

Thomas Nagel, *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False* New York: Oxford University Press, 2012. 144 pp. \$24.95.

For some time now, Thomas Nagel has been troubled by the place of Darwinism in public intellectual life. In 2008, he argued in *Philosophy and Public Affairs* that Intelligent Design Theory has a place in high-school science curricula. More recently, he reviewed Alvin Plantinga's anti-Darwinism favourably in the *New York Review of Books*, writing:

when our faculties lead us to beliefs vastly removed from those our ancestors needed to survive—as in the recent production and assessment of evidence for the existence of the Higgs boson—Plantinga's sceptical argument remains powerful.

Now, in *Mind and Cosmos*, we have a more systematic treatment, which affords us a better understanding of his view.

Let us begin with the inflammatory sub-title. You might think that Nagel is offering a refutation of a scientific theory. As far as I can tell, this is not exactly his intention (except for a strange pronouncement I'll discuss later). And it is certainly not the result, of his argument. Nagel claims that materialist neo-Darwinism ("Darwinism" for short) doesn't offer us a certain sort of understanding: it doesn't render the emergence of mind, consciousness, and value *intelligible*. For reasons I'll outline, *scientific* Darwinism doesn't claim to, and perhaps couldn't, offer *this* kind of understanding. So Nagel does not meet Darwinism on its ground. This criticism is from a point of view external to Darwinism itself.

Nagel's reasons for thinking that Darwinism is incomplete with respect to consciousness are summarized in an argument he gives in chapter 3. Explanation is not just of an event, but of an event *type* under a description. Suppose we knew

(a) why all organisms of material constitution *M* are conscious,

and

(b) how *M*-constituted organisms emerged by “purely physical evolution.”

(a) and (b) might seem together to imply that we know how and why *consciousness* evolved, but Nagel thinks they do not. For though (b) explains an instance of the event type *M*-CONSTITUTED CREATURES EMERGED, we still lack an explanation of how CONSCIOUS CREATURES EMERGED (51). To understand the latter, Nagel says, we need to know *why* evolution produced consciousness. Such an explanation must make it “likely” that evolution produced conscious organisms *under the description “conscious”* (48), and not merely under the description “*M*-constituted.” (For philosophers of science: Nagel is not using the term ‘likely’ in the Fisher-Edwards sense here: substitute ‘probable’ to understand his meaning.) There must be such an explanation, he says, since “organisms such as ourselves do not just *happen* to be conscious” (47).

In short, Nagel does not contest the possibility of knowing (a) and (b). (a) is a synchronic, or non-historical, reduction of conscious to material constitution; (b) is an evolutionary account of the emergence of the material properties underlying consciousness. Nagel’s central problem is that they do not suffice to make the emergence of consciousness non-accidental.

Here is one reason, unconnected with materialism or Darwinism, why science would find it very difficult to offer such an explanation. Psychology is an autonomous discipline. The laws of consciousness are investigated independently of those of physics, and as a consequence, psychological *concepts* are independent of physical concepts. The proposition that *M*-constituted creatures are conscious thus conjoins independent concepts and appears to be contingent. Along similar lines: we grasp consciousness from the first-person perspective. From this perspective, consciousness is not a brain process. Thus, the proposition that mental acts are physically constituted seems contingent to us.

This conceptual gap between psychology and material science is not why Nagel dismisses Darwinism. He does not think that it is an insuperable obstacle to understanding the mental:

I suspect that the appearance of contingency in the relation between mind and brain is probably an illusion, and that it is in fact a necessary and nonconceptual connection, concealed from us by the inadequacy of our present concepts . . . The mind-body problem is difficult enough that we should be suspicious of attempts to solve it with the concepts and methods developed to account for very different kinds of things. (41-42)

In short, Nagel allows that we might ultimately possess a non-historical understanding of *why* *M*-constituted creatures are conscious. To repeat: his point is that this still does not afford us a *historical* understanding of the emergence of consciousness, because it doesn't make it likely. (I confess I don't fully understand this point, since he seems to allow that (a) above might constitute a necessary connection between mind and brain.)

This is perhaps the moment to notice the strange pronouncement to which I earlier alluded.

With regard to evolution, the process of natural selection cannot account for the actual history without an adequate supply of viable mutations, and I believe it remain an open question whether this could have been provided in geological time merely as a result of chemical accident, without the operation of some other factors determining and restricting the forms of genetic variation. It is no longer legitimate simply to imagine a sequence of gradually evolving phenotypes, as if their appearance through mutations in the DNA were unproblematic—as Richard Dawkins does for the evolution of the eye" (9). (Versions of this claim are repeated on 43, 46, 48, etc., equally unsupported.)

