Contents

NATURAL SELECTION

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Natural Selection: the cornerstone of Darwinian evolution

The full title of Charles Darwin's 1859 book expressed the concept of natural selection: *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life.* 'Nature' preserved individuals that were best suited to the environment.

Natural selection is really a very straight-forward, commonsense idea. Creatures with features (traits) suited to survival in a given environment tend to survive better than those that do not have those features. For example, wolves with small ears, short legs and a thick coat of hair will tend to survive better in the Arctic than wolves with big ears, long legs and thin coat. These differences impact the ability of the animals to retain or lose heat; important traits for survival in a cold or hot environment respectively.

Although 'nature' is not a sentient being, and, therefore, cannot do any 'selecting', *natural selection* is a convenient phrase to use when discussing the survival or death of individuals, and their genes, over time in different environments. In 1868 Darwin clarified that natural selection had no direction; no ultimate purpose or goal:

> This preservation, during the battle for life, of varieties which possess any advantage in structure, constitution, or instinct, I have called Natural Selection; and Mr. Herbert Spencer has well expressed the same idea by the Survival of the Fittest. The term "natural selection" is in some respects a bad one, as it seems to imply conscious choice; but this will be disregarded after a little familiarity .... For brevity sake I sometimes speak of natural selection as an intelligent power;—in the same way as astronomers speak of the attraction of gravity as ruling the movements of the planets, or as agriculturists speak of man making domestic races by his power of selection. In the one case, as in the other, selection does nothing without variability, and this depends in some manner on the action of the surrounding circumstances on the organism. I have, also, often personified the word Nature; for I have found it difficult to avoid this ambiguity; but I mean by nature only the aggregate action and product of many natural laws,—and by laws only the ascertained sequence of events.[1]

However, creatures need to reproduce, not just survive; otherwise their traits will not be passed on to offspring. So anything that helps a creature to breed successfully (produce offspring that survive to reproduce) contributes to its 'fitness', and hence the species' ability to persist in a specific environment. How much influence the environment has on dictating fitness is a matter of debate, but this was Darwin's basic idea.

As we just read, Darwin also approved of Spencer's phrase "survival of the fittest", but many of today's evolutionists don't like the term because it leads people to think in terms of 'biggest', 'fastest', or 'strongest' and these traits do not always increase the ability to produce viable offspring. The 'fittest' are, by definition, those that produce the greatest number of *surviving offspring*. He who has the most children, wins! There is confusion on this topic, going all the way back to Darwin himself. Just before the passage quoted above, he said, "It has truly been said that all nature is at war; the strongest ultimately prevail, the weakest fail." Despite the confusion, biologists use 'natural selection' in terms of differential reproduction. This is an important distinction.

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Natural selection was the only mechanism Darwin proposed in *Origin of Species* to explain the origin of all the diverse life forms on earth; all from a single original life form (or from a few life forms, as Darwin allowed). He had no knowledge of genetics and mutations, or their molecular basis in DNA (see Chapter 2). He proposed that small variations were always occurring and that

1. Darwin, C.R. *The variation of animals and plants under domestication*, 1st edition, vol. 1, issue 1, John Murray, London, UK, p. 6, 1868.

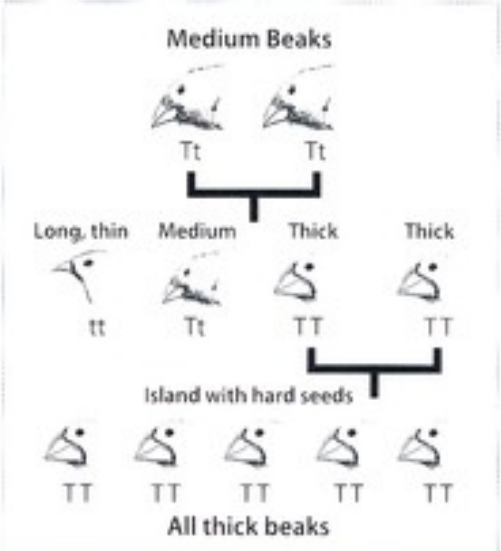
those that favoured survival would be preserved, thus propelling an organism towards an entirely different organism (given enough time).

Evidence for natural selection is commonly held up as proving evolution. Since organisms are often able to adapt to changes in their environment via natural selection, there is no shortage of stories of natural selection and so we are continually bombarded with the message that evolution is 'happening all the time'. But is this really *evolution*?

