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## To approach or to avoid : neurobiological mechanisms in social anxiety

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## References

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## References

- Adams, R. B., Ambady, N., Macrae, C. N., & Kleck, R. (2006). Emotional expressions forecast approach-avoidance behavior. *Motivation and Emotion, 30*, 179-188.
- Adolphs, R. (2002). Neural systems for recognizing emotion. *Current Opinion in Neurobiology, 12*, 169-177.
- Aerni, A., Traber, R., Hock, C., Rozendaal, B., Schelling, G., Papassotiropoulos, A. et al. (2004). Low-dose cortisol for symptoms of posttraumatic stress disorder. *American Journal of Psychiatry, 161*, 1488-1490.
- Alden, L. E., & Bieling, P. (1998). Interpersonal consequences of the pursuit of safety. *Behaviour Research and Therapy, 36*, 53-64.
- Amaral, D. G., Behnia, H., & Kelly, J. L. (2003). Topographic organization of projections from the amygdala to the visual cortex in the macaque monkey. *Neuroscience, 118*, 1099-1120.
- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.
- Amir, N., Foa, E. B., & Coles, M. E. (1998). Automatic activation and strategic avoidance of threat-relevant information in social phobia. *Journal of Abnormal Psychology, 107*, 285-290.
- Amir, N., Freshman, M., Foa, E. (2002). Enhanced Stroop interference for threat in social phobia. *Journal of Anxiety Disorders, 16*, 1-9.
- 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.
- Amodio, D. M., & Potanina, P. V. (2008). Motivated attention to race: Frontal asymmetry effects on the P200 and response control. *Psychophysiology, 45*, S15-S15.
- Anderson, A. K., & Phelps, E. A. (2001). Lesions of the human amygdala impair enhanced perception of emotionally salient events. *Nature, 411*, 305-309.
- Ashley, V., Vuilleumier, P., Swick, D. (2004). Time course and specificity of event-related potentials to emotional expressions. *Neuroreport, 15*, 211-216.

- Asmundson, G. J. G., & Stein, M. B. (1994). Selective processing of social threat in patients with generalized social phobia: Evaluation using a dot-probe paradigm. *Journal of Anxiety Disorders, 8*, 107-117.
- Bar, M. (2003). A cortical mechanism for triggering top-down facilitation in visual object recognition. *Journal of Cognitive Neuroscience, 15*, 600-609.
- Barbas, H. (2000). Connections underlying the synthesis of cognition, memory, and emotion in primate prefrontal cortices. *Brain Research Bulletin, 52*, 319-330.
- Bar-Haim, Y., Lamy, D., & Glickman, S. (2005). Attentional bias in anxiety: A behavioral and ERP study. *Brain and Cognition, 59*, 11-22.
- 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.
- Başar, E. (2006). The theory of the whole-brain-work. *International Journal of Psychophysiology, 60*, 133-138.
- Başar, E., Başar-Eroğlu, C., Karakaş, S., & Schürmann, M. (2000). Brain oscillations in perception and memory. *International Journal of Psychophysiology, 35*, 95-124.
- Beck, A.T., Rush, A.J., Hollon, S.D., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Wiley.
- Beck, A. T., Ward, C. H., Mendelsohn, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.
- Bertsch, K., Khan, R., Kruk, M., Hermes, M., Britz, P., & Naumann, E. (2008). Aggression changes the processing of emotional faces: An ERP study. *Poster session presented at the annual meeting of the Cognitive Neuroscience Society*, San Francisco, CA.
- Bishop, S. J. (2008). Neural mechanisms underlying selective attention to threat. *Molecular and Biophysical Mechanisms of Arousal, Alertness, and Attention, 1129*, 141-152.
- Blair, R. J. R., & Cipolotti, L. (2000). Impaired social response reversal: A case of 'acquired sociopathy'. *Brain, 123*, 1122-1141.
- Bögels, S. M., & Mansell, W. (2004). Attention processes in the maintenance and treatment of social phobia: Hypervigilance, avoidance and self-focused attention. *Clinical Psychology Review, 24*, 827-856.
- Bögels, S. M., & Reith, W. (1999). Validity of two questionnaires to assess social fears: The Dutch Social Phobia and Anxiety Inventory and the Blushing, Trembling and

- Sweating Questionnaire. *Journal of Psychopathology and Behavioral Assessment*, 21, 51-66.
- Born, J., Kern, W., Fehm-Wolfsdorf, G., & Fehm, H. L. (1987). Cortisol effects on attentional processes in man as indicated by event-related potentials. *Psychophysiology*, 24, 286-292.
- Born, J., Hitzler, V., Pietrowsky, R., Pauschinger, P., & Fehm, H. L. (1988). Influences of cortisol on auditory evoked-potentials (AEPs) and mood in humans. *Neuropsychobiology*, 20, 145-151.
- Bouman, T. K., Luteijn, F., Albersnagel, F. A., & van der Ploeg, F. A. E. (1985). Some experiences with the Beck Depression Inventory. *Gedrag*, 13, 13-24.
- Bradley, B. P., Mogg, K., Millar, N., Bonham-Carter, C., Fergusson, E., Jenkins, J., & Parr, M. (1997). Attentional biases for emotional faces. *Cognition and Emotion*, 11, 25-42.
- Buchanan, T. W., Brechtel, A., Sollers, J. J., & Lovallo, W. R. (2001). Exogenous cortisol exerts effects on the startle reflex independent of emotional modulation. *Pharmacology, Biochemistry and Behavior*, 68, 203-210.
- Buss, K. A., Schumacher, J. R. M., Dolski, I., Kalin, N. H., Goldsmith, H. H., & Davidson, R. J. (2003). Right frontal brain activity, cortisol, and withdrawal behavior in 6-month-old infants. *Behavioral Neuroscience*, 117, 11-20.
- Cacioppo, J. T., Priester, J. R., & Berntson, G. G. (1993). Rudimentary determinants of attitudes II: Arm flexion and extension have differential effects on attitudes. *Journal of Personality and Social Psychology*, 65, 5-17.
- Carver, C. S., & White, T. L. (1994). Behavioral-inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS-BAS Scales. *Journal of Personality and Social Psychology*, 67, 319-333.
- Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin*, 26, 741-751.
- Cavigelli, S. A., Stine, M. M., Kovacsics, C., Jefferson, A., Diep, M. N., & Barrett, C. E. (2007). Behavioral inhibition and glucocorticoid dynamics in a rodent model. *Physiology and Behavior*, 92, 897-905.
- Chen, M., & Bargh, J. A. (1999). Consequences of automatic evaluation: Immediate behavioral predispositions to approach or avoid the stimulus. *Personality and Social Psychology Bulletin*, 25, 215-224.

