



Instrumentalizing Cognitive Dissonance Emotions

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ABSTRACT

Many psychologists think that there are few basic emotions, and most emotions are combinations of these few. Here we advance a hypothesis that the number of principally different emotions is near infinite. We consider emotions as mental states with hedonic content, indicating satisfaction and dissatisfaction. Basic emotions correspond to bodily signals, and there are relatively few of them. Our hypothesis is that a large number of emotions are related to the knowledge instinct (KI, or a need for knowledge). KI drives the mind to fit mental representations to cognitive experiences and to resolve mental contradictions. Discomfort due to holding contradictory knowledge elements are known as cognitive dissonances. We emphasize that cognitive dissonances involve specific emotions. The number of cognitive dissonances is combinatorial in terms of elements of knowledge. Correspondingly, the number of these knowledge-related emotions is very large. We report experimental results on measuring these emotions and indicating that emotions of cognitive dissonance exist. We also make a step toward proving that these emotions are different from basic emotions in principle, and outline future research directions toward proving that their number is large.

KEYWORDS

Cognitive Dissonance Emotions; Basic Emotions; Instrumentalizing; Basic Emotions

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References

- [1] Balaskó, M., & Cabanac, M. (1998). Grammatical choice and affective experience in a second-language test. *Neuropsychobiology*, 37, 205-210. doi: 10.1159/000026504
- [2] Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition*, 50, 7-15. doi: 10.1016/0010-0277(94)90018-3
- [3] Bonniot-Cabanac, M.-C., & Cabanac, M. (2009). Pleasure in decision making situations: Politics and gambling. *Journal of Risk Research*, 12, 619-645. doi: 10.1080/13669870802579798
- [4] Bonniot-Cabanac, M.-C., & Cabanac, M. (2010). Do government officials decide more rationally than the rest of us? A study using participants from the legislature, the executive, and the judiciary. *Social Behavior & Personality*, 38, 1147-1152. doi: 10.2224/sbp.2010.38.8.1147
- [5] Bonniot-Cabanac, M.-C., Cabanac, M., Fontanari, J. F., & Perlovsky, L.I. (2012). A structural model of emotions of cognitive dissonances. *Neural Networks*, 32, 57-64.
- [6] Cabanac, M. (2002). What is emotion? *Behavioural Processes*, 60, 69-83.
- [7] Cabanac, M., & Bonniot-Cabanac, M. C. (2007). Decision making: Rational or hedonic? *Behavioral and Brain Functions*, 3, 1-45. doi: 10.1186/1744-9081-3-45
- [8] Cabanac, M., Cabanac, A. J., & André Parent, A. (2009). When in phylogeny did consciousness emerge? *Behavioral and Brain Research*, 198, 267-272. doi: 10.1016/j.bbr.2008.11.028

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- [9] Cabanac, M., & Bonniot-Cabanac, M.-C. (2011). Hedonicity and memory of odors. *International Journal of Psychological Studies*, 3, 178-185.
- [10] Cabanac, M., Guillaume, J., Balaskó, M., & Fleury, A. (2002). Pleasure in decision making situations. *Biomed Central*, 2, 7.
- [11] Cabanac, M., Pouliot, C., & J. Everett. (1997). Pleasure as a sign of efficacy of mental activity. *European Psychologist*, 2, 226-234. doi:10.1027/1016-9040.2.3.226
- [12] 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. doi:10.1126/science.8178168
- [13] Ekman, P. (1957). A methodological discussion of nonverbal behavior. *Journal of Psychology*, 43, 141-149. doi:10.1080/00223980.1957.9713059
- [14] Ekman, P. (1999). Basic emotions. In T. Dalgleish and M. Power (Eds.), *Handbook of Cognition and Emotion*. Sussex: John Wiley & Sons.
- [15] Festinger, L. (1957). A theory of cognitive dissonance. Stanford, CA: Stanford University Press.
- [16] Gratch, J., Marsella, S., & Petta, P. (2009). Modeling the cognitive antecedents and consequences of emotion. *Cognitive Systems Research*, 10, 1-5. doi:10.1016/j.cogsys.2008.06.001
- [17] Grossberg, S., & Levine, D. (1987). Neural dynamics of attentionally modulated Pavlovian conditioning: Blocking, interstimulus interval, and secondary reinforcement. *Applied Optics*, 26, 5015-5030. doi:10.1364/AO.26.005015
- [18] Kant, I. (1790). *The critique of judgment*. Amherst, MA: Prometheus Books.
- [19] Izard, C. E. (1992). Basic emotions, relations among emotions, and emotion-cognition relations. *Psychological Review*, 99, 561-565. doi:10.1037/0033-295X.99.3.561
- [20] Johnson-Laird, P. N., & Oatley, K. (1992). Basic emotions: a cognitive science approach to function, folk theory and empirical study. *Cognition and Emotion*, 6, 201-223. doi:10.1080/02699939208411069
- [21] Juslin, P. N., & Västfjäll, D. (2008) Emotional responses to music: The need to consider underlying mechanisms. *Behavioral and Brain Sciences*, 31, 559-575.
- [22] Kovalerchuk, B., Perlovsky, L., & Wheeler, G. (2012). Modeling of phenomena and dynamic logic of phenomena. *Journal of Applied Non-classical Logics*, 22, 51-82. doi:10.1080/11663081.2012.682439
- [23] Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- [24] Levine, D. S., & Perlovsky, L. I. (2008). Neuroscientific insights on biblical myths: Simplifying Heuristics versus Careful Thinking: Scientific analysis of millennial spiritual issues. *Zygon, Journal of Science and Religion*, 43, 797-821.
- [25] Levine, D. S., & Perlovsky, L. I. (2010). Emotion in the pursuit of understanding. *International Journal of Synthetic Emotions*, 1, 1-11. doi:10.4018/jse.2010070101
- [26] Masataka, N., & Perlovsky, L. I. (2012a). Music can reduce cognitive dissonance. *Nature Precedings*.
- [27] Masataka, N., & Perlovsky, L. I. (2012b). The efficacy of musical emotions provoked by Mozart's music for the reconciliation of cognitive dissonance. *Scientific Reports* (in press). doi:10.1038/srep00694
- [28] Ortony, A., Clore, G. L., & Foss, M. A. (1987). The referential structure of the affective lexicon. *Cognitive Science*, 11, 341-364. doi:10.1207/s15516709cog1103_4
- [29] Ortony, A., & Turner, T. J. (1990). What's basic about basic emotions? *Psychological Review*, 97, 315-331. doi:10.1037/0033-295X.97.3.315
- [30] Perlovsky, L. I. (1997). Physical concepts of intellect. *Proceedings of Russian Academy of Sciences*, 354, 320-323.
- [31] Perlovsky, L. I. (2000). Beauty and mathematical intellect. *Zvezda*, 9, 190-201. Perlovsky, L. I. (2001). Mystery of sublime and mathematics of intelligence. *Zvezda*, 8, 174-190.
- [32] Perlovsky, L. I. (2002a). Physical theory of information processing in the mind: Concepts and

