

An article review: Body-based strategies for emotion regulation

Shafir, T. (2015). Body-based strategies for emotion regulation. In M.L. Bryant (Ed.), *Handbook on Emotion Regulation: Processes, Cognitive Effects and Social Consequences* (pp 231-249). Nova Science Publishers, Inc.

Reviewed by: Tal Shafir

The 'playing self' in sociology This book chapter reviews various techniques for emotion regulation through movement, and explains their underlying neurophysiological mechanisms.

The term “emotion regulation” has been defined by James Gross, one of the leading researchers in this field, as the “processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions”. (Gross 1998, 2002). In dance/movement therapy patients express their emotions and process their psychological difficulties through movement. While the movements are usually improvised, expressing the emotion that the patient feels, therapists often invite patients to try certain type of movements or to enhance and emphasize a specific movement characteristic, in order to elicit and process through the movement a certain feeling which that type of movement is associated with. For example: deep breathing is used for stress reduction and to help one to connect with his internal feelings; large open and erect posture and movements help to feel more self-confidence and pride; making fists and moving them in strong direct bursting movements, can help bringing up and expressing anger, etc. How does that work? How do certain movements elicit specific emotions? The

chapter explains the physiological mechanisms behind this effect.

In short, according to Damasio's somatic marker hypothesis, emotions are generated by conveying the current state of the body to the brain through interoception (afferent input to the brain that represents physiological: mechanical, thermal, chemical, metabolic, and hormonal status of all tissues of the body) and proprioception (afferent input representing muscle length and joint angle). The resulting brain activation patterns represent unconscious emotions and correlate with subjective conscious feelings. This proposition implies a corollary, that through deliberate control of motor behavior and its consequent proprioception and interoception, one could regulate his feelings. Thus, one of the strategies to achieve emotion regulation could be through voluntary changes to one's posture and movements.

The chapter differentiates between two types of motor-behavior modifications that contribute to emotion regulation based on different underlying mechanisms. *Quantitative* changes in motor behavior, i.e., increased movement intensity and quantity for a period of time, such as during aerobic exercise, produce metabolic processes, which generate a myriad of physiological consequences (e.g., alterations in the

levels of hormones, neurotransmitters, trophic factors, endocannabinoids and immune system function) that contribute to the reduction of stress, anxiety and depression. In addition, there is evidence to suggest that *qualitative* modifications of motor behavior such as engaging in specific facial expressions, postures and whole body movements which are associated with specific emotions, probably use a different mechanism to enhance the corresponding affect: a mechanism that is based on afferent (proprioceptive) input to the brain regarding the current state of the body's muscle activation pattern and joint configuration. The chapter reviews the scientific evidence to support this hypothesis.

In addition, the chapter explains the physiological mechanism and summarizes the scientific evidence for two other muscle-activation-based strategies for emotion regulation that can be used in dance movement therapy: progressive muscle relaxation which reduces stress, and utilization of specific breathing patterns, which are capable of reducing stress and inducing differentiated emotional states.

References

- Gross J. J. Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*. 2002; 39(3):281-91.
- Gross J. J. The emerging field of emotion regulation: An integrative review. *Review of General Psychology*. 1998; 2(3):271-99.

Tal Shafir, tshafir1@univ.haifa.ac.il