

Adolescence: Sensitive Period of Brain Development

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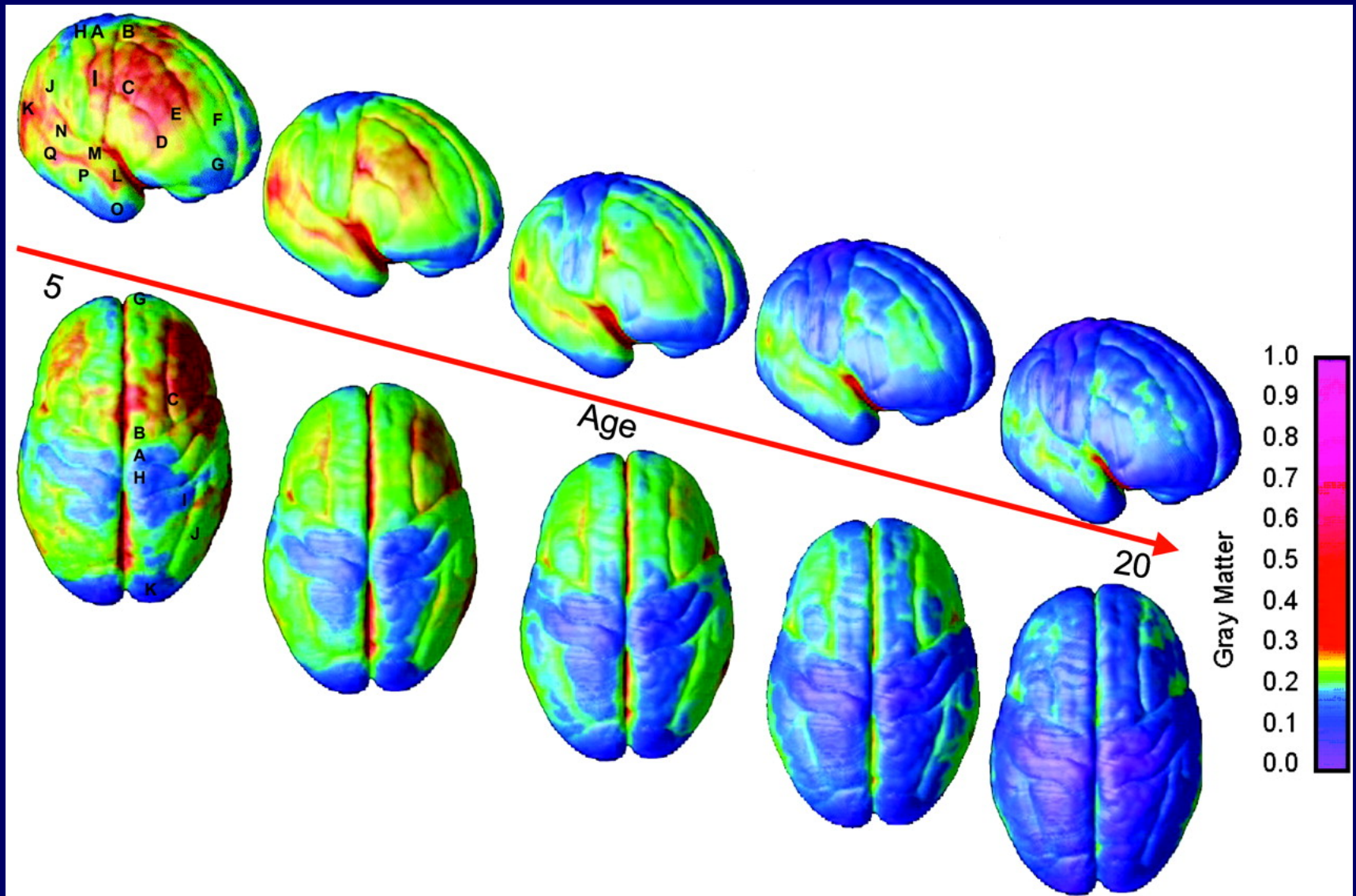
Board of Children, Youth and Families

