

Atheists Against Darwinism: Johnsons' "Wedge" Breaks Through

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Abstract

Intelligent design theory claims that 1) empirical evidence warrants 2) a scientific design inference using 3) reliable design detection criteria. *Philosophia Christi* published my paper "[The Design Inference from Specified Complexity Defended by Scholars Outside the Intelligent Design Movement: A Critical Review](#)" (*Philosophia Christi*, Vol 9, Number 2), which defended the third of these claims by reviewing the work atheists and theistic evolutionists. This paper defends the second of these claims, likewise by reviewing work by agnostics and atheists.

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"A log is a seeming solid object, but a wedge can eventually split it by penetrating a crack and gradually widening the split. In this case the ideology of scientific materialism is the apparently solid log. The widening crack is the important but seldom-recognized difference between the facts revealed by scientific investigation and the materialist philosophy that dominates the scientific culture." – Phillip E. Johnson¹

It was one of the "Top Ten Darwin and Design News Stories for 2008"² according to Access Research Network³, a leading Intelligent Design (ID) website:

Darwin v. Design public debates took an interesting turn in 2008 as atheists and agnostics took up the torch for ID and Christians went to bat for Darwin. This surprising role reversal was most evident at a November 7 debate in Texas where agnostic Dr. David Berlinski, a well-know skeptic of Darwinism, and Dr. Bradley Monton, an atheist philosopher of physics both defended intelligent design while theistic evolutionist Dr. Denis Alexander, a biochemist and editor of *Science & Christian Belief*, and well-known atheist and physicist Dr. Lawrence Krauss defended evolution . . . Another example of this trend was . . . philosopher and sociologist Steve Fuller's defense of ID in his newest book *Dissent over Descent* and the ensuing public debate about the book in the online pages of the *New Humanist*. Meanwhile atheist New York University Law professor Thomas Nagel authors an article defending the constitutionality of teaching ID.⁴

These events followed atheist Jerry Fodor's article "Why Pigs Don't Have Wings"⁵, critiquing evolutionary psychology and the adaptationalism it builds upon; and Steve Fuller's *Science vs Religion? Intelligent Design and the Problem of Evolution* (Polity, 2007), which defended the "heuristic value"⁶ of ID. And the trend has continued, with A.N. Wilson (an Oxford educated writer who returned to Christian faith in 2009 after two decades of atheism⁷) revealing his doubts about evolution in response to a question posed in the *New Statesman* about whether one can 'love God and agree with Darwin':

I think you can love God and agree with the author of *The Voyage of the Beagle*, the *Earth Worm*, and most of the *Origin of Species*. *The Descent of Man*, with its talk of savages, its belief that black people are more primitive than white people, and much nonsense besides, is an offence to the intelligence - and is obviously incompatible with Christianity. I think the jury is out about whether the theory of Natural selection, as defined by neo-Darwinians is true, and whether serious scientific doubts, as expressed in a new book *Why Us* by James Le Fanu, deserve to be taken seriously. For example, does the discovery of the complex structure of DNA and the growth in knowledge in genetics require a rethink of Darwinian ‘gradualism’. But these are scientific rather than religious questions.⁸

In *Why Us? How Science Rediscovered the Mystery of Ourselves* (Harper Press, 2009) James Le Fanu⁹, an apparently agnostic physician and writer¹⁰, contends:

The Ascent of Man from knuckle-walking chimp to upright human seems . . . almost self-evident, yet it conceals events that are without precedent in the whole of biology . . . This discrepancy between the beguiling simplicities of evolutionary theory and the profundity of the biological phenomena it seems to explain is very striking . . . Here the greatest virtue of Darwin’s proposed mechanism, its simplicity, might seem its greatest drawback – that it is *far too simple* to begin to account for the complexities of life . . . There is . . . more than enough evidence already to suspect that Darwin was less right than is commonly perceived.¹¹

And there’s more to come, as Bradley Monton’s *Seeking God in Science: An Atheist Defends Intelligent Design* is published by Broadview Press in July 2009.¹²

The above jointly signal a breakthrough for Phillip E. Johnson’s “wedge” strategy for legitimising scientific consideration of the design hypothesis. I will analyse this breakthrough in two phases. Phase one is the endorsement by agnostics and atheists of *Johnson’s philosophy of science*. Phase two (which builds upon and signifies the success of phase one) concerns the extent to which Michael J. Behe’s argument in *The Edge of Evolution: The Search for the Limits of Darwinism* (Free Press, 2007) is endorsed by Thomas Nagel’s essay. I will argue that Nagel’s reticence about ID results from philosophical inconsistency.

Phase One: The Wedge Strategy

“My colleges and I want to separate the real science from the materialist philosophy.” – Phillip E. Johnson¹³

Phillip E. Johnson, the so-called “god-father” of the ID movement¹⁴, muses:

In a lifetime of studying and participating in controversies, I have learned that the best way to approach a problem of any kind is usually not to talk or even think

very much about the ultimate answer until I have made sure I am asking all the right questions in the right order.¹⁵

This wisdom underlies Johnson's "wedge strategy" for shaping the evolution debate:

The most important crack in the modernist log is the difference between two distinct definitions of science. On the one hand, modernists say that science is impartial fact-finding, the objective and unprejudiced weighing of evidence On the other hand, modernists also identify science with naturalistic philosophy. In that case science is committed to finding and endorsing naturalistic explanations for every phenomenon – *regardless of the facts*. This kind of science is not free of prejudice. On the contrary, it is *defined* by a prejudice. The prejudice is that all phenomena can ultimately be explained in terms of purely natural causes, which is to say unintelligent causes.¹⁶

Johnson's strategy is a success, not because ID has yet succeeded in replacing Darwinism as the majority *scientific* paradigm, but because atheistic and agnostic scholars now openly champion Johnson's *philosophical* paradigm. Monton's defence of the scientific status of ID exemplifies this seismic shift:

rejection of the supernatural should not be a part of scientific methodology scientists should be free to pursue hypotheses as they see fit, without being constrained by a particular philosophical account of what science is If science really is permanently committed to methodological naturalism, it follows that the aim of science is not generating true theories. Instead, the aim of science would be something like: generating the best theories that can be formulated subject to the restriction that the theories are naturalistic science is better off without being shackled by methodological naturalism ID should not be dismissed on the grounds that it is unscientific...¹⁷

Fuller gives Johnson credit for this shift:

Johnson hammered home the historically correct observation that naturalism is, strictly speaking, a metaphysical position with which many scientists and the scientific establishment have identified, especially since the ascendancy of Darwinism, but which is not necessary for an adequate – or perhaps even fruitful – account of the means and ends of scientific inquiry Johnson, has stressed – in a way that his fellow lawyer Francis Bacon would have appreciated – the need for standards for appraising the scientific status of knowledge claims that are not inherently biased against a newcomer.¹⁸

In *Darwin on Trail* (IVP, 1991) Johnson drove a "wedge" between metaphysical deduction and scientific inference: "I assume" wrote Johnson, "that the creation-scientists are biased by their pre-commitment to Biblical fundamentalism..."¹⁹ There was nothing revolutionary in this analysis. But Johnson applied a parallel analysis *to Darwinism*: "The question I want to investigate is whether Darwinism is based upon a fair assessment of

the scientific evidence, or whether it is another kind of fundamentalism.”²⁰ He pointed out that defining science as “reliance upon naturalistic explanations”²¹ (a definition entailed by metaphysical naturalism, but accepted as a methodological restraint upon science by many non-naturalists), turns Darwinism into a foregone conclusion:

If science is to have any explanation for biological complexity at all it has to make do with what is left when the unacceptable has been excluded. Natural selection is the best of the remaining alternatives, probably the only alternative. In this situation some may decide that Darwinism simply *must* be true.²²

Johnson’s claims were nuanced: “I do not think that many scientists would be comfortable accepting Darwinism solely as a philosophical principle, without seeking to find at least some empirical evidence that it is true.”²³ (Nor are creationists comfortable accepting their model of creation solely as a theological dogma.²⁴) But as Johnson observed: “there is an important difference between going to the empirical evidence to test a doubtful theory against some plausible alternative, and going to the evidence to look for confirmation of the only theory that one is willing to tolerate.”²⁵

For Johnson, belief in the *doctrine* of creation “does not imply opposition to evolution”²⁶ as a *model* of creation, since “a Creator might well have employed such a gradual process as a means to creation. ‘Evolution’ contradicts ‘creation’ only when it is explicitly or tacitly defined as *fully naturalistic evolution*...”²⁷ Hence Johnson advocates *philosophical neutrality* concerning evolution:

I am a philosophical theist and a Christian. I believe that a God exists who could create out of nothing if he wanted to do so, but who might have chosen to work through a natural evolutionary process instead. I am not a defender of creation-science, and am in fact not concerned . . . with addressing any conflicts between the Biblical accounts and the scientific evidence.²⁸

As Johnson said in the second edition of *Darwin on Trail*:

