7), 1171–1180.
- Werner, K. H., Roberts, N. A., Rosen, H. J., Dean, D. L., Kramer, J. H., Weiner, M. W., . . . Levenson, R. W. (2007). Emotional reactivity and emotion recognition in frontotemporal lobar degeneration. *Neurology*, 69(2), 148–155.
- Westenberg, P. M., Drewes, M. J., Goedhart, A. W., Siebelink, B. M., & Treffers, P. D. A. (2004). A developmental analysis of self-reported fears in late childhood through mid-adolescence: Social-evaluative fears on the rise? *Journal of Child Psychology & Psychiatry*, 45(3), 481–495.
- Westermann, R., Spies, K., Stahl, G., & Hesse, F. W. (1996). Relative effectiveness and validity of mood induction procedures: A meta-analysis. *European Journal of Social Psychology*, 26(4), 557–580. doi:10.1002/(SICI)1099-0992(199607)26:4<557::AID-EJSP769>3.0.CO;2-4.
- Weymar, M., Gerdes, A. B., Löw, A., Alpers, G. W., & Hamm, A. O. (2013). Specific fear modulates attentional selectivity during visual search: Electrophysiological insights from the N2pc. *Psychophysiology*, 50, 139–148.
- Weymar, M., Keil, A., & Hamm, A. O. (2014). Timing the fearful brain: Unspecific hypervigilance and spatial attention in early visual perception. *Social Cognitive & Affective Neuroscience*, 9, 723–729.

- Whalen, P. J. (1998). Fear, vigilance, and ambiguity: Initial neuroimaging studies of the human amygdala. *Current Directions in Psychological Science*, 7, 177–188.
- Whalen, P. J., Davis, F. C., Oler, J. A., Kim, H., Kim, M. J., & Neta, M. (2009). Human amygdala responses to facial expressions of emotion. In P. J. Whalen & E. A. Phelps (Eds.), *The human amygdala* (pp. 265–288). New York: Guilford Press.
- Whalen, P. J., Kagan, J., Cook, R. G., Davis, F. C., Kim, H., Polis, S., . . . Johnstone, T. (2004). Human amygdala responsiveness to masked fearful eye whites. *Science*, 306, 2061.
- Whalen, P. J., Rauch, S. L., Etcoff, N. L., McInerney, S. C., Lee, M. B., & Jenike, M. A. (1998). Masked presentations of emotional facial expressions modulate amygdala activity without explicit knowledge. *Journal of Neuroscience*, 18(1), 411–418.
- Whalen, P. J., Shin, L. M., McInerney, S. C., Fischer, H., Wright, C. I., & Rauch, S. L. (2001). A functional MRI study of human amygdala responses to facial expressions of fear versus anger. *Emotion*, 1, 70–83.
- Whaley, A. L. (2001). Cultural mistrust: An important psychological construct for diagnosis and treatment of African Americans. *Professional Psychology: Research & Practice*, 32(6), 555.
- Wheatley, T., & Haidt, J. (2005). Hypnotic disgust makes moral judgments more severe. *Psychological Science*, 16, 780–784.
- White, L. K., McDermott, J. M., Degnan, K. A., Henderson, H. A., & Fox, N. A. (2011). Behavioral inhibition and anxiety: The moderating roles of inhibitory control and attention shifting. *Journal of Abnormal Child Psychology*, 39, 735–747. doi:10.1007/s10802-011-9490-x.
- White, L. K., Suway, J. G., Pine, D. S., Bar-Haim, Y., & Fox, N. A. (2011). Cascading effects: The influence of attention bias to threat on the interpretation of ambiguous information. *Behaviour Research & Therapy*, 49(4), 244–251.
- White, L. K., Degnan, K. A., Henderson, H. A., Pérez-Edgar, K. A., Walker, O. L., Shechner, T., . . . Fox, N. A. (2017). Developmental relations between behavioral inhibition, anxiety, and attention biases to threat and positive information. *Child Development*, 88, 141–155.
- White, L. K., Sequeira, S., Britton, J. C., Brotman, M. A., Gold, A. L., Berman, E., . . . Pine, D. S. (2017). Complementary features of attention bias modification therapy and cognitive-behavioral therapy in pediatric anxiety disorders. *American Journal of Psychiatry*, 174, 775–784.