'Special' versus 'General' theories of evolution

What is evolution? Is it 'change over time' or 'the common ancestry of all species'? While trying to combine these two ideas, Darwin's theory entailed the formation of new species (speciation), although he did not really explain how new species formed (and how it happens is still somewhat controversial). I discuss the definition of the word 'species' later. For now we just have to understand that speciation simply involves the origin of, for example, a variety of rabbit that no longer breeds with its ancestor rabbits. This is quite different from seeing a new species as a step in turning microbes into mankind.

Darwin assumed that the variation seen between species was limitless, so that natural selection could change a microbe into a mongoose over eons of time. He assumed that the observed variations between dog breeds, pigeon breeds, or in the beaks of different species of finch[2] in the wild demonstrated the type of change that could be extrapolated, almost without limit, to explain not only the species of finches but the origin of finches, pigeons, dogs and everything else. He did not discuss the evolution of humans until 12 years later in *The Descent of Man, and Selection in Relation to Sex*, presumably because including human evolution in *Origin* would have reduced the likelihood of its acceptance.



Sorting of pre-existing genes could produce variety in beak shapes. Then natural selection could remove information for thin beaks.

It is a huge leap to go from looking at variations in an existing feature (such as shorter, thinner, longer, fatter beaks) to explaining the *origin* of beaks, finches, birds, reptiles, mammals and everything else. How does looking at the

2. Darwin observed such finches while in the Galápagos. See Wieland, C., Darwin's finches, *Creation* **14**(3):22–23, 1992; creation.com/darwins-finches.

variations in dogs explain the *origin* of dogs (wolves)? There is a fundamental logical disconnect here and this highlights a major Achilles' heel of evolution.

Indeed the evolutionist, Professor G.A. Kerkut, a well-known British authority on invertebrates, distinguished the 'special theory of evolution' (speciation) from the 'general theory of evolution' (the common ancestry of all living things). He argued that the latter, GTE, is conjectural:

> This theory can be called the 'General Theory of Evolution' and the evidence that supports it is not sufficiently strong to allow us to consider it as anything more than a working hypothesis. It is not clear whether the changes that bring about speciation are of the same nature as those that brought about the development of new phyla [major divisions of living things, of which there are about 80, including microbes]. The answer will be found in future experimental work and not by the dogmatic assertions that the General Theory of Evolution must be correct because there is nothing else that will satisfactorily take its place.[3]

Incidentally, Kerkut included the origin of life in the GTE. Why is it, then, that so many today do not want to include the origin of life in their definition of evolution? See Chapter 3.

Nowadays, we understand why simple changes in species (STE) cannot be extrapolated to the origin of the diversity of all living things (GTE). The type of observable variation evolutionists like to dub as 'evolution' is due to rearrangement of existing genetic information (alleles), or accidental, and almost always degenerative, changes in that existing information. However, microbes-to-mankind evolution requires the formation of new, complex, information-laden suites of genes containing the instructions for making, for example, muscle cells, bone, nerves, feathers on reptiles, etc., where none existed before. Darwin had no idea what would be involved in bringing about such major changes and modern biology has revealed a sheer complexity that stands against belief in simple changes accumulating over time.

In November 1980, some of the world's leading evolutionary biologists held a conference, billed as "historic", at the Chicago Field Museum of Natural History. Reporting on the conference in the journal *Science*, Roger Lewin wrote:

> The central question of the Chicago conference was whether the mechanisms underlying microevolution can be extrapolated to explain the phenomena of macroevolution. At the risk of doing violence to the positions of some of the people at the meeting, the answer can be given as a clear, No.[4]

3. Kerkut, G.A., *Implications of Evolution*, Pergamon, Oxford, UK, p. 157, 1960.
4. Lewin, R., Evolutionary theory under fire, *Science* **210**(4472):883–887, 1980.

Francisco Ayala, then Associate Professor of Genetics, University of California, was quoted as saying that he now was convinced "that small changes do not accumulate."[5]

Nevertheless, many evolutionists today persist in apparent ignorance of this. That is, they continually promote the idea that 'Big Change = Small Change x Millions of Years'. This is a logical fallacy known as equivocation, or bait-and-switch. It is akin to saying "because a cow can jump over a fence, it is only a matter of time and practice for it to jump over the moon".

Some teachers also use other equivocation tricks to disarm students who might resist accepting big-picture evolution (GTE), saying things like, "Evolution means change. Here is an example of change, therefore evolution is a fact." Another lame definition is evolution is 'change in allele (gene) frequency'. Of course allele frequencies change, but this does not explain the *origin* of the genes (of which the alleles are variants), which 'goo-to-you' evolution needs to explain, not just variations in the frequency of existing alleles.