I am not . . . taking sides in a Bible-science conflict. I am interested in what unbiased scientific investigation has to tell us about the history of life . . . This project does not imply opposition to “evolution” in all the senses of that highly manipulable term . . . Darwinists tell us that . . . natural mechanisms like mutation and selection were adequate to perform the job of creation. I want to know whether that claim is true, not just whether it is the best naturalistic speculation available. . .²⁹

According to Johnson:

scientific evidence, when evaluated without an overwhelming bias toward materialism, does not support the Darwinian creation story . . . the evidence actually supports the supposedly discredited view that an intelligent designer outside of nature had to be involved in biological creation.³⁰

However, these are secondary and tertiary issues for Johnson, whereas *getting our philosophy of science right is primary in developing a fruitful debate on origins.*

Johnson navigated a trail similar to that blazed by Alvin Plantinga's articles "When Faith and Reason Clash: Evolution and the Bible"³¹ and "Evolution, Neutrality, and Antecedent Probability: a Reply to Van Till and McMullen"³², in which he argued:

a Christian . . . believes that God has created and sustains the world. Starting from this position . . . we recognize that there are many ways in which God could have created the living things he has in fact created; how, in fact, did he do it? . . . Did it all happen just by way of the working of the laws of physics, or was there further divine activity (activity not restricted to the upholding of matter in existence and concurring in the causal transactions expressing its nature)? That's the question, and the way to try to answer it . . . is to ask two others: first what is the antecedent probability of his doing it the one way rather than the other? And second what does the evidence at our disposal suggest? . . . Starting from the belief in God, we [i.e. Christians] must look at the evidence and consider the probabilities as best we can.

Johnson advanced the debate by arguing that it isn't just those with a belief in God who should privilege scientific evidence over philosophical prejudice when trying to explain biological complexity: *Anyone willing to acknowledge a distinction between science and materialism should do the same.*

Validating the Wedge

It's easy to find scientists whose thinking validates Johnson's warning about the "prejudice that all phenomena can ultimately be explained in terms [of] unintelligent causes" leading to "endorsing naturalistic explanations for phenomenon - *regardless of the facts.*"³³ Geneticist Richard Lewontin admits:

It is not that the methods . . . of science somehow compel us to accept a material explanation of the . . . world, but, on the contrary, that we are forced by our . . . adherence to material causes to create . . . a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying. . .³⁴

"Moreover", says Lewontin, "that materialism is absolute, *for we cannot allow a Divine foot in the door.* . . ."³⁵ Fodor affirms: "Getting minds in general, and God's mind in particular, out of biological explanations is a main goal of the adaptationist programme. I am, myself, all in favour of that. . ."³⁶

Nagel observes:

The theory [of evolution] does not claim to explain the origin of life, which remains a complete scientific mystery at this point. Opponents of ID, however, normally assume that that too must have a purely chemical explanation.³⁷

Assume is the right word. Biologist Franklin Harold asserts: “Life arose here on earth from inanimate matter, by some kind of evolutionary process.”³⁸ But he admits: “This is not a statement of demonstrable fact, but an assumption...”³⁹ Indeed, it’s an assumption maintained in the teeth of contrary evidence.⁴⁰ Paul Davies calculates the odds against producing just the proteins necessary for a minimally complex life-form are “something like $10^{40,000}$ to one.”⁴¹ In the 50th Anniversary edition of *New Scientist*, Davies confirmed: “One of the great outstanding mysteries is the origin of life,” and admitted that “nobody has a clue”⁴² how it happened. Gregg Easterbrook asks:

What creates life out of the inanimate compounds that make up living things? No one knows. How were the first organisms assembled? Nature hasn’t given us the slightest hint. If anything, the mystery has deepened over time . . . if life began unaided under primordial conditions in a natural system containing zero knowledge, then it should be possible - it should be *easy* - to create life in a laboratory today. But . . . no one has come close . . . Did God or some other higher being create life? . . . Until such time as a wholly natural origin of life is found, these questions have power.⁴³

Atheist Fred Hoyle (writing with mathematician Chandra Wickramasinghe) concluded that design is the only reasonable explanation:

the enormous information content of even the simplest living systems . . . cannot in our view be generated by what are often called “natural” processes . . . There is no way in which we can expect to avoid the need for information, no way in which we can simply get by with a bigger and better organic soup, as we ourselves hoped might be possible . . . The correct position we think is . . . an intelligence, which designed the biochemicals and gave rise to the origin of carbonaceous life . . . This is tantamount to arguing that carbonaceous life was invented by noncarbonaceous intelligence. . .⁴⁴

Hoyle and Wickramasinghe didn’t identify their “non-carbonaceous intelligence”, but noted:

the scientific facts throw Darwin out, but leave William Paley, a figure of fun to the scientific world for more than a century, still in the tournament with a chance of being the ultimate winner . . . Indeed, such a theory is so obvious that one wonders why it is not widely accepted as being self-evident. The reasons are psychological rather than scientific.⁴⁵

As Michael Ruse warns: “A great deal of the underpinning of discussions on the origin of life have been more philosophical than anything based in brute experience.”⁴⁶ In other words, Johnson was right.

Ruse on “Nonliteralist Antievolution”

As we’ve seen, it’s easy to find Darwinists whose thinking comports with Johnson’s analysis of the theory’s philosophical foundations. However, in a speech delivered to the American Association for the Advancement of Science in 1993, Michael Ruse *explicitly agreed with Johnson*:

Johnson [is] arguing [that] the kind of position of a person like myself, an evolutionist, is metaphysically based at some level, just as much as the kind of position of . . . some creationist . . . I must confess . . . I’ve been coming to this kind of position myself. . . I was inclined to say . . . creationism is not science and evolution is, and that’s the end of it . . . Now . . . I’m inclined to think . . . we should recognize. . . that the science side has certain metaphysical assumptions built into doing science. . . Certainly, I think that philosophers like myself have been much more sensitized to these things. . . by trends. . . in the philosophy of science . . . So . . . however we’re going to deal with creationism, or new creationism [i.e. Intelligent Design Theory] . . . we should also look at evolution and science, in particular, biology, generally philosophically I think a lot more critically . . . And *it seems to me very clear that at some very basic level, evolution as a scientific theory makes a commitment to a kind of naturalism, namely, that at some level one is going to exclude miracles and these sorts of things, come what may* . . . I think . . . that evolutionary theory . . . certainly seems to be the most reasonable position, *once one has taken a naturalistic position*. So I’m not coming here and saying, give up evolution, or anything like that. But I am coming here and saying, I think that philosophically that one should be sensitive to what I think history shows, namely, that . . . evolution, akin to religion, involves making certain *a priori* or metaphysical assumptions, which at some level cannot be proven empirically . . . And I think that the way to deal with creationism, but the way to deal with evolution also, is not to deny these facts, but to recognize them, and to see where we can go, as we move on from there.⁴⁷

Ruse still assumed that science should be defined so it “excludes miracles and these sorts of things.” But while the scientific status of ID is an important question, it isn’t an essential question. As Nagel comments: “a purely semantic classification of a hypothesis or its denial as belonging or not to science is of limited interest to someone who wants to know whether the hypothesis is true or false.”⁴⁸ The significant thing about Ruse’s lecture was that *he explicitly conceded Johnson’s point* about “metaphysical assumptions” which “cannot be proven empirically” playing a significant role in one’s assessment evolutionary theory. Nevertheless, once *this* admission is made, it’s hard not to reject “methodological naturalism”, for as Monton argues: “a consequence of [methodological naturalism] is that the aim of science is not truth.”⁴⁹ He points out that Judge Jones (who presided over the Dover trial⁵⁰):

seems aware of the fact that his demarcation criteria entail that the aim of science is not truth. He writes that “while ID arguments may be true, a proposition on which the Court takes no position, ID is not science” . . . But if science is not a

pursuit of truth, science has the potential to be marginalized as an irrelevant social practice.⁵¹

Ruse implicitly concedes that methodological naturalism (MN) carries this liability:

Your invoking God. And that's just not acceptable in science . . . I'm not denying the possibility of non-natural causes. My question, rather, is whether in doing science it is necessary to invoke non-natural causes? Or, if we agree by definition that science cannot invoke non-natural causes, whether it is necessary, therefore, to accept that there are questions about the world that science cannot answer because they demand non-natural answers?⁵²

Ruses' intransigence notwithstanding: "The inadequacy of methodological naturalism [is now] widely acknowledged by philosophers of science, even among those who are atheists. . ."⁵³ As Jeffrey Koperski affirms:

If the best explanation for some new phenomenon is design, even supernatural design, it would still count as a scientific explanation. It borders on academic incompetence to pretend that science has strict boundaries and then gerrymander those boundaries to keep out the riffraff. Philosophers of science in particular should know better.⁵⁴

Monton argues that there is no consensus among philosophers or scientists in favor of MN:

The way to refute intelligent design is not by declaring it unscientific, but by showing that the empirical evidence for design is not there. . . it is a mistake to try to argue against ID by declaring it unscientific. . . If our goal is to believe truth and avoid falsehood, and if we are rational people who take into account evidence in deciding what to believe, then we need to focus on the question of what evidence there is for and against ID.⁵⁵

