

Aristotle Redux: Nagel's "Mind and Cosmos"

by Ian Kluge

Starting with its title Thomas Nagel's new book sparked controversy and invited attack from the scientific community: *Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*. How many fingers can one man poke in how many eyes at the same time? In the title alone, he challenges materialism, the materialist-physicalist concept of nature and neo-darwinism and asserts that they are "almost certainly wrong." In effect, he calls into question some of the ontological foundation stones of modern science as a whole. To make matters even worse, he offers Aristotle's concepts of potentiality and teleology as possible solutions to the problems he identifies.

Sharpening the sense of outrage, at least in some quarters, is Nagel's distinguished career as a philosopher, a Fellow of the American Academy of Arts and Sciences as well as a Corresponding Fellow of the British Academy; he has received fellowships from the National Science Foundation. Moreover, he is a self-professed atheist and has no religious dogmas to defend. He believes that science must provide objective knowledge and will have no truck with the vagaries of postmodernist subjectivism:

"[t]hought and reasoning are correct or incorrect in virtue of something independent of the thinker's belief, and even independent of the community of thinkers to which [a person] belongs."^[1]

Finally, one of Nagel's two specialties is the philosophy of mind which studies mental events and their relationship to the brain. For reasons that will become clear below, he finds all current theories inadequate.

The philosophy of mind is where Nagel starts his critique of the current scientific "conception of nature," writing,

The aim of this book is to argue that the mind-body problem is not just a local problem having to do with the relation between mind, brain and behavior . . . but that it invades our understanding of the entire cosmos and its history. The physical sciences and evolutionary biology cannot be

kept insulated from it and I believe a true appreciation of the difficulty of the problem must eventually change our conception of the place of the physical sciences in describing the natural order.[2]

Challenging words indeed! Nagel is saying nothing less than that the sciences as we know them must be re-thought and reinvented because, as we shall see below, it cannot – on the basis of its own principles – explain the origin and nature of mind, consciousness and reason. Indeed, science has developed its explanations by purposely ignoring their existence even though they are the very basis of all scientific endeavor. As Nagel says, “mind is not just an afterthought or an accident or an add-on, but a basic part of nature.”[3] Furthermore, he insists that “reason is an irreducible faculty”[4] of consciousness and that material explanations cannot account for it. In a nutshell, he argues that “the failure of psychophysical reductionism”[5] i.e. the inability of materialist science to explain both fact and principle the origin of mind, consciousness and reason in the universe shows the incompleteness and inadequacy of the material-reductionist approach to explaining nature. He states,

We want to know what has to be added to the standard Darwinian picture to account for the appearance through evolution of creatures like us, who can control their actions in response to reasons.[6]

He wants a “revision of the Darwinian picture rather than an outright denial of it.”[7]

Furthermore, Nagel claims that science unwittingly admits as much by assuming that nature is “intelligible,” [8] i.e. there are rationally discoverable necessary and sufficient reasons for events. [9] In short, nature is rational. This assumption – made by all scientists – undermines the supposed purely empirical foundations of science because it cannot be justified empirically. The intelligibility of nature suggests that mind is an unavoidable “basic aspect of nature.”[10] To the attentive reader, Nagel’s unstated suggestion is clear: if science does not even understand the implicit implications of its own foundations, there is no rational ground to accept the current scientific world view’s claim of the unchallengeable supremacy of the reductionist-materialist conception of nature. This does not undermine the actual scientific research of the last three centuries, but it does mean we must be open to different philosophical interpretations or understandings of what that research means. Materialist-reductionism is one such understanding and in *Mind and Cosmos*, Nagel is suggesting another.

Contrary what various reviewers suggest, there is nothing unreasonable – or unscientific – about

questioning the philosophical interpretations of any scientific facts or methods. Of course, Nagel does not question any specific scientific results – he could hardly have such widespread expertise – but rather he questions the philosophic interpretation of these results. His point is that the materialist-reductionist view of nature is glaringly inadequate because it fails to explain mind and consciousness. Indeed, the current understanding of science cannot be proven to be correct by the scientific method; no experiment can prove that statements are true only if they are measurable and quantifiable, predictable, based on physical evidence, repeatable and falsifiable. Neither can reductionism be proven by the scientific method. These, too, are interpretations – albeit very useful ones – and, in Nagel’s view, it is time for a major revision.