June 6, 2018

Adolescent Development

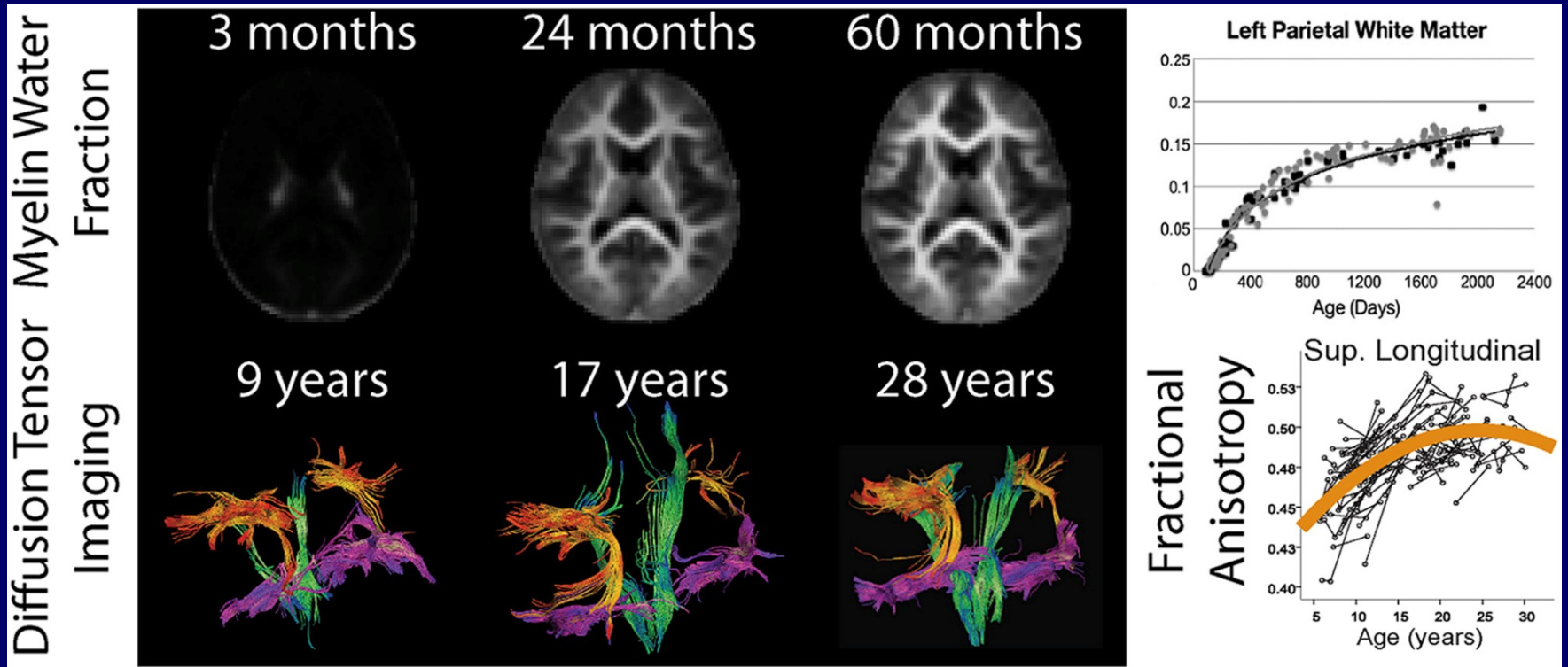
- Adolescence is a period of learning and adjustment, particularly for setting long-term goals and personal aspirations
- Youth discover how to navigate new social challenges and adjust to many physical, cognitive and emotional changes
- Structural and functional brain changes accompany these complex developmental processes