- Chen, Y. P., Ehlers, A., Clark, D. M., & Mansell, W. (2002). Patients with generalized social phobia direct their attention away from faces. *Behavior Research and Therapy*, 40, 677-687.
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R.G. Heimberg, M. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment and treatment* (pp. 69-93). New York: Guilford Press.
- Clark-Carter, D. (1997). *Doing quantitative psychological research: From design to report*. Hove: Psychology Press.
- Cloninger, C. R., Przybeck, T. R., Svrakic, D. M., & Wetzel, R. D. (1994). *The Temperament and Character Inventory (TCI): A Guide to its Development and Use*. St. Louis: Center for Psychobiology of Personality.
- Condren, R. M., O'Neill, A., Ryan, M. C. M., Barrett, P., & Thakore, J. H. (2002). HPA axis response to a psychological stressor in generalised social phobia. *Psychoneuroendocrinology*, 27, 693-703.
- Cools, R., Calder, A. J., Lawrence, A. D., Clark, L., Bullmore, E., & Robbins, T. W. (2005). Individual differences in threat sensitivity predict serotonergic modulation of amygdala response to fearful faces. *Psychopharmacology*, 180, 670-679.
- Cuthbert, B. N., Schupp, H. T., Bradley, M. M., Birbaumer, N., & Lang, P. J. (2000). Brain potentials in affective picture processing: Covariation with autonomic arousal and affective report. *Biological Psychology*, 52, 95-111.
- Davidson, R. J. (1992). Anterior cerebral asymmetry and the nature of emotion. *Brain and Cognition*, 20, 125-151.
- Davidson, R. J. (1998). Affective style and affective disorders: Perspectives from affective neuroscience. *Cognition and Emotion*, 12, 307-330.
- Davidson, R. J. (2004). What does the prefrontal cortex "do" in affect: perspectives on frontal EEG asymmetry research? *Biological Psychology*, 67, 219-233.
- De Houwer, J. (2006). What are implicit measures and why are we using them? In R. Wiers, & A. Stacy (Eds.), *Handbook of implicit cognition and addiction* (pp. 11-28). New York: Sage.
- De Houwer, J., Crombez, G., Baeyens, F., & Hermans, D. (2001). On the generality of the affective Simon effect. *Cognition and Emotion*, 15, 189-206.
- De Kloet, E. R. (1991). Brain corticosteroid receptor balance and homeostatic control. *Frontiers in Neuroendocrinology*, 12, 95-164.

- De Kloet, E. R., Joëls, M., & Holsboer, F. (2005). Stress and the brain: From adaptation to disease. *Nature Reviews Neuroscience*, 6, 463-475.
- De Kloet, E. R., Oitzl, M. S., & Joëls, M. (1999). Stress and cognition: Are corticosteroids good or bad guys? *Trends in Neurosciences*, 22, 422-426.
- De la Rie, S. M., Duijsens, I. J., & Cloninger, C. R. (1998). Temperament, character, and personality disorders. *Journal of Personality Disorders*, 12, 362-372.
- De Quervain, D. J. F. (2008). Glucocorticoid-induced reduction of traumatic memories: implications for the treatment of PTSD. *Progress in Brain Research*, 167, 239-247.
- De Quervain, D. J. F., & Margraf, J. (2008). Glucocorticoids for the treatment of post-traumatic stress disorder and phobias: A novel therapeutic approach. *European Journal of Pharmacology*, 583, 365-371.
- De Quervain, D. J. F., Rozendaal, B., Nitsch, R. M., McGaugh, J. L., & Hock, C. (2000). Acute cortisone administration impairs retrieval of long-term declarative memory in humans. *Nature Neuroscience*, 3, 313-314.
- Eder, A. B., & Rothermund, K. (2008). When do motor behaviors (mis)match affective stimuli? An evaluative coding view of approach and avoidance reactions. *Journal of Experimental Psychology: General*, 137, 262-281.
- Eger, E., Jedynak, A., Iwaki, T., & Skrandies, W. (2003). Rapid extraction of emotional expression: Evidence from evoked potential fields during brief presentation of face stimuli. *Neuropsychologia*, 41, 808-817.
- Eimer, M., & Holmes, A. (2002). An ERP study on the time course of emotional face processing. *Neuroreport*, 13, 427-431.
- Eimer, M., & Holmes, A. (2007). Event-related brain potential correlates of emotional face processing. *Neuropsychologia*, 45, 15-31.
- Eimer, M., Holmes, A., & McGlone, F. P. (2003). The role of spatial attention in the processing of facial expression: An ERP study of rapid brain responses to six basic emotions. *Cognitive, Affective, and Behavioral Neuroscience*, 3, 97-110.
- Ekman, P., & Friesen, W. V. (1976). *Pictures of facial affect*. Palo Alto: Consulting Psychologist Press.
- Elzinga, B. M., & Roelofs, K. (2005). Cortisol-induced impairments of working memory require acute sympathetic activation. *Behavioral Neuroscience*, 119, 98-103.

