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Donald Prothero, THE STORY OF EVOLUTION IN 25 DISCOVERIES: THE EVIDENCE AND THE PEOPLE WHO FOUND IT

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The Story of Evolution in 25 Discoveries: The Evidence and the People Who Found It, by Donald Prothero. Columbia University Press, 2020. Pp. xii + 406. \$35.00 (hardcover); \$25.00 (softcover); \$24.99 (e-book)

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Prothero makes his overarching purpose in writing the book clear in the preface: to provide not another jocular case against the proposition that an intelligent designer gave us our universe, but a “serious” case for atheism based upon the bio-mechanical flaws we can readily observe in many physical creatures in said universe. Here’s the relevant announcement:

Mara Grunbaum’s *WTF, Evolution: A Theory of Unintelligible Design* (2014) [Workman] and other books have made the point that life is full of bizarre and funny and ugly things that make no sense in a divinely designed universe, showing how clumsy and wasteful nature can be. However, that is basically a picture book full of jokes and one-liners with a hip, irreverent attitude. I want to make the same point in a more serious way, exploring this topic and delving deeper into its meaning. (xi)

Prothero certainly fulfills his desire: he mirthlessly attacks, repeatedly, the proposition—which I shall denote by “DD”—that our universe is divinely designed. But what about *arguments* against this proposition? Does Prothero articulate any, and, if so, are any of them any good? Well, he provides an argument *schema*—which I denote by “**ArgS**”—for the negation of DD, and he instantiates this schema repeatedly as he moves through the twenty-five “stories” alluded to in the title of his book. Unfortunately for Prothero, while **ArgS** should (as I assert below) be regarded as formally valid, all *instances* of it are unsound because of a “fatal flaw” we shall soon perceive. But before analyzing **ArgS** and some instantiations of it, allow me to say a few words about the overarching structure of Prothero’s book, and immediately following on that, for economy, permit me to restrict my subsequent attention herein to the part of his book that specifically explores *humans* and evolution (Part V).

The “25” in Prothero’s title corresponds not literally to a group of narratives/stories, but rather to the twenty-five chapters that compose the book, each of which is intended to convey an important discovery that in part substantiates, or at least fleshes out, evolution. I can’t review, even cursorily, the full series of these points here. Fortunately, among the twenty-five, a proper subset is especially relevant to the evaluation of his book, and some among this set will be of particular interest to Christian philosophers. Into this restricted category falls for instance “The Sinking of Noah’s Ark,” the sixth “story,” in which Prothero claims that the



co-discoverers of evolution by mutation and natural selection, Darwin and Wallace, revealed a variety and number of species on Earth too large to fit inside Noah's Ark. As I point out below, given Wallace's (well-known and contra-Darwin) position that the human mind (a) stands in radical discontinuity with the minds of nonhuman animals, and (b) is in fact not the result of evolution, the account given in chapter 6, which portrays Darwin and Wallace as walking in lockstep together, is exceedingly peculiar. I return to this peculiarity below.

Among all twenty-five "stories" before Prothero's treatment of humans (which concludes the book), "Chapter 8: Nature is Not Moral: The Case of the Cruel Wasps" will likely be of greatest interest to Christian philosophers. The first page of this chapter contains:

The natural theology school of thought was very influential in its day, and Darwin himself knew Paley's [*Natural Theology*] almost by heart. But natural theology had been debunked even before the time of Paley. In 1779, Scottish philosopher David Hume published *Dialogues Concerning Natural Religion*, which demolished the whole argument from design. (98)

This will come as rather surprising to philosophers of religion, acquainted as they will be with the fact that Paley's *Natural Theology* remained widely taught and affirmed throughout the nineteenth century. Leaving this aside—and leaving aside as well that arguments from design are quite alive and well today, in some cases in forms completely abstracted away from any particular physical phenomena; e.g. see Richard Swinburne, "The Argument from Design," in *Readings in Philosophy of Religion: An Analytic Approach*, ed. Baruch A. Brody (Prentice-Hall, 1974), 137–149—here is "story" number eight's discovery, made by Darwin:

One of Darwin's great insights was that beauty and pain were equal parts of the story and could only be explained by a process that allowed both to operate. Nature is not just a divine display of the beautiful handiwork of a benevolent god; it is a process that operates outside our judgmental human framework of beautiful and ugly — it just gets a certain job done (survival of organisms so they can leave offspring to the next generation) by whatever means necessary. (98)

Given that according to orthodox Christianity God gets quite a bit done by allowing not only pain, but agents who unjustly inflict it upon other agents (the Pauline epistles can serve here as a definitive source, and a remarkably subtle, sustained argument for their authenticity was mounted by none other than Paley himself in his *Horae Paulinae*), it's hard to see why Darwin's discovery that there is both "beauty and pain" is inconsistent with Christianity (absent a sustained and novel treatment of the problem of evil). To put it starkly, how is it that a religion with creeds asserting Pontius Pilate to have presided over the God-planned crucifixion of a guiltless man is negated by a "discovery" that our planet has ugliness upon it?

