

The changing facebook of genetic

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(PhysOrg.com) -- Social factors such as what we eat and where we live influence how natural selection acts on human genes, according to a research that is bringing the worlds of genetics and human sciences closer together.

In a Review article published today in *Nature Reviews Genetics*, Professor Kevin Laland of the University of St Andrews School of Biology (together with colleagues John Odling-Smee at Oxford University and Sean Myles at Cornell) suggests that humans have played a far more active part in their own evolution than traditionally conceived.

Accounts of [human evolution](#) have, in the past, tended to assume that changes in our external environment, beyond human control, have driven [natural selection](#). However, Professor Laland sets out a growing body of evidence that cultural practices - our learned behaviour and traditions - have had a profound effect on human evolution.

For instance, evidence suggests that dairy farming created the selective environment that favoured the spread of lactose tolerance. Other examples include the impact of human aggregation on the spread of genes that confer resistance to crowd diseases, and the co-evolution of cooking with [genes](#) that determine tooth size.

Professor Laland and colleagues in fact argue that, over the last 100,000 years, cultural factors are likely to have shaped the selective environment experienced by human more than non-cultural processes. This is largely

because cultural practices spread so quickly, which gives culturally induced selection a far greater intensity. The research suggests that our species may have experienced substantially more [genetic change](#) in recent millennia than previously realised.

Professor Kevin Laland said: "Over the past 50,000 years humans have spread from Africa around the globe, begun to exploit agriculture, witnessed rapid increases in densities, domesticated hundreds of species of plants and animals, and by keeping animals experienced a new proximity to animal disease. Each of these transformative events has been self-imposed, but nonetheless triggered an evolutionary episode."

"This new understanding of human evolution opens the door to new insights into the evolution of learning, culture, language, intelligence, cooperation, sex differences and mating systems. It suggests that our cultural development and social determinations form part of a lasting legacy that is shaping the human genome."

Provided by University of St Andrews

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