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### Moving the mind: embodied emotion concepts and their consequences

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## References

## References

- Bastiaansen, J.A.C.J., Thoux, M., & Keysers, C. (2009). Evidence for mirror systems in emotions. *Philosophical Transactions of the Royal Society B*, 364, 2391-2404.
- Bargh, J.A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 65, 272-281.
- Barrett, L.F. (2006). Solving the emotion paradox: categorization and the experience of emotion. *Personality and Social Psychology Review*, 10, 20-46.
- Barrett, L.F. & Bar, M. (2009). See it with feeling: affective predictions during object perception.
- Barrett, L.F., & Fossum, T. (2001). Mental representations of affect knowledge. *Cognition and Emotion*, 15, 333-363.
- Barrett, L. F., & Lindquist, K. (2008). The embodiment of emotion. Chapter in G. Semin & E. Smith (Eds.). *Embodied grounding: Social, cognitive, affective, and neuroscience approaches* (p. 237-262). New York: Cambridge University Press.
- Barrett, L.F., Lindquist, K.A., & Gendron, M. (2007). Language as a context for the perception of emotion. *Trends in Cognitive Sciences*, 11, 327-332. *Philosophical Transactions of the Royal Society B*, 364, 1325-1334.
- Barrett, L.F., & Bliss-Moreau, E. (2009). Affect as a psychological primitive. In M.P. Zanna (Ed.), *Advances in Experimental Social Psychology*, (Volume 41, pp. 167-218). Burlington: Academic Press.
- Barsalou, L.W. (1999). Perceptual symbol systems. *Behavioral and Brain Sciences*, 22, 577-660.
- Barsalou, L.W. (2008). Grounded cognition. *Annual Review of Psychology*, 59, 617-645.
- Barsalou, L.W., Niedenthal, P.M., Barbey, A.K., & Ruppert, J.A. (2003a). Social Embodiment. In B.H. Ross (Ed.), *The Psychology of Learning and Motivation*, Vol. 43 (pp. 43-92). San Diego, CA: Academic Press.
- Barsalou, L.W., Santos, A., Simmons, W.K., & Wilson, C.D. (2007). Language and simulation in conceptual processing. In De Vega, M., Glenberg, A.M., &

- Graesser, A.C. (Eds.). *Symbols, embodiment and meaning*. Oxford: Oxford University Press.
- Barsalou, L.W., Simmons, W.K., Barbey, A.K., & Wilson, C.D. (2003b). Grounding conceptual knowledge in modality-specific systems. *Trends in Cognitive Sciences*, 7, 84-91.
- Barsalou, L.W. & Wiemer-Hastings, K. (2005). Situating abstract concepts. In Pecher, D. & Zwaan, R.A. (Eds.), *Grounding cognition: The role of perception and action in memory, language and thinking* (pp. 129-163). Cambridge: Cambridge University Press.
- Bodenhausen, G.V., Kramer, G.P., & Süsler, K. (1994). Happiness and stereotypic thinking in social judgment. *Journal of Personality and Social Psychology*, 66, 621-632.
- 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.
- 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.
- Chao, L. L., & Martin, A. (2000). Representation of manipulable man-made objects in the dorsal stream. *NeuroImage*, 12, 478-484.
- 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.
- Conell, L., & Lynott, D. (2009). What is big and fluffy but can't be seen? Selective unimodal processing of bimodal property words. In N. A. Taatgen & H. van Rijn (Eds.), *Proceedings of the 31st Annual Conference of the Cognitive Science Society* (pp. 1465-1470). Austin, TX: Cognitive Science Society.