Nagel focuses especially on the whole concept of reductionism and a “fully mechanistic account of the origin and evolution of life.”[11] According to Nagel, his doubt about reductionism is justified because

The great advances in the physical and biological sciences were made possible by excluding the mind from the physical world . . . But at some point it will be necessary to make a new start on a more comprehensive understanding that includes the mind.[12]

In other words, Nagel’s point is that mind and consciousness are such overwhelmingly important developments in evolution that any scientific method that, by reductionism, severely distorts what it describes must be deficient in some way. What Nagel means is that all attempts to “accommodate . . . mind and related concepts” [13] have ended up by reducing mind and consciousness to a parody that has no clear resemblance to what humans universal experience. In short, he believes in “the irreducibility of conscious experience to the physical.”[14]

Nagel makes a powerful point here – one that his opponents prefer to ignore. So far, all reductionistic explanations ignore or distort consciousness. For example, determinism rejects free will despite our universal experience of it; epiphenomenalism, which Nagel explicitly rejects,[15] dismisses consciousness as a powerless and irrelevant by-product of physiological processes despite our constant experience to the contrary; and computer-brain models reduce consciousness to mere ‘calculation engine.’ Finally, there are the neurosciences and their reduction of mind or consciousness to brain. Like all the other reductionist theories, the neurosciences miss the subjectivity of consciousness, the fact that consciousness is universally characterized by subjective, personal experiences. As Nagel puts it,

Consciousness presents a problem for evolutionary reductionism because of its irreducibly

subjective character. This is true even of the most primitive forms of sensory consciousness such as those presumably found in all animals.[16]

All of these reductionistic models force consciousness into the intellectual Procrustes' bed and chop their understanding of mind to fit their model. Nagel, however, claims that all of them force consciousness into the intellectual Procrustes' bed and chop their understanding of mind to fit their model.

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This is because, by their intrinsic nature, subjective experiences are not available to external objective scientific studies. We can study the external, objective brain correlates of this subjective experience but not the inner subjective experience itself. Indeed, if we had access to someone else's subjective experience, we would be able to experience their orgasms instead of only studying the bio-electrical correlates. This irreducibility also points to a huge explanatory gap. How can inherently unconscious matter lead to consciousness and subjectivity? Something is missing from our explanations which, as we shall see below, Nagel attempts to supply. From this failure to develop an adequate understanding and explanation of consciousness and subjectivity, Nagel draws his conclusion: “Materialism requires reductionism; therefore, the failure of reductionism requires an alternative to materialism.”[18]

Some will argue that the problematic gap between inherently unconscious matter and subjective consciousness will eventually be solved by science. However, that answer masks an insurmountable difficulty: an effect must be explainable in terms of its cause(s).

or, as Nagel puts it, we need “some understanding of why the cause produces the effect.”[19] Unfortunately, he does not elaborate his point because it strengthens his argument. A cause is obviously related to its effect. Moreover, the kind of cause determines the kind of effect: we cannot plant iron filings and expect sunflowers; nor can we expect wishes to materialize horses for beggars to ride. Horses are material and wishes are not; they are different in kind, belonging to different ontological categories.

This leads to the question, ‘How can a material cause yield immaterial effects like consciousness and subjectivity?’ Since science only accepts materialist explanations, it cannot – even in principle – answer this question. All the time in the world cannot change this. That is precisely why science engages in reductionism, by reducing consciousness and subjectivity to something material or by-passing the issue altogether.

To overcome this problem, Nagel suggests “some form of universal monism or ‘panpsychism’[20] i.e. the belief that at least the possibility of consciousness is a constitutive aspect of matter itself.[21] Matter somehow contains the pre-conditions for the development of consciousness. We know that consciousness is possible because it developed – but if it developed it “must have been latent in the nature of things.”[22] Otherwise, how could it come into existence? A genuine understanding of reality must, therefore, be able to show “how the natural order is disposed to generate beings capable of comprehending it.”[23] The pre-conditions or potential for consciousness in matter explain why matter is able to manifest consciousness and subjectivity because the previously noted ontological division no longer exists. It is obvious that in Nagel’s view, the current concept of matter is inadequate and must be revised.