- Erickson, K., Drevets, W., & Schukin, J. (2003). Glucocorticoid regulation of diverse cognitive functions in normal and pathological emotional states. *Neuroscience and Biobehavioral Reviews*, 27, 233-246.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1996). *Structured Clinical Interview for the DSM-IV Axis I Disorders* (version 2). New York: Biometrics Research.
- Fitts, P. M. (1954). The information capacity of the human motor system in controlling the amplitude of movement. *Journal of Experimental Psychology*, 47, 381-391.
- Fox, E., Russo, R., & Dutton, K. (2002). Attentional bias for threat: Evidence for delayed disengagement from emotional faces. *Cognition and Emotion*, 16, 355-379.
- Frijda, N. H., Kuipers, P., & Terschure, E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology*, 57, 212-228.
- Furlan, P. M., DeMartinis, N., Schweizer, E., Rickels, K., & Lucki, I. (2001). Abnormal salivary cortisol levels in social phobic patients in response to acute psychological but not physical stress. *Biological Psychiatry*, 50, 254-259.
- Furmark, T. (2002). Social phobia: Overview of community surveys. *Acta Psychiatrica Scandinavica*, 105, 84-93.
- Gilboa-Schechtman, E., Foa, E. B., & Amir, N. (1999). Attentional biases for facial expressions in social phobia: The face-in-the-crowd paradigm. *Cognition and Emotion*, 13, 305-318.
- Goldberg, D. P. (1978). *Manual of the General Health Questionnaire*. Windsor: National Foundation for Educational Research.
- Gratton, G., Coles, M. G. H., & Donchin, E. (1983). A new method for off-line removal of ocular artifact. *Electroencephalography and Clinical Neurophysiology*, 55, 468-484.
- Gray, J. A. (1982). The neuropsychology of anxiety: An inquiry into the functions of the septo-hippocampal system. *Behavioral and Brain Sciences*, 5, 469-484.
- Gray, J. A. (1987). Perspectives on anxiety and impulsivity: A commentary. *Journal of Research in Personality*, 21, 493-509.
- Gray, J. A., & McNaughton, N. (2000). *The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system* (2nd ed.). Oxford: Oxford University Press.

- Harmer, C. J., Thilo, K. V., Rothwell, J. C., & Goodwin, G. M. (2001). Transcranial magnetic stimulation of medial-frontal cortex impairs the processing of angry facial expressions. *Nature Neuroscience, 4*, 17-18.
- Hartmann, A., Krumrey, K., Dietl, T., Vogl, L., Zhou, Y., Dirlich, G. et al. (1995). Long-term habituation of brain evoked potential responses and pituitary-adrenal secretion with repeated (placebo) testing. *Psychoneuroendocrinology, 20*, 865-877.
- Harvey, A., Watkins, E., Mansell, W., & Shaffran, R. (2004). *Cognitive behavioural processes across psychological disorders: A transdiagnostic approach to research and treatment*. Oxford: Oxford University press.
- Hermans, E. J., & van Honk J. (2006). Toward a framework for defective emotion processing in social phobia. *Cognitive Neuropsychiatry, 11*, 307-331.
- Hermans, E. J., Putman, P., Baas, J. M., Koppeschaar, H. P., van Honk, J. (2006). A single administration of testosterone reduces fear-potentiated startle in humans. *Biological Psychiatry, 59*, 872-874.
- Herbert, J., Goodyer, I. M., Grossman, A. B., Hastings, M. H., De Kloet, E. R., Lightman, S. L. et al. (2006). Do corticosteroids damage the brain? *Journal of Neuroendocrinology, 18*, 393-411.
- Het, S., & Wolf, O. T. (2007). Mood changes in response to psychosocial stress in healthy young women: Effects of pretreatment with cortisol. *Behavioral Neuroscience, 121*, 11-20.
- Heuer, K., Rinck, M., & Becker, E.S. (2007). Avoidance of emotional facial expressions in social anxiety: The Approach-Avoidance Task. *Behaviour Research and Therapy, 45*, 2990-3001.
- Hirshfeld-Becker, D. R., Micco, J. A., Simoes, N. A., & Henin, A. (2008). High risk studies and developmental antecedents of anxiety disorders. *American Journal of Medical Genetics Part C-Seminars in Medical Genetics, 148C*, 99-117.
- Hofmann, S. G., & Bögels, S. M. (2006). Recent advances in the treatment of social phobia. *Journal of Cognitive Psychotherapy, 20*, 3-5.
- Holmes, A., Nielsen, M. K., & Green, S. (2008). Effects of anxiety on the processing of fearful and happy faces: An event-related potential study. *Biological Psychology, 77*, 159-173.

- Holmes, A., Bradley, B. P., Kragh Nielsen, M., & Mogg, K. (2009). Attentional selectivity for emotional faces: Evidence from human electrophysiology. *Psychophysiology, 46*, 62-68.
- Holsboer, F., & Ising, M. (2008). Central CRH system in depression and anxiety: Evidence from clinical studies with CRH1 receptor antagonists. *European Journal of Pharmacology, 583*, 350-357.
- Horley, K., Williams, L. M., Gonsalvez, C., & Gordon, E. (2003). Social phobics do not see eye to eye: A visual scanpath study of emotional expression processing. *Journal of Anxiety Disorders, 17*, 33-44.
- Hornak, J., Bramham, J., Rolls, E. T., Morris, R. G., O'Doherty, J., Bullock, P. R. et al. (2003). Changes in emotion after circumscribed surgical lesions of the orbitofrontal and cingulate cortices. *Brain, 126*, 1691-1712.
- Hsu, F. C., Garside, M. J., Massey, A. E., & McAllister-Williams, R. H. (2003). Effects of a single dose of cortisol on the neural correlates of episodic memory and error processing in healthy volunteers. *Psychopharmacology, 167*, 431-442.
- Huang, Y. X., & Luo, Y. J. (2006). Temporal course of emotional negativity bias: An ERP study. *Neuroscience Letters, 398*, 91-96.
- Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological Methods, 6*, 115-134.
- Kagan, J., Reznick, J. S., & Snidman, N. (1987). The physiology and psychology of behavioral-inhibition in children. *Child Development, 58*, 1459-1473.
- Kalin, N. H., Larson, C., Shelton, S. E., & Davidson, R. J. (1998a). Asymmetric frontal brain activity, cortisol, and behavior associated with fearful temperament in rhesus monkeys. *Behavioral Neuroscience, 112*, 286-292.
- Kalin, N. H., Shelton, S. E., Rickman, M., & Davidson, R. J. (1998b). Individual differences in freezing and cortisol in infant and mother rhesus monkeys. *Behavioral Neuroscience, 112*, 251-254.
- Kalin, N. H., Shelton, S. E., & Davidson, R. J. (2000). Cerebrospinal fluid corticotropin-releasing hormone levels are elevated in monkeys with patterns of brain activity associated with fearful temperament. *Biological Psychiatry, 47*, 579-585.
- Kawasaki, H., Adolphs, R., Kaufman, O., Damasio, H., Damasio, A.R., Granner, M. et al. (2001). Single-neuron responses to emotional visual stimuli recorded in human ventral prefrontal cortex. *Nature Neuroscience, 4*, 15-16.

