

Different patterns of primary emotional systems contribute to adaptive and maladaptive emotion regulation

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Summary The Affective Neuroscience Theory (ANT) describes six primary emotional systems (PLAY, SEEK, CARE, FEAR, ANGER, SADNESS). They are evolutionary adaptive, have distinct neural circuits in the brain and are responsible for individual differences in emotions. We examined the relationship of these emotional systems to cognitive emotion regulation (ER), and we identified distinctive patterns how the six primary emotional systems contribute to adaptive and maladaptive ER.

Keywords · regulation · emotional systems · personality · affective neuroscience personality scales ·

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Introduction Emotions can activate and organize physiological and psychological mechanisms to serve intrapersonal, interpersonal and social-cultural functions (Hwang & Matsumoto, 2021).

Emotion regulation (ER) occurs when the duration, valence, intensity etc. of the current affective state is modified. Cognitive ER refers to the conscious way how emotionally arousing information is handled. Regulation of emotions by thoughts helps individuals to keep control over their emotions during or after threatening or stressful events. (Garnefski & Kraaij, 2007; Gross, 2015)

Individual differences in ER have been examined within Panksepp's ANT (Davis & Panksepp, 2011) that describes six primary-process subcortical emotional systems (FEAR, SADNESS, ANGER, CARE, PLAY, SEEK), and postulates that these systems serve as the foundations of human personality.

Aims In this research we examine how primary emotional systems contribute to adaptive and maladaptive ER.

Methods 231 males and 461 females (N= 692) filled in two questionnaires online: (1) the Hungarian version of The Affective Neuroscience Personality Scales (ANPS) consists of 112 items that are clustered into seven scales: FEAR, SADNESS, ANGER, CARE, PLAY, SEEK and Spirituality; (2) The Hungarian version of the Cognitive Emotion Regulation Questionnaire (CERQ) contains 36 items that are clustered into nine subscales: positive reappraisal, putting into perspective acceptance, planning, positive refocusing as adaptive strategies; rumination, catastrophizing, putting

blame on the self, and putting blame on others as maladaptive strategies.

Results The results of multiple regression analyses showed that SEEK (positively) and ANGER (negatively) contribute to adaptive ER ($F=23.87$ $p < .001$; adjusted $R^2: .19$). While FEAR, ANGER and SADNESS influence maladaptive ER strategies ($F=68.17$ $p < .001$; adjusted $R^2: .41$). Spirituality had a positive influence on both adaptive and maladaptive ER.

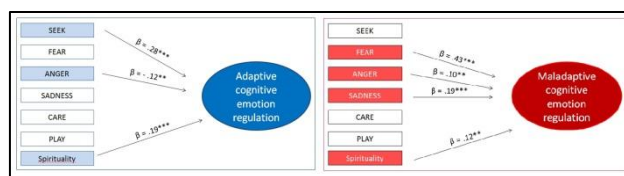


Figure 1: The contribution of primary emotional systems to adaptive and maladaptive emotion regulation

Conclusions The SEEK system promotes exploration, investigation, anticipating new experiences and it energizes behavior. In a stressful situation it can contribute to adaptive ER. FEAR is connected with anxiety, worry, and feeling tense. When the FEAR system is active, it may inhibit the formulation of adaptive cognitive strategies (e.g., reappraisal). SADNESS is connected with social separation distress, isolation or feeling lonely. It may contribute to a continuous thinking about the stressful situation (rumination), resulting in catastrophizing or blaming as maladaptive strategies. ANGER, on the one hand, is a risk factor for maladaptive ER, and it may result in limited access to adaptive strategies, on the other.

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