

Does God Exist?

Part I: Darwin and God

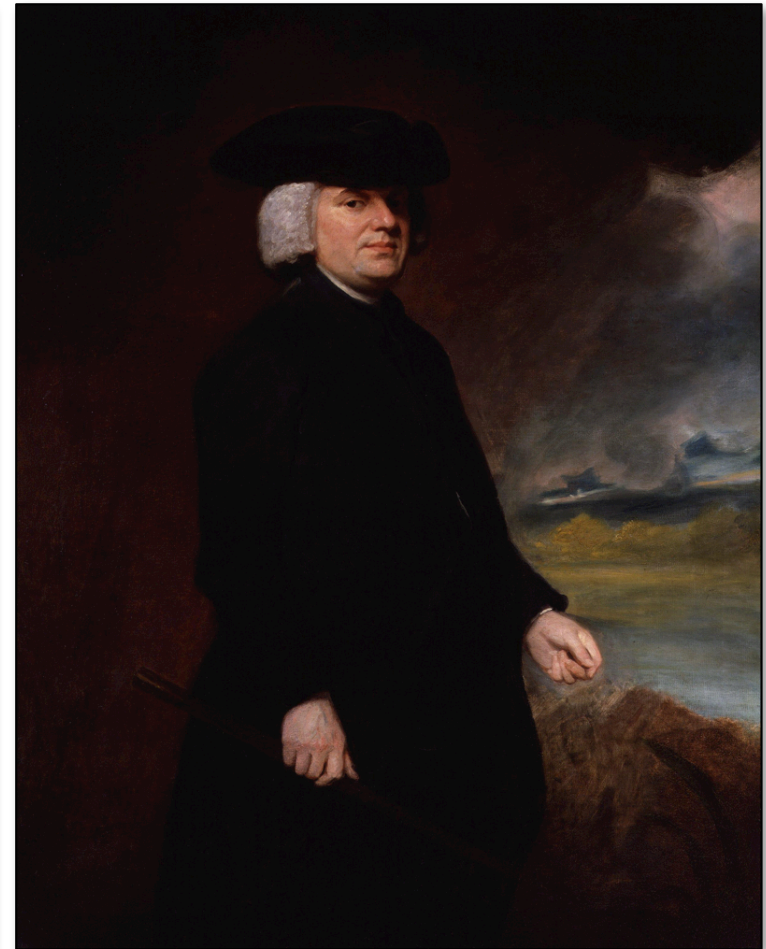
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I Paley's inference

IN crossing a heath, suppose I pitched my foot against a *stone*, and were asked how the stone came to be there, I might possibly answer, that, for any thing I knew to the contrary, it had lain there for ever: nor would it perhaps be very easy to shew the absurdity of this answer. But suppose I had found a *watch* upon the ground, and it should be enquired how the watch happened to be in that place, I should hardly think of the answer which I had before given, that, for any thing I knew, the watch might have
B always

The opening lines of Paley's *Natural Theology* (1802)



Portrait of William Paley by George Romney

I Paley's inference

Paley's inference in short:

Premise 1: The watch displays **apparent unity of purpose**.

Premise 2: The **best explanation** for this apparent unity of purpose is a **designer** who designed the watch for that purpose.

Conclusion: There **exists a designer** who designed the watch for that purpose.

- This is an **inference to the best explanation** (Lipton 2004).
- The explanation is **self-evidencing**: the phenomenon to be explained is sufficient evidence (Paley argues) for the truth of the explanation.

