

Simon Fraser University

The role of evolutionary genomics in the development of autism

Scientists at the London School of Economics, UK and Simon Fraser University, Canada have described the first hypothesis grounded in evolutionary genomics explaining the development of autism.

In an article to be published in a forthcoming issue of Journal of Evolutionary Biology, Dr Christopher Badcock and Professor Bernard Crespi explore the 'imprinted brain hypothesis' to explain the cause and effect of autism and autistic syndromes such as Asperger's syndrome, highlighted by the book *The Curious Incident of the Dog in the Night-Time*, which involves selective disruption of social behaviour that makes individuals more self-focussed whilst enhancing skills related to mechanistic cognition.

The 'imprinted brain hypothesis' suggests that competition between maternally and paternally expressed genes leads to conflicts within the autistic individual which could result in an imbalance in the brain's development. This is supported by the fact that there is known to be a strong genomic imprinting component to the genetic and developmental mechanisms of autism and autistic syndromes.

Professor Bernard Crespi from Simon Fraser University, Canada explains: "The imprinted brain hypothesis underscores the viewpoint that the autism spectrum represents human cognitive diversity rather than simply disorder or disability. Indeed, individuals at the highest-functioning end of this spectrum may have driven the development of science, engineering and the arts through mechanistic brilliance coupled with perseverant obsession."

The core behavioural features of autism such as self-focussed behaviour, altered social interactions and language and enhanced spatial and mechanistic cognition and abilities – as well as the degree to which the brain functions and structures are altered – also supports this hypothesis.

Weitere Informationen finden Sie im WWW:

- <http://www.sfu.ca>
- <http://www.blackwell-synergy.com/doi/full/10.1111/j.1420-9101.2006.01091.x>

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