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Philosophy Struggles with Nature

(Review of Thomas Nagel's *Mind and Cosmos. Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False*, Oxford University Press, 2012)



Abstract. Thomas Nagel's most recent book, *Mind and Cosmos*, announces in its subtitle that it would show 'Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False'. Through an analysis of some of the most important concepts of this book, this paper shows why Nagel's book doesn't live up to the promise of its subtitle.

Keywords: consciousness, evolutionary theory, variation, natural selection, Thomas Nagel

At just under 130 pages long, Thomas Nagel's most recent book, *Mind and Cosmos*, is certainly an ambitious project. The sheer magnitude of its scope is clearly visible on the cover of the book, where we can read its subtitle: *Why the Materialist Neo-Darwinian Conception of Nature is Almost*

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Certainly False. However, the contents of the book doesn't live up to the expectation created by this audacious subtitle, and an account of the downsides and upsides of this book can be given by a simple comparison between what the subtitle announces and what the book actually delivers. This is what I'm going to try to do here: analyze the claims that are made in this subtitle in the light of what is actually said in the book. Hopefully, this critical analysis will succeed in highlighting the salient ideas in Nagel's book and the shortcomings of his approach to the subject matter. By way of consequence, breaking down the subtitle into its components – the 'why', the 'materialist neo-darwinian conception of nature' and the 'almost certainly false' components – will actually offer the main lines of this account of the book.

The 'why' component

It is difficult to understand why the subtitle of the book lets us expect that we will find a demonstration of the falsity of what Nagel calls the 'materialist neo-Darwinian conception of nature'. After the introductory first chapter, the beginning of the second chapter already announces what the book would actually provide:

My aim is not so much to argue against reductionism as to investigate the consequences of rejecting it—to present the problem rather than to propose a solution. (p. 15)

This phrase accurately anticipates on the contents of the book: readers who expect to find here arguments against reductionism – or against 'materialist naturalism' of Darwinian descent – will be disappointed. Whether they expect an argumentation based on the lack of empirical evidence for the Darwinian theory of evolution by natural selection or an argumentation indicating the inconsistencies in the logical or epistemological structure of evolutionary theory, these avid readers' expectations are not going to be fulfilled by this book.

In this case, it remains a mystery as to why the subtitle announces that a demonstration of this kind would be provided by Nagel's book. While some mysteries are worth pursuing, I think this mystery is best left unsolved, since, in all probability, there is nothing philosophical about it. Let's just say that a more accurate subtitle for the book would have replaced the 'why' component and would have sounded something like this: 'What alternative theories could be proposed in case the neo-Darwinian conception of nature were proven to be false'. This subtitle would have provided a more suitable indication of the contents of the book since the three important chapters of the book (chapters 3, 4 and 5) pose this question with respect to consciousness, cognition and values. Chapter 3

poses the question of what alternative or additional principles would be necessary to explain both the manner of existence and the fact of the historical appearance of consciousness if we assume that the current neurosciences are unable to provide an explanation for the relationship between the body and the mind and that evolutionary biology in its current form is unable to provide an explanation of how this relationship itself has come into existence. Chapter 4 poses the same question with regards to superior cognition processes, stating that while evolutionary theory can provide an explanation for the appearance and persistence of simpler forms of cognition (e.g. perception), we need a more comprehensive approach in order to understand how superior forms of cognition (that may lead, for example, to the discovery of physical laws) have appeared historically and how their intrinsic functioning is to be described. Finally, chapter 5 asks a similar question regarding the alternative/additional principles needed in order to provide an explanation of the nature and appearance of moral values when the latter are described in a moral realist manner. However, the inadequacy of the ‘why’ component in the subtitle is the mildest of the problems of this book, and we need to move on to the more serious ones.

The ‘materialist neo-Darwinian conception of nature’

This notion is certainly the most problematic one of the book. It constitutes the target of critique throughout the book, and yet it is a target that Nagel both unjustifiably rejects and keeps using even after he has allegedly distanced himself from it. These two aspects – the insufficiently justified rejection and the surreptitious usage of what had been previously rejected – are actually interrelated, and I will detail them below.