Gray Matter Changes



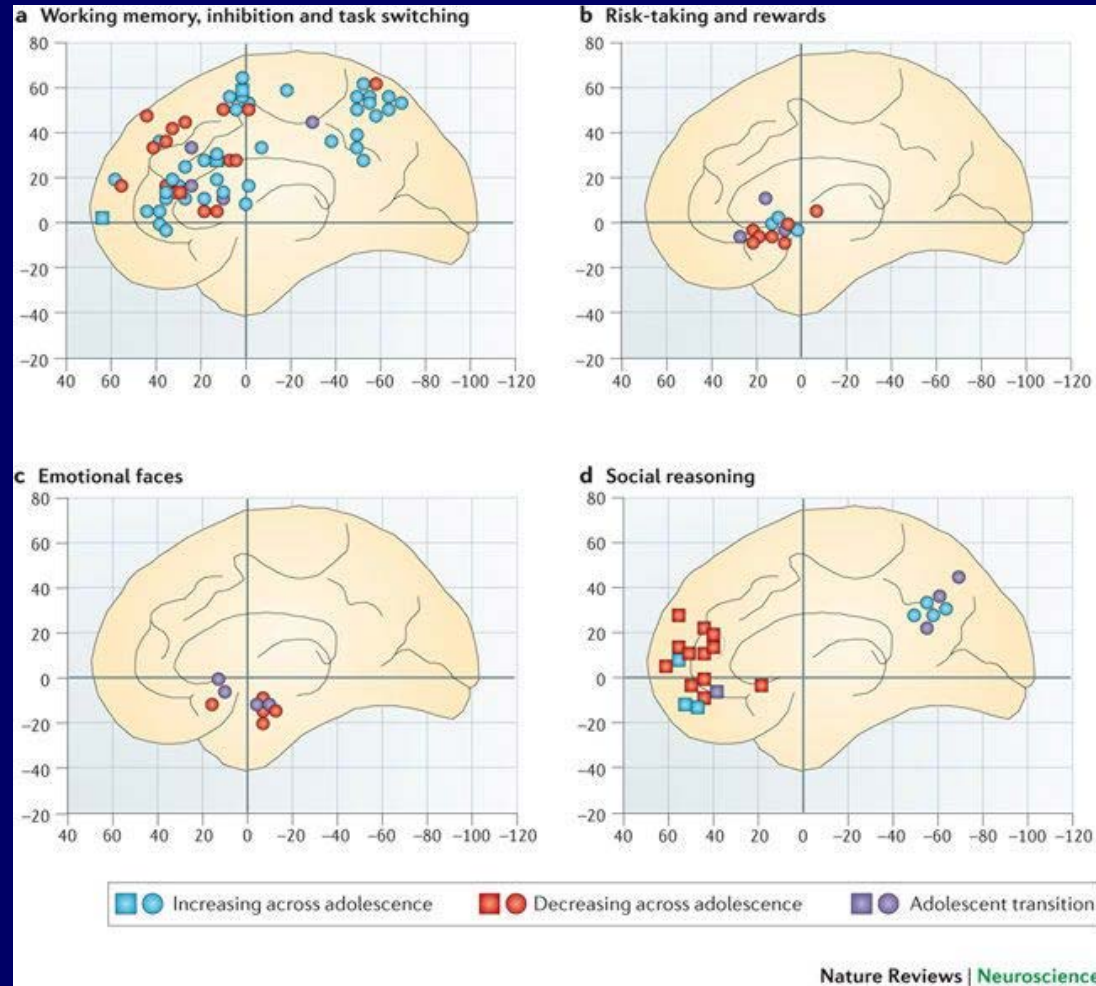
Gogtay et al. PNAS 2004;101:8174-8179

White Matter Changes



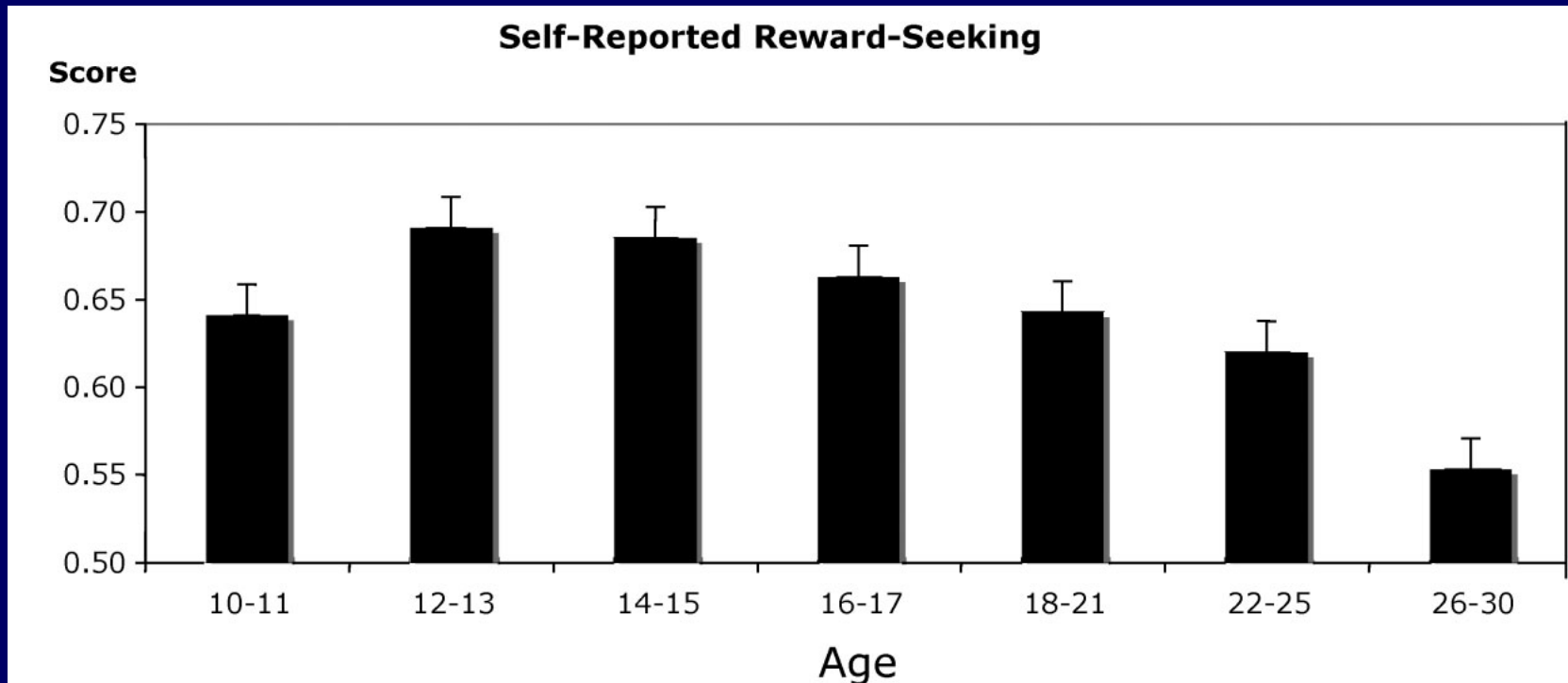