In his explanations, Nagel also resurrects Aristotle’s concept of potentiality as a constitutive aspect of nature. A potential is a possibility or capability that helps constitute any particular kind of thing. For example, an acorn has the potentiality or capability for becoming an oak tree; indeed, that capability is precisely what constitutes an acorn as an acorn. Without that possibility, it would be something else. A steel nut, for example, lacks that potential. A sheet of paper has the potential for being folded into a paper crane or other figures. This distinguishes a sheet of paper from a turnip and makes a sheet of paper what it is. The problem for materialism is that potentials are not necessarily discernible by empirical observation; they are not physical, i.e. little ‘seeds’ hidden in things – but they exist, i.e. are ‘there’ nonetheless. Empirical analysis cannot necessarily find them before they have been actualized and become available for study. By re-introducing the concept of potentiality, Nagel implicitly re-introduces the Aristotelian distinction between potentiality and actuality, and the philosophical definition of change as the ‘movement’ from potentiality to actuality. To make things worse (from the current scientific point of view), the definition of change as ‘movement’ from potentiality to actuality raises the question of how this change occurs – Aristotle’s efficient cause – and in what – Aristotle’s material cause. Such considerations cannot help but leave us wondering if Nagel was fully aware of the implications of his statements.

Nagel finds another major deficiency in the current philosophy of nature, namely, the belief – elevated to a dogma – that unguided natural selection operating randomly by genetic mutations and genetic drift alone explain the diversity of life. In Nagel’s view, there is a huge disparity between the supposed physical-chemical causes and the living effects that include consciousness, subjectivity, reason and creativity. Given this diversity of effects, Nagel expresses a common sense skepticism that this account is adequate to explain the infinite variety we encounter. He also wonders how unguided natural evolution could develop capacities such as reason and creativity that go well beyond the needs of reproductive success and survival. In other words, how could science itself have developed?

When we consider this, we are back at the concept of potentials and all that it entails. Of course, none of this necessarily means that our understanding of the evolutionary process is entirely wrong; rather it strongly suggests that something is missing in our understanding which is not erroneous but incomplete. It is important to keep in mind that as an atheist, Nagel has no interest in positing a supernatural origin of life. He has no intention of shoe-horning God into the picture.

The third deficiency grows out of the second: the lack of a guiding principle in evolution. This is where Mind and Cosmos is especially controversial because Nagel does nothing less than revive the Aristotelian concept of teleology as the way to remedy the problems inherent in reductionistic materialism and random natural evolution. He says that “the natural order is disposed to generate beings capable of comprehending it.”[24] Such a disposition is a ‘preference’ or for certain developments. He states that “Teleological laws would assign higher probability to steps on paths in state space that have a higher ‘velocity’ towards certain outcomes.”[25] Interestingly enough, this is the view of teleology proclaimed decades ago by neo-Aristotelian philosophers W. Norris Clarke SJ[26] and Henry Veatch.[27] In short, natural processes are not entirely random and have ‘direction.’ Of course, neither Nagel – nor Aristotle, Clarke or Veatch – insist that teleology must necessarily involve conscious intentions by a supreme being. However, that possibility is logically open to those who wish to pursue it.

Let us take a moment to see what Aristotle says and if it necessarily conflicts with modern science as it is alleged to do. According to Aristotle, teleology refers to the final cause, “that for the sake of which”[28] a being acts or an organ functions. Their actions are goal-directed or purposive, which is to say biased or disposed or prejudice in favor one particular end-state over others. To claim there is no such final cause, or purpose in living creatures leads to the absurd claim that all our internal organs, for example, just coincidentally ‘happen’ to function together to keep us alive by mere random actions. This is simply not credible; it is mere dogmatism. We must, of course, keep in mind that there are two kinds of teleology. Internal or immanent teleology means that each being and kind of being has its own final cause which we see in distinct species and members of species be they ducks or electrons. Kittens do not grow up to be cucumbers; the growth process is oriented towards becoming a certain kind of thing. We also see this kind of teleology in the way our physical organs are organized to work towards the goal of keeping our whole organism alive. Aristotle refers to internal causality when he discusses the development of teeth in pigs.[29] Modern biology accepts internal teleology – except it does so under the name of ‘function.’ Science

define[s] ‘function’ cybernetically in terms of persistence towards a goal under varying conditions, in terms of the contribution that a structure or action makes to the realization of a goal stage.[30]

