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# Brain mechanisms of motivations and emotions: A polarisation (adaptation) theory

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## Abstract

A new approach in understanding of motivations and emotions, so called "Polarisation (adaptation) theory", will be suggested. According to this theory (Murik, 1990-2011) motivations and emotions occur in afferent (sensory and associative) systems, and their mechanism is related to formation of the certain metabolic (vital) and functional state (FS) in afferent neurons, which depends on polarisation of their cellular membrane (i.e. resting potential). Formation under the influence of irritants or while changes of environment circumstances of adverse metabolic (vital) and FS of brain cells lies in the ground of negative emotions as subjective experience of this phenomenon so motivation (aimed behavior) as organism's striving for recovery of good metabolic (vital) and FS of afferent neurons.

The current FS of brain neurons characterizes tension of cells adaptation mechanisms and results in appropriate changes of membrane potential. We distinguish four consecutive adaptive stages in the reaction of nerve cells to irritants and unfavorable factors: (I) hyperpolarizing inhibition; (II) hyperpolarising (posthyperpolarising) excitation; (III) depolarising excitation; (IV) depolarising inhibition. Each of these stages is characterized by its own peculiarities of the elapse of living processes, the functional capacities of neurons and different resistance to unfavorable factors.

It is supposed, that any negative subjective experience and formation of motivational state is related to excitation or inhibition of neurons with a background bad metabolic and FS, though the excitation or inhibition of the same cells with a background good metabolic and FS mediates positive subjective experience.

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