

## Sarah-Jayne Blakemore - selected references

1 Mills, K. L., Lalonde, F., Clasen, L. S., Giedd, J. N., & Blakemore, S. J. (2014). Developmental changes in the structure of the social brain in late childhood and adolescence. *Soc.Cogn Affect.Neurosci.*, 9, 123-131.

Notes: Social cognition provides humans with the necessary skills to understand and interact with one another. One aspect of social cognition, mentalizing, is associated with a network of brain regions often referred to as the 'social brain.' These consist of medial prefrontal cortex [medial Brodmann Area 10 (mBA10)], temporoparietal junction (TPJ), posterior superior temporal sulcus (pSTS) and anterior temporal cortex (ATC). How these specific regions develop structurally across late childhood and adolescence is not well established. This study examined the structural developmental trajectories of social brain regions in the longest ongoing longitudinal neuroimaging study of human brain maturation. Structural trajectories of grey matter volume, cortical thickness and surface area were analyzed using surface-based cortical reconstruction software and mixed modeling in a longitudinal sample of 288 participants (ages 7-30 years, 857 total scans). Grey matter volume and cortical thickness in mBA10, TPJ and pSTS decreased from childhood into the early twenties. The ATC increased in grey matter volume until adolescence and in cortical thickness until early adulthood. Surface area for each region followed a cubic trajectory, peaking in early or pre-adolescence before decreasing into the early twenties. These results are discussed in the context of developmental changes in social cognition across adolescence

2 Blakemore, S. J. & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing? *Annual Review of Psychology*, 65, 187-207.

Notes: Adolescence is a period of formative biological and social transition. Social cognitive processes involved in navigating increasingly complex and intimate relationships continue to develop throughout adolescence. Here, we describe the functional and structural changes occurring in the brain during this period of life and how they relate to navigating the social environment. Areas of the social brain undergo both structural changes and functional reorganization during the second decade of life, possibly reflecting a sensitive period for adapting to one's social environment. The changes in social environment that occur during adolescence might interact with increasing executive functions and heightened social sensitivity to influence a number of adolescent behaviors. We discuss the importance of considering the social environment and social rewards in research on adolescent cognition and behavior. Finally, we speculate about the potential implications of this research for society

3 Blakemore, S. J. (2014). Brain development in adolescence. *Journal of Neurology, Neurosurgery and Psychiatry*, 85, e3.

Notes: Adolescence is a period of formative biological and social transition. Social cognitive processes involved in navigating an increasingly complex social world continue to develop throughout adolescence. Research in the past

15 years has demonstrated significant functional and structural changes in the brain during adolescence. Areas of the social brain undergo both structural changes and functional reorganization during the second decade of life, possibly reflecting a sensitive period for adapting to one's social environment. The changes in social environment that occur during adolescence might interact with increasing executive functions and heightened social sensitivity to influence a number of adolescent behaviours. I will discuss the importance of considering the social environment and social rewards in research on adolescent cognition and behaviour

4 Blakemore, S. J. & Robbins, T. W. (2012). Decision-making in the adolescent brain. *Nature Neuroscience*, 15, 1184-1191.

Notes: Adolescence is characterized by making risky decisions. Early lesion and neuroimaging studies in adults pointed to the ventromedial prefrontal cortex and related structures as having a key role in decision-making. More recent studies have fractionated decision-making processes into its various components, including the representation of value, response selection (including inter-temporal choice and cognitive control), associative learning, and affective and social aspects. These different aspects of decision-making have been the focus of investigation in recent studies of the adolescent brain. Evidence points to a dissociation between the relatively slow, linear development of impulse control and response inhibition during adolescence versus the nonlinear development of the reward system, which is often hyper-responsive to rewards in adolescence. This suggests that decision-making in adolescence may be particularly modulated by emotion and social factors, for example, when adolescents are with peers or in other affective ('hot') contexts

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