‘Function,’ i.e. “persistence towards a goal” is simply a re-wording of Aristotle’s ‘teleology.’ Because the function is purposive, the attainment of a certain condition or final cause, all living beings exhibit internal teleology. That is why it still plays a part in natural selection.[31] On the other hand, external teleology is observed when things strive for an external goal, e.g. the repayment of debts, attaining a degree or making a loved one happy. Achieving this external goal may have internal aspects, e.g. the feeling of satisfaction, but the actual goal is external and requires efforts for something beyond oneself. Nagel – and science – reject external teleology but not internal teleology. In his view, “[t]eleology is a naturalistic alternative that is distinct from all three other candidate explanations: chance, creationism and directionless physical law.”[32]

In *Mind and Cosmos*, Nagel recognizes that the “idea of teleology implies some kind of value in the result toward which things tend, even if teleology is separated from intention.”[33] Nature, in other words, is disposed or biased towards certain developments above others and this makes them inherently valuable in the natural scheme of things. These values arise from teleology in the same way they rise from theology – by appeals to the ‘wishes’ or ‘dispositions’ of something larger than humanity, God in one case, nature in another. What might such natural values be? From Nagel’s perspective, it is clear that whatever preserves and enhances consciousness is good and whatever impairs it is bad. That is a small beginning but it entails other values, e.g. the importance of pursuits that improve the quality of consciousness, such as art, music and literature.

Nagel’s belief on this matter is quite radical because it violates a dogma of modern non-Continental philosophy[34]: Hume’s claim that we cannot get from an ‘is’ to an ‘ought.’ If teleology is biased towards consciousness, then it follows that it is of value, i.e. working with this bias is better than working against it. This explains why Nagel professes to be an ethical realist who believes that values are not wholly matters of personal intentions, preferences or beliefs. He emphasizes this by saying,

An adequate conception of the cosmos must contain the resources to account for how it could have given rise to beings capable of thinking successfully about what is good and bad, right and wrong, and discovering moral and evaluative truths

that do not depend on their own beliefs.[35]

Grounded as they are in natural, evolutionary processes, these values are objective, i.e. independent of personal or cultural circumstances and preferences. Furthermore, they are not merely products of religion or philosophy but are matters for scientific investigation.

In short, provided we recognize teleology, ethics can have a scientific foundation.[36]

Perhaps the most amazing features of Mind and Cosmos is the re-introduction of key aspects Aristotelian metaphysics: potentiality and actuality and the additional concepts they entail, along with teleology, i.e. inherent predispositions or biases in matter. It would be interesting to know if Nagel was aware that by re-introducing ‘potentiality’ into nature, he was also implicitly re-introducing the Aristotelian concept of change and evolution as the activation of actualization of potentials. But this, of course, leads us even deeper into Aristotle’s metaphysics. Potentials – because they are potential – cannot activate themselves and must be activated by an external, already activated or actualized thing.[37] Once Nagel has introduced ‘potentiality’ this conclusion is logically inescapable – though Nagel himself passes over it. Furthermore, the concept of potentiality also re-introduces the idea of ‘essence’ since each kind of thing is defined by the potentials it has. As the old adage goes, we cannot make a silk purse from a sow’s ear. They are two different things with their own unique potentials. Thus Nagel has – inadvertently? – brought back the notion of essence into science.