- Whiteford, H. A., Degenhardt, L., Rehm, J., Baxter, A. J., Ferrari, A. J., Erskine, H. E., . . . Vos, T. (2013). Global burden of disease attributable to mental and substance use disorders: Findings from the Global Burden of Disease Study 2010. *Lancet*, 382, 1575–1586.
- Whitehead, B. R., & Bergeman, C. S. (2014). Ups and downs of daily life: Age effects on the impact of daily appraisal variability on depressive symptoms. *The Journals of Gerontology Series B: Psychological Sciences & Social Sciences*, 69, 387–396. doi:10.1093/geronb/gbt019.
- Whittle, S., Allen, N. B., Lubman, D. I., & Yücel, M. (2006). The neurobiological basis of temperament: Towards a better understanding of psychopathology. *Neuroscience & Biobehavioral Reviews*, 30, 511–525. doi:10.1016/j.neubiorev.2005.09.003.
- Wickramasekera, I. (1980). A conditioned response model of the placebo effect predictions from the model. *Biofeedback & Self-Regulation*, 5(1), 5–18.
- Widen, S. C. (2013). Children's interpretation of facial expressions: The long path from valence-based to specific discrete categories. *Emotion Review*, 5(1), 72–77.
- Widen, S. C., & Russell, J. A. (2008). Children acquire emotion categories gradually. *Cognitive Development*, 23(2), 291–312.
- Wierzbicka, A. (1992). Defining emotion concepts. *Cognitive Science*, 16(4), 539–581. doi:10.1207/S15516709cog1604\_4.
- Wierzbicka, A. (2009). Language and meta-language: Key issues in emotion research. *Emotion Review*, 1(1), 3–14. doi:10.1177/1754073908097175.
- Wieser, M. J., & Keil, A. (2014). Fearful faces heighten the cortical representation of contextual threat. *Neuroimage*, 86, 317–325.
- Wild, B., Erb, M., & Bartels, M. (2001). Are emotions contagious? Evoked emotions while viewing emotionally expressive faces: Quality, quantity, time course and gender differences. *Psychiatry Research*, 102, 109–124.
- Wilhelm, M. O., & Bakkens, R. (2010). Helping behavior, dispositional empathic concern, and the principle of care. *Social Psychology Quarterly*, 73, 11–32. doi:10.1177/0190272510361435.
- Williams, A. C. D. C. (2002). Facial expression of pain, empathy, evolution, and social learning. *Behavioral & Brain Sciences*, 25(04), 475–480.
- Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health socio-economic status, stress and discrimination. *Journal of Health Psychology*, 2(3), 335–351.
- Williams, J. M. G. (2010). Mindfulness and psychological process. *Emotion*, 10(1), 1.
- Williams, K. D., & McGillicuddy-De Lisi, A. (1999). Coping strategies in adolescents. *Journal of Applied Developmental Psychology*, 20, 537–549.

## 570 REFERENCES

- Williams, L. E., Oler, J. A., Fox, A. S., McFarlin, D. R., Rogers, G. M., Jesson, M. A., . . . Kalin, N. H. (2015). Fear of the unknown: Uncertain anticipation reveals amygdala alterations in childhood anxiety disorders. *Neuropsychopharmacology*, *40*(6), 1428–1435.
- Williams, L. M., Brown, K. J., Palmer, D., Liddell, B. J., Kemp, A. H., Olivieri, G., . . . Gordon, E. (2006). The mellow years?: Neural basis of improving emotional stability over age. *Journal of Neuroscience*, *26*(24), 6422–6430.
- Williams, L. M., Das, P., Liddell, B. J., Kemp, A. H., Rennie, C. J., & Gordon, E. (2006). Mode of functional connectivity in amygdala pathways dissociates level of awareness for signals of fear. *Journal of Neuroscience*, *26*(36), 9264–9271.
- Williams, L. M., Kemp, A. H., Felmingham, K., Liddell, B. J., Palmer, D. M., & Bryant, R. A. (2007). Neural biases to covert and overt signals of fear: Dissociation by trait anxiety and depression. *Journal of Cognitive Neuroscience*, *19*(10), 1595–1608. doi:10.1162/jocn.2007.19.10.1595.