- Kirschbaum, C., Hellhammer, D. H. (1994). Salivary cortisol in psychoneuroendocrine research: Recent developments and applications. *Psychoneuroendocrinology*, 19, 313-333.
- 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, 76-81.
- Kirschbaum, C., Wolf, O. T., May, M., Wippich, W., & Hellhammer, D.H. (1996). Stress- and treatment-induced elevations of cortisol levels associated with impaired declarative memory in healthy adults. *Life Sciences*, 58, 1475-1483.
- Klimesch, W. (1999). EEG alpha and theta oscillations reflect cognitive and memory performance: A review and analysis. *Brain Research Reviews*, 29, 169-195.
- Knyazev, G. G. (2007). Motivation, emotion, and their inhibitory control mirrored in brain oscillations. *Neuroscience and Biobehavioral Reviews*, 31, 377-395.
- Knyazev, G. G., & Slobodskaya, H. R. (2003). Personality trait of behavioral inhibition is associated with oscillatory systems reciprocal relationships. *International Journal of Psychophysiology*, 48, 247-261.
- Knyazev, G. G., Slobodskaya, H. R., & Wilson, G. D. (2002). Psychophysiological correlates of behavioural inhibition and activation. *Personality and Individual Differences*, 33, 647-660.
- Knyazev, G. G., Slobodskaya, H. R., Safranova, M. V., Sorokin, O. V., Goodman, R., & Wilson, G. D. (2003). Personality, psychopathology and brain oscillations. *Personality and Individual Differences*, 35, 1331-1349.
- Knyazev, G. G., Savostyanov, A. N., & Levin, E. A. (2004). Alpha oscillations as a correlate of trait anxiety. *International Journal of Psychophysiology*, 53, 147-160.
- Knyazev, G. G., Schutter, D. J. L. G., & van Honk, J. (2006). Anxious apprehension increases coupling of delta and beta oscillations. *International Journal of Psychophysiology*, 61, 283-287.
- Koeter, M. W. J., & Ormel, J. (1991). *General Health Questionnaire: Nederlandse bewerking - Handleiding*. Lisse, The Netherlands: Swets & Zeitlinger.
- Kolassa, I. T., & Miltner, W. H. R. (2006). Psychophysiological correlates of face processing in social phobia. *Brain Research*, 1118, 130-141.
- Kolassa, I. T., Kolassa, S., Musial, F., & Miltner, W. H. R. (2007). Event-related potentials to schematic faces in social phobia. *Cognition and Emotion*, 21, 1721-1744.

- Kolassa, I. T., Kolassa, S., Bergmann, S., Lauche, R., Dilger, S., Miltner, W. H. R., & Musial, F. (2009). Interpretive bias in social phobia: An ERP study with morphed emotional schematic faces. *Cognition and Emotion, 23*, 69-95.
- Kopell, B. S., Wittner, W. K., Lunde, D., Warrick, G., & Edwards, D. (1970). Cortisol effects on averaged evoked potential, alpha-rhythm, time estimation, and two-flash fusion threshold. *Psychosomatic Medicine, 32*, 39-49.
- Korte, S. M. (2001). Corticosteroids in relation to fear, anxiety and psychopathology. *Neuroscience and Biobehavioral Reviews, 25*, 117-142.
- Kringelbach, M. L., & Rolls, E. T. (2003). Neural correlates of rapid reversal learning in a simple model of human social interaction. *Neuroimage, 20*, 1371-1383.
- Krolak-Salmon, P., Fischer, C., Vighetto, A., & Mauguière, F. (2001). Processing of facial emotional expression: Spatio-temporal data as assessed by scalp event-related potentials. *European Journal of Neuroscience, 13*, 987-994.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. *Psychological Review, 97*, 377-395.
- Laufs, H., Krakow, K., Sterzer, P., Eger, E., Beyerle, A., Salek-Haddadi, A., & Kleinschmidt, A. (2003). Electroencephalographic signatures of attentional and cognitive default modes in spontaneous brain activity fluctuations at rest. *Proceedings of the National Academy of Sciences of the United States of America, 100*, 11053-11058.
- LeDoux, J. E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience, 23*, 155-184.
- LeDoux, J. E. (2002). Synaptic self: How our brains become who we are. New York: Viking.
- Levin, A. P., Saoud, J. B., Strauman, T., Gorman, J. M., Fyer, A. J., Crawford, R. et al. (1993). Responses of generalized and discrete social phobics during public speaking. *Journal of Anxiety Disorders, 7*, 207-221.
- Liebowitz, M. R. (1987). Social phobia. In T.A. Ban, P. Pichot, & W. Poldinger (Eds.), *Modern Problems of Pharmacopsychiatry* (22nd ed., pp. 141-173). Basel: Karger.
- Loo, S. K., Hopfer, C., Teale, P. D., & Reite, M. L. (2004). EEG correlates of methylphenidate response in ADHD: Association with cognitive and behavioral measures. *Journal of Clinical Neurophysiology, 21*, 457-464.