I **Paley's inference**

Paley argues that the same inference can be made in the case of an eye:

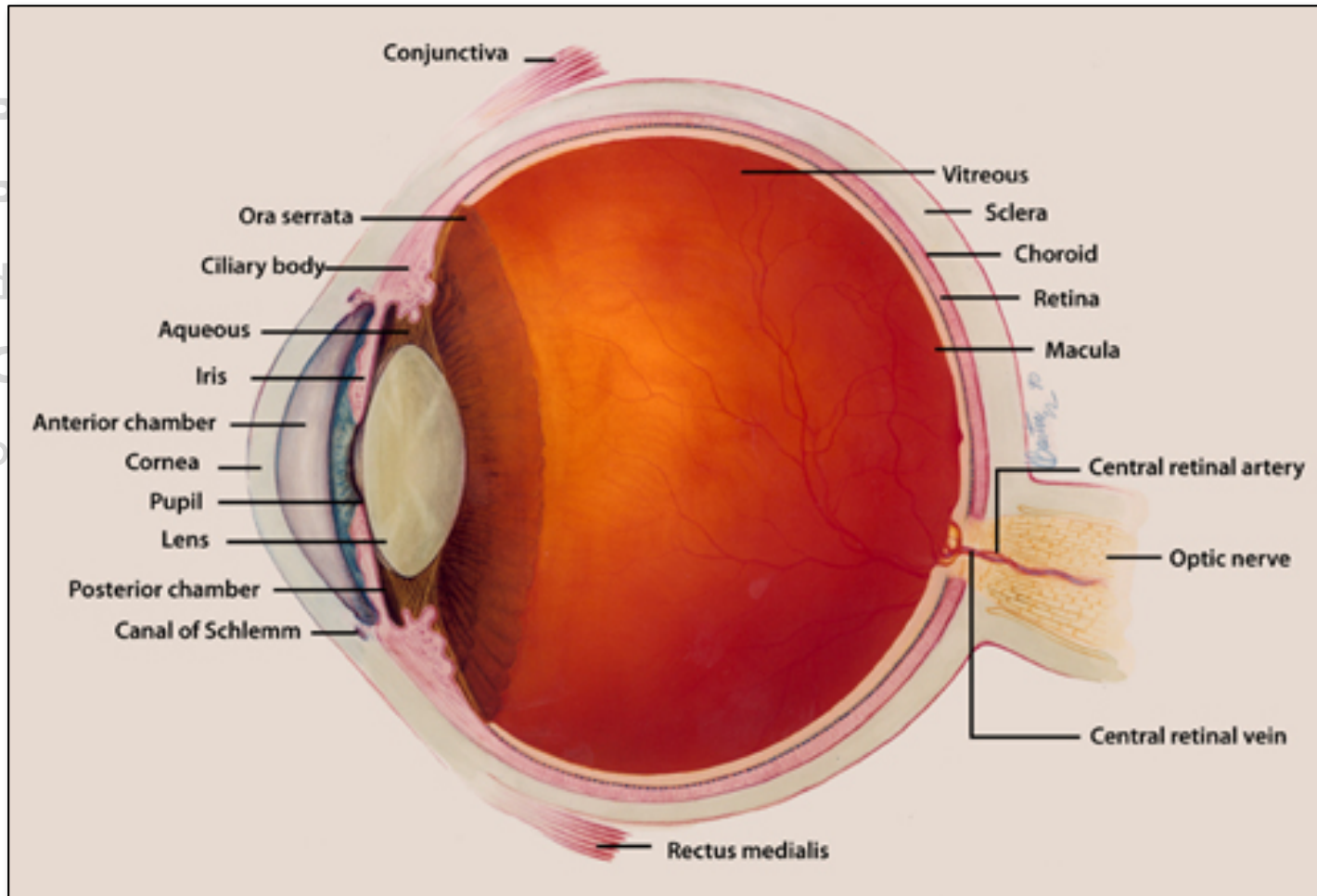
Premise 1: The eye displays apparent unity of purpose.

Premise 2: The best explanation for this apparent unity of purpose is a designer who designed the eye for that purpose.

Conclusion: There exists a designer who designed the eye for that purpose.

I Paley's inference

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Public domain image by the US National Eye Institute

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Conclusion: There **exists a designer** who designed the eye for that purpose.

2 Darwin's response

- Paley assumed that the **only** process capable of creating apparent unity of purpose was **intentional design**.
- However, we now know that there is another such process: **natural selection** (Darwin 1859).
- Natural selection is the **differential reproduction of organisms** due to differences in their heritable characteristics.
- Over time, traits that promote the **fitness** of an organism—its propensity to survive and reproduce—tend to spread through populations.
- Over longer timescales, **small improvements accumulate** and complex adaptations are **gradually assembled**.
- Because the criterion for improvement (fitness) is the same for all parts of the organism, these adaptations display **apparent unity of purpose**.
- In this sense, natural selection is a “**blind watchmaker**” (Dawkins 1986).