- Williams, L. M., Liddell, B. J., Kemp, A. H., Bryant, R. A., Meares, R. A., Peduto, A. S., & Gordon, E. (2006). Amygdala-prefrontal dissociation of subliminal and supraliminal fear. *Human Brain Mapping*, *27*(8), 652–661.
- Williams, L. M., Liddell, B. J., Rathjen, J., Brown, K. J., Gray, J., Phillips, M., . . . Gordon, E. (2004). Mapping the time course of nonconscious and conscious perception of fear: An integration of central and peripheral measures. *Human Brain Mapping*, *21*, 64–74.
- Williams, M. A., & Mattingley, J. (2004). Unconscious perception of non-threatening facial emotion in parietal extinction. *Experimental Brain Research*, *154*, 403–406.
- Williams, M. A., McGlone, F., Abbott, D. F., & Mattingley, J. B. (2005). Differential amygdala responses to happy and fearful facial expressions depend on selective attention. *NeuroImage*, *24*, 417–425.
- Williams, M. A., Morris, A. P., McGlone, F., Abbott, D. F., & Mattingley, J. B. (2004). Amygdala responses to fearful and happy facial expressions under conditions of binocular suppression. *The Journal of Neuroscience: The official journal of the Society for Neuroscience*, *24*, 2898–2904.
- Wilson, C. R. E., Gaffan, D., Browning, P. G. F., & Baxter, M. G. (2010). Functional localization within the prefrontal cortex: Missing the forest for the trees? *Trends in Neurosciences*, *33*(12), 533–540. doi:10.1016/j.tins.2010.08.001.
- Wilson, E. J., MacLeod, C., Mathews, A., & Rutherford, E. M. (2006). The causal role of interpretive bias in anxiety reactivity. *Journal of Abnormal Psychology*, *115*(1), 103–111. doi:10.1037/0021-843x.115.1.103.
- Wilson, R., & Gareis, E. (2006). Emotion expression and the locution “I love you.” *International Journal of Intercultural Relations*, *30*, 51–75.
- Wilson, S. A. K. (1924). Some problems in neurology, II: Pathological laughing and crying. *Journal of Neurology & Psychopathology*, *4*, 299–333.
- Wilson, S. J., Smyth, J. M., & MacLean, R. R. (2014). Integrating ecological momentary assessment and functional brain imaging methods: New avenues for studying and treating tobacco dependence. *Nicotine & Tobacco Research*, *16*(Suppl 2), S102–S110.
- Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. *Advances in Experimental Social Psychology*, *35*, 345–411.
- Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science*, *14*(3), 131–134.
- Wilson, T. D., Wheatley, T., Meyers, J. M., Gilbert, D. T., & Axson, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality & Social Psychology*, *78*(5), 821.
- Wilson-Mendenhall, C. D., Barrett, L. F., & Barsalou, L. W. (2015). Variety in emotional life: Within-category typicality of emotional experiences is associated with neural activity in large-scale brain networks. *Social Cognitive and Affective Neuroscience*, *10*, 62–71.
- Wilson-Mendenhall, C. D., Barrett, L. F., Simmons, W. K., & Barsalou, L. W. (2011). Grounding emotion in situated conceptualization. *Neuropsychologia*, *49*(5), 1105–1127.
- Wimmer H., & Perner, J. (1983). Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children’s understanding of deception. *Cognition*, *13*, 103–128.
- Winecoff, A., Clithero, J. A., Carter, R. M., Bergman, S. R., Wang, L., & Huettel, S. A. (2013). Ventromedial prefrontal cortex encodes emotional value. *Journal of Neuroscience*, *33*(27), 11032–11039. doi:10.1523/JNEUROSCI.4317-12.2013.
- Winkielman, P., & Berridge, K. C. (2004). Unconscious emotion. *Current Directions in Psychological Science*, *13*(3), 120–123.
- Winston, J. S., Strange, B. A., O’Doherty, J., & Dolan, R. J. (2002). Automatic and intentional brain responses during evaluation of trustworthiness of faces. *Nature Neuroscience*, *5*(3), 277–283. https://doi.org/10.1038/nn816.
- Wise, R. A. (1985). The anhedonia hypothesis: Mark III. *Behavioral & Brain Sciences*, *8*, 178–186.
