
Peeling the dynamical layers of self: Impact of aversive electrodermal stimulations on the phenomenological, physiological and motor components of social interactions

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Résumé

The self is a multidimensional construct interacting with the external (and social) world. Emotional experiences color the way we interact with the world and pain is one of the most archaic emotions that trigger stereotypical physiological and behavioral responses. Accumulative evidence shows that behavioural synchrony influences pain threshold by increasing social connectedness, yet those studies have neglected to consider the emotional component of pain and its consequences on physiological and behavioural rhythms. This study investigated the impact of aversive electrodermal stimulations on the phenomenological, physiological and motor components of social interactions.

10 mixed-gender quartets (N = 40) performed oscillatory movement with their arm under three conditions: (i) SOLO (i.e., without visual coupling), (ii) TOGETHER (i.e., with visual coupling) and (iii) SYNCHRO (i.e., with the instruction to synchronize). Electrocardiograms and motion tracking were recorded while aversive electrodermal stimulations were delivered to half of the participants. Between experimental conditions, participants completed self-reports of emotional states, social connectedness, unpleasant experiences, and the fear of experiencing the stimulation.

The administration of the aversive stimulation induced localized unpleasant sensations, associated with a decrease of emotional valence and an increase of the fear of stimulation. The aversive stimulation also led to an increase in participants' heart rates when there was a threat of stimulations or when stimulations were effectively delivered. However, the stimulation did not influence social connectedness and behavioural synchrony, but individual movement's variability. Altogether, these results stress the distinct sensitivity of the rhythmic components of the self to emotional and social context.

Mots-Clés: pain, emotion, synchrony, social connectedness

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