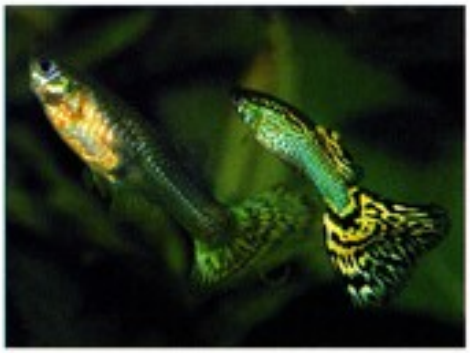
John Endler, a prominent evolutionist and an elected fellow of the US National Academy of Sciences, makes the point in this way:

> Evolution may be defined as any net directional change or any cumulative change in the characteristics of organisms or populations over many generations … It explicitly includes the origin as well as the spread of alleles, variants, trait values or character states.[6]

Many evolutionists speak as if evolution only involves the latter, and leave the origin of the traits out of the discussion. This omission was evident in the works of Charles Darwin, and prevails in evolutionary thought today, but it is lame.

Evolution is not just 'change'. It is not merely changes in trait prevalence (allele frequency) in a population (STE). It also must entail the origin of radically new traits that are not just modifications to existing ones (GTE), and this is where Darwin, and many since that time, have continually failed.

Natural selection is not evolution



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Many high-profile evolutionists speak of Darwinism/evolution and natural selection as if they are one and the same. For example, Dr Richard Dawkins speaks of experiments that demonstrated natural selection operating on the colouration of guppies (camouflage to protect against predators versus males being

5. Lewin, ref. 4, p. 884.
6. Endler, J. A., *Natural Selection in the Wild*, Princeton University Press, NJ, USA, p. 5, 1986.

colourful enough to attract females) as "a spectacular example of evolution before our very eyes."[7]

Dr John Endler, quoted above, carried out this clever research on guppies. Would he agree with Dawkins that this is "a spectacular example of *evolution*"?[8] In his book *Natural Selection in the Wild*, published in 1986, Endler clearly stated why the two are not the same:

> Natural selection must not be equated with evolution, though the two are intimately related.[9]
>
> Natural selection is common enough in natural populations to have been detected in a wide variety of organisms, and strong selection is not as rare as has been previously assumed; natural selection is therefore likely to be important in evolution. However, natural selection does not explain the origin of new variants, only the process of changes in their frequency.[10]
>
> Thus natural selection may affect the patterns of the origins of combinations of traits, even though it will not explain the mechanisms of their origins. This was tangentially discussed by Fisher (1930), Simpson (1944), and Rensch (1959), but has received virtually no attention since then. It would repay further study.[11]

Note that Fisher, Simpson and Rensch were very high profile evolutionists. Fisher is recognized as one of the formulators of the modern evolutionary synthesis.

In regard to the guppy research, while natural selection might help explain the relative abundances of colourful and less-colourful guppies, depending on the balance between sexual selection[12] (females favouring colourful mates) versus the risk of being eaten by a predator (favouring dull colours), it does not explain the *origin of the colours*. Even given that some mutations in a previously-existing colour gene might affect the way the guppy looks, this does not explain the origin of the gene itself. This is a critical difference to consider, but one which Darwin, and evolutionists since him, have consistently underplayed.

Can Dawkins and company really be ignorant of the fact that natural selection is not the same as evolution when such high-profile evolutionists, even one whom Dawkins cites when it suits his argument, have clearly pointed this out?

7. Dawkins, R., *The Greatest Show on Earth*, Free Press, New York, p. 139, 2009. See also Sarfati, J., Dawkins playing bait and switch with guppy selection, February 2010; creation.com/dawkins-guppy.
8. See Catchpoole, D., Defining terms, January 2011; creation.com/defining-terms.
9. Endler, J.A., ref. 6, p. 8.
10. Endler, J.A., ref. 6, p. 245.
11. Endler, J.A., ref. 6, p. 246.
12. Sexual selection is a special form of natural selection where the male or female of a species shows a mating preference for a partner with certain traits (such as colour).

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EVOLUTION'S ACHILLES' HEELS

Many people believe the universe and all life in it evolved by chance due to naturalistic processes over billions of years. It is also believed that there is abundant scientific evidence to support this idea. Yet, most individuals rarely examine the evidence for themselves. Instead, our human tendency is to defer to 'leading scientists' who claim to be qualified to know. However, not all scientists agree that evolution is a valid explanation for how things came to be and this book takes another look at the cherished icons behind evolutionary belief—written and reviewed by Ph.D. scientists qualified in their respective fields. Their summaries will help you examine the evidence for yourself. Even though evolution is the ruling paradigm, is it as strong an edifice as many people believe? At the end of the day, this foundational and crucial area of origins should have a profound impact on the way that every individual views his/her reason for being. It's that important!

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