Lebel & Deoni, NeuroImage, in press

Functional Brain Changes



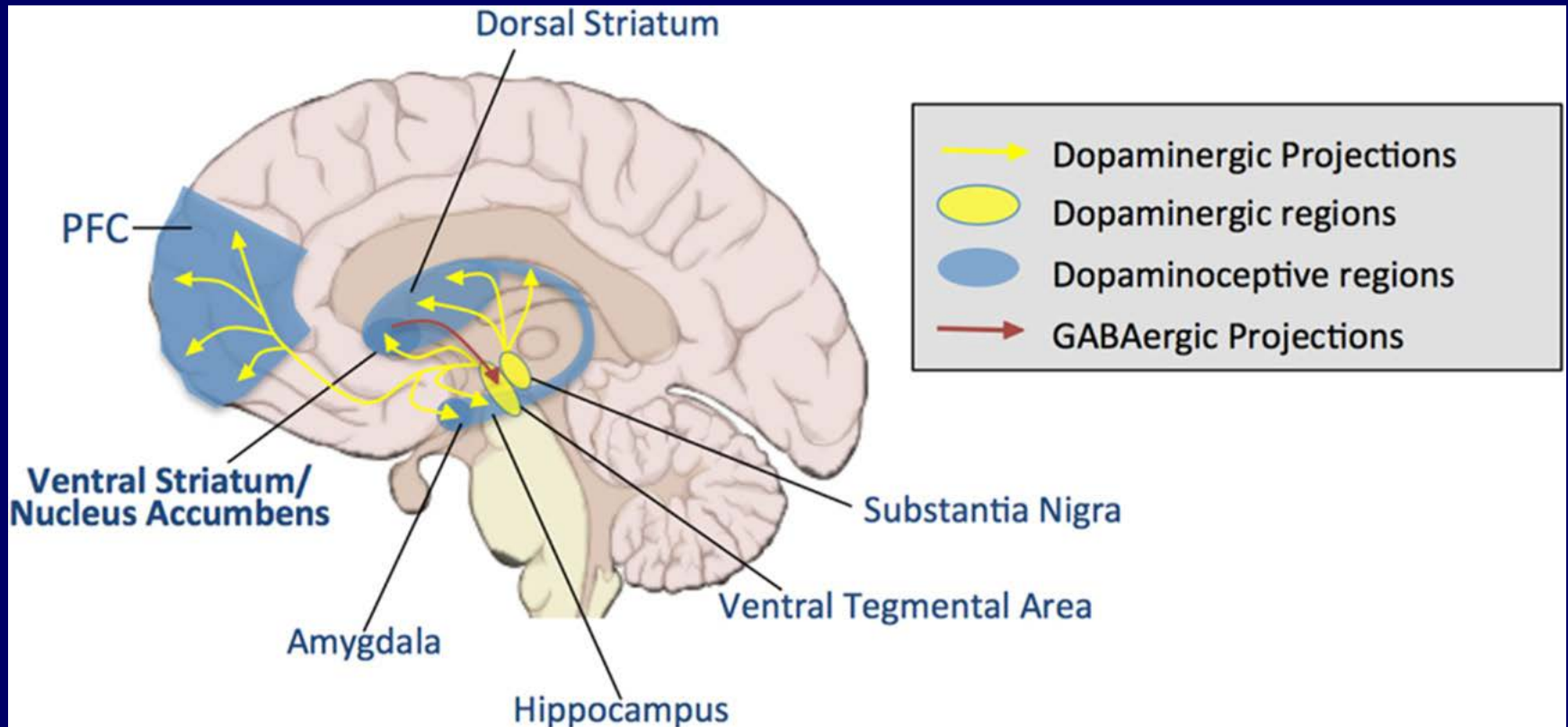
Crone & Dahl, Nat Rev Neurosci 2012;13:636-650