First of all, in what way is Nagel’s rejection of the neo-Darwinian frame of thought insufficiently justified? A brief clarification is needed. In its ‘canonical’ form, the theory of evolution by natural selection describes the latter as a ‘two-step process’.⁷ The first step consists in the appearance of genetic variation (by way of different processes like mutation, recombination etc.), whereas the second step is the selection process itself, that favors certain variations and increases their representation in the global population (by way of viability and/or fertility selection etc.). These two steps are to be kept distinct: the variation step describes *how* an organism is (what are the underlying bio-chemical mechanisms and elements that make, for example, black mountain goats be what they are and, consequently, what distinguishes them from their immediate predecessor); the selection (or, in Mayr’s terms, the ‘elimination’ step) provides an explanation for the fact *that*

⁷ Ernst Mayr, *What Evolution Is*, Phoenix, London, 2002, pp. 131-133.

that type of organism keeps existing (it explains – in this openly imaginary example – why the blackness of mountain goats proves to be important for their persistence or, in other words, for the fact that while non-black mountain goats have been eliminated or have become less common, the black ones have not shared the same fate).

However, and this is the important point, even if the two steps need to be kept distinct, even if the ‘*how* an organism exists’ and the ‘*that* a type of organisms keeps existing’ are two separate questions, this doesn’t mean that they do not shape one another *historically*. To put it very bluntly, if a type of organism is eliminated by natural selection (so, by the second step), then this elimination has limited the amount and the types of future variations that remain available. New variations of a genome cannot appear since that genome is no longer extant. The selection step therefore partly determines the type and quantum of new variations that are possible in the future,⁸ while, conversely, the new variations can determine the type of selection processes that could possibly occur within a given population (if the variation step doesn’t only introduce the blackness of mountain goat in a population of goats with a different color, but also introduces, for example, running speed differences within the same population, then we might have two selective processes that will act on the two varying traits within the given population). To sum it up: natural selection involves two distinct steps, but precisely because they are distinct, the two steps shape each other historically. Evolutionary biology is a historical science *precisely because* it keeps these two steps distinct.

This properly *historical* structure of evolutionary theory is what Nagel completely misrepresents. He does indeed distinguish between what he calls a constitutive question (with respect to consciousness it reads: ‘why specific organisms have the conscious life they have’) and a historical question (‘why conscious organisms arose in the history of life on earth’). But he then goes on to add:

Suppose there were a general psychophysical theory that, if we could discover it, would allow us to understand, for any type of physical organism, why it did or did not have conscious life, and if it did, why it had the specific type of conscious life that it had. This could be called a nonhistorical theory of consciousness. It would accomplish task (1) [i.e. give an answer to the constitutive question]. But I believe that even if such a powerful non-historical theory were conjoined with a purely physical theory

⁸ In my imaginary example, if non-black mountain goats are eliminated and only black ones remain in existence, the new variation that may appear will only affect the gene pool of this type of organism. A new variation may appear – let’s say, goats with longer horns and goats with shorter horns –, but they will necessarily be *black* goats with longer horns and *black* goats with shorter horns.

of how those organisms arose through evolution, the result would not be an explanation of the appearance of consciousness as such. It would not accomplish task (2) [i.e. give an answer to the historical question]; it would still leave the appearance of consciousness as an accidental and therefore unexplained concomitant of something else—the genuinely intelligible physical history. (p. 51)

This is certainly a puzzling statement. Even if we could explain the connection between the physical aspects of an organism and the consciousness that it has – so even if we were to give an accurate account of *how* a given conscious organism is, in the terms of my distinction above – this couldn't explain the appearance of consciousness in the history of life. But, in the account of the two-step process of natural selection given above, if we did have the kind of 'general psychophysical theory' that Nagel talks about, it would mean that we would have an account of several other facts: 1) of the previous type of organism a variation of which (step 1) has led to the given organism with the given consciousness we are now fully capable of explaining; 2) of why that previous type of organism had previously been favored by selection (step 2). In other words, the conjunction of the two steps, made possible by their historical co-shaping I've described above, would offer us the means to explain why consciousness has appeared (provided, of course, that we did have at our disposal that powerful psychophysical theory that Nagel is imagining here). All that would be left for us to explain would be not why conscious beings have come into existence, but why they kept existing, i.e. what trait – whether it's the consciousness itself or something else – is responsible for the fact that they have persisted over time.

