



# Movement and Emotions



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**Submission:** 📅 April 12, 2018; **Published:** 📅 May 21, 2018

## Introduction

There is no uniform conception in the literature about what an emotion is and consists of [1,2]. Consensually, essential aspects have been considered to understand emotion: the presence in emotions of physiological changes, the mobilisation of bodily actions or “tendencies of action” and the subjective experience that involves; and emotion has been approached as a result of a system of analysis and processing of information. But taking each of the elements indicated separately has not favoured knowledge of emotion being presented in an integrated manner [3]. Moreover, the investigators have been supported in their work by different a theoretical orientation, which makes it even more difficult to integrate all the knowledge. One perspective that tackles this question is the theories of Embodiment, which have their origin in the French philosopher Merleau-Ponty (1908-1961), according to which psychological processes are based on bodily states. From the perspective of Embodiment, perceiving, recognizing and interpreting an emotion in ourselves or in others requires information from bodily systems. In this way “experiencing emotional states affects somatovisceral and motoric systems” and vice versa. In other words, “bodily states have effects on how emotional information is processed” [4].

The research not only supports the intimate relationship between emotion and cognition [5], but is also argues that current neuroscience vindicates the importance of information from the body in processing emotional information [6]. Currently, the perspective of Embodiment is an appropriate framework from which to understand and consider body and somatic elements which form part of emotions. This interest is reflected in important scientific papers [7-9]. There is extensive literature linking the posture and body movement to states of emotion and affection. Riskind & Gotay [10] found that posture affected the self reports of the mood of the participants as well as the task that they were performing. For example, the subjects who had been temporarily placed in a slumped, depressed physical posture (subject’s torso was bent forward at the waist, and his chest and neck dropped downward) later appeared to develop helplessness more readily, as assessed by their lack of persistence in a standard learned helplessness task, than did subjects who had been placed in an expansive, upright posture (straight back, open shoulders, chest

in a full and expansive position, head raised slightly at the chin, looking forward and slightly upward).

Duclos et al. [11] determined the influence of posture in the emotional self-reports. Subjects were induced to adopt postures characteristic of fear (seated on the edge of the chair, feet together under the chair, torso turned and leaning backwards, shoulders inwards, hands raised to the level of the mouth, arms bent at the elbow), anger (seated in a chair, the feet in contact with the floor directly under the knees, forearms and elbows on the arms of the chair, fists clenched, upper part of the body leaning slightly forwards) and sadness (lying back on the chair, the back supported on the chair back, feet under the chair, hands together in the lap). The results indicated that subjects induced to adopt emotionally expressive behaviours (postures) reported feeling the emotions they were expressing. These findings were replicated and corroborated by Flack et al. [12]. These authors observed not only that the postures relative to an emotion increased the emotional response, but that in combination with the facial expression appropriate to that emotion it produced more intense emotional responses than the posture and the facial expression separately.

More recently, Shafir et al. [13] suggest that different postures induce different emotional states: an upright position, pride; a slouching position, sadness; and an expansive position, power. Likewise, they suggest that deliberate control of motor behaviour could regulate the feelings. Thus, the motor execution of movements of happiness, jumping for example, significantly increases positive affect; the execution of movements of fear, protecting oneself for example, significantly increase negative affect; the execution of sad movements, bowing the head for example, increases sad feelings; the execution of emotionally neutral movement’s increases neutral feelings. Therefore, engaging in movements associated with a certain emotion would enhance that emotion and/or the corresponding valence. The influence of the way of walking on mood was also studied. Michalak et al. [4] studied the effects of the sad and depressive mood on gait and the results of their investigation show that individuals with dysphoric mood are characterised by a specific pattern of walking, that is to say, “reduced walking speed, arm swing, vertical movement of the head, stronger lateral body

sway, and a slumped posture” (p.585). Previous studies already suggested that depressed patients evidence reduced gait velocity, stride length, increased standing phase and gait cycle duration [14].

In relation to body movement the effect on the emotions of head movements and the movements of extending/flexing the arms was also analysed. Cacioppo et al. [15] found that the isometric flexed arm (associated with approximation, for example, putting food in the mouth) and arm extension (associated with rejection) affect the cognitive processing of the stimuli presented, making the subjects evaluate neutral stimuli more positively during the flexing of the arm than during the extension of the arm. Chen & Bargh [16] observed that for the participants in their study it was simpler to flex the arms after dealing with positive stimuli and to extend them after observing negative images than the reverse. And Wiers et al. [17] showed that the movements of flexing and extending the arm serve to modify cognitive bias in alcoholic patients, so that patients' approach bias changed into an avoidance bias for alcohol. Finally, in relation to the effect of head movements on the emotional state, a study by Rahona et al. [18] suggests that head movements influence emotional regulation in people with dysphoria. According to this study, the act of assenting counteracts the effect of the dysphoria in mood regulation, improving the regulatory ability of participants with high levels of dysphoria. The results of this study suggest that the head movements might play a moderating role in the relation between the levels of dysphoria and the mood regulation ability of the individuals.

## Conclusion

There seems to be a considerable amount of evidence of the relation between body movement and emotional state. A certain emotional state leads to a type of movement (for example, sadness to reduced gait velocity). And, vice versa, a certain movement can facilitate an emotional state (for example, jumping and happiness). Avoiding certain movements would also influence the emotional state whereas, on the other hand, trying to avoid emotional states would have consequences on body movement. In fact, one of the effects of emotional suppression is a decrease of the body movement indicators, which are registered through the physiological measure of somatic activity [19]. Emotional suppression is a type of emotional regulation that is defined as “conscious inhibition of one’s own emotional expressive behaviour while emotionally aroused” [19]. And emotional regulation “consists of the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one’s goals” [20].

Thus body movement, in any of its possible modalities (sport, physical exercise, dancing, etc.), could be a valid tool for emotional regulation. Body movement not only facilitates emotional expression but also makes it possible to redirect the emotions. The intention is not to use movement as a way of avoiding some painful emotions, since sometimes feeling these emotions is psychologically healthy because it permits greater congruence with

the true self (for example, experiencing sadness upon the death of a loved one instead of avoiding it) [21-23]. Body movements are a way of modifying the emotional state. However, before modifying it, it must be understood, since the emotions provide people with information about what is happening to them and about how to experience what is happening.

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