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Synchrony and the neurobiology of human attachments; Trajectories of well-being and psychopathology from infancy to adolescence

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Synchrony – the coordination of biological and behavioral processes between attachment partners during social contact - provides the basis for social affiliation in mammals and charts a central mechanism for stress management, empathy, and the development of the "affiliative brain" in humans. In this talk, I will present our model on the neurobiology of human attachments and detail the contribution of the extended oxytocin system to the development of social synchrony at the genetic, brain, hormonal, and behavioral levels across the individual's multiple attachments bonds. Research on the parental brain will be discussed as the junction of evolutionary progress and as a template for species-continuity and sociality of the young. Following, I will present findings from several birth-to-adolescence cohorts involving disruptions to parent-infant bonding, including the long term effects of premature birth, maternal post-partum depression, and chronic trauma exposure on children's brain, behavior, the capacity for empathy, and stress- and affiliation-related neuroendocrine systems. The talk will conclude by addressing the implications of the model for the construction of targeted early interventions and expanding the discussion on the mind-brain polarity.