## References

- Conway, M. A. (1990). Conceptual representation of emotions: the role of autobiographical memories. In Gilhooly, K. J., Keane, M. T. G., Logie, R. H., & Erdos, G. (Eds.), *Lines of thinking: Reflections on the psychology of thought. Volume 2. Skills, emotion, creative processes, individual differences and teaching thinking* (pp. 133-143). Chichester, England: John Wiley & Sons.
- Craig, A.D. (2002). How do you feel? Interoception: the sense of the physiological condition of the body. *Nature Reviews Neuroscience*, 3, 655-666.
- Craig, A.D. (2009). How do you feel, now? The anterior insula and human awareness. *Nature Reviews Neuroscience*, 10, 59-70.
- Crawford, L.E. (2009). Conceptual metaphors of affect. *Emotion Review*, 1, 129-139.
- Dawson, M. E., Schell, A. M., & Filion, D.L. (2000). The electrodermal system. In: J. T. Cacioppo, L.G. Tassinary & G.G. Bernston (Eds). *Handbook of Psychophysiology*, 2nd edition (pp. 200–223). Boston: Cambridge University Press.
- Dimberg, U. (1982). Facial reactions to facial expressions. *Psychophysiology*, 19, 643-647.
- Dimberg, U. (1986). Facial reactions to fear-relevant and fear-irrelevant stimuli. *Biological Psychology*, 23, 153-161.
- Dimberg, U. (1990). Facial electromyography and emotional reactions. *Psychophysiology*, 27, 481-494.
- Dimberg, U., Thunberg, M., & Elmehed, K. (2000). Unconscious facial reactions to emotional facial expressions. *Psychological Science*, 11, 86-89.
- Duclos, S. E., Laird, J. D., Schneider, E., Sexter, M., Stern, L., & Van Lighten, O. (1989). Emotion specific effects of facial expressions and postures on emotional experience. *Journal of Personality and Social Psychology*, 57, 100-108.
- Duncan, S., & Barrett, L. F. (2007). Affect as a form of cognition: A neurobiological analysis. *Cognition and Emotion* 21, 1184-1211.

- Ekman, P. (2007). The directed facial action task. Emotional response without appraisal. In J.A. Coan & J.J.B. Allen (Eds.), *Handbook of Emotion Elicitation and Assessment* (pp. 47-53). New York: Oxford University Press.
- Fehr, B., & Russell, J.A. (1984). Concept of emotion viewed from a prototype perspective. *Journal of Experimental Psychology: General*, 113, 464-486.
- Fodor, J. (1975). *The language of thought*. Cambridge, MA: Harvard University Press.
- Froni, F., & Semin, G.R. (2009). Language that puts you in touch with your bodily feelings. The multimodal responsiveness of affective expressions. *Psychological Science*, 20, 974-980.
- Förster, J., & Liberman, N. (2007). Knowledge activation. In Higgins, E. T. & Kruglanski, A. W. (Eds.), *Social Psychology: Handbook of basic principles* (2nd edition, pp. 201-231). New York: Guilford.
- Fridlund, A.J., Cacioppo, J.T. (1986). Guidelines for human electromyographic research. *Psychophysiology*, 23, 567-589.
- Gallese, V., & Lakoff, G. (2005). The brain's concepts: The role of the sensory-motor system in conceptual knowledge. *Cognitive Neuropsychology*, 22, 455-479.
- Gelder, B. de (2006). Towards the neurobiology of emotional body language. *Nature Reviews Neuroscience*, 7, 242-249.
- Glenberg, A.M. (2010). Embodiment as a unifying perspective for psychology. Wiley Interdisciplinary Reviews: Cognitive Science.
- Glenberg, A. M. & Kaschak, M. P. (2002). Grounding language in action. *Psychonomic Bulletin & Review*, 9, 558-565.
- Glenberg, A.M. & Robertson, D.A. (2000). Symbol grounding and meaning: A comparison of high-dimensional and embodied theories of meaning. *Journal of Memory and Language*, 43, 379-401.
- Glenberg, A.M., Webster, B.J., Mouilso, E., Havas, D., & Lindeman, L.M. (2009). Gender, emotion, and the embodiment of language comprehension. *Emotion Review*, 1, 151-161.