The book's twenty-five chapters are clustered under parts and, from the standpoint of both the Bible (which Prothero refers to rather unflatteringly

throughout his volume) and philosophy viewed through the lens of Christian doctrine, it is far and away “Part V: Humans and Evolution” that is most important. Prothero launches this part thus:

In the 1600s and 1700s, naturalists and theologians (often the same person) held up the human body as an example of perfect design and engineering. After all, doesn't Genesis 9:6 say that “God made man in His own image”? Therefore, the human body must be perfect or at least as good as could be designed. This extreme view was often pushed by the “philosophical optimism” school of thought articulated by Gottfried Wilhelm Leibniz and other thinkers in the 1670s and 1680s. (273)

This opening reveals two things: one, it makes plain that it is the *bodies* of human persons to be lampooned by Prothero, and two, it also makes plain that we are dealing with an author shockingly unfamiliar with the historical fact that the challenge to evolution in light of the nature of human persons pertains not to our bodies, but to our *minds*. (I refrain from discussing a third thing we can immediately apprehend upon reading the start of Part V: that Prothero has no familiarity with Leibniz's own relevant writings and accomplishments. I shall say only that the co-inventor of the calculus, a Christian, rejected the view that the mind is mechanical, which by definition is in Prothero's exclusively bio-mechanical orientation.) After all, the co-discoverer, with Darwin, of evolution as a mechanism driven by mutation and natural selection, the previously mentioned Wallace, was an unwavering theist who pressed against Darwin the apparent fact that our capacity to grasp and use higher mathematics, while having no perceivable value when it comes to the *modus operandi* of hunter-gatherers, was nonetheless a capacity they paradoxically had.

Wallace was well aware of the fact that aspects of our bodies, even when viewed against the backdrop of physical capacities seen in some nonhuman animals, are decidedly unimpressive. But our mental capacities, Wallace pointed out, are quite another matter. Concerns that human persons have remarkable mental powers qualitatively superior to those of nonhuman animals, which thus serve to call into question Darwin's “Protheroian” view that, say, canines reason in ways fundamentally no different than our own, which Darwin defended in his *Descent of Man*, are alive and well in our new century, as contemporary cognitive science reveals; e.g., see Penn, D., Holyoak, K. & Povenelli, D. (2008), “Darwin's Mistake: Explaining the Discontinuity Between Human and Nonhuman Minds,” *Behavioral and Brain Sciences* 31.2: 109–130.

But so be it: Prothero is concerned with bodily imperfections, and what they imply with respect to theism. Let's turn now to the shape of the reasoning he employs to express this implication. What, then, is the aforementioned argument schema, **ArgS**, that Prothero presents, and then instantiates, in order to attack proposition DD? In order to answer this question, a sensible first move is to make DD a bit clearer and crisper. I do so by replacing it with:

DD*: A set *E* of empirically confirmable propositions constitutive in part of modern evolutionary biology is inconsistent with some set *C* of tenets of credal Christianity.

ArgS also includes the schematic structure needed to deduce DD*; after reading Prothero's book end-to-end carefully, and wanting in my analysis to be as charitable as possible, the schematic structure needed (and which, as we will see, Prothero does at least unmistakably wish to instantiate) can be taken to consist in three slot-filled propositions, to wit:

1. A set *S* of empirically confirmable propositions constitutive in part of modern evolutionary biology is inconsistent with Christianity, if
 - (1.1) *S* consists of propositions that together entail both that
 - (C1) some biomechanical sub-parts/sub-systems *Sub* of the bodies of human persons are obviously sub-optimal, and that
 - (C2) God as a supernaturally intelligent creator would not create *Sub*.
2. A set of propositions entails (C1) if some biomechanical sub-parts/sub-systems *Sub* of the bodies of human persons can be better designed by contemporary human persons (specifically, at least presumably, by human scientists and engineers).
3. God as a supernaturally intelligent creator would not create the bio-mechanical sub-optimal parts/systems *Sub*.

