



The Neurobiological Mechanism of Emotions and Behavior in Personality Disorders

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ABSTRACT

This commentary refers to the findings reported in the articles showing that both personality disorder traits and emotional functioning have constant neural bases. These bases determine their stable nature which means that impaired behavior, experienced emotions, and even relevant cognitive functioning related to their neurobiological mechanisms show some degree of constancy. This, in turn, results in some difficulties in the treatment of persons displaying emotional dysfunctions associated with personality disorders traits. Another important conclusion should be formulated in that the findings presented in the articles support the idea that affective and personality functioning of persons with personality disorders can be better understood and treated when both psychological and neurobiological mechanisms are taken into consideration.

Key Words: personality disorders, neural correlates

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Commentary

Three papers published in *NeuroQuantology* have presented data that support the idea that the emotional and behavioral function of persons displaying personality disorders have a neural mechanism basis (Gawda 2012; Gawda, Bernacka and Gawda, 2016; Gawda, 2017). Every personality disorder is associated with emotional and behavioral impairments manifested in different ways which are determined by complex neural organization. For instance, borderline personality disorder's main characteristics such as emotional instability, suicidality, identity disturbances, outbursts of intense anger, stormy relationships are entrenched in neurobiological mechanisms (Koenigsberg et al., 2009). Psychopathic and antisocial personality disorder has been thoroughly studied in terms of neural substrates. All dysfunctions in recognizing,

differentiating, and analyzing emotional information, disturbances in emotional processing and experiencing have been shown as significantly related to neural mechanisms (Gawda, 2012). Psychopaths experience love as unclear and strong emotion, with an inappropriate valence, and high self-concentration. Their insight in emotional states is dysfunctional which has serious and negative consequences in their interpersonal relationships. These findings are in line with other data indicating their inability to take a victim's perspective (Hiatt and Newmann, 2007).

The findings presented on mental rigidity defined as personality disposition showed that this trait can be also associated with neural mechanisms. A stable line in the formation and development of this mental disposition has been found, i.e. research showed that fear attachment is a predictor for

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dogmatism/mental rigidity. This demonstrates the links between trait anxiety and mental rigidity. As fear/anxiety as a disposition has been described as being based on neural foundations, such is the case for other personality traits, among them mental rigidity, which can be associated with a neurobiological bases (Gawda and Szepietowska, 2016). The relationships shown correspond with other data on personality dimensions which have documented that personality is rooted in the relevant brain systems (De Young et al., 2010). Dogmatism as well as other personality traits such as Openness, and Mindfulness can be associated with both the activation of brain areas and the structural variations of brain regions (De Young, 2010). For example, Openness has been presented to be associated with structure variation and activation in the lateral prefrontal cortex (De Young, 2010; De Young et al., 2010). Mindfulness which is opposing to dogmatism, in turn, has been found as involving more efficient PFC inhibition of the amygdala responses during affect labeling. This trait is associated with activation in the medial prefrontal, ventrolateral prefrontal, and ventromedial prefrontal cortices (Creswell et al., 2007). Thus, dogmatism/mental inflexibility being an opposite of Openness and Mindfulness and being formed on the bases of fear attachment can be entrenched in the stable neural mechanism encompassing the lateral prefrontal cortex, the medial ventrolateral, and ventromedial prefrontal cortices, and amygdala. It is worth noting that mental rigidity means some inflexible behavior which is also present in personality disorders.

All findings presented in the articles clearly point out that stability of emotional functioning and behavioral patterns in individuals with personality disorders is determined by neurobiological bases (Gawda 2012; Gawda, Bernacka and Gawda, 2016;

Gawda, 2017). This means that all personality disorder traits are deeply rooted in neural mechanisms. This has consequences. First, it is a cause of their relatively stable nature. Second, it results in a resistance to change during treatment. It explains that behaviors and emotions can be modified only in the process of long-term treatment. Finally, these results emphasizing that the most effective understanding, description, and treatment should encompass both biological and psychological approaches.

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