emotions. *SEED on Line Journal*, 2, 36-54Perlovsky, L. I. (2002b). Aesthetics and mathematical theories of intellect. *Iskusstvoznanie*, 2, 558-594.Perlovsky, L. I. (2004). Integrating language and cognition. *IEEE Connections*, Feature Article, 2(2), 8-12.

- [33] Perlovsky, L. I. (2006a). Toward physics of the mind: Concepts, emotions, consciousness, and symbols. *Physics of Life Reviews*, 3, 22-55. doi:10.1016/j.plrev.2005.11.003
- [34] Perlovsky, L. I. (2006b). Fuzzy dynamic logic. *New Mathematics and Natural Computation*, 2, 43-55. doi:10.1142/S1793005706000300
- [35] Perlovsky, L. I. (2006c). Music—The first principle. URL (last checked 3 December 2011). http://www.ceo.spb.ru/libretto/kon_lan/ogl.shtml
- [36] Perlovsky, L. I. (2007a). Cognitive high level information fusion. *Information Sciences*, 177, 2099-2118. doi:10.1016/j.ins.2006.12.026
- [37] Perlovsky, L. I. (2007b). Evolution of Languages, Consciousness, and Cultures. *IEEE Computational Intelligence Magazine*, 2, 25-39. doi:10.1109/MCI.2007.385364
- [38] Perlovsky, L. I. (2007c). The Mind vs. logic: Aristotle and zadeh. *Society for Mathematics of Uncertainty, Critical Review*, 1, 30-33.
- [39] Perlovsky, L. I. (2008). Music and consciousness. *Journal of Arts, Sciences and Technology*, 41, 420-421.
- [40] Perlovsky, L. I. (2009a). Language and cognition. *Neural Networks*, 22, 247-257. doi:10.1016/j.neunet.2009.03.007
- [41] Perlovsky, L. I. (2009b). Language and emotions: Emotional Sapir Whorf hypothesis. *Neural Networks*, 22, 518-526. doi:10.1016/j.neunet.2009.06.034
- [42] Perlovsky, L. I. (2009c). "Vague-to-crisp" neural mechanism of perception. *IEEE Transactions on Neural Networks*, 20, 1363-1367. doi:10.1109/TNN.2009.2025501
- [43] Perlovsky, L. I. (2010a). Musical emotions: Functions, origin, evolution. *Physics of Life Reviews*, 7, 2-27. doi:10.1016/j.plrev.2009.11.001
- [44] Perlovsky, L. I. (2010b). Neural mechanisms of the mind, aristotle, zadeh, & fMRI. *IEEE Transactions of Neural Networks*, 21, 718-733. doi:10.1109/TNN.2010.2041250
- [45] Perlovsky, L. I. (2010c). Intersections of mathematical, cognitive, and aesthetic theories of mind. *Psychology of Aesthetics, Creativity, and the Arts*, 4, 11-17. doi:10.1037/a0018147
- [46] Perlovsky, L. I. (2010d). The Mind is not a kludge. *Skeptic*, 15, 51-55
- [47] Perlovsky, L. I. (2010e). Joint acquisition of language and cognition; WebmedCentralBRAIN, 1, WMC00994. http://www.webmedcentral.com/article_view/994
- [48] Perlovsky L. I. (2010f). Physics of the mind: Concepts, emotions, language, cognition, consciousness, beauty, music, and symbolic culture. *WebmedCentral Psychology* 2010, 1, WMC001374.
- [49] Perlovsky, L. I. (2010g). Beauty and art, Cognitive function, evolution, and mathematical models of the mind. *WebmedCentral Psychology* 2010, 1, WMC001322.
- [50] Perlovsky, L. I. (2011a). Music, cognitive function, origin, and evolution of musical emotions. *WebmedCentral Psychology* 2011, 2, WMC001494.
- [51] Perlovsky, L. I. (2011b). Consciousness and free will: A scientific possibility due to advances in cognitive science. *WebmedCentral Psychology* 2011, 2, WMC001539
- [52] Perlovsky, L.I. (2011c). Language, emotions, and cultures: Emotional Sapir-Whorf hypothesis. *WebmedCentral Psychology* 2011, 2, WMC001580.
- [53] Perlovsky, L. I. (2011d). Computational intelligence applications for defense. *IEEE Computational Intelligence Magazine*, 6, 20-28. doi:10.1109/MCI.2010.939581
- [54] Perlovsky L. I. (2011e). Language and cognition interaction neural mechanisms. *Computational Intelligence and Neuroscience*, 3, 454587. doi:10.1155/2011/454587
- [55] Perlovsky, L. I. (2011f). High cognitive emotions in language prosody. *Physics of Life Reviews*, 8, 408-409. doi:10.1016/j.plrev.2011.10.007