Changes in Reward-Seeking



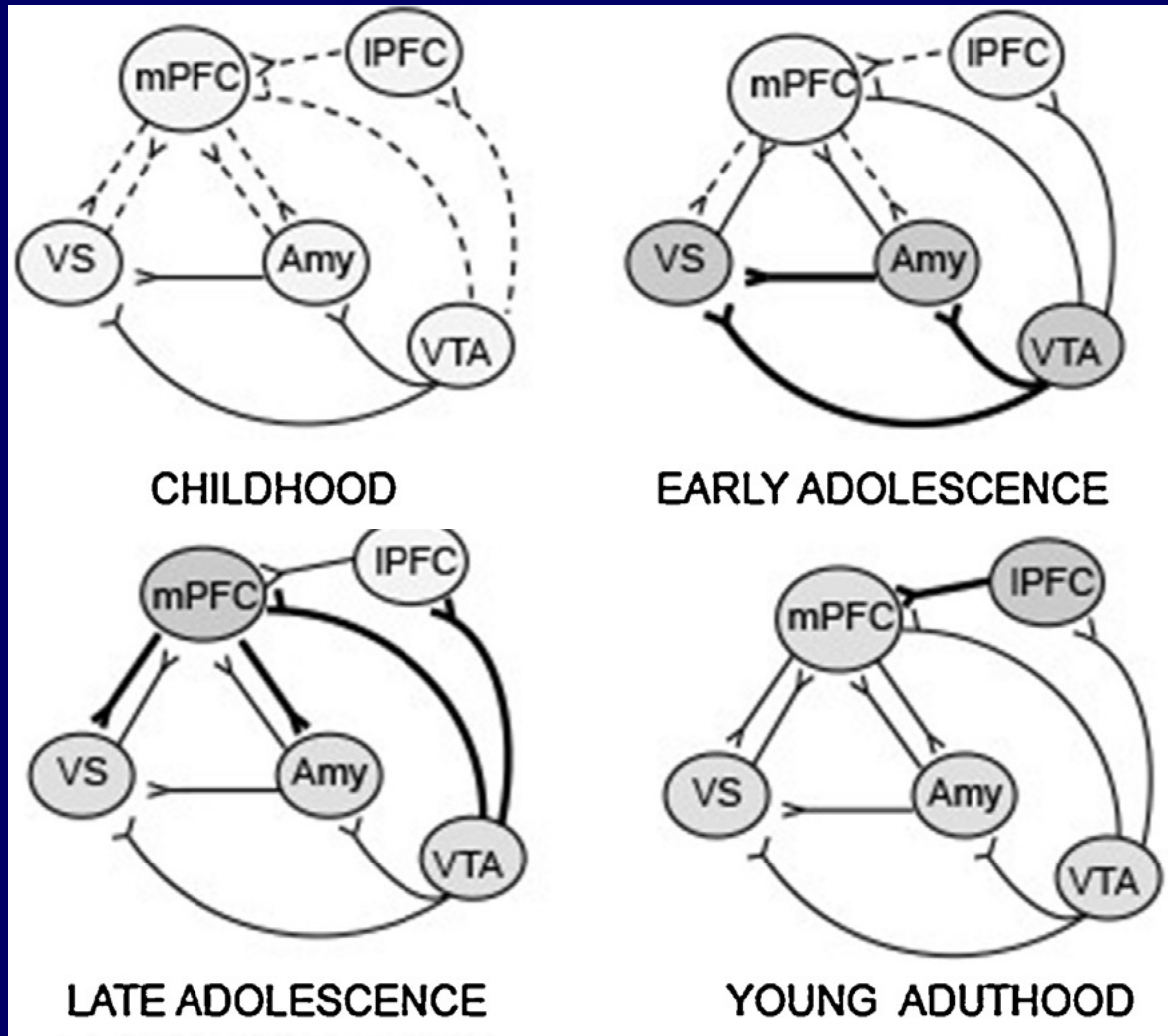
Steinberg et al. Dev Psychol 44:1764-1778, 2008

