

Darwin's theory of evolution challenged by University of Adelaide genetic memory research, published in journal

Science

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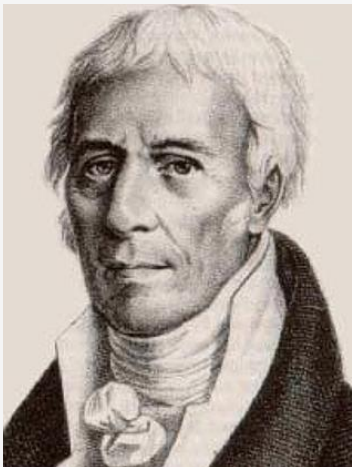


- THEORY CHOMPED: Caitlin O'Connell, 19, with her daughter Zara. Picture Dean Martin
- **LANDMARK Adelaide research showing that sperm and eggs appear to carry genetic memories of events well before conception, may force a rethink of the evolutionary theories of Charles Darwin, scientists say.**

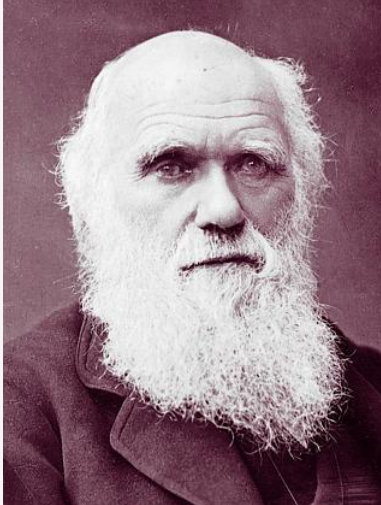


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- A NEW BEGINNING: A human embryo ... Robinson Research Institute show that sperm and eggs appear to carry genetic memories of events well before conception.

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- It also suggests the bad habits developed through a parent's lifetime could be passed on genetically to their children.
- The University of Adelaide research, published internationally today, shows that babies may be prone to their parents' youthful behaviour, from gorging as obese teenagers to a preference for fruit or even dislike of smells.
- The work by the university's Robinson Research Institute appears on Friday in the international journal *Science* after being put through scrupulous peer review.
- It paves the way for a review of the work of French biologist Jean-Baptiste Lamarck, whose theory that an organism can pass to its offspring characteristics acquired during its lifetime was largely ignored after Darwin's publication of *On The Origin of Species* in the mid-1800s, that work defining evolution as a process of incidental, random mutation between generations.



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- Jean-Baptiste Lamarck



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- Charles Darwin
- Robinson Institute director Professor Sarah Robertson warned that children born of parents with unhealthy habits may already be programmed to adopt them.
- “People used to think that it didn’t matter because a child represented a new beginning, with a fresh start,” she said.
- “The reality is, we can now say with great certainty the child doesn’t quite start from scratch. They already carry over a legacy of factors from their parents’ experiences that can shape development in the foetus and after birth.



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- Professor Sarah Robertson
- “There is now biological evidence that memories of experiences in adults can be transferred through egg and sperm for the lifetime prospects of the child.

- “If evolution has developed something like this it can give a child an edge to survive. This will rewrite long held views, that experiences can actually be transferred to offspring.”
- Prof Robertson stressed that genes remain the blueprint for a new baby, but said the work of both Darwin and Lamarck may need to be reconsidered.
- “The genes are the blueprint and that won’t change,” Prof Robertson said. “But this is at another level, it is the decoration of the gene, the icing on the cake if you like, a gift to offspring that gives them another layer of information about survival.”
- “Lifestyle changes by potential parents and improvements in the right direction, especially in the months leading up to conception, could have a lasting, positive benefit for the future of their child,” Prof Robertson said.
- UniSA human movement student Caitlin O’Connell, 19, who has baby Zara, six months, said the research findings seemed like common sense and she is pleased for her daughter’s sake her own parents encouraged her towards a healthy lifestyle.
- “Mum and Dad always encouraged us to eat well and I’ve always tried to have a balanced diet with plenty of exercise,” she said.
- “When I was pregnant that became paramount — everyone wants the best for their baby — and now Zara is moving on to solids she just loves her fruit and vegetables.”