



# Beyond Statistics

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Statistics based on measurable data protect us from the temptation of saying our intuition is true. However, they cannot sometimes reveal the truths hidden behind a phenomenon. Sometimes, data cannot be collected in the middle of an ongoing phenomenon. Many factors make the process hard, including practical difficulties in data collection, available measures, age of participants, various biases of data collection, and representativeness of the sample. For example, how can we measure the active changes in the brain of very young infants when they are developing basic social emotions, learning a language at the single word level, and consolidating secured attachment with their primary caregivers? How can we quantify ever-changing emotional reciprocity during the rapprochement period of 2-year-old toddlers and their parents? Even if we can capture a certain aspect of brain activities during the early developmental stage, a more robust story and context are attenuated within the data, and its implication in development might lose its depth. As another example, it has been more than 2 years since the COVID-19 pandemic started, and while some children are experiencing both physical and mental issues, others are not; statistics have not been able to capture or integrate what we experience and feel in everyday life. There has been a tremendous increase in cases of neurodevelopmental disorders, including autism spectrum disorder, in the last four decades. Nonetheless, the statistics per se are insufficient to understand the situation without knowing the why behind the rapid increase, which is extremely hard to answer clearly. We know that children in Ukraine are facing tremendous crises in the face of war, and the data are unavailable and even powerless in such a rigorous existential reality.

An in-depth understanding of typical developmental trajectories is an essential research area for atypical development and decoding psychopathology in child psychiatry. Studies have tried to prove the developmental process both in behavior and at the brain level. Many outstanding longitudinal studies examining developmental brain structure or connectivity changes have been published, with some examining brain

changes associated with specific traits, such as reading, arithmetic ability, and preterm birth [1-3]. Prospective follow-up databases for brain development have been launched to set up more comprehensive insight into human brain development in an unbiased setting [4]. Various experimental models were developed and utilized to reproduce developmental processes in laboratory settings, from classic examples such as Ainsworth's strange situation procedure to examine mother-child attachment patterns and false belief tasks to test the theory of mind to more complicated cognitive tasks. These might be researchers' trials to make more abstract issues more concrete and transform further intersubjective phenomena into more visible, ubiquitous ones. With these attempts, we now know that children's cortical thickness changes as they develop, and the maturation of specific brain areas vary depending on cognitive characteristics.

In the current issue, there are two articles regarding synchronization in the process of separation-individuation (SSI) in adolescents in the context of treating an adolescent patient and representing the concept in a plot of a movie and a fairy tale. As with many concepts in the early developmental process, it is only an observable contemplation through work with patients or symbolic texts, including arts or literature, that reflect human experiences. These articles led me to think about the coordination of research through analyses of measurable data and logical analyses of the phenomenon observed during the active process of treating patients. The latter should be an essential driving force to develop more generalizable empirical research. Research in child psychiatry ultimately aims to understand children's lives and improve them by acknowledging biological processes and their interaction with the environment. For example, we can set the next questions based on the contemplation of these articles, such as how to visualize SSI, how to prove that SSI is universal to a majority of families, which brain region contributes to the phenomenon the most, and how to follow up the longitudinal course of SSI from toddlerhood to adolescence. How can it be accomplished? Can digital technology combined with emotion sensors, emerging as a rapidly growing topic these days, shed light on measuring active, ongoing phenomena with minimal biases or bypassing labor-intensive laboratory work such

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as brain imaging? I do not believe it is fair that socio-economic supply creates the demands of research, but it is the researchers' role to consider if the technology could fill the gap between what exists and what should exist.

### REFERENCES

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