- Lopes da Silva, F. H. (1991). Neural mechanisms underlying brain waves: from neural membranes to networks. *Electroencephalography and Clinical Neurophysiology*, 79, 81-93.
- Lorberbaum, J. P., Kose, S., Johnson, M. R., Arana, G. W., Sullivan, L. K., Hamner, M. B. et al. (2004). Neural correlates of speech anticipatory anxiety in generalized social phobia. *Neuroreport*, 15, 2701-2705.
- Lubar, J. F., Swartwood, M. O., Swartwood, J. N., & Timmermann, D. L. (1995). Quantitative EEG and auditory event-related potentials in the evaluation of attention deficit/hyperactivity disorder: Effects of methylphenidate and implications for neurofeedback training. *Journal of Psychoeducational Assessment, ADHD Special*, 143-160.
- Lundqvist, D., Flykt, A., & Öhman, A. (1998). *The Karolinska directed emotional faces (KDEF)* [CD ROM]. Stockholm: Department of Clinical Neuroscience, Psychology section, Karolinska Institute.
- Lupien, S. J., Gillin, C. J., & Hauger, R. L. (1999). Working memory is more sensitive than declarative memory to the acute effects of corticosteroids: A dose-response study in humans. *Behavioral Neuroscience*, 113, 420-430.
- 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 and Cognition*, 65, 209-237.
- Lyons, D. M., Lopez, J. M., Yang, C., & Schatzberg, A. F. (2000). Stress-level cortisol treatment impairs inhibitory control of behavior in monkeys. *Journal of Neuroscience*, 20, 7816-7821.
- 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.
- Mansell, W., Clark, D. M., Ehlers, A., & Chen, Y. P. (1999). Social anxiety and attention away from emotional faces. *Cognition and Emotion*, 13, 673-690.
- Mannuzza, S., Schneier, F. R., Chapman, T. F., Liebowitz, M. R., Klein, D. F., & Fyer, A. J. (1995). Generalized social phobia: Reliability and validity. *Archives of General Psychiatry*, 52, 230-237.

- Markman, A. B., & Brendl, C. M. (2005). Constraining theories of embodied cognition. *Psychological Science, 16*, 6-10.
- Martel, F. L., Hayward, C., Lyons, D. M., Sanborn, K., Varady, S., & Schatzberg, A. F. (1999). Salivary cortisol levels in socially phobic adolescent girls. *Depression and Anxiety, 10*, 25-27.
- Martinez, A. M., & Benavente, R. (1998). *The AR face database: CVC Technical Report No. 24*. West Lafayette: Purdue University.
- Mathew, S. J., & Ho, S. (2006). Etiology and neurobiology of social anxiety disorder. *Journal of Clinical Psychiatry, 67*, 9-13.
- Mathews, A., & Mackintosh, B. (1998). A cognitive model of selective processing in anxiety. *Cognitive Therapy and Research, 22*, 539-560.
- Mathews, A., & Macleod, C. (1994). Cognitive approaches to emotion and emotional disorders. *Annual Review of Psychology, 45*, 25-50.
- Mathews, A., & Macleod, C. (2005). Cognitive vulnerability to emotional disorders. *Annual Review of Clinical Psychology, 1*, 167-195.
- Matsumoto, D., & Ekman, P. (1988). *Japanese and Caucasian Facial Expressions of Emotion (JACFEE) [slides]*. San Francisco: University of California, Human Interaction Laboratory.
- Mattia, J. I., Heimberg, R. G., & Hope, D. A. (1993). The revised Stroop color-naming task in social phobics. *Behaviour Research and Therapy, 31*, 305-313.
- McClure, E. B., Monk, C. S., Nelson, E. E., Zarahn, E., Leibenluft, E., Bilder, R. M. et al. (2004). A developmental examination of gender differences in brain engagement during evaluation of threat. *Biological Psychiatry, 55*, 1047-1055.
- Meaney, M. J., & Aitken, D. H. (1985). [<sup>3</sup>H]dexamethasone binding in rat frontal-cortex. *Brain Research, 328*, 176-180.
- Mobini, S., & Grant, A. (2007). Clinical implications of attentional bias in anxiety disorders: An integrative literature review. *Psychotherapy, 44*, 450-462.
- Mogg, K., Bradley, B. P., DeBono, J., & Painter, M. (1997). Time course of attentional bias for threat information in non-clinical anxiety. *Behaviour Research and Therapy, 35*, 297-303.
- Mogg, K., & Bradley, B.P. (2002). Selective orienting of attention to masked threat faces in social anxiety. *Behaviour Research and Therapy, 40*, 1403-1414.

- Mogg, K., Philippot, P., & Bradley, B. P. (2004). Selective attention to angry faces in clinical social phobia. *Journal of Abnormal Psychology, 113*, 160-165.
- Morris, J. S., Öhman, A., & Dolan, R. J. (1998). Conscious and unconscious emotional learning in the human amygdala. *Nature, 393*, 467-470.
- Moser, J. S., Huppert, J. D., Duval, E., Simons, R. F. (2008). Face processing biases in social anxiety: An electrophysiological study. *Biological Psychology, 78*, 93-103.
- Musa, C., Lepine, J. P., Clark, D. M., Mansell, W., & Ehlers, A. (2003). Selective attention in social phobia and the moderating effect of a concurrent depressive disorder. *Behaviour Research and Therapy, 41*, 1043-1054.
- Neumann, R., & Strack, F. (2000). Approach and avoidance: The influence of proprioceptive and exteroceptive cues on encoding of affective information. *Journal of Personality and Social Psychology, 79*, 39-48.
- Neumann, R., Förster, J., & Strack, F. (2003). Motor compatibility: The bidirectional link between behavior and evaluation. In J. Musch, & K.C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp.371-391). Mahwah, NJ: Lawrence Erlbaum Associates.
- Neuper, C., & Pfurtscheller, G. (2001). Event-related dynamics of cortical rhythms: Frequency-specific features and functional correlates. *International Journal of Psychophysiology, 43*, 41-58.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review, 9*, 184-211.
- Nieuwenhuis, S., Aston-Jones, G., & Cohen, J. D. (2005). Decision making, the P3, and the locus coeruleus-norepinephrine system. *Psychological Bulletin, 131*, 510-532.
- Nijenhuis, E. R. S., van der Hart, O., Kruger, K. (2002). The psychometric characteristics of the Traumatic Experiences Questionnaire (TEC): First findings among psychiatric outpatients. *Clinical Psychology and Psychotherapy, 9*, 200-210.
- Nunez, J. F., Ferre, P., Escorihuela, R.M., Tobena, A., & Fernandez-Teruel, A. (1996). Effects of postnatal handling of rats on emotional, HPA-axis, and prolactin reactivity to novelty and conflict. *Physiology and Behavior, 60*, 1355-1359.
- Ochsner, K. N., & Gross, J. J. (2005). The cognitive control of emotion. *Trends in Cognitive Sciences, 9*, 242-249.