Let's grant what certainly seems undeniable: the logical structure of what we have here, **ArgS**, could be further formalized, to the point that we obtain formal validity, transparently. Now, to instantiate **ArgS**, the key assignment needed is to *Sub*, such that (2) and (3) are concretized as true, which will yield satisfaction of conditions (C1) and (C2), which will yield in turn satisfaction of the consequent of (1)—at which point Prothero will have brought his project to successful completion.

What are some of Prothero's instantiations of *Sub*? There are far too many for me to even mention a significant portion of them. Prothero's list of them is preceded by the following:

Let's run down some of the long list of poor designs and vestigial features of humans, just to remind us of our humble origins. Many of these features were configured in a certain way in our ancestors, and this roundabout wiring and clumsy, intelligent design has been maintained even though it does not function as well as it should. (276)

First on Prothero's list of things to be instantiated to *Sub* is sub-optimal vision; we read:

One of these features is the vertebrate eye (see chapter 20). Our eyes are wired backward, with the photoreceptors in the retina pointed away from the light source, and the network of blood vessels and nerves lies on top of them in the retina, which makes our vision less acute than it could be. This configuration also necessitates having an opening for the optic nerve,

which creates a blind spot in our retina. If humans were divinely designed, surely our eyes would be like those of the octopus, in which the photoreceptors point the right way and are in the top layer of the retina with nothing obstructing them, nor any blind spot. (276)

Consider what Prothero says here, with an eye to premise-schema (3), the untenability of which is the fatal flaw. It's one thing to say that something is suboptimal from *our* perspective, and given *our* (presumed) ability to design and engineer something better. I'm more than happy, in fact, to agree for argument's sake that (2), instantiated with our "backward" eyes, is true. But it's quite another thing to say that there exists a specific alternate design that, were there a God, would have been used by that God; yet this is what's needed to obtain a true instantiation of (3), and from there a true instantiation of **ArgS**. Is it really plausible to hold that the existence of God entails that we must specifically have octopus eyes instead of what the neurobiologically normal among us have? Who's to say that God can't develop out of "backward-eye" creatures all sorts of glory beyond what octopi eyes would bring? Of course, the very idea that specifically God would create octopus eyes is astoundingly naïve. After all, aren't there any *number* of additional alternatives such that, for all we know, would exceed, when implemented, the visual prowess of an octopus? Even if we assume that visual acuity ranges all and only across a continuum spanning a capacity to handle variation in distance, size, resolution, and the like, then surely, for example, neither humans *nor* octopi have vision systems enabling direct perception of, say, single-cell creatures.

Another instantiation to *Sub* given by Prothero is that we have tailbones, not tails:

Another example is our ridiculously small tailbone. All monkeys and more primitive primates have a long tail for balance and other functions (some even have prehensile tails for grasping limbs), as do most mammals. We humans also had a long tail when we were embryos. But this tail-making gene is shut off during embryology in all apes and humans, and our early embryonic tail is resorbed. Instead of being born with a fully functional tail, all we have is three tiny tailbones at the end of our spine (the coccyx). A few tiny muscles still insert in the tail region, so it is not entirely functionless, but the fact that it's reduced to a tiny stub shows that its function is relatively unimportant now. (283)

In short, then, because we don't have tails for balance and/or grasping, there is no Creator—or so we are to believe. But the fatal flaw rises up again to eviscerate the instantiation of **ArgS**: How do we know, contrary to (3), that the Creator wouldn't create non-tailed beings like us? How do we specifically know that non-tailhood is overall sub-optimal? After all, again, surely there are an infinite number of possibilities for how non-tailhood can play a role in all sorts of situations having more value than those wherein we have tails.

There are many other equally colorful sub-optimal aspects of our bodies, each implying, by **ArgS**, that there is no Creator. But scour the book with the (optimal?) eyes of a scholarly eagle and you will find nothing at all supplied by Prothero to establish, or even render slightly plausible, the requisite instantiations of proposition (3).

Let me end by pointing out that despite Prothero's anemic argumentation, his is nonetheless an important book for Christian philosophers who regard established empirical science and engineering to count in *favor* of the proposition that God exists (or to at least render this proposition—to use an apt epistemic adjective from Chisholm's *Theory of Knowledge* (Prentice-Hall, 1966)—*counterbalanced*, i.e. (essentially) equally likely and unlikely for a rational agent engaged in belief fixation). The importance of the book arises from the fact that it forces its Christian readers to face the brute fact, conveyed loud and sneeringly clear by Prothero's prose, that some prominent atheists working in the particular physical sciences still, well over a century after Darwin, aver publicly that evolution obviously entails God's non-existence.