2 Darwin's response

“If we must compare the eye to an optical instrument, we ought in imagination to take a thick layer of transparent tissue, with a nerve sensitive to light beneath, and then suppose every part of this layer to be continually changing slowly in density, so as to separate into layers of different densities and thicknesses, placed at different distances from each other, and with the surfaces of each layer slowly changing in form. Further we must suppose **that there is a power always intently watching each slight accidental alteration** in the transparent layers; and carefully **selecting each alteration which, under varied circumstances, may in any way, or in any degree, tend to produce a distincter image.**” ...

(Darwin 1859, p. 188-189)

2 Darwin's response

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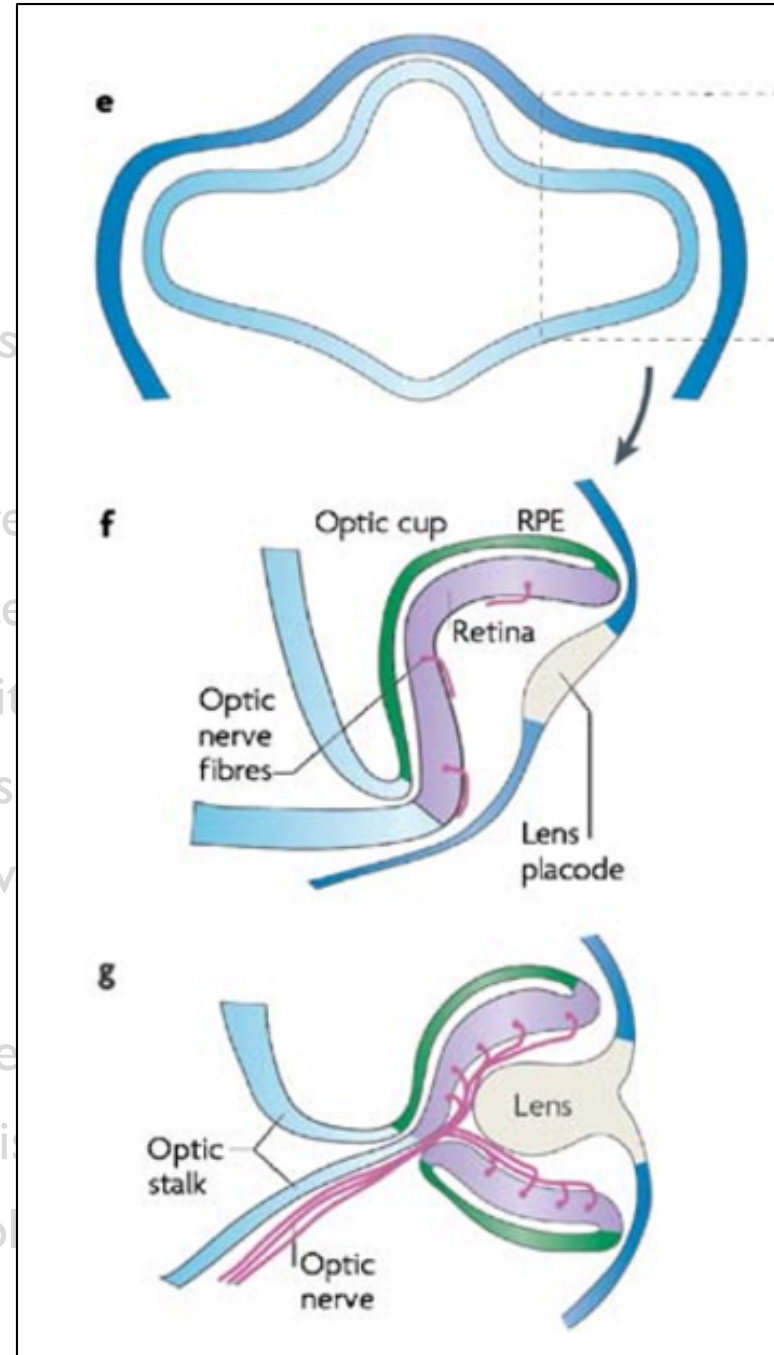
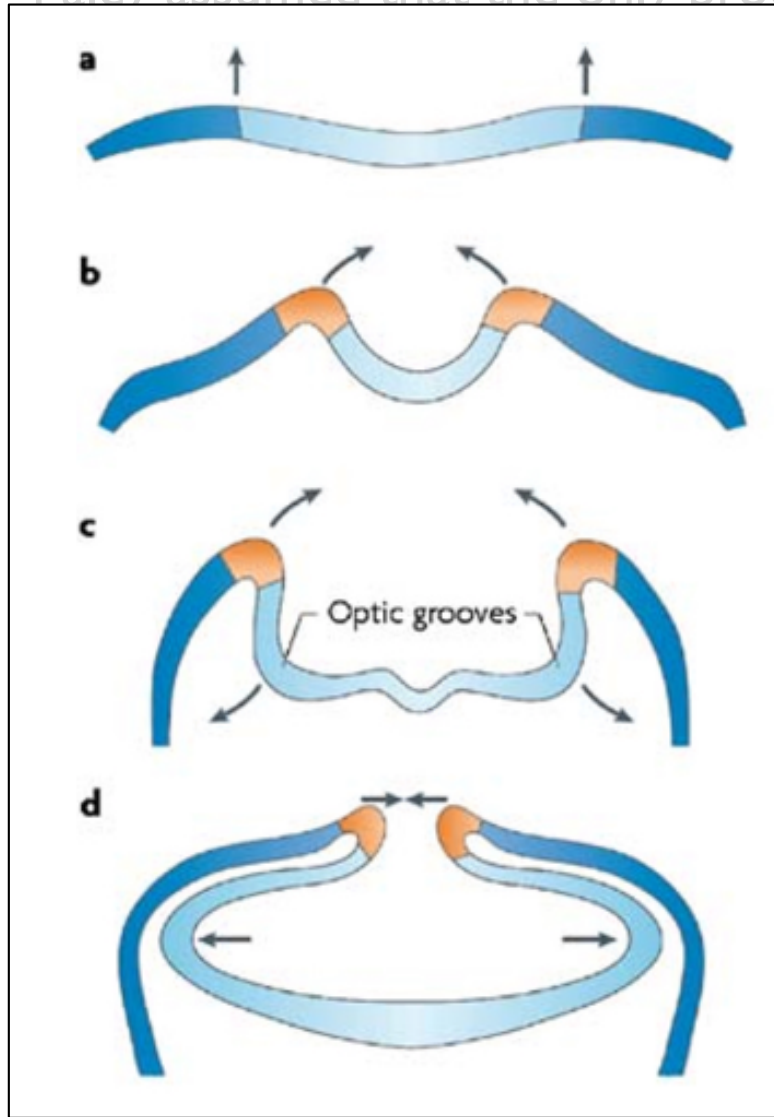
... “We must suppose **each new state of the instrument to be multiplied by the million**; and each to be **preserved till a better be produced**, and then the old ones to be destroyed. In living bodies, variation will cause the slight alterations, generation will multiply them almost infinitely, and **natural selection will pick out with unerring skill each improvement**. Let this process go on for millions on millions of years; and during each year on millions of individuals of many kinds; and **may we not believe that a living optical instrument might thus be formed as superior to one of glass, as the works of the Creator are to those of man?**”

(Darwin 1859, p. 188-189)

- In this sense, natural selection is a “blind watchmaker” (Dawkins 1986).

2 Darwin's response

- Paley assumed that the only process



From Lamb et al. (2008) The origin of the vertebrate eye. *Evolution: Education and Outreach*

2 Darwin's response

- Paley assumed that the only process capable of creating apparent unity of purpose was intentional design.
- However, we now know that there is another such process: natural



- From Lamb et al. (2008) The origin of the vertebrate eye. *Evolution: Education and Outreach*. Because the criterion for improvement (fitness) is the same for all parts of the organism, these adaptations display apparent unity of purpose.
- In this sense, natural selection is a “blind watchmaker” (Dawkins 1986).