- Oei, N. Y. L., Tollenaar, M. S., Spinhoven, P., & Elzinga, B. M. (2009). Hydrocortisone reduces emotional distracter interference in working memory. *Psychoneuroendocrinology*, doi:10.1016/j.psyneuen.2009.03.015.
- Öhman, A., Lundqvist, D., & Esteves, F. (2001). The face in the crowd revisited: A threat advantage with schematic stimuli. *Journal of Personality and Social Psychology*, 80, 381-396.
- Phan, K. L., Fitzgerald, D. A., Nathan, P. J., & Tancer, M. E. (2006). Association between amygdala hyperactivity to harsh faces and severity of social anxiety in generalized social phobia. *Biological Psychiatry*, 59, 424-429.
- Phelps, E. A. (2006). Emotion and cognition: Insights from studies of the human amygdala. *Annual Review of Psychology*, 57, 27-53.
- Picton, T. W., Bentin, S., Berg, P., Donchin, E., Hillyard, S. A., Johnson, R. et al. (2000). Guidelines for using human event-related potentials to study cognition: Recording standards and publication criteria. *Psychophysiology*, 37, 127-152.
- Pizzagalli, D., Regard, M., & Lehmann, D. (1999). Rapid emotional face processing in the human right and left brain hemispheres: An ERP study. *Neuroreport*, 10, 2691-2698.
- Pruessner, J. C., Kirschbaum, C., Meinlschmid, G., & Hellhammer, D. H. (2003). Two formulas for computation of the area under the curve represent measures of total hormone concentration versus time-dependent change. *Psychoneuroendocrinology*, 28, 916-931.
- Putman, P., Hermans, E.J., & van Honk, J. (2004). Emotional Stroop performance for masked angry faces: It's BAS, not BIS. *Emotion*, 4, 305-311.
- Putman, P., Hermans, E. J., Koppeschaar, H., van Schijndel, A., & van Honk, J. (2007b). A single administration of cortisol acutely reduces preconscious attention for fear in anxious young men. *Psychoneuroendocrinology*, 32, 793-802.
- Putman, P., Hermans, E. J., & van Honk, J. (2007a). Exogenous cortisol shifts a motivated bias from fear to anger in spatial working memory for facial expressions. *Psychoneuroendocrinology*, 32, 14-21.
- Radley, J. J., Sisti, H. M., Hao, J., Rocher, A. B., McCall, T., Hof, P. R. et al. (2004). Chronic behavioral stress induces apical dendritic reorganization in pyramidal neurons of the medial prefrontal cortex. *Neuroscience*, 125, 1-6.

- Rapee, R. M., & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behaviour Research and Therapy*, 35, 741-756.
- Ray, W. J., & Cole, H. W. (1985). EEG alpha-activity reflects attentional demands, and beta-activity reflects emotional and cognitive processes. *Science*, 228, 750-752.
- Reuter, M. (2002). Impact of cortisol on emotions under stress and nonstress conditions: A pharmacopsychological approach. *Neuropsychobiology*, 46, 41-48.
- Ridderinkhof, K. R., Ullsperger, M., Crone, E. A., & Nieuwenhuis, S. (2004). The role of the medial frontal cortex in cognitive control. *Science*, 306, 443-447.
- Rinck, M., & Becker, E. S. (2007). Approach and avoidance in fear of spiders. *Journal of Behavior Therapy and Experimental Psychiatry*, 38, 105-120.
- Robinson, D. L. (1999). The technical, neurological and psychological significance of 'alpha', 'delta' and 'theta' waves confounded in EEG evoked potentials: A study of peak latencies. *Clinical Neurophysiology*, 110, 1427-1434.
- Robinson, D.L. (2000). The technical, neurological, and psychological significance of 'alpha', 'delta' and 'theta' waves confounded in EEG evoked potentials: A study of peak amplitudes. *Personality and Individual Differences*, 28, 673-693.
- Robinson, D. L. (2001). How brain arousal systems determine different temperament types and the major dimensions of personality. *Personality and Individual Differences*, 31, 1233-1259.
- Roelofs, K., Bakvis, P., Hermans, E.J., van Pelt, J., & van Honk, J. (2007). The effects of social stress and cortisol responses on the preconscious selective attention to social threat. *Biological Psychology*, 75, 1-7.
- Roelofs, K., Elzinga, B. M., & Rotteveel, M. (2005). The effects of stress-induced cortisol responses on approach-avoidance behavior. *Psychoneuroendocrinology*, 30, 665-677.
- Roelofs, K., Minelli, A., Mars, R. B., van Peer, J., & Toni, I. (2009b). On the neural control of social emotional behavior. *Social Cognitive and Affective Neuroscience*, 4, 50-58.
- Roelofs, K., van Peer, J. M., Beretty, E., De Jong, P., Spinhoven, P., & Elzinga, B. M. (2009a). HPA-axis hyperresponsiveness is associated with increased social avoidance behavior in social phobia. *Biological Psychiatry*, 65, 336-343
- Rolls, E. T. (2000). Précis of 'The brain and emotion'. *The Behavioral and brain sciences*, 23, 177-191.