## References

- Glenberg, A. M., Havas, D., Becker, R., & Rinck, M. (2005). Grounding Language in Bodily States: The Case for Emotion. In R. Zwaan and D. Pecher (Eds.), *Grounding cognition: The role of perception and action in memory, language, and thinking* (pp. 115-128). Cambridge: Cambridge University Press.
- Goldberg, R.F., Perfetti, C.A., & Schneider, W. (2006). Perceptual knowledge retrieval activates sensory brain regions. *The Journal of Neuroscience*, *26*, 4917-4921.
- Halberstadt, J., Winkielman, P., Niedenthal, P. M., & Dalle, N. (2009). Emotional conception: How embodied emotion concepts guide perception and facial action. *Psychological Science*, *20*, 1254-1261.
- Halberstadt, J.B., & Niedenthal, P.M. (2001). Effects of emotion concepts on perceptual memory for emotional expressions. *Journal of Personality and Social Psychology*, *81*, 587-598.
- Harnard, S. (1990). The symbol grounding problem. *Physica*, *42*, 335-346.
- Hauk, O., Johnsrude, I., & Pulvermüller, F. (2004). Somatotopic representation of action words in human motor and premotor cortex. *Neuron*, *41*, 301-307.
- Hauk, O., Shtyrov, Y., & Pulvermüller, F. (2008). The time course of action and action word comprehension in the human brain as revealed by neurophysiology. *Journal of Physiology - Paris*, *102*, 50-58.
- Havas, D.A., Glenberg, A.M., & Rinck, M. (2007). Emotion simulation during language comprehension. *Psychonomic Bulletin & Review*, *14*, 436-441.
- Hawk, S.T., Fischer, A.H., & Van Kleef, G.A. (in revision). Face the noise: Embodied responses to nonverbal vocalizations of discrete emotions.
- Hess, U. & Blairy, S. (2001). Facial mimicry and emotional contagion to dynamic emotional facial expressions and their influence on encoding accuracy. *International Journal of Psychophysiology*, *40*, 129-141.

- Hillman, C. H., Rosengren, K. S., & Smith, D. P. (2004). Emotion and motivated behavior: postural adjustments to affective picture viewing. *Biological Psychology, 66*, 51-62.
- Holmes, E.A., & Mathews, A. (2005). Mental imagery and emotion: A special relationship? *Emotion, 5*, 489-497.
- Innes-Ker, Å.H. & Niedenthal, P.M. (2002). Emotion concepts and emotional states in social judgment and categorization. *Journal of Personality and Social Psychology, 83*, 804-816.
- Isen, A.M., Daubman, K.A., & Nowicki, G.P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology, 52*, 1122-1131.
- Izard, C.E., Dougherty, F.E., Bloxom, B.M., & Kotsch, W.E. (1974). *The differential emotions scale: A method of measuring the subjective experience of discrete emotions*. Unpublished Manuscript, Vanderbilt University, Nashville, Tennessee.
- Jabbi, M., Bastiaansen, J. & Keysers, C. (2008). A common anterior insula representation of disgust observation, experience and imagination shows divergent functional connectivity pathways. *PLoS ONE 3*(8): e2939.
- Kan, I.P., Barsalou, L.W., Solomon, K.O., Minor, J.K., & Thompson-Schill, S.L. (2003). Role of mental imagery in a property verification task: fMRI evidence for perceptual representations of conceptual knowledge. *Cognitive Neuropsychology, 20*, 525-540.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
- Lambie, J.A., & Marcel, A.J. (2002). Consciousness and the varieties of emotion experience: A theoretical framework. *Psychological Review, 109*, 219-259.
- Lang, P.J., Bradley, M.M., & Cuthbert, B.N. (1995). *International affective pictures System (IAPS): Technical manual and affective ratings*. Technical Report A-4. Gainesville, FL: The Research Center for Research in Psychophysiology, University of Florida.



## References

- Levenson, R.W. (2003). Blood, sweat and fears: the autonomic architecture of emotion. In P. Ekman, J.J. Campos, R.J. Davidson, & F.B.M. de Waal (Eds.), *Emotions inside out* (pp. 348-366). New York: The New York Academy of Sciences.
- Lieberman, M.D., Eisenberger, N.I., Crockett, M.J., Tom, S.M., Pfeifer, J.H., & Way, B.M. (2007). Putting feelings into words. Affective labeling disrupts amygdala activity in response to affective stimuli. *Psychological Science*, 18, 421-428.
- Lindquist, K.A., & Barrett, L. F. (2008). Constructing Emotion. The experience of fear as a conceptual act. *Psychological Science*, 19, 898-903.
- Lindquist, K., Barrett, L. F., Bliss-Moreau, E., & Russell, J. A. (2006). Language and the perception of emotion. *Emotion*, 6, 125-138.
- Lundqvist, D., Flykt, A., & Öhman, A. (1998). The Karolinska Directed Emotional Faces - KDEF, CD ROM from Department of Clinical Neuroscience, Psychology section, Karolinska Institutet.
- Mahon, B.Z., & Caramazza, A. (2008). A critical look at the embodied cognition hypothesis and a new proposal for grounding conceptual content. *Journal of Physiology - Paris*, 102, 59-70.
- Mar, R.A., & Oatley, K. (2008). The function of fiction is the abstraction and simulation of social experience. *Perspectives on Psychological Science*, 3, 173-192.
- Mar, R.A., Oatley, K., Hirsh, J. Dela Paz, J., & Peterson, J.B. (2006). Bookworms versus nerds: Exposure to fiction versus non-fiction, divergent associations with social ability, and the simulation of fictional social worlds. *Journal of Research in Personality*, 40, 694-712.
- Maringer, M., Stapel, D. (2007). Unfinished business: How completeness affects the impact of emotional states and emotion concepts on social judgment. *Journal of Experimental Social Psychology*, 43, 712-718.