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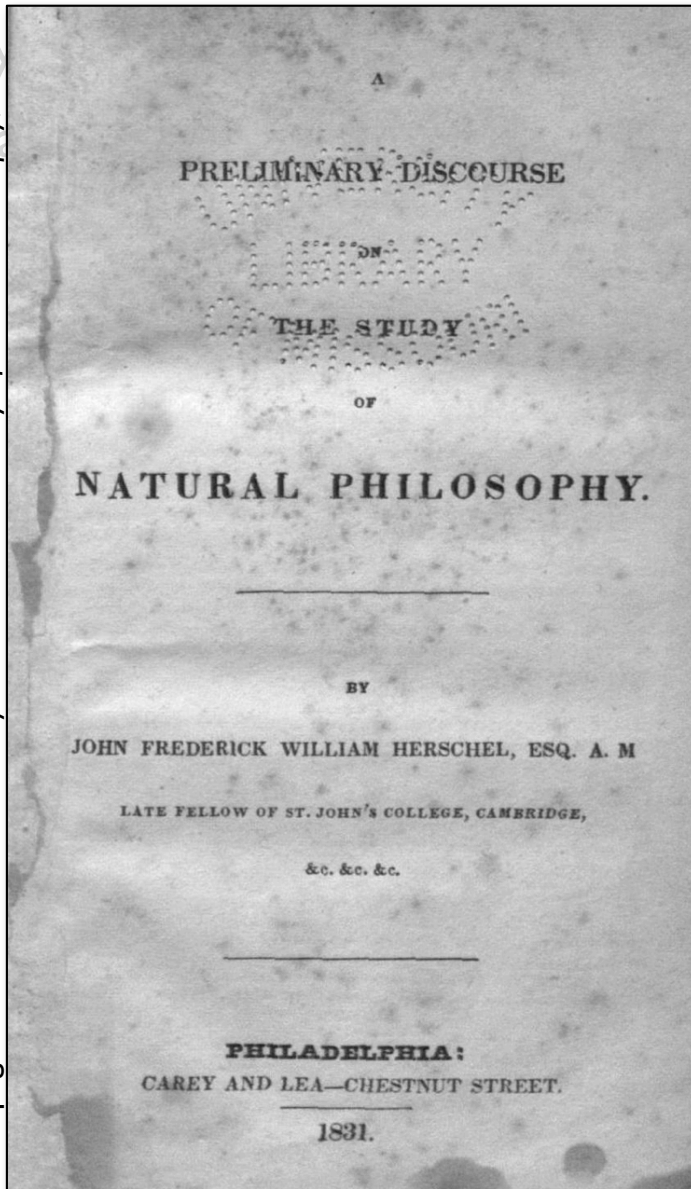
Paley's argument is refuted only if natural selection provides a **better explanation** for the origin of the eye than intentional design. Does it?

A rather unconvincing answer: Yes, because an explanation that cites **natural** causes is always better than an explanation that cites **supernatural** causes.

A better answer: Yes, because an explanation that cites causes such that **their existence and competence to produce the phenomenon of interest can be supported by independent evidence** is always better than one that cites causes of unknown existence or competence (the **vera causa** principle).

2 Darwin's response

Title page of Herschel's *Preliminary Discourse on the Study of Natural Philosophy*, 1831.



Portrait of Herschel by A. E. Chalon, 1839

2 Darwin's response

The vera causa principle

Phenomenon to be explained: A dead rabbit in my garden.

Possible cause I: The neighbour's cat.

VC? Yes – existence and competence independently established.

Possible cause II: Lightning bolts seen the night before.

VC? Yes – existence and competence independently established.

Possible cause III: Burst of cosmic radiation accompanying the sunrise.