- Roozendaal, B., McReynolds, J. R., & McGaugh, J. L. (2004). The basolateral amygdala interacts with the medial prefrontal cortex in regulating glucocorticoid effects on working memory impairment. *Journal of Neuroscience, 24*, 1385-1392.
- Rossignol, M., Anselme, C., Vermeulen, N., Philippot, P., & Campanella, S. (2007). Categorical perception of anger and disgust facial expression is affected by non-clinical social anxiety: An ERP study. *Brain Research, 1132*, 166-176.
- Rotteveel, M., Bonarius, H., & Phaf, R.H. (in preparation). Moving arms and faces: Interaction in affective space.
- Rotteveel, M., & Phaf, R. H. (2004). Automatic affective evaluation does not automatically predispose for arm flexion and extension. *Emotion, 4*, 156-172.
- Rotteveel, M., & Phaf, R. H. (2007). Mere exposure in reverse: Mood and motion modulate memory bias. *Cognition and Emotion, 21*, 1323-1346.
- Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology, 60*, 141-171.
- Sapolsky, R. M. (1990). Adrenocortical function, social rank, and personality among wild baboons. *Biological Psychiatry, 28*, 862-878.
- Sapolsky, R. M., Romero, L. M., & Munck, A. U. (2000). How do glucocorticoids influence stress responses? Integrating permissive, suppressive, stimulatory, and preparative actions. *Endocrine Reviews, 21*, 55-89.
- Sato, W., Kochiyama, T., Yoshikawa, S., & Matsumura, M. (2001). Emotional expression boosts early visual processing of the face: ERP recording and its decomposition by independent component analysis. *Neuroreport, 12*, 709-714.
- Schmidt, L. A., Fox, N. A., Rubin, K. H., Sternberg, E. M., Gold, P. W., Smith, C. C. et al. (1997). Behavioral and neuroendocrine responses in shy children. *Developmental Psychobiology, 30*, 127-140.
- Schelling, G., Roozendaal, B., Krauseneck, T., Schmoelz, M., De Quervain, D., & Biegel, J. (2006). Efficacy of hydrocortisone in preventing posttraumatic stress disorder following critical illness and major surgery. *Psychobiology of Posttraumatic Stress Disorder: A Decade of Progress, 1071*, 46-53.
- Schultz, L. T., & Heimberg, R. G. (2008). Attentional focus in social anxiety disorder: Potential for interactive processes. *Clinical Psychology Review, 28*, 1206-1221.

- Schupp, H. T., Öhman, A., Junghofer, M., Weike, A. I., Stockburger, J., & Hamm, A. O. (2004). The facilitated processing of threatening faces: An ERP analysis. *Emotion, 4*, 189-200.
- Schutter, D. J. L. G., & van Honk, J. (2004). Decoupling of midfrontal delta-beta oscillations after testosterone administration. *International Journal of Psychophysiology, 53*, 71-73.
- Schutter, D. J. L. G. & van Honk, J. (2005). Salivary cortisol levels and the coupling of midfrontal delta-beta oscillations. *International Journal of Psychophysiology, 55*, 127-129.
- 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*, 65-75.
- Seibt, B., Neumann, R., Nussinson, R., & Strack, F. (2008). Movement direction or change in distance? Self- and object-related approach-avoidance motions. *Journal of Experimental Social Psychology, 44*, 713-720.
- Skosnik, P. D., Chatterton, R. T. Jr., Swisher, T., & Park, S. (2000). Modulation of attentional inhibition by norepinephrine and cortisol after psychological stress. *International Journal of Psychophysiology, 36*, 59-68.
- Smillie, L. D., Pickering, A. D., & Jackson, C. J. (2006). The new Reinforcement Sensitivity Theory: Implications for personality measurement. *Personality and Social Psychology Review, 10*, 320-335.
- Solarz, A.K. (1960). Latency of instrumental responses as a function of compatibility with the meaning of eliciting verbal signs. *Journal of Experimental Psychology, 59*, 239-245.
- Soravia, L. M., Heinrichs, M., Aerni, A., Maroni, C., Schelling, G., Ehllert, U. et al. (2006). Glucocorticoids reduce phobic fear in humans. *Proceedings of the National Academy of Sciences of the United States of America, 103*, 5585-5590.
- Spangler, G., & Schieche, M. (1998). Emotional and adrenocortical responses of infants to the strange situation: The differential function of emotional expression. *International Journal of Behavioral Development, 22*, 681-706.

- Spector, I. P., Pecknold, J. C., & Libman, E. (2003). Selective attentional bias related to the noticeability aspect of anxiety symptoms in generalized social phobia. *Journal of Anxiety Disorders, 17*, 517-531.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory (STAII-form Y)*. Palo Alto: Consulting Psychologists Press.
- Stangier, U., Heidenreich, T., & Schermelleh-Engel, K. (2006). Safety behaviors and social performance in patients with generalized social phobia. *Journal of Cognitive Psychotherapy, 20*, 17-31
- 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*, 1027-1034.
- Strack, F., & Deutsch, R. (2004). Reflective and impulsive determinants of social behavior. *Personality and Social Psychology Review, 8*, 220-247
- Straube, T., Kolassa, I. T., Glauer, M., Mentzel, H. J., & Miltner, W. H. R. (2004). Effect of task conditions on brain responses to threatening faces in social phobics: An event-related functional magnetic resonance Imaging study. *Biological Psychiatry, 56*, 921-930.
- Strauss, M. M., Makris, N., Aharon, I., Vangel, M. G., Goodman, J., Kennedy, D. N. et al. (2005). fMRI of sensitization to angry faces. *Neuroimage, 26*, 389-413.
- Sutton, S. K. & Davidson, R. J. (1997). Prefrontal brain asymmetry: A biological substrate of the behavioral approach and inhibition systems. *Psychological Science, 8*, 204-210.
- Svensson, A. I., Akesson, P., Engel, J.A., & Soderpalm, B. (2003). Testosterone treatment induces behavioral disinhibition in adult male rats. *Pharmacology Biochemistry and Behavior, 75*, 481-490.
- Thomas, S. J., Johnstone, S. J., & Gonsalvez, C. J. (2007). Event-related potentials during an emotional Stroop task. *International Journal of Psychophysiology, 63*, 221-231.
- Tillfors, M., Furmark, T., Marteinsdottir, I. , Fischer, H., Pissiota, A., Långström, B. et al. (2001). Cerebral blood flow in subjects with social phobia during stressful speaking tasks: A PET study. *American Journal of Psychiatry, 158*, 1220-1226.
- Tollenaar, M. S., Elzinga, B. M., Spinhoven, Ph., & Everaerd, W. (2009). Autobiographical memory after acute stress in healthy young men. *Memory, 17*, 301-310.