- Wise, R. A., & Rompre, P. P. (1989). Brain dopamine and reward. *Annual Review of Psychology*,

- 40, 191–225. <https://doi.org/10.1146/annurev.ps.40.020189.001203>.
- Witvliet, C. V., & Vrana, S. R. (1995). Psychophysiological responses as indices of affective dimensions. *Psychophysiology*, 32, 436–443.
- Wolf, J. M., Tanaka, J. W., Klaiman, C., Cockburn, J., Herlihy, L., Brown, C., . . . Schultz, R. T. (2008). Specific impairment of face-processing abilities in children with autism spectrum disorder using the Let's Face It! skills battery. *Autism Research*, 1(6), 329–340.
- Wolf, R. C., Philippi, C. L., Motzkin, J. C., Baskaya, M. K., & Koenigs, M. (2014). Ventromedial prefrontal cortex mediates visual attention during facial emotion recognition. *Brain*, 137(Pt 6), 1772–1780. doi:10.1093/brain/awu063.
- Wollmer, M. A., de Boer, C., Kalak, N., Beck, J., Götz, T., Schmidt, T., . . . Kruger, T. H. (2012). Facing depression with botulinum toxin: A randomized controlled trial. *Journal of Psychiatric Research*, 46(5), 574–581.
- Wolpert, D. M., Doya, K., & Kawato, M. (2003). A unifying computational framework for motor control and social interaction. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, 358(1431), 593–602. doi:10.1098/rstb.2002.1238.
- Woo, C. W., Chang, L. J., Lindquist, M. A., & Wager, T. D. (2017). Building better biomarkers: Brain models in translational neuroimaging. *Nature Neuroscience*, 20, 365–377.
- Woo, C. W., Koban, L., Kross, E., Lindquist, M. A., Banich, M. T., Ruzic, L., . . . Wager, T. D. (2014). Separate neural representations for physical pain and social rejection. *Nature Communications*, 5, 5380.
- Woo, C. W., Roy, M., Buhle, J. T., & Wager, T. D. (2015). Distinct brain systems mediate the effects of nociceptive input and self-regulation on pain. *PLoS Biology*, 13(1), e1002036.
- Wormwood, J. B., Lynn, S. K., Feldman Barrett, L., & Quigley, K. S. (2016). Threat perception after the Boston Marathon bombings: The effects of personal relevance and conceptual framing. *Cognition & Emotion*, 30(3), 539–549.
- Wormwood, J. B., Siegel, E., Sears, L., Kopec, J., Quigley, K., & Barrett, L. F. (in preparation). Seeing what you feel: The role of the body and subjective experience in affective realism.
- Wrzus, C., & Mehl, M. R. (2015). Lab and/or field? Measuring personality processes and their social consequences. *European Journal of Personality*, 29, 250–271.
- Wrzus, C., Hanel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin*, 139, 53–80.
- Wrzus, C., Müller, V., Wagner, G. G., Lindenberg, U., & Riediger, M. (2014). Affect dynamics across the lifespan: With age, heart rate reacts less strongly, but recovers more slowly from unpleasant emotional situations. *Psychology & Aging*, 29(3), 563–576. <http://doi.org/10.1037/a0037451>.
- Wu, C. C., Bossaerts, P., & Knutson, B. (2011). The affective impact of financial skewness on neural activity and choice. *PLoS One*, 6(2), e16838.
- Wu, C. C., Samanez-Larkin, G. R., Katovich, K., & Knutson, B. (2014). Affective traits link to reliable neural markers of incentive anticipation. *NeuroImage*, 84, 279–289.
- Wu, G. (1999). Anxiety and decision making with delayed resolution of uncertainty. *Theory & Decision*, 46 (2), 159–199.
- Wundt, W. (1897). *Outlines of Psychology*. Translated by C.H. Judd. Leipzig: Wilhelm Engelmann (Reprinted Bristol: Thoemmes, 1999); first published in German as Wundt, W. (1896). *Grundriss der Psychologie*. Leipzig: Wilhelm Engelmann
- Wundt, W. (1904). *Principles of physiological psychology* (E. B. Titchener, Trans., 5th ed.). New York: MacMillan.
- Wyer, R. S., Clore, & G. L., & Isbell, L. (1999). Affect and information processing. M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 31, pp. 1–77). New York: Academic Press.