But why doesn't Nagel acknowledge this? Why does he insist that having an answer to the constitutive question (*how* a conscious organism exists, i.e. how the specific organism that it is corresponds to the specific consciousness that it has) doesn't explain the appearance of consciousness? The deeper answer is not axiological – the fact, as stated in the text, that consciousness cannot be 'accidental' or a 'concomitant' of something else –, but theoretical. As the discussion above has shown, he misrepresents the questions that evolutionary theory poses. As I've shown, there are two answers that are needed in evolutionary theory: *how* an organism exists and an account of the fact *that* it keeps existing⁹ at a given moment. It is only the conjunction of these two answers – and therefore the co-shaping of the two steps involved in natural selection – that renders evolutionary biology a historical discipline. But Nagel's questions are not identical with the ones above. While the constitutive question is pretty much the same as the 'how'

⁹ Or that it exists in a certain proportion with respect to other types within the given population.

question above, when he sets his ‘historical’ question next to it he leaves aside the other question regarding the fact ‘that’ a type of organism – the type described by the ‘how’ question – keeps existing. But it was only the conjunction of the ‘how’ and the ‘that’ questions that introduced history in discussion in the first place. In other words, by only referring to two questions – the constitutive and the historical ones –, Nagel actually misses the very historicity of evolution. What he is actually seeking – at least with regards to consciousness – is a theory that would give *the same answer* to the constitutive and the historical question. But this is tantamount to saying that the theory he is looking for is non-historical. It gives the impression of historicity, but it is only an impression. This is obvious in the passage below:

It isn’t enough that C should be the consequence, even the necessary consequence, of B, which is explained by A. There must be something about A itself that makes C a likely consequence. I believe that if A is the evolutionary history, B is the appearance of certain organisms, and C is their consciousness, this means that some kind of psychophysical theory must apply not only nonhistorically, at the end of the process, but also to the evolutionary process itself. That process would have to be not only the physical history of the appearance and development of physical organisms but also a mental history of the appearance and development of conscious beings. *And somehow it would have to be one process, making both aspects of the result intelligible.* (p. 52, my emphasis)

What Nagel is looking for, is a general theory of evolution whereby the historical appearance of consciousness is explained, but that would also show that consciousness had been there all along, it had been there from the very beginning, long before its actual appearance. This is visible in the way he answers his two questions, the constitutive and the historical question with respect to consciousness. Since, he argues, no accurate scientific explanation of the mind-body problem has yet been provided, we might offer a reductive solution to the constitutive question and support a panpsychism whereby physical particles are intrinsically ‘mental’. The building blocks of nature are also the building blocks of consciousness (‘all the elements of the physical world are also mental’ – p. 57). This is a philosophical hypothesis, and should be treated as such. The problem however is that when he moves on to the historical question, he also tends towards a reductive – and not emergent – solution, but then the difficulty Nagel raises for himself is the following: why conscious organisms appear at a certain moment, if everything physical is also mental? What is even more problematic is that he frames this question in biological terms, asking how the monistic (i.e., at the same time, physical and mental) properties that

underlie consciousness lead ‘to the appearance of conscious systems on the menu of mutations available for natural selection’ (p. 65).¹⁰

The serious problems of Nagel’s project become clearer now. First of all, he rejects the historicity of evolutionary biology by neglecting one of its questions that is however fundamental for the historicity of the object itself of evolutionary theory. Why he rejects it remains unclear, since, as stated above, he offers no empirical evidence against the theory of evolution by natural selection (not even with respect to the evolution of consciousness); nor does he criticize the epistemological structure of evolutionary biology. Instead, he simply replaces the two central questions of evolutionary theory *and their conjunction* with just two questions of his own – the constitutive and the historical ones – where one of them (the historical one) is meant not only to replace the corresponding question of the evolutionary theory, but also the conjunction of the two questions – or the co-shaping of the two steps of natural selection – that actually underlies the historicity of the object of evolutionary theory. However, having done this replacement, Nagel would somehow like to keep his answers to the historical question within the conceptual frame of evolutionary theory – by appealing to mutations, selection etc. –, even though this move has been rendered impossible by his substitution of the central questions of evolutionary theory.