- [56] Perlovsky, L. I. (2011g). Abstract concepts in language and cognition, Physics of Life Reviews, 8, 375-376. doi:10.1016/j.plrev.2011.10.006
- [57] Perlovsky, L. I. (2012a). Free will and advances in cognitive science. Open Journal of Philosophy (OJPP), 2, 32-37. doi:10.4236/ojpp.2012.21005
- [58] Perlovsky, L. I. (2012b). The cognitive function of emotions of spiritually sublime. Review of Psychology Frontier, 1, 1-10.
- [59] Perlovsky L. I. (2012c). Emotions of "higher" cognition. Comment to Lindquist at the brain basis of emotion: A meta-analytic review. Brain and Behavior Sciences, 35, 157-158. doi:10.1017/S0140525X11001555
- [60] Perlovsky, L. I. (2012d). Cognitive function, origin, and evolution of musical emotions. Musicae Scientiae, 16, 185-199. doi:10.1177/1029864912448327
- [61] Perlovsky, L. I. (2012e). Cognitive function of music: Part I. Interdisciplinary Science Reviews, 37, 129-142. doi:10.1179/0308018812Z.00000000010
- [62] Perlovsky, L. I. (2012f). Nonlinear dynamics and higher cognitive mental functions. Physics of Life Reviews, 9, 74-75. doi:10.1016/j.plrev.2011.12.004
- [63] Perlovsky, L. I. (2012g). Cognitive function of musical emotions. Psychomusicology (in press).
- [64] Perlovsky, L. I. (2012h). Mirror neurons, language, and embodied cognition. Neural Networks (in press).
- [65] Perlovsky, L. I. (2012i). Brain: Conscious and unconscious mechanisms of cognition, emotions, and language. Brain Sciences (in press).
- [66] Perlovsky, L. I. (2012j). The cognitive function of emotions of spiritually sublime. Review of Psychology Frontier, 1, 1-10. www.j-psych.org.
- [67] Perlovsky, L. I. (2012k). Emotionality of languages affects evolution of cultures. Review of Psychology Frontier (in press).
- [68] Perlovsky, L. I., Bonniot-Cabanac, M., & Cabanac, M. (2010). Curiosity and pleasure. WebmedCentral Psychology 2010, 1, WMC001275
- [69] Perlovsky, L. I., Cabanac, A., Bonniot-Cabanac, M.-C., & Cabanac, M. (2012). Mozart effect, cognitive dissonance, and origin of music. Behavioral Brain Research (in press).
- [70] Perlovsky, L. I. & Iljin, R. (2010). Neurally and mathematically motivated architecture for language and thought. The Open Neuroimaging Journal, 4, 70-80. doi:10.2174/1874440001004020070
- [71] Perlovsky, L. I., & Iljin, R. (2012a). Mathematical model of grounded symbols: Perceptual symbol system. Journal of Behavioral and Brain Science, 2, 195-220. doi:10.4236/jbbs.2012.22024
- [72] Perlovsky, L. I., & Iljin, R. (2012b). CWW, language, and thinking. New Mathematics and Natural Computations (in press).