- Xiang, T., Lohrenz, T., & Montague, P. R. (2013). Computational substrates of norms and their violations during social exchange. *Journal of Neuroscience*, 33(3), 1099–1108.
- Xiao, E., & Houser, D. (2005). Emotion expression in human punishment behavior. *Proceedings of the National Academy of Sciences of the United States of America*, 102(20), 7398–7401.
- Xiu, J., Zhang, Q., Zhou, T., Zhou, T.-T., Chen, Y., & Hu, H. (2014). Visualizing an emotional valence map in the limbic forebrain by TAI-FISH. *Nature Neuroscience*, 17(11), 1552–1559.
- Xu, X., Scott-Scheiern, T., Kempker, L., & Simons, K. (2007). Active avoidance conditioning in zebrafish (*Danio rerio*). *Neurobiology of Learning & Memory*, 87(1), 72–77. <https://doi.org/10.1016/j.nlm.2006.06.002>.
- Yaar, M., & Park, H. Y. (2012). Melanocytes: A window into the nervous system. *Journal of Investigative Dermatology*, 132, 835–845.
- Yan, Z. (2002). Regulation of GABAergic inhibition by serotonin signaling in prefrontal cortex. *Molecular Neurobiology*, 26(2), 203–216. <http://doi.org/10.1385/MN:26:2-3:203>.
- Yang, T. T., Simmons, A. N., Matthews, S. C., Tapert, S. F., Frank, G. K., Max, J. E., . . . Paulus, M. P.

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- (2010). Adolescents with major depression demonstrate increased amygdala activation. *Journal of the American Academy of Child & Adolescent Psychiatry*, 49(1), 42–51.
- Yang, Y., Glenn, A. L., & Raine, A. (2008). Brain abnormalities in antisocial individuals: Implications for the law. *Behavioral Sciences & the Law*, 26(1), 65–83.
- Yang, Y., Liu, D. Q., Huang, W., Deng, J., Sun, Y., Zuo, Y., & Poo, M. M. (2016). Selective synaptic remodeling of amygdalocortical connections associated with fear memory. *Nature Neuroscience*, 19, 1348–1355.
- Yarkoni, T. (2009). Big correlations in little studies: Inflated fMRI correlations reflect low statistical power. Commentary on Vul et al. (2009). *Perspectives on Psychological Science*, 4, 294–298.
- Yarkoni, T., & Westfall, J. A. (2017). Choosing prediction over explanation in psychology: Lessons from machine learning. *Perspectives on Psychological Science*, 12, 1100–1122.
- Yarkoni, T., Poldrack, R. A., Nichols, T. E., Van Essen, D. C., & Wager, T. D. (2011). Large-scale automated synthesis of human functional neuroimaging data. *Nature Methods*, 8, 665–670.
- Yau, P. L., Castro, M. G., Tagani, A., Tsui, W. H., & Convit, A. (2012). Obesity and metabolic syndrome and functional and structural brain impairments in adolescence. *Pediatrics*, 130(4), e856–e864.
- Yehuda, R., Blair, W., Labinsky, E., & Bierer, L. M. (2007). Effects of parental PTSD on the cortisol response to dexamethasone administration in their adult offspring. *American Journal of Psychiatry*, 164(1), 163–166. doi:10.1176/appi.ajp.164.1.163.
- Yehuda, R., Daskalakis, N. P., Lehrner, A., Desarnaud, F., Bader, H. N., Makotkine, I., . . . Meaney, M. J. (2014). Influences of maternal and paternal PTSD on epigenetic regulation of the glucocorticoid receptor gene in Holocaust survivor offspring. *American Journal of Psychiatry*, 171(8), 872–880. doi:10.1176/appi.ajp.2014.13121571.
- Yehuda, R., Engel, S. M., Brand, S. R., Seckl, J., Marcus, S. M., & Berkowitz, G. S. (2005). Transgenerational effects of posttraumatic stress disorder in babies of mothers exposed to the World Trade Center attacks during pregnancy. *Journal of Clinical Endocrinology & Metabolism*, 90(7), 4115–4118. doi:10.1210/jc.2005-0550.
- Yehuda, R., Schmeidler, J., Wainberg, M., Binder-Brynes, K., & Duvdevani, T. (1998). Vulnerability to posttraumatic stress disorder in adult offspring of Holocaust survivors. *American Journal of Psychiatry*, 155(9), 1163–1171.