Fuller thinks there's a consensus *against* MN among philosophers of science:

neo-Darwinists are inclined to slide from observing (correctly) that [ID] challenges the metaphysical naturalism of contemporary biology to inferring (incorrectly) that [ID] challenges the established methods of scientific inquiry. . . However, [ID] does not challenge science, only the artificially restricted conceptual horizons within which science is practiced under the neo-Darwinist regime . . . [ID's] attempt to embrace a philosophy of science that extends beyond naturalism does not reflect the eccentricity of a reactionary scientific movement. On the contrary, it probably represents the mainstream opinion of philosophers themselves.⁵⁶

He condemns MN as:

a neologism designed to capture two things at once that the history of the scientific method has tended to keep separate . . . the contexts of discovery and justification. This separation explains the studied neutrality that philosophers of the scientific method have tended to adopt toward “metaphysics,” including *both* naturalism and supernaturalism. . . Not surprisingly, the scientific community’s recent legitimatory appeals to methodological naturalism have appeared to sit uncomfortably even with philosophers who oppose [ID]...⁵⁷

Richard Dawkins likewise rejects MN and defends the scientific status of ID:

God’s existence or non-existence is a scientific fact about the universe, discoverable in principle if not in practice . . . The presence or absence of a creative super-intelligence is unequivocally a scientific question, even if it is not in practice – or not yet – a decided one.⁵⁸

Ruse and Johnson agree that evolution is “the most reasonable position, *once one has taken a naturalistic position.*”⁵⁹ But what if one does *not* take a naturalistic position (methodological or metaphysical)? Approaching the question of origins without a “commitment to a kind of naturalism” doesn’t entail rejecting evolution as the best available scientific account of biology. It does mean *following the scientific evidence*.

Nagel on the Scientific Status of ID

Nagel believes “that the response of evolutionists to creation science and intelligent design should not be to rule them out as ‘not science.’”⁶⁰ He argues that Darwinism and ID are methodologically equivalent: “Either both of them are science or neither of them is.”⁶¹:

The denier that ID is science faces the following dilemma. Either he admits that the intervention of such a designer is possible, or he does not. If he does not, he must explain why that belief is more scientific than the belief that a designer is possible. If on the other hand he believes that a designer is possible, then he can argue that the evidence is overwhelmingly against the actions of such a designer, but he cannot say that someone who offers evidence on the other side is doing something of a fundamentally different kind . . . It is difficult to avoid the conclusion that the two sides are in symmetrical positions. If one scientist is a theist and another an atheist, this is either a scientific or a nonscientific disagreement between them. If it is scientific . . . then their disagreement is scientific all the way down. If it is not a scientific disagreement, and if this difference in their nonscientific beliefs about the antecedent possibilities affects their rational interpretation of the same empirical evidence, I do not see how we can say that one is engaged in science and the other is not. Either both conclusions are rendered nonscientific by the influence of their nonscientific assumptions, or both are scientific in spite of those assumptions. In the latter case, they have a scientific disagreement that cannot be settled by scientific reasoning alone. . .⁶²

Nagel complains that the “ID isn’t science” objection amounts to an unfair and implausible rigging of the ground-rules of science:

The contention seems to be that, although science can demonstrate the falsehood of the design hypothesis, no evidence against that demonstration can be regarded as scientific support for the hypothesis. Only the falsehood, and not the truth, of ID can count as a scientific claim. Something about the nature of the conclusion, that it involves the purposes of a supernatural being, rules it out as science.⁶³

As I will argue, the claim that ID “involves the purposes of a supernatural being” is misleading. This aside, Nagel’s point about double standards is a good one:

From the beginning it has been commonplace to present the theory of evolution by random mutation and natural selection as an alternative to intentional design as an explanation of the functional organization of living organisms. The evidence for the theory is supposed to be evidence for the absence of purpose in the causation of the development of life-forms on this planet. It is not just the theory that life evolved over billions of years, and that all species are descended from a common ancestor. Its defining element is the claim that all this happened as the result of the appearance of random and purposeless mutations in the genetic material followed by natural selection due to the resulting heritable variations in reproductive fitness. It displaces design by proposing an alternative. No one suggests that the theory is not science, even though the historical process it describes cannot be directly observed, but must be inferred from currently available data. It is therefore puzzling that the denial of this inference, i.e., the claim that the evidence offered for the theory does not support the kind of explanation it proposes, and that the purposive alternative has not been displaced, should be dismissed as not science.⁶⁴

Nagel argues that the supposed problem with the design hypothesis:

cannot be just that the idea of a designer is too vague, and that nothing is being said about how he works. When Darwin proposed the theory of natural selection, neither he nor anyone else had any idea of how heredity worked, or what could cause a mutation that was observable in the phenotype and was heritable. The proposal was simply that something purposeless was going on that had these effects, permitting natural selection to operate. This is no less vague than the hypothesis that the mutations available for selection are influenced by the actions of a designer. So it must be the element of purpose that is the real offender.⁶⁵

However, if the “purpose” in question can be “vague” without this vagueness being problematical, then it must be un-problematical if this vagueness extends to a refusal to specify the “purpose” in question as *divine* (as Nagel assumes). It’s upon the issue of “purpose” or “design” *per se* that we should focus, for as Nagel observes:

We do not have much scientific understanding of the creative process even when the creator is human; perhaps such creativity too is beyond the reach of science. Leaving that aside: the idea of a divine creator or designer is clearly the idea of a being whose acts and decisions are not explainable by natural law. There is no divine scientific psychology.⁶⁶

Let's not "leave that aside". Nagel raises an issue that re-enforces the probity of focusing upon "design" as an explanation, rather than upon the secondary question of *divine* design. Fuller comments upon the "heuristic value" of design detection criteria and design explanations, like those used by ID, which are "accepted in settings less fraught with theological controversy"; noting that: "The most extreme version of this application appears in NASA's Search for Extraterrestrial Intelligence, or SETI, project..."⁶⁷ The observation that personal agency and internal states of agents (human and non-human) are routinely cited as scientific explanations holds true despite the fact that, as Nagel notes, the creativity routinely referenced therein might itself turn out to be beyond the reach of a naturalistically defined science.⁶⁸ That is, no one thinks that if some form of mind-body dualism is true, then forensic science isn't a science after all because it explains with reference to something that doesn't fit within a naturalistic worldview! One needn't have a settled view upon the mind-body problem to justifiably count forensic science as a science. Likewise, one needn't assume that design explanations *per se* are necessarily naturalistic in order to within one's rights in counting such explanations as scientific:

The fact that there could be no scientific theory of the internal operation of the divine mind is consistent with its being in large part a scientific question whether divine intervention provides a more likely explanation of the empirical data than an explanation in terms of physical law alone. To ask whether there are limits to what can credibly be explained by a given type of scientific theory, or any theory relying only on universal physical laws, is itself a scientific question. An answer to the question that asserts such limits on the basis of empirical evidence is still a scientific claim, even if it also proposes an alternative cause whose internal operation is not governed by the kind of natural law that science can investigate. I suspect that the assumption that science can never provide evidence for the occurrence of something that cannot be scientifically explained is the principal reason for the belief that ID cannot be science; but so far as I can see, that assumption is without merit.⁶⁹

Going Soft on Methodological Naturalism

One can distinguish between *hard* and *soft* methodological naturalism.⁷⁰ Hard methodological naturalism (HMN) excludes *intelligent* causation from science - exiling many fields of study currently considered scientific (e.g. forensic science, SETI) and ceding epistemological competency to philosophy. Soft methodological naturalism (SMN) excludes *explicitly supernatural causation* from science, but permits explanations framed in terms of *intelligence*. Those who (like Fodor) believe that explanations framed

in terms of intelligence are ultimately reducible to naturalistic metaphysics, those who (like Nagel) take an anti-reductionistic position, and those who are agnostic on this question, can all accept SMN. This is a *pragmatic* reason for practicing at least some science within SMN: Accepting SMN allows science to function as a “big tent” for people of all worldviews. Rather than theists doing “theistic science” *a la* Plantinga, and atheists doing “naturalistic science” (HMN definition) *a la* Ruse, we can all co-operate in science (SMN definition).

SMN doesn’t entail adopting or rejecting ID. SMN permits ID to count as science just as effectively as the outright rejection of “methodological naturalism” advocated by Monton, Nagel, Fuller *et al.* SMN *limits* the epistemological competency of science (like HMN), but without *subverting* it (unlike HMN). Whether an intelligent cause is supernatural or not, it is still an *intelligent* cause, and true to note it as such within scientific theory making.