Now, this is an *internal* challenge to the scientific viability of Darwinian explanation, not just to its explanatory completeness. The sufficiency of genetic variation to drive natural selection has been a central theme since R. A. Fisher's great book, *The Genetical Theory of Natural Selection*. Nagel, a *philosopher*, tells us there's not enough. Big result! And it's *completely* unsupported by argument.

Nagel says that he would

like to defend the untutored reaction of incredulity to neo-Darwinism . . . It is *prima facie* highly implausible that life as we know it is the result of a sequence of physical accidents together with the mechanism of natural selection” (6).

This is just irresponsible. It is simply wrong to adjudicate the probability of mutations by an “untutored reaction of incredulity.” Probability assessments notoriously run counter to common sense. If you think you have a scientifically viable argument, give it. And leave it to scientists to solve this kind of problem, or to decide that it cannot be solved.

Returning to the philosophical content: whatever you may think of Nagel’s incompleteness of explanation argument, you still have to take a leap to conclude that this argues for a non-naturalist *ontology*. Grant him, for the sake of argument that evolutionary theory does not make it probable that conscious creatures will emerge. Perhaps, this makes it impossible to explain why consciousness emerges *under that description* from physical matter. Call this the Hard Problem of Evolutionary Emergence. However that might be, neuroscientists are certainly hard at work trying to figure out how particular conscious processes are physically realized *in humans* and other species—call this an Easy Problem of neurophysiological correspondence. Solving this problem will at least enable us to figure out *post hoc* what evolutionary path leads to the material substrate of consciousness.

Naturalism posits that the Easy Problem kind of explanation will always be available. This isn’t the mad hope that there is a single materialist explanation for consciousness *as such*, but the optimistic hope (perhaps a bit wide-eyed, but not mad) that a material account can be given for each realization of consciousness. So even if there are grounds for pessimism about understanding the emergence of consciousness-as-such in Darwinist terms, this pessimism arises from the fragmentary nature of science and the unavailability of boundary crossing definitions of consciousness, and not from the exclusion of any material factor.

Nagel thinks that in order to make the emergence of consciousness likely, we have to introduce a new kind of process—one that is teleologically directed toward the emergence of the right kind of genes. He wants, in other words, to supplement naturalistic science with teleological drive. But there is a serious problem with trying to expand the ontology in order to get the kind of intelligibility that Nagel wants. *There is no room in his argument for additional causes.* Recall that under (a) and (b) above, he allowed that evolution might be sufficient to *cause* consciousness, though not to make it intelligible. (“Explanation, *unlike causation*, is not just of an event, but of an event under a description.” 41) The way that evolution does this is to produce *M*-constituted creatures by (b). Because of (a), this suffices for it to produce conscious creatures.

If evolution by natural selection can produce conscious creatures this way, what work is left for a teleological process or other non-natural cause? It is one thing to argue that the theory of evolution can’t make the emergence of evolution intelligible. It is quite another thing to argue that evolution can’t produce conscious creatures. In fact, Nagel’s argument seems to lead in the opposite direction.

Evolutionary theory treats its outcomes as highly contingent. In *Wonderful Life* (1989) Stephen Gould famously wrote that if you replayed the history of evolution, “any replay of the tape would take evolution down a pathway radically different from the road actually taken” (*ibid*, 51). Nagel wants to say that this would make the emergence of consciousness, mind, and value unintelligible. The question is this: given that evolution gives causes that are sufficient to the outcome, are we justified in *adding* causes in order to secure non-contingency and intelligibility? Nagel thinks so.

On the face of it, this is a super-strong version of the Anthropic Principle. The Anthropic Principle states that the world is such as to make it possible for humans to exist. Proponents of the Anthropic Principle suggest that this explains why certain fundamental constants of physics take the values they do. Nagel proposes, in effect, that the universe should be such as to make the emergence of consciousness

intelligible. Since evolution is sufficient only to explain consciousness *post hoc*, he inserts causes—specifically, teleological causes—to secure this effect.

To summarize, Nagel attacks contemporary theory of evolution from two sides. He argues, first, that in order to make the emergence of consciousness intelligible the theory needs to be supplemented by teleology. One might doubt that this is reasonable because there is no reason why the emergence of consciousness should be intelligible in his sense. Nagel also argues that the biological/genetic variation that is required to generate the emergence of consciousness is unavailable. If correct, this would undermine evolutionary theory from within by showing that it is actually unable to provide even a causal narrative of how consciousness emerged. He does not support this charge by evidence or analysis. Even if it is on the mark, it is unclear why it is within the purview of philosophy to fix the problem or to suggest teleology as an alternative. If a scientific theory fails to do its job, scientists have to come up with a replacement.