

The Making and Breaking of Minds

How social interactions shape the human mind

COGNITIVE SCIENCE AND PSYCHOLOGY

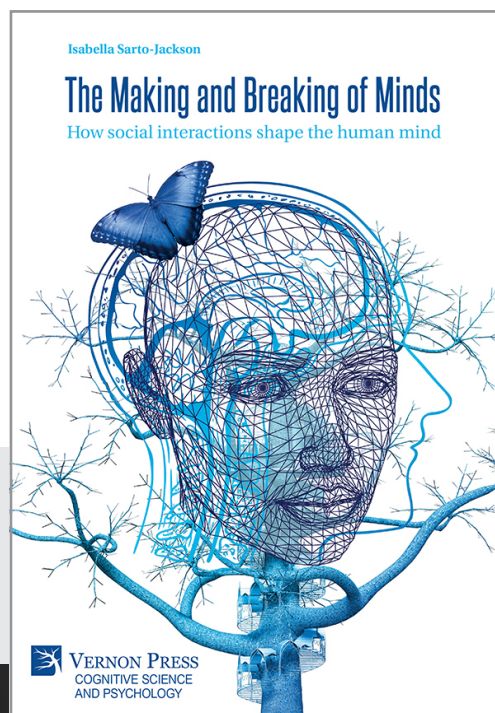
About the author

Isabella Sarto-Jackson is a neurobiologist, executive manager of the Konrad Lorenz Institute for Evolution and Cognition Research, and president (2022 - 2023) of the Austrian Neuroscience Association. She holds a Master's degree in genetics and a PhD in neurobiochemistry. For more than a decade, she has worked as a neuroscientist at the Center for Brain Research of the Medical University in Vienna. She has since extended her research focus to cognitive science and evolutionary biology and gives lectures in cognitive science at the University of Vienna and cognitive biology at the Comenius University in Bratislava. She is associate editor of the journal 'Biological Theory' (Springer Nature) and co-chair of the education committee of the International Society for the History, Philosophy, and Social Studies of Biology. Over the last years, she has dedicated a lot of effort to teaching neuroscientific findings to social education workers and social welfare workers by giving advanced training courses. Her work is highly interdisciplinary, i.e., being at the interface of neurobiology, cognitive science, evolutionary biology, and social education. Her particular passion is advocating for children at risk and enabling equal opportunities for them in order to reach their full cognitive potential.

Summary

The human brain has a truly remarkable capacity. It reorganizes itself, flexibly adjusting to fluctuating environmental conditions – a process called neuroplasticity. Neuroplasticity provides the basis for wide-ranging learning and memory processes that are particularly profuse during childhood and adolescence. At the same time, the exceptional malleability of the developing brain leaves it highly vulnerable to negative impact from the surroundings. Abusive or neglecting social environments, as well as socioeconomic deprivation and poverty, cause toxic stress and complex traumas that can severely compromise cognitive development, emotional processing, self-perception, and executive brain functions. The neurophysiological changes entailed impair emotional regulation, lead to heightened anxiety, and afflict attachment and the formation of social bonds. Neuroplastic changes following severely adverse experiences are not something that a person grows out of and gets over. These experiences alter the neurobiological and biochemical makeup and cause people to live in an emotionally relabeled world in which the evaluation of any social cue, their behavior, cognition, and state of mind are biased towards the negative. Even more worrying, detrimental neurophysiological consequences are not limited to the traumatized individual but are often transmitted to subsequent generations through a process of social niche construction, thereby creating a vicious cycle. Thus, the making and breaking forces of the brain are epitomized by parents, alloparents, peers, and our socioeconomic niche.

This book expounds on the formative role that the social environment plays in healthy brain development, especially during infancy, childhood, and adolescence. Based on scientific findings, the book advocates for bold measures and responsible stewardship to combat child abuse, maltreatment, and child poverty. By bringing together insights from neuroscience, evolutionary biology, and social education work, it lays out a fact-based, transdisciplinary endeavor that aims at rising to the societal challenge of providing a rewarding perspective to youth at risk. It will be a valuable resource for academics from social education, pedagogy, cognitive science, neuroscience, as well as professionals in the fields of social work, pedagogy, education, child welfare.



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