While Mind and Cosmos has special importance to anyone interested in the philosophy of science, it is of special interest to Catholics and Baha’is. Thomism, the dominant philosophy among Catholic thinkers, is based on Aristotelian thought as applied to the Gospels. The Baha’i Writings, however, go further: the revealed scriptures themselves actually endorse key elements of Aristotle’s metaphysics and build various arguments on them.[38] For example, they assert that animals and humans have different potentials,[39] and, thereby, different essences – which suggest that the behaviors acceptable in animals are not acceptable from humans. Our task is to free ourselves from our lower, animal natures and to actualize our spiritual potentials. That is why Baha’u’llah says, “To act like the beasts of the field is unworthy of man,”[40] which is to say, we must not act against our specifically human potentials and essence. From this it follows that certain ethical rules have an objective basis and are not at the mercy of subjective preferences. The principle of internal teleology is evident in the statement that all things “must strive after the perfections of their own degree.”[41] Finally, the Baha’i Writings explicitly endorse that teleology i.e. final causes for which potentials actualize, entails the concept of an efficient cause (which can actualize a potential), a material cause (that in which the potentials inhere) and a formal cause (the particular “bias” – as Nagel calls it – of the physical forces which determine the result).

Mind and Cosmos leaves us with one “overwhelming question”[42]: will science take serious note of his arguments – he is, after all, a well established philosopher of mind – or will science ignore him, or worse. Will he suffer the same fate as Anthony Flew, the foremost atheist philosopher of the twentieth century, when he announced his belief in deism on the basis of intelligent design? Will he be labeled as being stupid, brainwashed, wicked or insane as Dawkins

does to all “defectors” from the contemporary version of Darwinism? How open will science be to an in-depth critical examination of some of its core concepts? It’s hard to tell since the book has only been out since 2012 but early indications seem to be negative. However, from my perspective as a Baha’i and neo-Aristotelian, I welcome the return of Aristotle’s common sense concepts to our analysis and understanding of reality.

[1] Thomas Nagel, *Mind and Cosmos*, p. 72.

[2] Nagel, p. 3.

[3] Nagel, p. 16.

[4] Nagel, p. 87.

[5] Nagel, p. 4.

[6] Nagel, p. 117.

[7] Nagel, p. 123.

[8] Nagel, p. 16.

[9] Nagel, p. 17.

[10] Nagel, p. 16.

[11] Nagel, p. 7.

[12] Nagel, p. 8.

- [13] Nagel, p. 14.
- [14] Nagel, p. 68.
- [15] Nagel, p. 115.
- [16] Nagel, p. 71.
- [17] Nagel, p. 68.
- [18] Nagel, p. 15.
- [19] Nagel, p. 45.
- [20] Nagel, p. 87.
- [21] Alfred North Whitehead also expounded a form of panpsychism in *Process and Reality*.
- [22] Nagel, p. 86.
- [23] Nagel, p. 86.
- [24] Nagel, p. 45.
- [25] Nagel, p. 93.
- [26] Norris Clarke SJ, *Explorations in Metaphysics*, 1994.
- [27] Henry Veatch, *Aristotle: A Contemporary Appreciation*, 1974.
- [28] Aristotle, *Physics*, 198a.
- [29] Aristotle, *On the Generation of Animals*, 789a.
- [30] Robert Audi, editor, *The Cambridge Dictionary of Philosophy*, p. 906.
- [31] See also Bunnin and Yu, editors, *The Blackwell Dictionary of Western Philosophy*, p. 679 – 680.
- [32] Nagel, p. 91.
- [33] Nagel, p. 97.
- [34] I call this the ‘Anglo-American axis’ in modern philosophy.

[35] Nagel, p. 106; emphasis added.

[36] See Ian Kluge, “Ethics Based on Science Alone?” forthcoming publication in Lights of Irfan. I show how any attempts to base ethics on current scientific thinking are logically inadequate and miss the point.

[37] If we follow this chain of events, we end at Aristotle’s Prime Mover and Aristotle’s view that an infinity of real, individualized things or events is impossible.

[38] Ian Kluge, “The Aristotelian Substratum of the Baha’i Writings,” Lights of Irfan, Vol. IV, 2003.

[39] Abdu’l-Baha, Some Answered Questions, p. 96.

[40] Baha'u'llah, Gleanings from the Writings of Baha'u'llah, p. 214.

[41] Abdu'l-Baha, Some Answered Questions, p. 249.

[42] T.S. Eliot, The Lovesong of J Alfred Prufrock. Aristotle Redux: Nagel’s “Mind and Cosmos”

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