ID isn’t Theistic Science

According to Nagel:

the campaign of the scientific establishment to rule out intelligent design as beyond discussion because it is not science results in the avoidance of significant questions about the relation between evolutionary theory and religious belief, questions that must be faced in order to understand the theory and evaluate the scientific evidence for it.⁷¹

Nagel reckons: “evolutionary theory as a complete explanation of the development of life is more plausible to someone who does not believe in God than to someone who does.”⁷² In more general terms he explains: “the empirical evidence may suggest different conclusions depending on what religious belief one starts with. . . the evidence does not by itself settle which of those beliefs is correct. . .”⁷³

Nevertheless, Nagel acknowledge that “ID is very different from creation science”⁷⁴ and that “there is a distinction between the arguments for intelligent design in biology and the traditional argument from design for the existence of God.”⁷⁵ Indeed, ID simply claims that:

intelligent agency, as an aspect of scientific theory making, has more explanatory power in accounting for the specified, and sometimes irreducible complexity of some physical systems, including biological entities, and/or the existence of the universe as a whole, than the blind forces of . . . matter.⁷⁶

As such, ID is compatible with “all those teleological views that allow for the empirical detection of real design.”⁷⁷ Such views include, *but aren’t limited to*, theism. As Behe comments:

my argument is limited to design itself; I strongly emphasize that it is not an argument for the existence of a benevolent God . . . I myself do believe in a benevolent God, and I recognize that philosophy and theology may be able to extend the argument. But a scientific argument for design in biology does not reach that far. . .⁷⁸

Nagel uncharitably ignores Monton's recommendation "that. . . we simply take proponents of ID at their word that the doctrine they are endorsing. . . is not inherently theistic."⁷⁹ In discussing "the relation between evolutionary theory and the despised alternative,"⁸⁰ Nagel asserts:

For legal reasons that alternative is called intelligent design, with no implication that the designer is God, but I shall assume that we are talking about some form of divine purpose or divine intervention. Nevertheless, there is a distinction between the arguments for intelligent design in biology and the traditional argument from design for the existence of God. ID . . . is best interpreted not as an argument for the existence of God, but as a claim about what it is reasonable to believe about biological evolution if one independently holds a belief in God that is consistent both with the empirical facts about nature that have been established by observation, and with the acceptance of general standards of scientific evidence. For legal reasons it is not presented that way by its defenders. . .⁸¹

Nagel interprets ID as an exercise in what Plantinga calls "theistic science"⁸² (albeit one that has tendentiously branded itself for legal reasons⁸³). However, as Stephen C. Meyer explains, this is incorrect:

According to a spate of recent media reports . . . intelligent design is just biblical creationism repackaged by religious fundamentalists in order to circumvent a 1987 United States Supreme Court prohibition against teaching creationism in the U.S. public schools . . . newspapers, magazines and broadcast outlets in the United States and around the world have repeated this trope. But is it accurate? As one of the architects of the theory of intelligent design . . . I know that it isn't. The modern theory of intelligent design was . . . first proposed in the late 1970s and early 1980s by a group of scientists, Charles Thaxton, Walter Bradley and Roger Olson, who were trying to account for an enduring mystery of modern biology: the origin of the digital information en-coded along the spine of the DNA molecule. Thaxton and his colleagues came to the conclusion that the information-bearing properties of DNA provided strong evidence of a prior but unspecified designing intelligence. They wrote a book proposing this idea in 1984 . . . Contemporary scientific interest in the design hypothesis not only predates the U.S. Supreme Court ruling against creationism, but the . . . theory of intelligent design, unlike creationism . . . is an inference from empirical evidence, not a deduction from religious authority.⁸⁴

There is an in-principle reason why ID cannot be conflated with natural theology.⁸⁵ Behe explains:

a raft of important distinctions intervene between a conclusion of design and identification of a designer . . . if one wishes to be academically rigorous, one can't leap directly from design to a transcendent God. To reach a transcendent God, other, nonscientific arguments have to be made. . .⁸⁶

Monton (following Dembski⁸⁷) argues that there can be situations in which "it is possible to get scientific evidence for the existence of God."⁸⁸ However, unlike Monton's hypothetical example, the data-set ID draws upon doesn't include propositional communication, and thus cannot constitute direct evidence for the existence of God. There is a distinction between detecting design and revelation.⁸⁹

Atheist Sam Harris acknowledges that there is a logical gap between the conclusion of intelligent design and the conclusion that the designer is God: "Even if we accepted that our universe simply had to be designed by a designer, this would not suggest that this designer is the biblical God. . ."⁹⁰ This gap can be illustrated by thinking about crop-circles. Crop-circles are obviously designed. Some believe the source of crop-circle design is extra-terrestrial. Yet, no matter how skeptical we are about aliens, it would be irrational to argue that "Since aliens don't exist, crop-circles aren't the product of design"! Likewise, however skeptical we are about the existence of God, it would be irrational to argue that since God doesn't exist, nothing in nature is the product of design. As Monton argues:

The intelligent cause could be God, but it need not be. It may be that living things on Earth were created by a highly intelligent alien civilization . . . It may be that the whole universe we experience is really just a computer simulation being run by highly intelligent non-supernatural beings, as Nick Bostrom (2003) argues is plausible. It takes just a bit of creativity to come up with other possibilities. . .⁹¹

God is a sufficient but not necessary cause of design in nature. Arguments for design needn't be viewed as arguments for God - at least, not without considerations from outside ID being brought to bear: "intelligent design theory by itself makes no claims about the nature of the designer, and scientists currently working within an intelligent design framework include Protestants, Catholics, Jews, agnostics, and others."⁹² Dembski reports: "I've seen intelligent design embraced by Jews, Muslims, Hindus, Buddhists, agnostics and even atheists."⁹³ The inference to design is prior to inferences to any particular designer, and stands or falls on its own merits. Recognizing distinctions between *intelligent*, *supernatural* and *divine* design is *not* a rhetorical move on the part of ID theorists. As Behe observes: "diligence in making proper distinctions should not be impugned as craftiness."⁹⁴ Monton acknowledges: "ID is not inherently supernatural, and hence ID can count as science even if the restriction to naturalism is part of the scientific methodology."⁹⁵

Discarding Nagel's conspiracy theory, we can agree that:

ID. . . requires only that design be admitted as a possibility . . . it would be difficult to argue that the admission of that possibility is inconsistent with the standards of scientific rationality. Further, if it is admitted as a possibility, it would be difficult to argue that the presently available empirical evidence rules it out decisively. . . The conceivability of the design alternative is part of the background for understanding evolutionary theory. To make the assumption of its falsehood a condition of scientific rationality seems almost incoherent.⁹⁶

Still, *given* Nagel's explicitly theistic interpretation of ID, it's noteworthy that he not only defends its scientific status (if ID is science even if it includes reference to God, it can hardly fail to be science when it doesn't do so), but thinks it correctly captures the epistemic relationship between the hypotheses of theism and evolution.

Phase Two: A Naturalist on *The Edge of Evolution*

"I recognize that there is a significant debate amongst evolutionists as to how far natural selection goes." – Michael Ruse⁹⁷

One of the most significant ID publications of recent years is *The Edge of Evolution: The Search for the Limits of Darwinism*, (Free Press, 2007) by Michael J. Behe. In "Public Education and Intelligent Design", Thomas Nagel proclaims a significant degree of agreement with Behe's argument, whilst professing agnosticism concerning Behe's conclusion of design.

Nagel states: "My own situation is that of an atheist who, in spite of being an avid consumer of popular science, has for a long time been skeptical of the claims of traditional evolutionary theory to be the whole story about the history of life."⁹⁸ In Nagel's view:

Sophisticated members of the contemporary culture have been so thoroughly indoctrinated that they easily lose sight of the fact that evolutionary reductionism defies common sense. A theory that defies common sense can be true, but doubts about its truth should be suppressed only in the face of exceptionally strong evidence.⁹⁹

Thus Nagel apparently agrees with Behe that the burden of proof is on those who doubt design:

a person who conjectured that the statues on Easter Island . . . were actually the result of unintelligent forces would bear the substantial burden of proof the claim demanded. In those examples, the positive evidence for design would be there for all to see in the purposeful arrangements of parts to produce the images. Any putative evidence for the claim that the images were actually the result of unintelligent processes . . . would have to clearly show that the postulated unintelligent process could indeed do the job. In the absence of such a clear

demonstration, any person would be rationally justified to prefer the design explanation.¹⁰⁰

It's worth noting Fuller's comment that: "As long as evolutionists cannot bridge the model gap between the possible and the actual in their core domain . . . the conceptual space remains for alternative explanatory scenarios for the emergence of the cell and other *prima facie* intelligently designed features of nature."¹⁰¹ If it 'looks like a duck, walks like a duck, swims like a duck and sounds like a duck' then it should be assumed to *be* a duck, in the absence of sufficient evidence to the contrary.¹⁰² Franklin Harold admits: "there are presently no detailed Darwinian accounts of the evolution of any biochemical or cellular system, only a variety of wishful speculations."¹⁰³ It should take more than "wishful speculations" to trump the *prima facie* evidence for design.¹⁰⁴

Behe distinguishes between common descent and adaptationism, accepting the former but rejecting the latter as the explanation for (most of) the former¹⁰⁵:

Random mutation, natural selection, common descent – three separate ideas welded into one theory . . . In brief, the evidence for common descent seems compelling . . . Second, there's also great evidence that random mutation paired with natural selection can modify life in important ways. Third, however, there is strong evidence that random mutation is extremely limited.¹⁰⁶

Fuller distinguishes between:

observable, often experimentally induced, "microevolution" in the laboratory, and more speculative inferences concerning "macroevolution" in the distant past based on the fossil record. The neo-Darwinian synthesis consists largely of an extended promissory note to the effect that these two senses of "evolution" are ultimately the same.¹⁰⁷