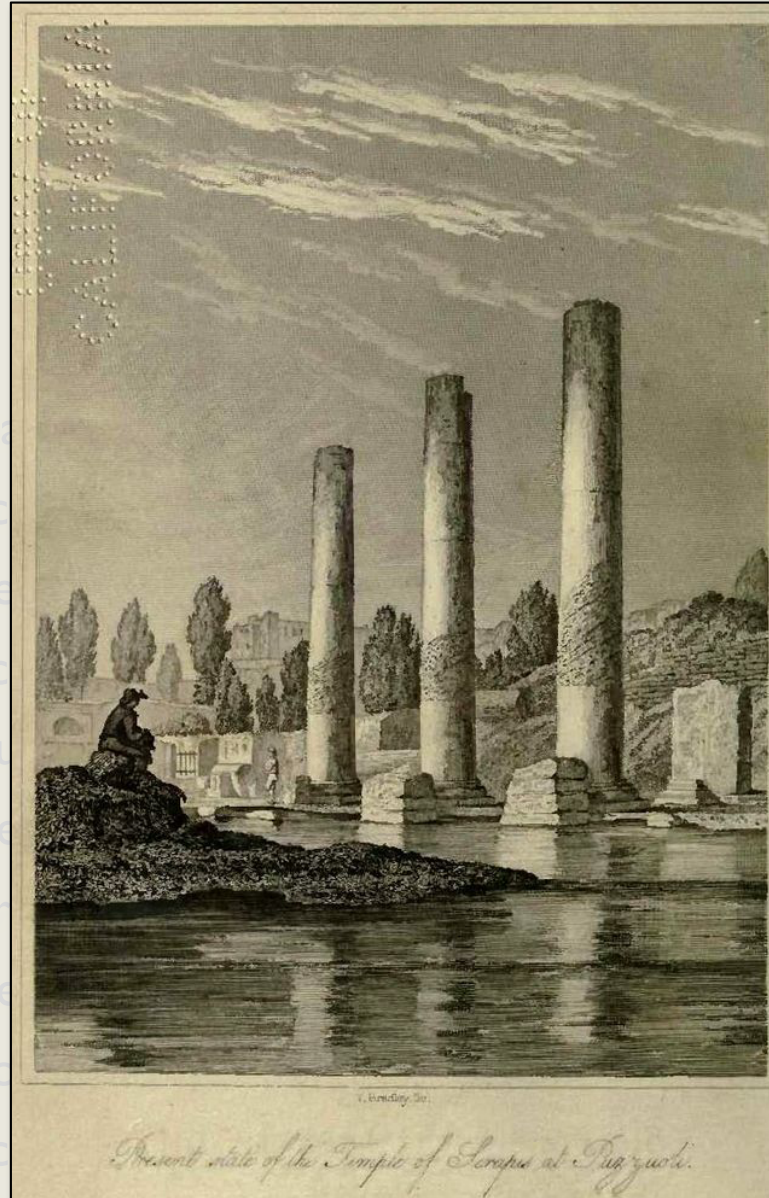
VC? No – existence not independently established.

Possible cause IV: The neighbour's hamster.

VC? No – competence not independently established.

2 Darwin's response

Frontispiece of Lyell's *Principles of Geology* (1830-33), showing the Macellum of Pozzuoli



e

Phenomenon to be explained

a level.

Possible cause I: A volcanic eruption

VC? No – existed before

Possible cause II: Infringement of the sea bed

VC? No – existed before

Possible cause III: Collapse of the columns

VC? No – complete

Possible cause IV: A volcanic eruption

VC? No – complete

Possible cause V: Deposition of the seabed

VC? Yes – existed before

f the seabed.

ublished.

2 Darwin's response

The vera causa principle

Phenomenon to be explained: Shells in rocks above sea level.

Possible cause I: A “plastic virtue” in the soil.

VC? No – existence not independently established.

Possible cause II: Influence of celestial bodies.

VC? No – existence not independently established.

Possible cause III: Casual transport by pilgrims.

VC? No – competence not independently established.

Possible cause IV: A process of fermentation.

VC? No – competence not independently established.