- Marques, J. F. (2006). Specialization and semantic organization: Evidence for multiple semantics linked to sensory modalities. *Memory and Cognition*, *34*, 60-67.
- Martin, A. & Chao, L. L. (2001). Semantic memory and the brain: structure and processes. *Current opinion in Neurobiology*, *11*, 194-201.
- Mauss, I.B, Levenson, R.W., McCarter, L., Wilhelm, F.H., & Gross, J.J. (2005). The tie that binds? Coherence among emotional experience, behavior and physiology. *Emotion*, *5*, 175-190.
- Meier, B.P., Robinson, M.D., & Clore, G.L. (2004). Why good guys wear white: Automatic inferences about stimulus valence based on brightness. *Psychological Science*, *15*, 82-87.
- Meier, B.P., & Robinson, M.D. (2004). Why the sunny side is up: Associations between affect and vertical position. *Psychological Science*, *15*, 243-247.
- Mouilso, E., Glenberg, A. M., Havas, D. A., & Lindeman, L. M. (2007). Differences in action tendencies distinguish anger and sadness after comprehension of emotional sentences. In D. S. McNamara & J. G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society* (pp. 1325-1330). Austin, TX: Cognitive Science Society.
- Neumann, R., Förster, J., & Strack, F. (2003). Motor compatibility: the bidirectional link between behavior and evaluation. In Klauer, K. C., & Musch, J. (Eds.), *The psychology of evaluation: affective processes in cognition and emotion* (pp. 371-391). Mahwah, NJ: Erlbaum.
- 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.
- Niedenthal, P.M. (2007). Embodying emotion. *Science*, *316*, 1002-1005.

## References

- Niedenthal, P.M. (2008). Emotion concepts. In M. Lewis, J.M. Haviland-Jones, & L.F. Barrett (Eds.), *Handbook of Emotion* (3<sup>rd</sup> edition, pp. 587-600). New York: Guilford Press.
- Niedenthal, P. M., Barsalou, L. W., Ric, F., & Krauth-Gruber, S. (2005a). Embodiment in the acquisition and use of emotion knowledge. In Barrett, L. F., Niedenthal, P. M., & Winkielman, P. (Eds.), *Emotion and consciousness* (pp. 21-50). New York: Guilford Press.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005b). Embodiment in attitudes, social perception and emotion. *Personality and Social Psychology Review*, 9, 184-211.
- Niedenthal, P.M., Rohmann, A., & Dalle, N. (2003). What is primed by emotion concepts and emotion words? In J. Musch & K.C. Klauer (Eds.), *The psychology of evaluation: Affective processes on cognition and emotion* (pp. 307-333). Mahwah, NJ: Lawrence Erlbaum.
- Niedenthal, P. M., Winkielman, P., Mondillon, L., & Vermeulen, N. (2009). Embodiment of emotional concepts: Evidence from EMG measures. *Journal of Personality and Social Psychology*, 96, 1120-1136.
- Olsson, A., & Phelps, E.A. (2004). Learned fear of 'unseen' faces after Pavlovian, observational and instructed fear. *Psychological Science*, 15, 822-828.
- Oosterwijk, S., Rotteveel, M., & Fischer, A.H. (submitted). Remembering the self versus knowing the world: Emotional consequences of episodic and semantic fear representations.
- Oosterwijk, S., Rotteveel, M., Fischer, A.H., & Hess, U. (2009). Embodied emotion concepts: How generating words about pride and disappointment influences posture. *European Journal of Social Psychology*, 39, 457-466.
- Oosterwijk, S., Topper, M., Rotteveel, M., & Fischer, A.H. (2010). When the mind forms fear: Embodied fear knowledge potentiates bodily reactions to fearful stimuli. *Social Psychological and Personality Science*, 1, 65-72.