Arguing for macroevolution from the fossil record doesn't show that common descent is explicable in terms of an extrapolated micro-evolutionary process. Indeed, most of *The Edge of Evolution* is devoted to showing that, far from making good on Fuller's "promissory note", a straight-forward extrapolation from the evidence of microevolution shows that the macro-evolutionary explanation is all but empty (the merits of design as an alternative explanation is an separate issue). Behe urges: "Properly evaluating Darwin's theory absolutely requires evaluating random mutation and natural selection *at the molecular level*."¹⁰⁸ Nagel agrees:

Are the sources of genetic variation uniformly random or not? That is the central issue, and the point of entry for defenders of ID. In his recent book, *The Edge of Evolution*, Michael Behe examines a body of currently available evidence about the normal frequency and biochemical character of random mutations in the genetic material of several organisms: the malaria parasite, the human immunodeficiency virus (HIV), the bacterium *E. coli*, and humans. He argues that

those widely cited examples of evolutionary adaptation, including the development of immunity to antibiotics, when properly understood, cannot be extrapolated to explain the formation of complex new biological systems. These, he claims, would require . . . mutations whose random probability, either as simultaneous multiple mutations or as sequences of separately adaptive individual mutations, is vanishingly small. He concludes that alterations to DNA over the course of the history of life on earth must have included many changes that we have no statistical right to expect, ones that were beneficial beyond the wildest reach of probability . . . he believes that random mutation is not sufficient to explain the range of variation on which natural selection must have acted to yield the history of life . . . This seems on the face of it to be a scientific claim, about what the evidence suggests, and one that is not self-evidently absurd. I cannot evaluate it; I merely want to stress its importance for the current debate.¹⁰⁹

Nagel carefully distinguishes skepticism about adaptationalism from advocating design: “Skepticism about the standard evolutionary model is not limited to defenders of ID.”¹¹⁰ Nagel re-iterates the significance of Behe’s argument:

even if one merely regards the randomness of the sources of variation as an open question, it seems to call for the consideration of alternatives . . . A great deal depends on the likelihood that the complex chemical systems we observe arose through a sufficiently long sequence of random mutations in DNA, each of which enhanced fitness. It is difficult to find in the accessible literature the grounds for evolutionary biologists’ confidence about this.¹¹¹

He references:

Confidence expressed by Jerry Coyne . . . in his review of *The Edge of Evolution*: “Behe furnishes no proof, no convincing argument, that [protein-protein] interactions cannot evolve gradually. In fact, interactions between proteins, like any complex interaction, were certainly built up step by mutational step, with each change producing an interaction scrutinized by selection and retained if it enhanced an organism’s fitness” (*The New Republic*, June 18, 2007, p. 42).¹¹²

Behe does *not* argue that protein-protein interactions “cannot evolve gradually”, but that “complexes with more than two different binding sites – ones that require three or more different kinds of proteins – are beyond the edge of evolution.”¹¹³ And Behe *does* furnish “proof”:

Where is it reasonable to draw the edge of evolution? . . . On the one side are our very best examples – from humanity’s trench war with parasites – of what random mutation and natural selection are known to do. We know that single changes to single genes can sometimes elicit a significant beneficial effect. The classic example . . . is that of sickle cell hemoglobin, where a change to one amino acid confers resistance to malaria . . . More rarely, several mutations can sequentially

add to each other to improve an organisms' chances of survival. An example is the breaking of the regulatory controls of fetal hemoglobin to help alleviate sickle cell disease. Very, very rarely, several amino acid mutations appear simultaneously to confer a beneficial effect, such as in chloroquine resistance... in malaria... a “CCC,” a “chloroquine-complexity cluster,” . . . A CCC requires, on average, 10^{20} , a hundred billion billion, organisms – more than the number of mammals that has ever existed on earth. So if other things were equal, the likelihood of getting two new binding sites would be . . . the square of a CCC, or one in ten to the fortieth power. Since that’s more cells than likely to have ever existed on earth, such an event would not be expected to have happened by Darwinian processes in the history of the world. Admittedly, statistics are all about averages, so some freak event like this *might* happen . . . But it is not biologically reasonable to expect it, or less likely events that occurred in the common descent of life on earth . . . complexes of just three or more different proteins are beyond the edge of evolution.¹¹⁴

Nagel cautions Darwinists:

It is not enough to say . . . that the *incapacity* of evolutionary mechanisms to account for the entire evolution of life has not been conclusively established. That is not required for an alternative to be considered seriously, provided the alternative is not ruled out in advance on other grounds. Those who offer empirical evidence for ID do not have to argue that a completely non-purposive explanation is impossible, only that it is very unlikely, given the evidence available. That is a scientific claim, though a contestable one.¹¹⁵

This is precisely what Behe argues. Indeed, peer-reviewed scientific debate about Behe’s empirical argument is ongoing.¹¹⁶ Whilst withholding agreement from Behe, Nagel affirms that no empirical refutation of ID:

has ever been offered, let alone established. What have been offered instead are necessarily speculative proposals about how the problems posed by Behe might be handled by evolutionary theory, declarations that no hypothesis involving divine intervention counts as science, and assurances that evolutionary theory is not inconsistent with the existence of God.¹¹⁷

Against Reticence: Why Thomas Nagel Should Embrace ID

In Nagel’s view: “A theory that defies common sense can be true, but doubts about its truth should be suppressed only in the face of exceptionally strong evidence.”¹¹⁸ Nagel is “skeptical of the claims of traditional evolutionary theory. . .”¹¹⁹ The conjunction of these propositions surely leaves Nagel endorsing “common sense”, by which I take him to mean the universally acknowledged impression of design in nature. After all: “The evidence for [evolution] is supposed to be evidence for the absence of purpose in the

causation of the development of life-forms on this planet . . . It displaces design by proposing an alternative”¹²⁰ Failure to establish an alternative is failure to displace design.

Moreover, Nagel views Behe’s critique of the extrapolation from “micro” to “macro” evolution as a methodologically correct argument that, *if* sound, supports his own skepticism about Darwinism. Yet, despite the fact that he thinks no empirical refutation of ID “has ever been . . . established”¹²¹, Nagel is reticent about ID. Why? He confesses his reticence has a metaphysical source:

I do not regard divine intervention as a possibility, even though I have no other candidates.¹²²

That is, since a) he has no candidate for the role of designer besides divinity, and b) he regards divine design as impossible, he concludes that he can’t embrace ID (Nagel’s argument is explicitly person relative).

Regarding a) it’s unclear if Nagel thinks there’s something relevant to his agnosticism about ID in the fact that (i) he lacks a prior belief in any *actual* candidate designer, or (ii) in the fact he can’t think of a *hypothetical* designer candidate, besides God. Of course, (ii) can only feature as a factor in Nagel’s argument *on the condition that he regards divine design as impossible*. Moreover, Nagel most plausibly means (i), both because this interpretation follows naturally from his focus on possibility in the preceding clause about divinity, and because it seems unlikely that he can’t conceive any designer candidates besides God.

Given that Nagel means (i), the implied assumption - that rationally accepting a design inference requires prior belief in a plausible designer candidate - is false. Suppose the SETI program discovered a signal telling us how to build a working warp drive engine. It would be irrational *not* to attribute such a signal to design, even if we had a prior belief in the *non*-existence of extra-terrestrials! Design inferences don’t depend upon a prior belief in the existence of *actual* designer candidates. They depend upon the belief that it’s *possible* that a designer *might* exist: “ID . . . requires only that design be admitted as a possibility . . .”¹²³ Moreover, *this* assumption is bound up in Nagel’s recognition that the common sense design alternative to Darwinism carries the presumption of truth (since real design entails a real designer, and *real* designers must of course be *possible*).

Regarding (b), Nagel admits: “I recognize that this is because of an aspect of my overall worldview that does not rest on empirical grounds or any other kind of rational grounds.”¹²⁴ This unwarranted presupposition adversely affects Nagel’s assessment of ID:

I do not think the existence of God can be disproved. So someone who can offer serious scientific reasons to doubt the adequacy of the theory of evolution, and who believes in God, in the same immediate way that I believe there is no god, can quite reasonably conclude that the hypothesis of design should be taken seriously.¹²⁵

Nagel doesn't embrace ID *because he doesn't believe in God*. That's like rejecting a design inference from crop-circles because one doesn't believe in aliens! To take a design inference seriously, one need only regard the existence of a designer *per se* as a possibility. And recognition that the design hypothesis enjoys the presumption of truth (something Nagel appears to acknowledge) *includes* the recognition that the existence of a designer *per se* is a possibility! Nagel's reticence about ID rests upon a failure to recognize that the design hypothesis provides the embarkation point, rather than the terminus, to debate over the nature of the designer.