Possible cause V: Depositing of shells on seabed, plus uplift of the seabed.

VC? Yes – existence and competence independently established.

2 Darwin's response

Paley's argument is refuted only if natural selection is a better explanation for the origin of the eye than intentional design.

English carrier pigeon (CC-licensed photograph by Jim Gifford)



English short-faced tumbler
(CC-licensed photograph by Graham Manning)

2 Darwin's response

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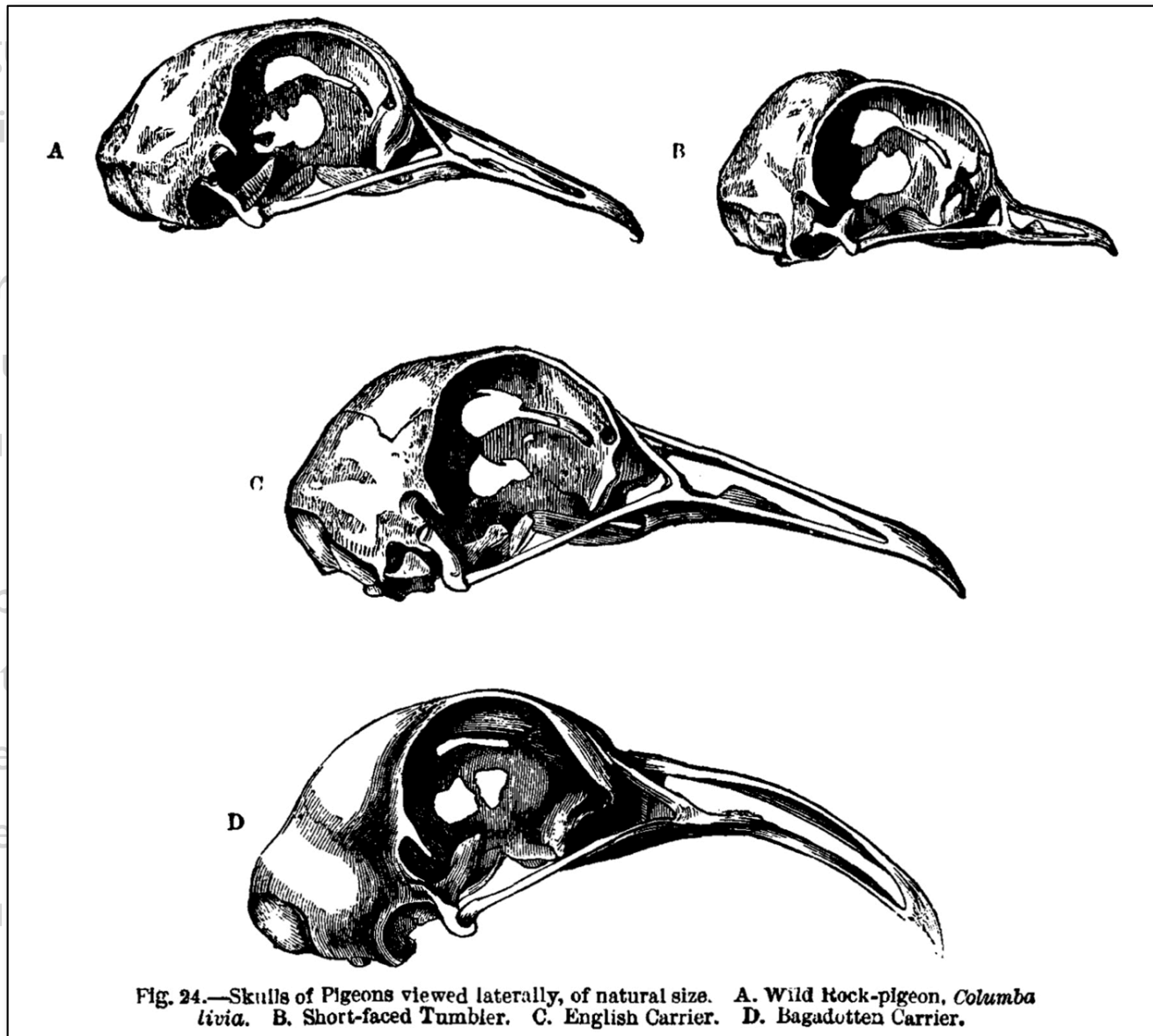


Figure 24 from Darwin's (1868) *Variation of Plants and Animals under Domestication*

3 Natural selection as “universal acid”

Evolutionary biology is **logically compatible** with the existence of God (Sober 2014).