- Oosterwijk, S., Winkielman, P., Pecher, D., Zeelenberg, R., Rotteveel, M., & Fischer, A.H. (submitted). Mental States Inside Out: Switching Costs for Emotional and Non-emotional Sentences that Differ in Internal and External Focus.
- Pecher, D., van Dantzig, S., & Schifferstein (2009). Concepts are not represented by conscious imagery. *Psychonomic Bulletin & Review*, 16, 914-119.
- Pecher, D., Zeelenberg, R., & Barsalou, L. W. (2003). Verifying different-modality properties for concepts produces switching costs. *Psychological Science*, 14, 119-124.
- Pessl, M. (2006). *Special Topics in Calamity Physics*. New York: Viking Penguin.
- Phaf, R.H., & Rotteveel, M. (2005). Affective modulation of recognition bias. *Emotion*, 5, 309-318.
- Phelps, E.A., Connor, K.J., Gatenby, J.C., Gore, J.C., Grillon, C., Davis, M. (2001). Activation of the left amygdala to a cognitive representation of fear. *Nature Neuroscience*, 4, 437-441.
- Phillipot, P., & Schaefer, A. (2001). Emotion and memory. In T. J. Mayne & G. A. Bonanno (Eds.), *Emotion: Current issues and future directions* (pp. 82–122). New York: Guilford Press.
- Phillipot, P., Schaefer, A., & Herbet, G. (2003). Consequences of specific processing of emotional information: Impact of general versus specific autobiographical memory priming on emotion. *Emotion*, 3, 270-283.
- Pobric, G., Jefferies, E., & Lambon Ralph, M.A. (2010). Category-specific versus category-general semantic impairment induced by transcranial magnetic stimulation. *Current Biology*, 20, 964-968.
- Pylyshyn, Z.W. (1984). *Computation and cognition*. MIT Press.
- Risak, J. H. (1984). They stoop to conquer: guiding and self-regulatory functions of physical posture after success and failure. *Journal of Personality and Social Psychology*, 47, 479-493.

## References

- Roberts, T., & Arefi-Afshar, Y. (2007). Not all who stand tall are proud: Gender differences in the proprioceptive effects of upright posture. *Cognition and Emotion, 21*, 714-727.
- Robinson, M.D., & Clore, G.L. (2002). Episodic and semantic knowledge in emotional self-report: Evidence for two judgment processes. *Journal of Personality and Social Psychology, 83*, 198-215.
- Rotteveel, M., den Daas, C., Wagenmakers, E.J., Zeelenberg, R. (In preparation). Bias in the eye of the beholder: Emotion congruent bias for emotion words.
- Rotteveel, M., & Phaf, R.H. (2004). Automatic affective evaluation does not automatically predispose for arm flexion and extension. *Emotion, 4*, 156-172.
- Rowling, J.K. (2007). *Harry Potter and the Deathly Hallows*. London: Bloomsbury Publishing.
- Schwarz, N., & Clore, G. L. (2007). Feelings and phenomenal experiences. In E. T. Higgins & A. Kruglanski (eds.), *Social psychology. Handbook of basic principles* (2nd ed.; pp. 385-407). New York: Guilford.
- Searle, J. (1980). Minds, brains and programs. *Behavioral and Brain Sciences, 3*, 417-424.
- Spence, C., Nicholls, M.E.R., & Driver, J. (2000). The cost of expecting events in the wrong sensory modality. *Perception & Psychophysics, 63*, 330-336.
- Stapel, D.A. & Koomen, W. (2000). How far do we go beyond the information given? The impact of knowledge activation on interpretation and inference. *Journal of Personality and Social Psychology, 78*, 19-37.
- Stepper, S., & Strack, F. (1993). Proprioceptive determinants of emotional and nonemotional feelings. *Journal of Personality and Social Psychology, 64*, 211-220.
- Strack, F., Martin, L.L., & Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality and Social Psychology, 54*, 768-777.