Dopaminergic Pathways

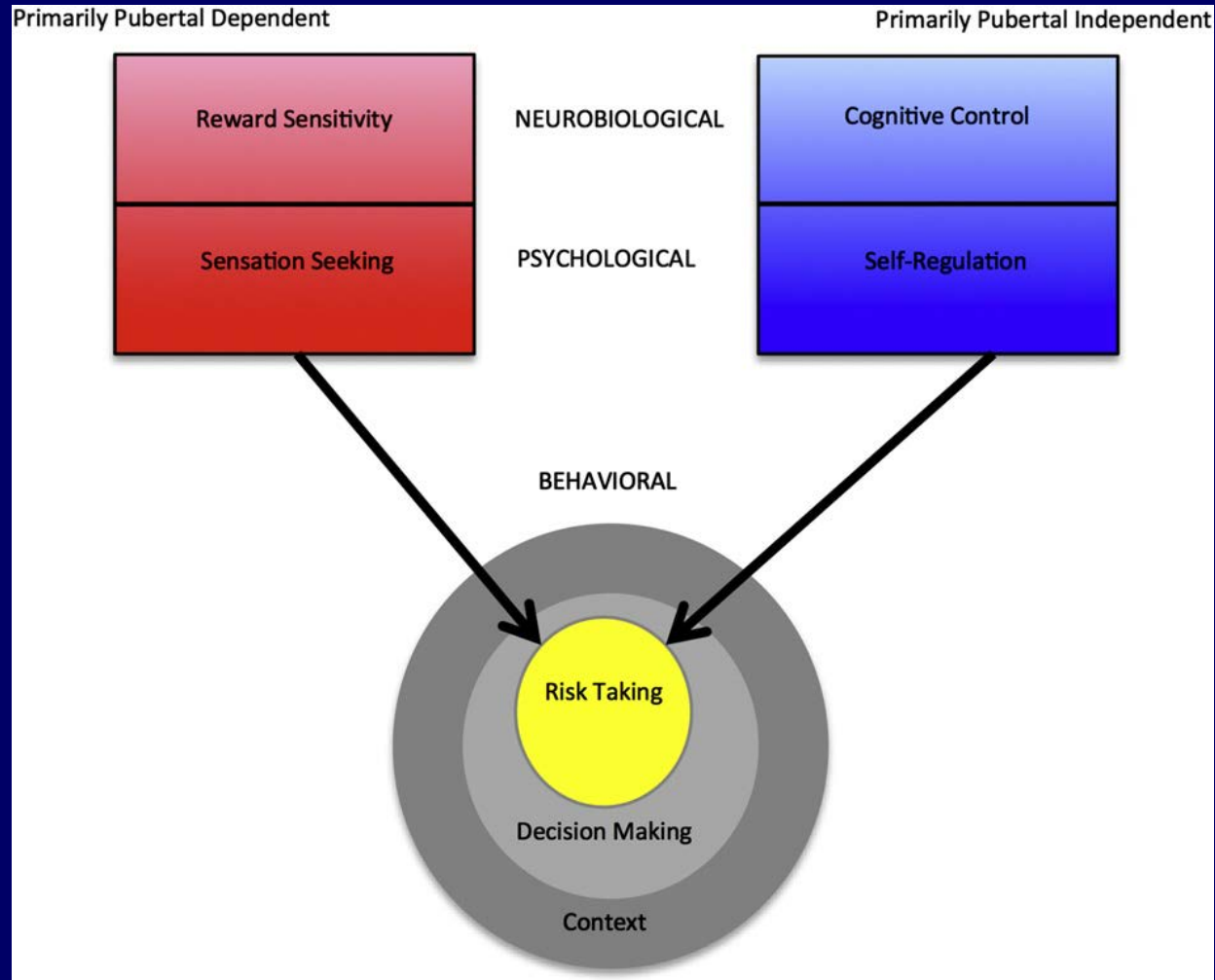


Telzer, Dev Cogn Neurosci 2016;17:57-67