However, one can distinguish modest and radical ways in which evolutionary biology still threatens to **undermine the justification for religious belief**:

Modest way: Evolutionary biology undermines what was previously the strongest argument for the existence of God, namely the argument from design.

Radical way: Evolutionary biology provides **debunking explanations** of religious belief, showing religious belief to have originated in natural processes rather than supernatural revelation.

3 Natural selection as “universal acid”

Evolutionary biology is logically compatible with the existence of God (Sober 2014).

“[Darwin’s “dangerous idea] eats through just about every traditional concept, and leaves in its wake a revolutionized world-view, with most of the old landmarks still recognizable, but transformed in fundamental ways.”

Dennett, *Darwin’s Dangerous Idea*, 1995

Radical way: Evolutionary biology provides debunking explanations of religious belief, showing religious belief to have originated in natural processes rather than supernatural revelation.

3 Natural selection as “universal acid”

Radical way: Evolutionary biology provides **debunking explanations** of religious belief, showing religious belief to have originated in natural processes rather than supernatural revelation.

The structure of an **evolutionary debunking argument** (Wilkins and Griffiths 2013):

Causal premise: *S*'s belief that *p* is explained by process *X*.

Epistemic premise: *X* is an **off-track** process (i.e. it is insensitive to the truth or falsity of *p*).

Conclusion: *S*'s belief in *p* is unjustified.

3 Natural selection as “universal acid”

Radical way: Evolutionary biology provides **debunking explanations** of religious belief, showing religious belief to have originated in natural processes rather than supernatural revelation.

- Evolutionary accounts of religion, although very speculative, have the potential to fill in the details of “process X” in the debunking argument.
- For example, David Sloan Wilson (2002) argues that religions are products of **cultural group selection** that evolved because of their benefits for **group cohesion**...
- ...but these benefits for group cohesion in no way depend on religious beliefs being **true**.

4 Darwin's agnosticism

- Darwin in later life described himself as an **agnostic** (a term that had recently been coined by T. H. Huxley).
- Darwin held that an attitude of uncertainty, doubt and humility is appropriate with respect to religious questions...
- ... and that direct confrontation of religion is ineffective and misguided.

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“I may state that my judgment often fluctuates. Moreover whether a man deserves to be called a theist depends on the definition of the term: which is much too large a subject for a note. In my most extreme fluctuations I have never been an atheist in the sense of denying the existence of a God.— I think that generally (& more and more so as I grow older) but not always, that an **agnostic** would be the most correct description of my state of mind.”

Darwin, letter to John Fordyce, 1879.

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- Darwin held that an attitude of **uncertainty, doubt** and **humility** is appropriate with respect to religious questions...
- ... and that direct confrontation of religion is ineffective and misguided.

5 Summary

- Paley argued that, on finding a watch on a heath, one would reasonably infer from the apparent unity of purpose of the watch to the existence of a watchmaker. This is an **inference to the best explanation**.
- Paley argued that we could likewise infer from the apparent unity of purpose of an **eye** to the existence of a designer responsible for biological design.
- We owe to Darwin the discovery that there is an alternative explanation for apparent unity of purpose in nature: **natural selection**.
- Natural selection assembles complex adaptations **gradually** via the **accumulation of small improvements**.
- Dennett and others have argued that natural selection is a “**universal acid**” that dissolves (among other things) the foundations of religious belief. It does so by showing religious belief to be the result of natural processes, not supernatural revelation.
- The argument here can be formulated as an **evolutionary debunking argument**.
- Darwin himself avoided any such arguments, instead adopting a distinctive form of **agnosticism**.

Next time: God, cosmology, and the Big Bang...