- Tabibnia, G., Lieberman, M.D., & Craske, M.G. (2008). The lasting effects of words on feelings: Words may facilitate exposure effects to threatening images. *Emotion, 8*, 307-317.
- Teasdale, J.D. (1999). Multi-level theories of cognition-emotion relations. In T. Dalgleish and M. Power (Eds.) *Handbook of cognition and emotion*, (pp. 665-681). Chichester, England: Wiley.
- Tracy, J. L., & Robins, R. W. (2004). Show your pride: Evidence for a discrete emotional expression. *Psychological Science, 15*, 194-197.
- Tulving, E. (1993). What is episodic memory? *Current directions in Psychological Science, 2*, 67-70.
- Van Dantzig, S., Pecher, D., Zeelenberg, R., & Barsalou, L. W. (2008). Perceptual processing affects conceptual processing. *Cognitive Science, 32*, 579-590.
- Velten, E. (1968). A laboratory task for the induction of mood states. *Behavior Research and Therapy, 6*, 473-482.
- Vermeulen, N., Mermillod, M., Godefroid, J., & Corneille, O. (2009). Unintended embodiments of concepts into percepts: Sensory activation boosts attention for same-modality concepts in attentional blink paradigm. *Cognition, 112*, 467-472.
- Vermeulen, N., Niedenthal, P.M., & Luminet, O. (2007). Switching between sensory and affective systems incurs processing costs. *Cognitive Science, 31*, 183-192.
- Von Helversen, B., Gendolla, G. H. E, Winkielman, P., & Schmidt, R.E. (2008). Exploring the hardship of ease: Subjective and objective effort in the ease-of-processing paradigm. *Motivation and Emotion, 32*:1-10.
- Vrana, S. R. (1994). Startle reflex response during sensory modality specific disgust, anger, and neutral imagery. *Journal of Psychophysiology, 8*, 211-218.
- Vrana, S.R. (1995). Emotional modulation of skin conductance and eyeblink responses to a startle probe. *Psychophysiology, 32*, 351-357.

## References

- Vrana, S.R., & Rollock, D. (2002). The role of ethnicity, gender, emotional content, and contextual differences in physiological, expressive, and self-reported emotional responses to imagery. *Cognition and Emotion, 16*, 165-192.
- Wheeler, M.A., Stuss, D.T., & Tulving, E. (1997). Toward a theory of episodic memory: the frontal lobes and autonoetic consciousness. *Psychological Bulletin, 121*, 331-354.
- Wicker, B., Keysers, C., Plailly, J., Royet, J.P., Gallese, V., & Rizzolatti, G. (2003). Both of us disgusted in My insula: the common neural basis of seeing and feeling disgust. *Neuron, 40*, 655–664.
- Wiezberca, A. (1992). Defining emotion concepts. *Cognitive Science, 16*, 539-581.
- Wilde, O. (1891). *The Picture of Dorian Gray*. New York: Barnes & Noble Classics.
- Wilkowski, B.M., Meier, B.P., Robinson, M.D., Carter, M.S., & Feltman, R. (2009). “Hot-headed” is more than an expression: the embodied representation of anger in terms of heat. *Emotion, 9*, 464-477.
- Wilson, M. (2002). Six views of embodied cognition. *Psychonomic Bulletin & Review, 9*, 625-636.
- Winkielman, P., & Berridge, K.C. (2004). Unconscious emotion. *Current Directions in Psychological Science, 13*, 120-123.
- Winkielman, P., & Cacioppo, J. T. (2001). Mind at ease puts a smile on the face: Psychophysiological evidence that processing facilitation increases positive affect. *Journal of Personality and Social Psychology, 81*, 989-1000.
- Winkielman, P., Niedenthal, P., & Oberman, L. (2008). The embodied emotional mind. In Semin, G. R., & Smith, E. R. (Eds.) *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches*. (pp. 263-288). New York: Cambridge University Press.
- Zeelenberg, R., Wagenmakers, E.J., & Rotteveel, M. (2006). The impact of emotion on perception. Biased or enhanced processing? *Psychological Science, 17*, 287-291.

- Zillmann, D., Katcher, A.H., Milavsky, B. (1972). Excitation transfer from physical exercise to subsequent aggressive behavior. *Journal of Experimental Social Psychology*, 8, 247-259.
- Zwaan, R.A. (2009). Mental simulation in language comprehension and social cognition. *European Journal of Social Psychology*, 39, 1142-1150.
- Zwaan, R.A. & Madden, C.J. (2005). Embodied sentence comprehension. In Pecher, D. & Zwaan, R.A. (Eds.) *Grounding cognition: The role of perception and action in memory, language, and thinking*. (pp 224-245). Cambridge University Press, Cambridge, UK.
- Zwaan, R.A., & Taylor, L.J. (2006). Seeing, acting, understanding: Motor resonance in language comprehension. *Journal of Experimental Psychology: General*, 135, 1-11.