Conclusion

Johnson's question about the relationship between worldviews and scientific theorising has proved to be the right question:

In my mind the most important thing is to get people to ask the right questions, not to try to tell them how to *answer* the questions. In a sense, all who are willing to address the right questions are participants in our program regardless of what answers they want to give . . . the right question has been whether science and naturalism are really the same thing, or whether scientific evidence may be moving away from the materialist answers. If someone thinks this is a good question which deserves fair-minded investigation, he or she is travelling side-by-side with us – even if he or she thinks that naturalistic science will eventually solve its problems. . . ¹²⁶

Many critics remain willing to deploy the “it's not science” objection against ID. However, Johnson's log-splitting question has successfully shaped a growing debate about origins. Not only are an increasing number of atheists prepared to travel “side-by-side” with Johnson's philosophical point that there *is* a distinction between science and naturalism that means ID *is* a scientific theory; but growing acknowledgement of this point appears to have opened up space for atheists to express dissatisfaction with Neo-Darwinism *as a scientific explanation*. Monton is standing on solid *and mainstream* ground in arguing that “We shouldn't get caught up debating whether ID counts as science; the focus should be on the empirical arguments for and against ID.”¹²⁷

When one combines Nagel's acceptance that ID *is* science (*even if it were to explicitly identify God as the designer!*) with the fact that he all but endorses Behe's *Edge of Evolution* argument, and the fact that Richard Dawkins concedes life on Earth *might* be the product of design (*just so long as the designer/s have a naturalistic explanation*)¹²⁸, one can see that the “wedge” has gone mainstream:

The goal of the Intelligent Design Movement is to achieve an open philosophy of science that permits consideration of any explanations toward which the evidence may be pointing . . . visibly making evolutionary naturalism the subject of critical investigation based on evidence, rather than allowing it to rule by default as the

unquestioned philosophical position to which science must by definition adhere.¹²⁹

Endorsement of the scientific status of ID by the likes of Dawkins, Fuller, Monton and Nagel represents a genuine breakthrough for the “wedge”. What Johnson calls the “modernist log” is no longer cracked: it’s split.

¹ Phillip E. Johnson, *Testing Darwinism: An Easy-To-Understand Guide* (Leicester: IVP, 1997), 92.

² ARN, “Top Ten Darwin and Design News Stories for 2008”

<http://www.arn.org/top10/2008newsstories.pdf> Cf. Intelligent Design The Future, “Top Ten Darwin and Design News Stories for 2008” http://intelligentdesign.podomatic.com/player/web/2008-12-24T10_18_54-08_00.

³ <http://www.arn.org>.

⁴ ARN, “Top Ten Darwin and Design News Stories for 2008”. Cf. David Berlinski, *The Devil’s Delusion: Atheism and its Scientific Pretensions* (New York: Crown Forum, 2008); David Berlinski, “The Scientific Embrace of Atheism” <http://www.discovery.org/a/4949>; Intelligent Design The Future, “David Berlinski on *The Devil’s Delusion*” http://intelligentdesign.podomatic.com/entry/2008-04-16T16_23_01-07_00; Peter S. Williams, “Atheist Philosopher Bradley Monton Defends Intelligent Design Theory” <http://idpluspeterswilliams.blogspot.com/2008/11/atheist-philosopher-bradley-monton.html>; Steve Fuller, *Dissent Over Descent: Intelligent Design’s Challenge to Darwinism* (Icon, 2008); Caspar Melville, “The Darwin Wars: Still Raging” www.guardian.co.uk/commentisfree/2008/sep/17/evolution.religion?gusrc=rss&feed=commentisfree; Thomas Nagel, “Public Education and Intelligent Design”, *Philosophy & Public Affairs* 36, no. 2 (2008) http://as.nyu.edu/docs/IO/1172/papa_132.pdf On the constitutionality of teaching ID in America, Cf. Jay D. Wexler, “Kitzmiller and the ‘Is It Science?’ Question,” *5 First Amendment Law Review* 90, 93 (2006).

⁵ Cf. Jerry Fodor, “Why Pigs Don’t Have Wings”, *London Review of Books*, 18th October 2007, http://www.lrb.co.uk/v29/n20/fodo01_.html.

⁶ Steve Fuller, *Science vs Religion? Intelligent Design and the Problem of Evolution* (Cambridge: Polity, 2007), 116 & 83.

⁷ cf. A.N. Wilson, “Why I Believe Again” <http://www.newstatesman.com/religion/2009/04/conversion-experience-atheism>; A.N. Wilson, “Religion of Hatred: Why we should no longer be cowed by the chattering classes ruling Britain who sneer at Christianity” <http://www.dailymail.co.uk/news/article-1169145/Religion-hatred-Why-longer-cowed-secular-zealots.html>; William Lane Craig, “A.N. Wilson” <http://www.reasonablefaith.org/site/News2?page=NewsArticle&id=5887>.

⁸ A.N. Wilson, “Can you love God and agree with Darwin?” <http://www.newstatesman.com/religion/2009/04/returning-to-religion>.

⁹ Cf. <http://www.jameslefanu.com/>.

¹⁰ For example, in the course of discussing physiological systems like the heart, Le Fanu writes: “when, as here, the purposive efforts of brilliant bioengineers employing the most sophisticated modern technology fall so far short of nature’s model, it seems merely perverse to suggest that the undirected processes of nature, acting on numerous small, random genetic mutations, could give rise to this or any other of those ‘masterpieces of design.’ This is not to suggest that there must be a Creator after all . . .”, *Why Us? How Science Rediscovered the Mystery of Ourselves* (Harper Press, 2009), 122. Cf. James Le Fanu, “Why ‘Why Us?’” <http://www.jameslefanu.com/archives/502>.

¹¹ James Le Fanu, *Why Us? How Science rediscovered the Mystery of Ourselves*, 23, 58 & 88. Cf. Christopher Booker, “Mind Over Matter”, *The Spectator*, Wednesday, 28th January 2009 <http://www.spectator.co.uk/books/3299576/mind-over-matter.thtml>.

¹² Cf. <https://www.broadviewpress.com/product.php?productid=952&cat=0&page=1> Monton explains: “even though I’m an atheist, I’m of the opinion that the arguments for intelligent design are stronger than most realize. . . I maintain that it is legitimate to view intelligent design as science, that there are somewhat plausible arguments for the existence of a cosmic designer, and that intelligent design should be taught in public school science classes.” <http://spot.colorado.edu/~monton/BradleyMonton/ID.html>

¹³ Phillip E. Johnson, *The Firing Line Creation-Evolution Debate* (1997) <http://www.bringyou.to/apologetics/p45.htm> Cf. Cornelius G. Hunter, *Darwin’s Proof: The Triumph of Religion Over Science* (Grand Rapids, Michigan: Brazos Press, 2003); Cornelius G. Hunter, *Science’s Blind Spot: The Unseen Religion of Scientific Naturalism* (Grand Rapids, Michigan: Brazos Press, 2007);

Intelligent Design The Future, “Dr Cornelius Hunter and Science’s Blind Spot”

http://intelligentdesign.podomatic.com/entry/eg/2008-07-30T16_00_48-07_00.

¹⁴ Cf. William A. Dembski, ed., *Darwin’s Nemesis: Phillip Johnson and the Intelligent Design Movement* (Downers Grove, Illinois: IVP Academic, 2006).

¹⁵ Phillip E. Johnson, *The Right Questions: Truth, Meaning & Public Debate* (Downers Grove: IVP, 2002), 27.

¹⁶ Phillip E. Johnson, *The Wedge of Truth: Splitting the Foundations of Naturalism* (Downers Grove: IVP, 2000), 14.

¹⁷ Bradley Monton, “Is Intelligent Design Science? Dissecting the Dover Decision”, 1, 2 & 9-10
http://philsci-archive.pitt.edu/archive/00002592/01/Methodological_Naturalism_Dover_3.doc

¹⁸ Fuller, *Science vs Religion? Intelligent Design and the Problem of Evolution*, 116 & 162.

¹⁹ Phillip E. Johnson, *Darwin on Trail*, second edition (Downers Grove: IVP, 1993), 14. Creationist Dr Jonathan Sarfati writes: “The authority of the Bible is the main emphasis of Answers in Genesis. We don’t try to ‘prove’ the Bible with science; rather, we accept the Bible’s propositions as true without proof, i.e. as *axioms* or *presuppositions*. . . it’s important to realize that all ‘facts’ of science do *not* speak for themselves, but are *interpreted* within a framework. Evolutionists start with the axiom of *naturalism* or *materialism*. . . Biblical creationists interpret the *same* facts and observations, but within the framework outlined above.” - *Refuting Evolution 2* (Green Forrest AR: Master Books, 2002), 211-212.

²⁰ Johnson, *Darwin on Trail*, 14.

²¹ *Ibid.*, 28.

²² *Ibid.*, quoting the National Academy of Science, 28.

²³ *Ibid.*, 28.

²⁴ Cf. Stuart Burgess, *Hallmarks of Design: Evidence of purposeful design and beauty in nature*, revised edition (Surrey: DayOne, 2002); David Rosevear, *Creation Science: Confirming that the Bible is Right* (Chichester: New Wine Press, 1991); Sarfati, *Refuting Evolution 2*; <http://www.answersingenesis.org/>.

²⁵ Johnson, *Darwin on Trail*, 28.

²⁶ *Ibid.*, 3.

²⁷ *Ibid.*, 3-4.