- Yehuda, R., Teicher, M. H., Seckl, J. R., Grossman, R. A., Morris, A., & Bierer, L. M. (2007). Parental posttraumatic stress disorder as a vulnerability factor for low cortisol trait in offspring of Holocaust survivors. *Archives of General Psychiatry*, 64(9), 1040–1048. doi:10.1001/archpsyc.64.9.1040.
- Yeo, B. T., Krienen, F. M., Sepulcre, J., Sabuncu, M. R., Lashkari, D., Hollinshead, M., . . . Fischl, B. (2011). The organization of the human cerebral cortex estimated by intrinsic functional connectivity. *Journal of Neurophysiology*, 106(3), 1125–1165.
- Yeshurun, Y., & Sobel, N. (2009). An odor is not worth a thousand words: From multidimensional odors to unidimensional odor objects. *Annual Review of Psychology*, 2010, 61, 219–241, C211–C215.
- Yik, M., Russell, J. A., & Steiger, J. H. (2011). A 12-point circumplex structure of core affect. *Emotion*, 11, 705–731.
- Yonelinas, A. P., & Ritchey, M. (2015). The slow forgetting of emotional episodic memories: An emotional binding account. *Trends in Cognitive Sciences*, 19, 259–267.
- Yong, E. (2016). Psychology's replication crisis can't be wished away. *The Atlantic*. Retrieved from <https://www.theatlantic.com/science/archive/2016/03/psychologys-replication-crisis-cant-be-wished-away/472272/>.
- Yoo, S. S., Gujar, N., Hu, P., Jolesz, F. A., & Walker, M. P. (2007). The human emotional brain without sleep—a prefrontal amygdala disconnect. *Current Biology*, 17(20), R877–R878.
- Yook, K., Kim, K.-H., Suh, S. Y., & Lee, K. S. (2010). Intolerance of uncertainty, worry, and rumination in major depressive disorder and generalized anxiety disorder. *Journal of Anxiety Disorders*, 24(6), 623–628. doi:10.1016/j.janxdis.2010.04.003.
- Yoon, K. L., Hong, S. W., Joermann, J., and Kang, P. (2009). Perception of facial expressions of emotion during binocular rivalry. *Emotion*, 9, 172–182.
- Young, P. T. (1918). An experimental study of mixed feelings. *American Journal of Psychology*, 29, 237–271.
- Zaborszky, L., Pang, K., Somogyi, J., Nadasdy, Z., & Kallo, I. (1999). The basal forebrain corticopetal system revisited. *Annals of the New York Academy of Sciences*, 877, 339–367.
- Zachar, P., & Ellis, R. (Eds.). (2012). *Emotional theories of Jaak Panksepp and Jim Russell*. Amsterdam: John Benjamins.
- Zahn-Waxler, C., Friedman, R. J., Cole, P. M., Mizuta, I., & Hiruma, N. (1996). Japanese and United States preschool children's responses to conflict and distress. *Child Development*, 67, 2462–2477. doi:10.2307/1131634.
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151–175.

- Zajonc, R. B. (1984). On the primacy of affect. *American Psychologist*, 39, 117–123.
- Zaki, J. (2014). Empathy: A motivated account. *Psychological Bulletin*, 140(6), 1608–1647. <https://doi.org/10.1037/a0037679>.
- Zaki, J., & Ochsner, K. (2012). The neuroscience of empathy: Progress, pitfalls and promise. *Nature Neuroscience*, 15, 675–680. doi:10.1038/nn.3085.
- Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion*, 13, 803–810.
- Zaki, J., Ochsner, K. N., Hanelin, J., Wager, T. D., & Mackey, S. C. (2007). Different circuits for different pain: Patterns of functional connectivity reveal distinct networks for processing pain in self and others. *Social Neuroscience*, 2(3–4), 276–291.
- Zaki, J., Schirmer, J., & Mitchell, J. P. (2011). Social influence modulates the neural computation of value. *Psychological Science*, 22(7), 894–900. <https://doi.org/10.1177/0956797611411057>.
