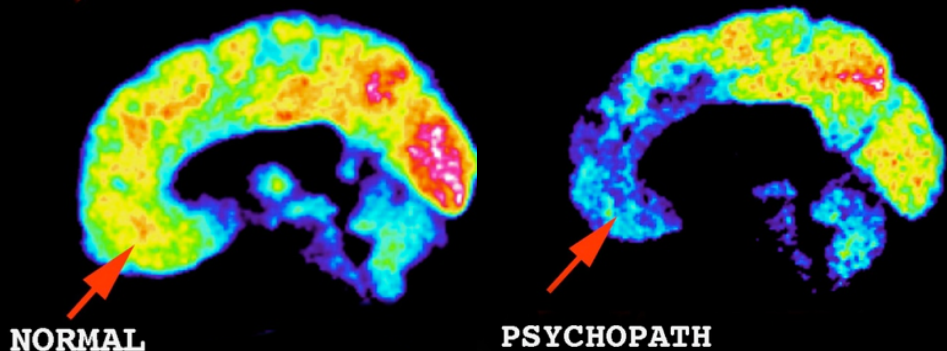


Parenting, Brain Development & Altruism

Modern parenting may hinder brain development, research suggests

- Parenting-to-Perfection = **Lack of Resilience**
 - Lack of Resilience? **Unable to cope, tantrums**
- Neglectful Parenting = **Lack of Trust**
 - Lack of Trust? **Unable to socialize or trust relying on others, cooperation**
- Comparison of Self vs. **Comparison to Others**
- **Lack of Self-Resilience + Lack of Trust + Comparison to Others = Low Self-Esteem**
- “Sweet Spot” of Parenting = **Build Self-Resilience & Trust**



Growing a Grown-up Brain

Scientists have long thought that the human brain was formed in early childhood. But by scanning children's brains with an MRI year after year, they discovered that the brain undergoes radical changes in adolescence. Excess gray matter is pruned out, making brain connections more specialized and efficient. The parts of the brain that control physical movement, vision, and the senses mature first, while the regions in the front that control higher thinking don't finish the pruning process until the early 20s.

Gray matter density

Gray matter becomes less dense as the brain matures.
More dense
Less dense

Gray matter: Nerve cell bodies and fibers that make up the bulk of the brain's computing power.

Parietal lobe: Spatial perception

Occipital lobe: Vision

Temporal lobe: Memory, hearing, language

Frontal lobe: Planning, emotional control, problem solving



Source: "Dynamic mapping of human cortical development during childhood through early adulthood," Nitin Gogtay et al., *Proceedings of the National Academy of Sciences*, May 25, 2004; California Institute of Technology

Human social interactions often involve two parties who want to maximize their own outcomes while reaching a mutually satisfactory result. A sign of increasing maturity is the shift from a more selfish focus to an increased tendency to consider the benefits to others. This new perspective occurs over the course of childhood to adolescence.