Sub-Cortical and Cortical Circuitry

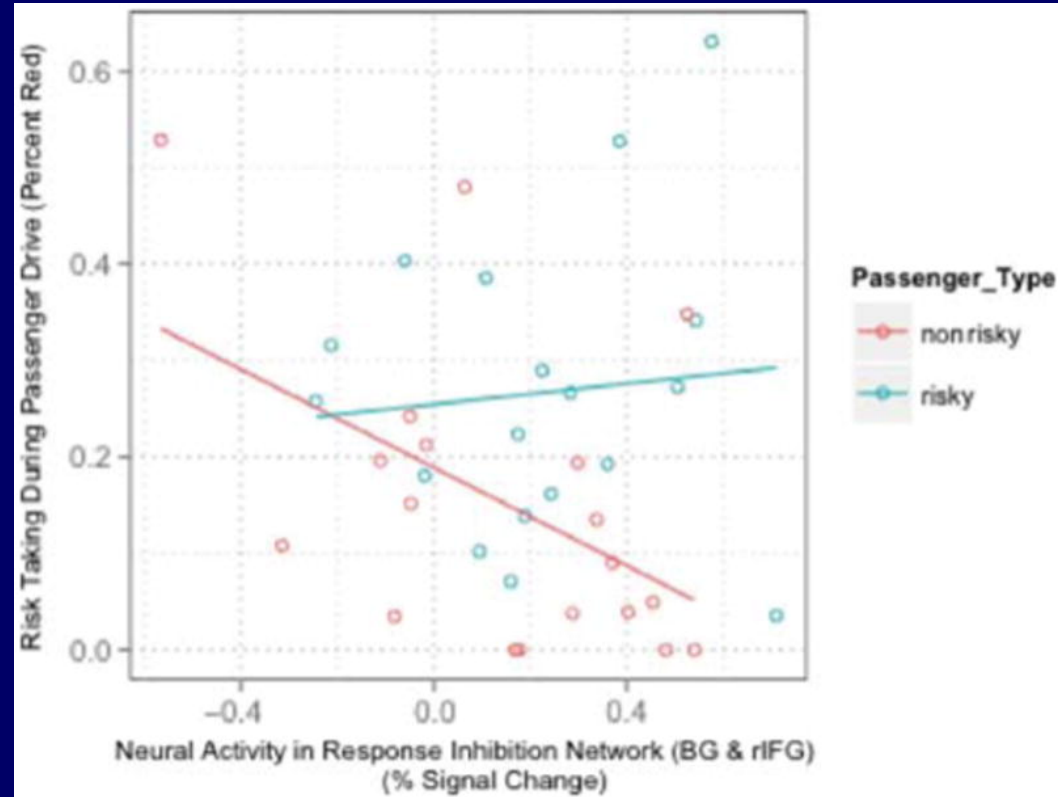
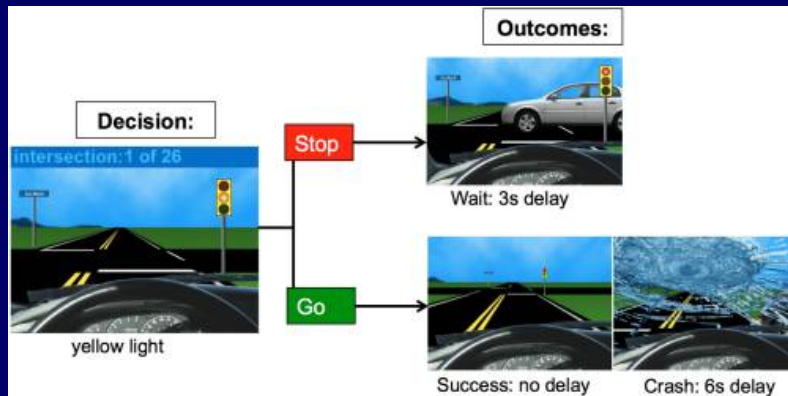


