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Acting selfish? Blame your mother

Science

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Genes from our parents battle it out, telling us to be kind or telling us to be selfish

The fact that our female ancestors dispersed more than our male ancestors can lead to conflicts within the brain that influence our social behaviour, new research reveals.

Scientists from Oxford University and the University of Tennessee, Knoxville, examined the impact that genes 'knowing' which parent they come from – a process called 'genomic imprinting' – has on how selfish or altruistic they want their carriers to be.

A report of their research is published in the journal *Evolution*.

They found that because, historically, women moved about more than men, and so are less related to their neighbours, our paternal and maternal genes are in conflict over how we should behave – with our paternal genes encouraging us to be altruistic whilst our maternal genes encourage us to be selfish.

'When women disperse more during their lifetime than men, as seems to be the case for ancestral humans, this leads to you being more related to your neighbours through your father than through your mother,' said Dr Andy Gardner of Oxford University's Department of Zoology, an author of the report.

The genes you receive from your father are telling you to be kind to your neighbours, whereas the genes you receive from your mother, like a demon sat on your shoulder, try to make you act selfishly

Dr Andy Gardner

'This leads to conflicts over social behaviour: the genes you receive from your father are telling you to be kind to your neighbours, whereas the genes you receive from your mother, like a demon sat on your shoulder, try to make you act selfishly.'

Mutations in imprinted genes have previously been linked to growth disorders in infants and, more recently, it has been suggested that they could underpin neurological disorders such as autism and psychosis. This study reveals how such disorders of the social brain can evolve by mutations favouring the expression of paternal genes (favouring altruism) or maternal genes (favouring selfishness).

Dr Gardner said: 'What our research reveals is that the popular idea of someone battling their psychological 'demons', that are telling them to behave in a selfish way, has some basis in our genetic makeup – we are all coalitions of conflicting genes.'