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Editorial

Developmental determinants of sensitivity and resistance to stress: A tribute to Seymour "Gig" Levine

Since the early work of Seymour Levine, an impressive amount of research has clearly shown that early experiences exert powerful effects on the brain and body lasting throughout the entire life span, influencing brain function and increasing vulnerability to stress, depression and anxiety disorders. Animal models of early life adversity can provide important insights into the adaptive value as well as the negative consequences of early life stress. The aim of this Special Issue of *Neuroscience and Biobehavioral Reviews* is a tribute to the work of Gig Levine, showing the numerous approaches that have been developed based on his original findings and that are currently used in translational neuroscience for the identification of early determinants of psychopathology. The majority of the models developed so far are based on the notion that disruption of the mother–infant bond is a major risk factor for psychopathology. Indeed human data and animal studies have suggested that the relationship between the quality of the early environment and emotional responding at adulthood appears to be mediated by parental/maternal influences on brain development. Manipulations of the mother–infant relationship can affect hypothalamic–pituitary–adrenal (HPA) axis activity and lead to a persistent sensitization of limbic circuits to even mild stress at adulthood, forming the basis for a greater susceptibility for mood and anxiety disorders.

The studies collected within this issue provide a clear evidence that exposure to adverse events during the course of development predispose an individual to psychopathology. Understanding the role that development plays in the expression of these risk factors is often overlooked, but definitively needs more attention to fully understand the impact of early life events on the complex neurobiological derangement, including HPA axis system dysfunctions, playing a crucial role in affective disorders. The different approaches used in translational neuroscience can facilitate the identification of vulnerability factors to be exploited by the pharmaceutical industry for the development of innovative preventive approaches and treatment strategies.

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