Social Context Influence



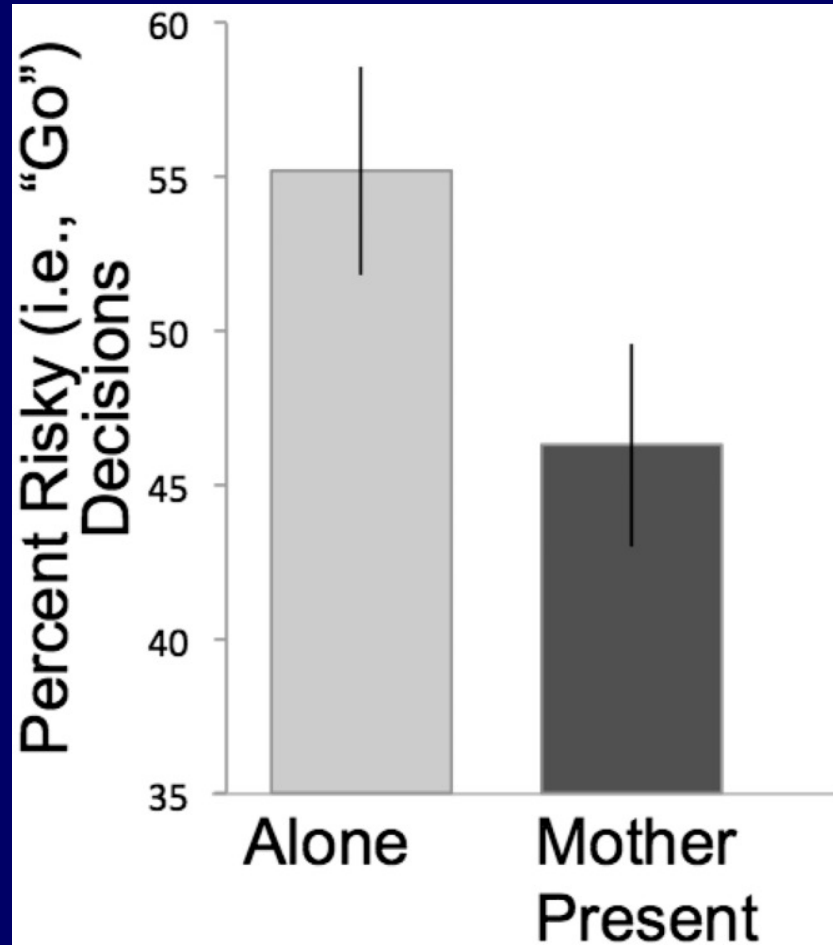
Smith et al., Hom Behav 2013;64:323-332

Social Context Effects -1

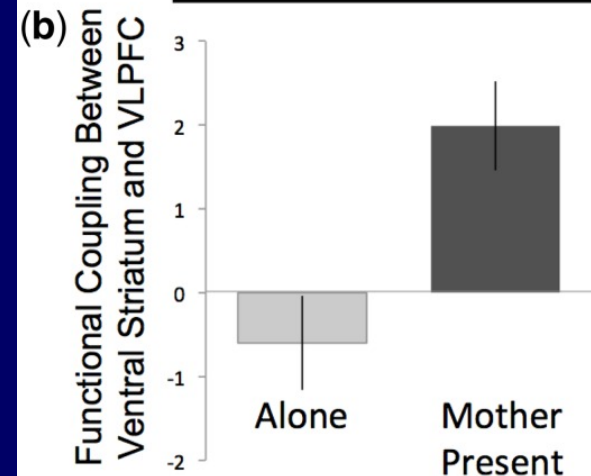
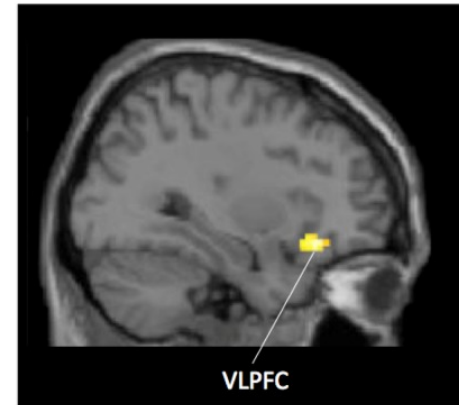


Cascio et al., J Cogn Neurosci 2015;27:83-95

Social Context Effects - 2



(a) Stop Decisions, Mother Present>Alone



References

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