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- ²⁸ Ibid., 14.
- ²⁹ Ibid., 157.
- ³⁰ Johnson, *The Right Questions: Truth, Meaning & Public Debate*, 80.
- ³¹ Alvin Plantinga, “When Faith and Reason Clash: Evolution and the Bible”, *Christian Scholar’s Review* XXI:1 (September 1991), 8-33; re-printed in David L. Hull & Michael Ruse, ed.’s, *The Philosophy of Biology* (Oxford University Press, 1998), <http://www.asa3.org/asa/dialogues/Faith-reason/CRS9-91Plantinga1.html>.
- ³² Alvin Plantinga, “Evolution, Neutrality, and Antecedent Probability: a Reply to Van Till and McMullen” <http://www.asa3.org/asa/dialogues/faith-reason/CRS9-91Plantinga2.html>.
- ³³ Johnson, *The Wedge of Truth*, 14.
- ³⁴ Richard Lewontin, “Billions and Billions of Demons”, *New York Review of Books*, January 9, 1997.
- ³⁵ *ibid*, my italics.
- ³⁶ Fodor, “Why Pigs Don’t Have Wings”.
- ³⁷ Thomas Nagel, “Public Education and Intelligent Design”, *Philosophy & Public Affairs* 36, no. 2 (2008), 202 http://as.nyu.edu/docs/IO/1172/papa_132.pdf.
- ³⁸ Franklin Harold, *The Way of the Cell: Molecules, Organisms, and the Order of Life* (New York: Oxford University Press, 2003), 254.
- ³⁹ Ibid.
- ⁴⁰ Cf. Paul Davies, *The Fifth Miracle: The Search for the Origins of Life* (London: Penguin, 1998); Hubert P. Yockey, *Information Theory, Evolution, and the Origin of Life* (Cambridge University Press, 2005); David Berlinski, “On the Origins of Life” <http://www.discovery.org/a/3209>; Stephen C. Meyer, “DNA and the Origin of Life: Information, Specification, and Explanation” in *Darwin, Design and Public Education* (Michigan State University Press, 2003) <http://www.discovery.org/a/2184>; Leslie E. Orgel, “The Implausibility of Metabolic Cycles on the Prebiotic Earth”, *PLoS Biol* 6(1), January 22, 2008 <http://biology.plosjournals.org/perlserv/?request=get-document&doi=10.1371/journal.pbio.0060018&ct=1>; Robert Shapiro, “A Simpler Origin for Life”, *Scientific American*, February 12, 2007 <http://www.sciam.com/article.cfm?id=a-simpler-origin-for-life>; J.T. Trevors & D.L. Abel, “Chance and Necessity do not explain the origin of life”, *Cell Biology International*, Volume 28, Issue 11, (2004), 729-

739; J.T. Trevors & D.L. Abel, “Three subsets of sequence complexity and their relevance to biopolymeric information”, *Theoretical Biology and Medical Modelling*, (2005, 2: 29)

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Design The Future, “Ed Pelzer: The Current State of Origins of Life Studies”

http://intelligentdesign.podomatic.com/entry/2008-06-26T09_45_00-07_00.

⁴¹ Davies, *The Fifth Miracle*, 64-65.

⁴² Paul Davies, *New Scientist*, November 2006, 35. Kenneth Miller states: “the most profound unsolved problem in biology is the origin of life itself.” (*New Scientist*, 31 January 2009, 41.)

⁴³ Gregg Easterbrook, *Wired*, February 2007, 108.

⁴⁴ Fred Hoyle and Chandra Wickramasinghe, *Evolution from Space* (Dent, 1981), 24-148.

⁴⁵ *Ibid.*, 130.

⁴⁶ Michael Ruse, quoted from the *Journal of Theoretical Biology* by Michael Behe in *The Firing Line Creation-Evolution Debate* www.bringyou.to/apologetics/p45.htm.

⁴⁷ Michael Ruse, “Nonliteralist Antievolution,” AAAS Symposium: “The New Antievolutionism,” February 13, 1993, Boston, MA (1993) www.leaderu.com/orgs/arn/orpages/or151/mr93tran.htm Cf. Tom Woodward, “Ruse Gives Away the Store” www.leaderu.com/real/ri9404/ruse.html.

⁴⁸ Nagel, “Public Education and Intelligent Design”, 195. Cf. Alvin Plantinga, “Whether ID Is Science Isn’t Semantics” <http://www.discovery.org/scripts/viewDB/index.php?command=view&id=3331>.

⁴⁹ Monton, “Is Intelligent Design Science? Dissecting the Dover Decision”, 1.

⁵⁰ Cf. David DeWolf, John West, Casey Luskin & Jonathan Witt, *Traipsing Into Evolution: Intelligent Design and the Kitzmiller vs. Dover Decision* (Seattle, WA: Discovery Institute Press, 2006); David K.

DeWolf, John G. West, and Casey Luskin “Intelligent Design will Survive Kitzmiller v. Dover,” 68

Montana Law Review 7 (Winter, 2007) <http://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=1372>.

⁵¹ Monton, "Is Intelligent Design Science? Dissecting the Dover Decision", 10.

⁵² Michael Ruse in Robert B. Stewart, ed., *Intelligent Design: William A. Dembski & Michael Ruse in Dialogue* (Minneapolis: Fortress Press, 2007), 34 & 39-40.

⁵³ Garrett J. DeWeese & J.P. Moreland, *Philosophy Made Slightly Less Difficult* (Downers Grove: IVP, 2005), 146.

⁵⁴ Jeffrey Koperski, "Two Bad Ways to Attack Intelligent Design and Two Good Ones", *Zygon*, 43 (2), June 2008, 433-449. According to Larry Laudan: "If we would stand up and be counted on the side of reason, we ought to drop terms like "pseudo-science" and "unscientific" from our vocabulary; they are just hollow phrases which do only emotive work for us." - "The Demise of the Demarcation Problem" in Michael Ruse, ed., *But is it Science?* (Amherst: Prometheus, 1983), 349. Laudan explains: "There is no demarcation line between science and non-science, or between science and pseudoscience, which would win assent from a majority of philosophers." - *Beyond Positivism and Relativism* (Westview Press, 1996), 210. Philip Kitcher states: "Even postulating an unobserved Creator need be no more unscientific than postulating unobservable particles." - *Abusing Science* (MIT Press, 1983), 125. Willard Quine agrees: "If I saw indirect explanatory benefit in positing... spirits, a Creator, I would joyfully accord them scientific status too, on a par with such avowedly scientific posits as quarks and black holes." - "Naturalism; or, Living within One's Means", *Dialectica* 1995, vol. 49. Keith M. Parsons comments: "I can see no reason why, in principle, supernatural hypotheses might not be rigorously tested *vis-à-vis* natural ones. . . Darwin did not define creationism out of science, but devastated it by repeatedly demonstrating its failure as an empirical hypothesis. . . Such hypotheses fail and have failed for centuries, which failure - rather than atheistic prejudice - justifies the refusal of scientists to take them seriously." - Review of Michael Ruse, *Can a Darwinian be a Christian?* (2001)

http://www.infidels.org/library/modern/keith_parsons/darwinian.html.

⁵⁵ Monton, "Is Intelligent Design Science? Dissecting the Dover Decision," 1-2.

⁵⁶ Fuller, *Science vs Religion?*, 102-103.

⁵⁷ *Ibid.*, 117.

⁵⁸ Richard Dawkins, *The God Delusion* (London: Bantam, 2006), 50 & 59. Dawkins also endorses specified complexity as a design detection criterion, Cf. Peter S. Williams, "The Design Inference from Specified

Complexity Defended by Scholars Outside the Intelligent Design Movement – A Critical Review”, *Philosophia Christi*, Vol 9, Number 2 <http://epsociety.org/library/articles.asp?pid=54> Cf. William Lane Craig, “Naturalism and Intelligent Design” in Robert B. Stewart, ed., *Intelligent Design*, 70-71.

⁵⁹ Michael Ruse, “Nonliteralist Antievolution,” AAAS Symposium: “The New Antievolutionism,” February 13, 1993, Boston, MA (1993) <http://www.leaderu.com/orgs/arn/orpages/or151/mr93tran.htm>.

⁶⁰ Nagel, “Public Education and Intelligent Design,” 198.

⁶¹ *Ibid.*, 201-202.

⁶² *Ibid.*, 195 & 197.

⁶³ *Ibid.*, 189.

⁶⁴ *Ibid.*, 188-189.

⁶⁵ *Ibid.*, 189.

⁶⁶ *Ibid.*, 189.

