

Evolution: 24 myths and misconceptions

[Click to Print](#)

18:00 16 April 2008

[NewScientist.com news service](#)[Michael Le Page](#)

If you think you understand it, you don't know nearly enough about it

It will soon be 200 years since the birth of Charles Darwin and 150 years since the publication of *On the Origin of Species*, arguably the most important book ever written. In it, Darwin outlined an idea that many still find shocking – that all life on Earth, including human life, evolved through natural selection.

Darwin presented compelling evidence for evolution in *On the Origin* and, since his time, the case has become overwhelming. Countless fossil discoveries allow us to trace the evolution of today's organisms from earlier forms. DNA sequencing has confirmed beyond any doubt that all living creatures share a common origin. Innumerable examples of evolution in action can be seen all around us, from the pollution-matching pepper moth to fast-changing viruses such as HIV and H5N1 bird flu. Evolution is as firmly established a scientific fact as the roundness of the Earth.

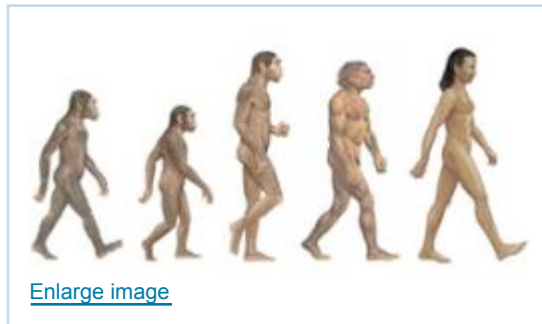
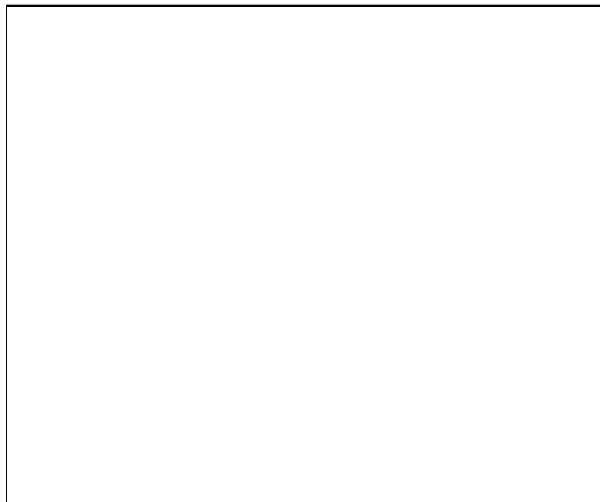
And yet despite an ever-growing mountain of evidence, most people around the world are not taught the truth about evolution, if they are taught about it at all. Even in the UK, the birthplace of Darwin with an educated and increasingly secular population, one recent poll suggests less than half the population accepts evolution.

For those who have never had the opportunity to find out about biology or science, claims made by those who believe in supernatural alternatives to evolutionary theory can appear convincing. Meanwhile, even among those who accept evolution, misconceptions abound.

Most of us are happy to admit that we do not understand, say, the string theory in physics, yet we are all convinced we understand evolution. In fact, as biologists are discovering, its consequences can be stranger than we ever imagined. Evolution must be the best-known yet worst-understood of all scientific theories.

So here is **New Scientist's** guide to some of the most common myths and misconceptions about evolution.

There are already several good and comprehensive guides out there. But most biologists would probably agree that there can never be too many.

[Enlarge image](#)

Shared misconceptions:

Everything is an adaptation produced by natural selection
Natural selection is the only means of evolution
Natural selection leads to ever-greater complexity
Evolution produces creatures perfectly adapted to their environment
Evolution always promotes the survival of species
It doesn't matter if people do not understand evolution
"Survival of the fittest" justifies "everyone for themselves"
Evolution is limitlessly creative
Evolution cannot explain traits such as homosexuality
Creationism provides a coherent alternative to evolution

Creationist myths:

Evolution must be wrong because the Bible is inerrant
Accepting evolution undermines morality
Evolutionary theory leads to racism and genocide
Religion and evolution are incompatible
Half a wing is no use to anyone
Evolutionary science is not predictive
Evolution cannot be disproved so is not science
Evolution is just so unlikely to produce complex life forms
Evolution is an entirely random process
Mutations can only destroy information, not create it
Darwin is the ultimate authority on evolution
The bacterial flagellum is irreducibly complex
Yet more creationist misconceptions
Evolution violates the second law of thermodynamics

[Close this window](#)

Printed on Thu Apr 17 21:11:33 BST 2008