The ‘almost certainly false’ component

This decidedly undecided nature of Nagel’s theoretical enterprise also underlies the end of his book’s subtitle. One of the motivations for Nagel’s project is presented in the following way:

It may be frustrating to acknowledge, but we are simply at the point in the history of human thought at which we find ourselves, and our successors will make discoveries and develop forms of understanding of which we have not dreamt. Humans are addicted to the hope for a final reckoning, but intellectual humility requires that we resist the temptation to assume that tools of the kind we now have are in principle sufficient to understand the universe as a whole. Pointing out their limits is a philosophical task, whoever engages in it, rather than part of the internal pursuit of science. (p. 3)

¹⁰ For lack of space, I will leave aside here his responses to the constitutive and historical questions with respect to cognition and values. I will only state that he tends to offer an emergentist answer to the constitutive question with respect to cognition and values, while he argues that a teleological – of a non-purposive type – answer to the historical question regarding cognition and values would probably be preferable.

It is precisely this argument that can be turned against Nagel himself, since it is this very humility that his enterprise betrays. There are two main ways in which the limits of science can be indicated, and neither is sufficiently represented in Nagel's book.

The first one would be that of indicating what remains unexplained by the 'neo-Darwinian' frame of thought with regards to, for example, consciousness, cognition and values. But the fact that certain things are not yet explained by a scientific theory is certainly not sufficient to lead us to the conclusion that that theory is false. The 'humility' Nagel is talking about would, in this respect, be simply that of conceptually isolating what remains unexplained by that theory and, subsequently, passing to the scientists themselves the task of building explanatory theories that would encompass what is yet unknown. This patience lacks in Nagel's book because, we are lead to assume, if evolutionary theory hasn't explained consciousness yet, then the theory is simply false. Why this is so remains another mystery, particularly since, as stressed above, his book doesn't offer empirical arguments against evolutionary theory, nor theoretical arguments indicating inconsistencies in the logical and epistemological structure of evolutionary biology. When the subtitle announces that the book would prove that the 'neo-Darwinian' conception of nature is almost certainly false, this 'almost' underlines the fundamental impatience that underlies Nagel's philosophical project.

There would however be another way of indicating the limits of current knowledge or science, and that would be a more speculative one. It wouldn't consist simply in trying to isolate what is not yet explained, but in trying to show why current science could *never* explain certain phenomena because the fundamental principles and presuppositions that their epistemological structure assumes is incompatible with the 'essence' of those phenomena. An attempt to do this exists in Nagel's book, as manifested by the equivalence he tries to establish between 'materialist naturalism' and the 'neo-Darwinian' frame of thought. But, from this point of view, Nagel's project is not radical enough. If this is the road a philosopher wants to take, than it would be vital for him not only to criticize those fundamental principals and presuppositions, but also, and above all, to avoid making use of them when he tries to forge the building blocks of a new explanatory theory. This is where Nagel's enterprise falls short, and this is visible in the fact that his stab at an explanation of consciousness can't help involve mental 'particles' or 'microelements' (p. 62), while his stab at an explanation of the historical appearance of consciousness is still framed in terms of mutations, selection etc. If one wants to provide a deeper, properly philosophical explanatory theory by criticizing certain sciences, than it is crucial that one keeps clear of the

presuppositions and principles that govern those very sciences. The physical-biological language that Nagel keeps using marks the fact of an insufficient radicalism of his philosophical enterprise. What he would need, as we've seen above with respect to consciousness, is a theory that would explain that something can preexist without being pre-formed (for example without being given under the form of 'particles'); and, at the same time, a theory that would explain the fact that something can preexist and yet be entirely new at the moment of its actual appearance. But such a *philosophical* theory exists and it is known since Bergson as the theory of actualization. It is a shame that Bergson's only appearance in Nagel's book is connected to a theodicy problem regarding values and not to the ontological theory of actualization. It is also a shame that an entire line of French philosophers of the 20th century that tried to build on the theory of actualization are completely left out from this discussion. Since Nagel's project is not humble enough anyway, it could at least have become more radical.

In conclusion, Thomas Nagel's book doesn't live up to its subtitle's promise. However, it is an interesting read and it is stimulating in that particular way in which insufficiently grounded philosophical works sometimes provide food for thought.