- Zaki, J., Wager, T. D., Singer, T., Keyser, C., & Gazzola, V. (2016). The anatomy of suffering: Understanding the relationship between nociceptive and empathic pain. *Trends in Cognitive Sciences*, 20, 249–259.
- Zald, D. H., & Lahey, B. B. (2017). Implications of the hierarchical structure of psychopathology for psychiatric neuroimaging. *Biol Psychiatry Cogn Neurosci Neuroimaging*, 2, 310–317. doi:10.1016/j.bpsc.2017.02.003
- Zald, D. H., & Treadway, M. T. (2017). Reward processing, neuroeconomics, and psychopathology. *Annual Review of Clinical Psychology*, 13, 471–495.
- Zeelenberg, M. (1999). Anticipated regret, expected feedback and behavioral decision making. *Journal of Behavioral Decision Making*, 12(2), 93.
- Zeman, A. (2001). Consciousness. *Brain: A Journal of Neurology*, 124, 1263–1289.
- Zeman, A., & Coebergh, J. A. (2013). The nature of consciousness. *Handbook of Clinical Neurology*, 118, 373–407.
- Zeman, J., & Garber, J. (1996). Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development*, 67, 957–973.
- Zentner, M., & Shiner, R. L. (2012). Fifty years of progress in temperament research: A synthesis of major themes, findings, and challenges and a look ahead. In M. Zentner & R. L. Shiner (Eds.), *Handbook of temperament* (pp. 673–700). New York: Guilford Press.
- Zentner, M., Grandjean, D., & Scherer, K. R. (2008). Emotions evoked by the sound of music: Characterization, classification, and measurement. *Emotion*, 8(4), 494.
- Zerneck, R., Frank, T., Haegler, K., Albrecht, J., Bruckmann, H., & Wiesmann, M. (2011). Correlation analyses of detection thresholds of four different odorants. *Rhinology*, 49(3), 331–336. doi:10.4193/Rhino10.263.
- Zhang, J. W., Piff, P. K., Iyer, R., Koleva, S., & Keltner, D. (2014). An occasion for unselfing: Beautiful nature leads to prosociality. *Journal of Environmental Psychology*, 37, 61–72.
- Zhang, T.-Y., & Meaney, M. J. (2010). Epigenetics and the environmental regulation of the genome and its function. *Annual Review of Psychology*, 61(439–66).
- Zhou, Q., Eisenberg, N., Wang, Y., & Reiser, M. (2004). Chinese children's effortful control and dispositional anger/frustration: Relations to parenting styles and children's social functioning. *Developmental Psychology*, 40, 352–366. doi:10.1037/0012-1649.40.3.352.
- Zhou, W., & Chen, D. (2008). Encoding human sexual chemosensory cues in the orbito-frontal and fusiform cortices. *Journal of Neuroscience*, 28(53), 14416–14421. doi:10.1523/JNEUROSCI.3148-08.2008.
- Zhou, W., & Chen, D. (2009). Fear-related chemosignals modulate recognition of fear in ambiguous facial expressions. *Psychological Science*, 20(2), 177–183. <https://doi.org/10.1111/j.1467-9280.2009.02263.x>.
- Zhou, W., & Chen, D. (2011). Entangled chemosensory emotion and identity: Familiarity enhances detection of chemosensorily encoded emotion. *Society for Neuroscience*, 6(3), 270–276. doi:10.1080/17470919.2010.523537.
- Ziemann, A. E., Allen, J. E., Dahdaleh, N. S., Drobot, I. I., Coryell, M. W., Wunsch, A. M., . . . Wemmie, J. A. (2009). The amygdala is a chemosensor that detects carbon dioxide and acidosis to elicit fear behavior. *Cell*, 139(5), 1012–1021.
- Zoellner, L. A., & Foa, E. B. (2016). Applying Research Domain Criteria (RDoC) to the study of fear and anxiety: A critical comment. *Psychophysiology*, 53, 332–335.
- Zorawski, M., Cook, C. A., Kuhn, C. M., & LaBar, K. S. (2005). Sex, stress, and fear: Individual differences in conditioned learning. *Cognitive, Affective, & Behavioral Neuroscience*, 5(2), 191–201.
- Zvielli, A., Bernstein, A., & Koster, E. H. (2014). Dynamics of attentional bias to threat in anxious adults: Bias towards and/or away? *PLoS One*, 9, e104025.