- Tomarken, A. J., Davidson, R. J., Wheeler, R. E., & Doss, R. C. (1992). Individual-differences in anterior brain asymmetry and fundamental dimensions of emotion. *Journal of Personality and Social Psychology, 62*, 676-687.
- Tops, M., van der Pompe, G., Baas, D., Mulder, L. J. M., Den Boer, J. A., Meijman, T. F., & Korf, J. (2003). Acute cortisol effects on immediate free recall and recognition of nouns depend on stimulus valence. *Psychophysiology, 40*, 167-173.
- Tops, M., van der Pompe, G., Wijers, A. A., Den Boer, J. A., Meijman, T. F., & Korf, J. (2004). Free recall of pleasant words from recency positions is especially sensitive to acute administration of cortisol. *Psychoneuroendocrinology, 29*, 327-338.
- Tops, M., van Peer, J. M., Wester, A. E., Wijers, A. A., & Korf, J. (2006). State-dependent regulation of cortical activity by cortisol: An EEG study. *Neuroscience Letters, 404*, 39-43.
- Tops, M., Wijers, A. A., van Staveren, A. S., Bruin, K. J., Den Boer, J. A., Meijman, T.F., & Korf, J. (2005). Acute cortisol administration modulates EEG alpha asymmetry in volunteers: relevance to depression. *Biological Psychology, 69*, 181-193.
- Turner, S. M., Beidel, D. C., Dancu, C. V., & Stanley, M. A. (1989). An empirically derived inventory to measure social fears and anxiety: The Social Phobia and Anxiety Inventory. *Psychological Assessment, 1*, 35-40.
- van Aken, M. O., Romijn, J. A., Miltenburg, J. A., & Lentjes, E. G. W. M. (2003). Automated measurement of salivary cortisol. *Clinical Chemistry, 49*, 1408-1409.
- van Dantzig, S., Pecher, D., & Zwaan, R. A. (2008). Approach and avoidance as action effects. *The Quarterly Journal of Experimental Psychology, 61*, 1298-1306.
- van der Ploeg, H. M. (2000). *Handleiding bij de Zelf-Beoordelingsvragenlijst. Een Nederlandstalige bewerking van de Spielberger State-Trait Anxiety Inventory* (2e gewijzigde druk). (*Manual of the Self-Report questionnaire. A Dutch translation of the Spielberger State-Trait Anxiety Inventory* (2nd modified ed.). Lisse, The Netherlands: Swets & Zeitlinger B.V.
- van Honk, J., Schutter, D. J. L. G., Hermans, E.J., Putman, P., Tuitenhout, A., & Koppeschaar, H. (2004). Testosterone shifts the balance between sensitivity for punishment and reward in healthy young women. *Psychoneuroendocrinology, 29*, 937-943.
- van Honk, J., Tuitenhout, A., van den Hout, M., Koppeschaar, H., Thijssen, J., de Haan, E., & Verbaten, R. (1998). Baseline salivary cortisol levels and preconscious selective attention for threat. A pilot study. *Psychoneuroendocrinology, 23*, 741-747.

- van Honk, J., Tuiten, A., van den Hout, M., Koppeschaar, H., Thijssen, J., de Haan, E., & Verbaten, R. (2000). Conscious and preconscious selective attention to social threat: different neuroendocrine response patterns. *Psychoneuroendocrinology*, 25, 577-591.
- van Hooff, J. C., Dietz, K. C., Sharma, D., & Bowman, H. (2008). Neural correlates of intrusion of emotion words in a modified Stroop task. *International Journal of Psychophysiology*, 67, 23-34.
- van Peer, J. M., Roelofs, K., Rotteveel, M., van Dijk, J. G., Spinhoven, Ph., & Ridderinkhof, K. R. (2007). The effects of cortisol administration on approach-avoidance behavior: An event-related potential study. *Biological Psychology*, 76, 135-146.
- van Peer, J. M., Roelofs, K., & Spinhoven, Ph. (2008). Cortisol administration enhances the coupling of midfrontal delta and beta oscillations. *International journal of Psychophysiology*, 67, 144-150.
- van Peer, J. M., Spinhoven, Ph., van Dijk, J. G., Roelofs, K. (2009). Cortisol-induced enhancement of emotional face processing in social phobia depends on symptom severity and motivational context. *Biological Psychology*, 81, 123-130.
- van Veen, V., & Carter, C. S. (2002). The timing of action-monitoring processes in the anterior cingulate cortex. *Journal of Cognitive Neuroscience*, 14, 593-602.
- van Veen, V., Holroyd, C. B., Cohen, J. D., Stenger, V. A., & Carter, C. S. (2004). Errors without conflict: Implications for performance monitoring theories of anterior cingulate cortex. *Brain and Cognition*, 56, 267-276.
- 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, 1271-1278.
- 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., 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, 411-418.
- Wheeler, R. E., Davidson, R. J., & Tomarken, A. J. (1993). Frontal brain asymmetry and emotional reactivity: A biological substrate of affective style. *Psychophysiology*, 30, 82-89.

- Williams, J. M. G., Mathews, A., & Macleod, C. (1996). The emotional Stroop task and psychopathology. *Psychological Bulletin, 120*, 3-24.
- Williams, L. M., Palmer, D., Liddell, B. J., Song, L., & Gordon, E. (2006). The 'when' and 'where' of perceiving signals of threat versus non-threat. *Neuroimage, 31*, 458-467.
- Wolf, O. T. (2003). HPA axis and memory. *Best Practice and Research Clinical Endocrinology and Metabolism, 17*, 287-299.
- Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition*. Stanford, CA: Stanford University Press.
- Yeung, N., Botvinick, M. M., Cohen, J. D. (2004). The neural basis of error detection: Conflict monitoring and the error-related negativity. *Psychological Review, 111*, 931-959.