

## 2015 Klaus J. Jacobs Research Prize Recipient Sarah-Jayne Blakemore

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Sarah-Jayne Blakemore (British, born 1974) is a Royal Society University Research Fellow and Professor of Cognitive Neuroscience at University College London (UCL). She is Deputy Director of the UCL Institute of Cognitive Neuroscience and leader of the Developmental Cognitive Neuroscience Group.

**Major research interests:** understanding the emotional and social brain development during human adolescence; neurocognitive development in typically developing children and adolescents; development of the social brain (the network of brain regions involved in understanding other people).

**Scientific breakthroughs, social applications:** Until about 15 years ago, the prevailing opinion amongst neuroscientists was that no major neurodevelopmental changes occur after early childhood, an assumption that has been thoroughly upturned by Blakemore's work through:

- research showing that the brain develops both structurally (i.e., grey matter volume decreases from childhood into the early twenties) and functionally (i.e., activity within the mentalising network shifts from anterior to posterior brain regions) during adolescence;
- behavioral and brain scanning studies demonstrating that changes occur in the processing of emotional and social information about other people, as well as self-awareness and decision-making;
- findings showing that neural responses to social exclusion, risky decisions, self-generated thoughts and the interpretation of social emotions undergo change;
- findings showing that the ability to take into account other people's perspectives when making decisions continues to develop

Blakemore suggests revising the tendency to attribute typical adolescent behavior chiefly to hormones and to changes in the social environment. Instead it is at least partly linked to biological developments in the brain that are adaptive, natural, and inevitable. Typical adolescent behavior may be advantageous since it is intrinsically rooted in human development. Therefore, adolescent behavior should be reframed as exploratory and potentially socially beneficial as opposed to only risky and problematic. If adolescent behavior is linked to approval from friends and to avoiding social exclusion, how young people might positively influence each other's learning and decisions through peer education and mentoring should be examined. Blakemore's research suggests that adolescence represents a period of relatively high neural plasticity, in particular in brain regions involved in executive function and social cognition. This might inform both curriculum design and teaching practice with the aim of ensuring that classroom activities exploit periods of neural plasticity that facilitate maximal learning.

Blakemore regularly gives talks on the brain in schools and at conferences. Her 2012 TED talk on the teenage brain has attracted over 1.6M views. In 2008 she was commissioned to write a UK Government Foresight Report on adolescent brain development. She was a member of the working group of the Royal Society Brain Waves project on Neuroscience: Implications for Education and Lifelong Learning and the Royal Society Vision Committee for Science and Maths Education. She is also one of the most influential neuroscientists on Twitter with over 19'000 followers.

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**Future Plans and Aspirations:** With the prize money she plans to investigate whether mid-adolescents are particularly efficient at acquiring social information, and at improving self-control. Using MRI, she will look at changes in brain structure and function as a result of social cognitive training. This aims at providing novel information about the neural mechanisms underlying sensitive periods for learning social information in adolescence.

**Honors:** Blakemore was awarded the British Psychological Society (BPS) Doctoral Award in 2001, the BPS Spearman Medal for outstanding early career research in 2006, the Annual Lecturer Award in 2011 by the Swedish Neuropsychology Society, one of 40 under 40 young scientists invited to speak at the World Economic Forum in 2012, the Young Mind & Brain Prize in 2013 and the Royal Society Rosalind Franklin Award in 2013.