

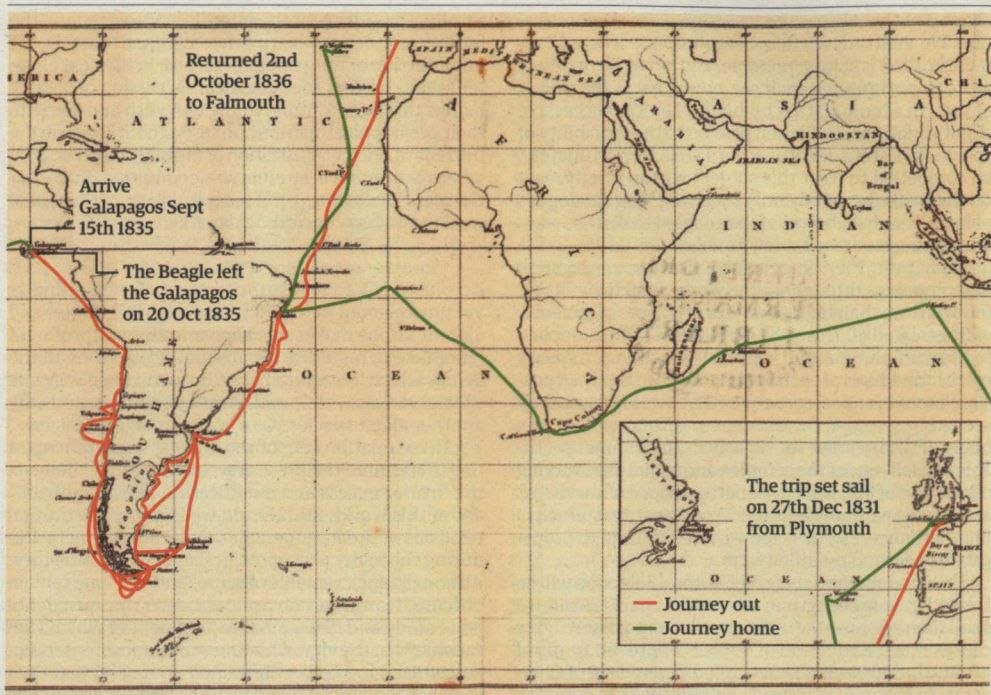
Charles Darwin

On the Origin of Species



The definitive guide to
the book that changed the world
Introduction by Richard Dawkins

theguardian



Misconceptions

Darwin was no atheist, he didn't say humans came from monkeys, and 'survival of the fittest' – that was someone else's idea.

By **John van Wyhe**

Everyone has heard of Charles Darwin. Yet it is a sad fact that a good part of what most people think and believe about the man is wrong. So many myths and legends have cropped up since his death that it is difficult to disentangle fact from fiction. Here are some of the most common misconceptions.

Darwin and the Galapagos

There are, as always, multiple versions of this legend. One of the most pervasive is the idea that Darwin and the Beagle set sail

straight to the Galapagos so that Darwin could discover evolution there. The Galapagos was ground zero for Darwin's eureka moment.

But there was no eureka moment. Darwin didn't become an evolutionist while in the Galapagos. In fact, three classes of facts gradually convinced him that evolution was true, but only after his return. For example in this passage from his autobiography: "During the voyage of the Beagle I had been deeply impressed by discovering in the Pampean formation great fossil animals covered with armour like that on the existing armadillos; secondly, by the manner in which closely allied animals replace one another in proceeding southwards over the continent; and thirdly, by the South American character of most of the productions of the Galapagos archipelago, and more especially by the manner in which they differ slightly on each island; none of these islands appearing to be very ancient in a geological sense."

The Origin

The title of Darwin's most famous book is often given incorrectly as "Origin of the species", as if it was about the origin of our species. But the title is actually *On the Origin of Species*, meaning "where do species come from?" The short answer is they are descended from common ancestors, winnowed by natural selection – and not independently created. The Origin is about the general process of the evolution of all species. It does not trace the origin of any particular species, including humans.

Another common misconception is that the "origin of species" means "origin of life", and in this it utterly fails. But again, this is not what the book is about. Darwin, although himself convinced that life had perfectly natural origins, thought the science of his day was unable to answer that question, and he left it for future generations to investigate. He was in a position, however, to demonstrate that the various kinds of living and fossil-



From left: Robert Fitzroy's map, showing the journey of the Beagle; the spine of the Origin; Darwin's grave, in the North Choir Aisle ("Scientists Alley"), Westminster Abbey; a sketch of the head of *Semnopithacus comatus*. All images, except photo of grave, can be found at darwin-online.org.uk/



ised things we find in the world are related to one another genealogically by descent – they evolve.

Monkeys

Darwin said we come from monkeys. Nope. He never said that. This common misconception belies a profound misunderstanding of evolution. This is not unlike the popular illustrations of mankind as the pinnacle of the tree of life. Saying we come from monkeys is like saying you are the child of your cousin. Darwin said that monkeys, apes and humans must have a common ancestor because of our great similarities compared to other species. Even in his day it could be shown that we are more similar to apes than apes are to monkeys.

Another common shorthand misconception is, "It's all just survival of the fittest isn't it?" No it isn't. "Survival of the fittest" is a misleading phrase, and it was not coined by Darwin but by the philosopher Herbert Spencer. Alfred Russel Wallace later convinced Darwin to adopt the phrase. Any shorthand summary of Darwin's theory needs three elements: variation between individuals, natural selection based on differences in survival and heritability of traits.

Darwin was an atheist

Nope. As far as we know Darwin was never an atheist. He was baptised in the Church of England, taken to Unitarian chapel as a child and at one time intended to become a country clergyman. But Darwin was never a particularly religious person. When in his late 20s and early 30s he began to think more carefully about nature and the meaning of life, he gradually came to disbelieve in Christianity, miracles or divine revelations. One of the most important factors in this gradual – and as he recalled it distress-free transformation – was his awareness that humans are animals too and are derived from less human-like ancestors. Secondly other religions, which had repeatedly swept over vast parts of the globe, were considered utterly groundless myths by Victorian Christians. Darwin could see that almost all peoples in all times had contradictory mythical stories and supernatural beings, and Christianity could boast of no evidence to support its own version.

Other pernicious myths claim that Darwin repented of evolution or converted to Christianity on his deathbed. To the former I can

only think, so what? Although it is quite untrue, whatever Darwin could have said on his deathbed could not erase the mountains of scientific evidence which confirms Darwin's views. The second myth is also entirely untrue and was forcibly denied by his sons in print when it first surfaced in 1915 and in the following decades.

Darwin remained an agnostic though he always retained a lingering suspicion that some intelligence had set up the laws of nature in the first place. These fixed natural laws could be identified by science. He believed he had discovered a new such law in natural selection.

False quotations

There are many attributed to Darwin. Probably the most common is: "It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change." Versions of this catchy phrase adorn many a book and website. But it was never written by Darwin. There is no longer any excuse for taking someone else's word about or misquoting Darwin, because all of his publications are available for free at darwin-online.org.uk