⁶⁷ Fuller, *Science vs Religion?*, 83. Dawkins discusses SETI in *The God Delusion*: “It is a non-trivial question . . . what kind of signal would convince us of its intelligent origin . . . Metronomic rhythms can be generated by many non-intelligent phenomena. . . . Nothing simply rhythmic . . . would announce our intelligent presence to the waiting universe,” 71. The regular, specified but uncomplicated pattern of a pulsar does not require an explanation in terms of design. Neither, of course, does the irregular, unspecified complexity of static. So what sort of signal would do the job? Dawkins notes: “Prime numbers are often mentioned as the recipe of choice, since it is difficult to think of a purely physical process that could generate them” (43). Dawkins affirms that there is a type of pattern, in principle discoverable by empirical, scientific investigation, for which it is difficult to account in purely physical terms and which would rightly trigger a design inference. Cf. Peter S. Williams, “The Design Inference from Specified Complexity Defended by Scholars Outside the Intelligent Design Movement – A Critical Review”; Peter S. Williams, “If SETI Is Science and UFOlogy Is Not, Which Is Intelligent Design Theory?” http://www.arn.org/docs/williams/pw_setivsufology.htm.

⁶⁸ Cf. Thomas Nagel, *Mortal Questions* (Cambridge: Canto, 1996); Thomas Nagel, *What Does It All Mean?* (Oxford University Press, 1987); Mario Beauregard & Denyse O’Leary, *The Spiritual Brain: A Neuroscientist’s Case for the Existence of the Soul* (Harper One, 2007); James Le Fanu, *Why Us? How*

Science Rediscovered the Mystery of Ourselves (Harper Press, 2009); Edward Fesser, *Philosophy of Mind: A Short Introduction* (Oxford: OneWorld, 2005); Stewart Goetz & Charles Taliaffero, *Naturalism* (Grand Rapids: Eerdmans, 2008); William Hasker, *The Emergent Self* (Cornell University Press, 2001); Angus Menuge, *Agents Under Fire: Materialism and the Rationality of Science* (Oxford: Rowman & Littlefield, 2004); J.P. Moreland, *Consciousness and the Existence of God* (Routledge, 2008); Victor Reppert, *C.S. Lewis' Dangerous Idea: In Defence of the Argument from Reason* (Downers Grove: IVP, 2003); William Hasker, "How Not to be a Reductivist" http://www.iscid.org/papers/Hasker_NonReductivism_103103.pdf; William Lycan, "Giving Dualism its Due" @ <http://www.unc.edu/~ujanel/Du.htm>; Dallas Willard, "Non-Reductive and Non-Eliminative Physicalism?" <http://www.dwillard.org/articles/artview.asp?artID=48>; Peter S. Williams, "Nothing More than Blood and Bones?" http://www.arn.org/docs/williams/pw_bloodandbone.htm.

⁶⁹ Nagel, "Public Education and Intelligent Design", 189-190.

⁷⁰ A proposal I first made in "Reviewing the Reviewers: Pigliucci *et al* on Darwin's Rotweiller & the public understanding of science" http://www.arn.org/docs/williams/pw_pigliucci_reviewingreviewers.htm.

⁷¹ Nagel, "Public Education and Intelligent Design", 188.

⁷² *Ibid.*, 201.

⁷³ *Ibid.*

⁷⁴ *Ibid.*, 196.

⁷⁵ Nagel, "Public Education and Intelligent Design", 188. Cf. Beckwith, *Law, Darwinism, And Public Education*; Casey Luskin, "Is Intelligent Design Theory Really an Argument for God?" <http://www.ideacenter.org/contentmgr/showdetails.php/id/1341>.

⁷⁶ Beckwith, *Law, Darwinism, and Public Education*, xiii.

⁷⁷ Marcus Ross & Paul Nelson, "A Taxonomy of Teleology", in Dembski, ed., *Darwin's Nemesis*, 274.

⁷⁸ Michael J. Behe, "The Modern Intelligent Design Hypothesis", *Philosophia Christi*, Series 2, Volume 3, Number 1, 2001, 165.

⁷⁹ Monton, "Is Intelligent Design Science? Dissecting the Dover Decision", 9.

⁸⁰ Nagel, "Public Education and Intelligent Design", 188.

⁸¹ *Ibid.*

⁸² Cf. Plantinga, “When Faith and Reason Clash: Evolution and the Bible”.

⁸³ If ID is a legal ruse tailor-made for the American legal situation, why does it garner support in other countries? Cf. Intelligent Design Network Australia www.idnet.com.au/; Progetto Cosmo <http://progettocosmo.altervista.org/>; Ondrej Hejma, “Intelligent Design Supporters Gather” www.discovery.org/a/2974.

⁸⁴ Stephen C. Meyer, “A Scientific History and Philosophical Defence of Intelligent Design Theory” <http://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=3241> Cf. Thaxton, Bradley & Olsen, *The Mystery of Life’s Origin* <http://www.themysteryoflifefororigin.org/>; Intelligent Design The Future, “The Mystery of Life’s Origin: An Interview with Dr Charles Thaxton: Part One” http://intelligentdesign.podomatic.com/entry/2008-07-21T16_40_55-07_00 & “The Mystery of Life’s Origin: An Interview with Dr Charles Thaxton: Part Two” http://intelligentdesign.podomatic.com/entry/2008-07-25T13_49_57-07_00.

⁸⁵ Cf. Casey Luskin, “Principled (not Rhetorical) Reasons Why Intelligent design Doesn’t Identify the Designer” <http://www.discovery.org/a/4306>; Casey Luskin, “Is Intelligent Design Theory Really an Argument for God?”

⁸⁶ Michael J. Behe, *The Edge of Evolution: The Search for the Limits of Darwinism* (Free Press, 2007), 228-229.

⁸⁷ Cf. William A. Dembski, “On the very possibility of intelligent design” in J.P. Moreland, ed., *The Creation Hypothesis: Scientific Evidence for an Intelligent Designer* (Downers Grove, Illinois: IVP, 1994).

⁸⁸ Monton, “Is Intelligent Design Science? Dissecting the Dover Decision”, 4.

⁸⁹ This said, design detection criteria used within intelligent design theory can be applied to data that includes propositional communication within the field of historical apologetics. Cf. Gregory Koukl, “Prophecy and People: Both Designed to Fit” <http://www.str.org/site/News2?page=NewsArticle&id=5508>; John A. Bloom, “Is Fulfilled Prophecy of Value for Scholarly Apologetics?” *Apologetics.com* http://www.apologetics.com/default.jsp?bodycontent=/articles/biblical_apologetics/bloom-prophecy.html; Robert C. Newman, “Fulfilled Prophecy as Miracle,” *In Defence of Miracles: A Comprehensive Case for God’s Action in History*, ed. R. Douglas Geivett and Gary R. Habermas (Leicester: Apollos, 1997); Robert C. Newman, “On Fulfilled Prophecy as Miracle” *Philosophia Christi* 3

(2001): 63-7; Hugh Ross, "Fulfilled Prophecy: Evidence for the Reliability of the Bible,"

<http://www.reasons.org/resources/apologetics/prophecy.shtml>.

⁹⁰ Sam Harris, *Letter to a Christian Nation* (Bantam Press, 2007), 73.

⁹¹ Monton, "Is Intelligent Design Science? Dissecting the Dover Decision", 9. One could attribute design to: Plato's Demiurge, the gods of polytheism, angels, demons, time-travelling humans, or the sort of observer-created self-caused loop apparently favoured by Paul Davies in *The Goldilocks Enigma: Why Is The Universe Just Right For Life?* (London: Penguin, 2007). Scientists who accept Fred Hoyle's theory of directed-panspermia might subscribe to ID. Directed Panspermia is accepted by members of the naturalistic Raelian UFO Cult. Of course, this interpretation of intelligent design theory faces an awkward explanatory regress in explaining the origin of the aliens. Cf. Lee Elliot Major, "Big Enough to Bury Darwin" <http://education.guardian.co.uk/higher/physicalscience/story/0,9836,541468,00.html>; Michael J. Behe, "The God of Science" http://www.arn.org/docs/behe/mb_godofscience.htm; Peter S. Williams, "Raelians Successfully Clone Naturalism" http://www.arn.org/docs/williams/pw_raeliansclonenaturalism.htm.

⁹² ARN guide to *Evolution*.

⁹³ Dembski, "Preface", *Darwin's Nemesis*, 20.

⁹⁴ Michael Behe, "Whether Intelligent Design is Science"

<http://www.discovery.org/scripts/viewDB/filesDB-download.php?command=download&id=697>.

⁹⁵ Monton, "Is Intelligent Design Science? Dissecting the Dover Decision", 3-4.

⁹⁶ Nagel, "Public Education and Intelligent Design", 199.

⁹⁷ Michael Ruse, *The Firing Line Creation-Evolution Debate*.

⁹⁸ Nagel, "Public Education and Intelligent Design", 202.

⁹⁹ Ibid.

¹⁰⁰ Michael J. Behe, *Darwin's Black Box*, 2nd edition (Free Press, 2006), 265-266. Cf. Robert C. Koons, "The Check is in the Mail: Why Darwinism Fails to Inspire Confidence" in William A. Dembski, ed., *Uncommon Dissent: Intellectuals Who Find Darwinism Unconvincing* (ISI Books, 2004).

¹⁰¹ Fuller, *Dissent Over Descent*, 146-147.

¹⁰² As Richard Swinburne argues: “If it seems . . . to *S* that *x* is present, that is good reason for *S* to believe that it is so, in the absence of special considerations – whatever *x* may be.” – *The Existence of God* (Oxford: Clarendon Press, 1991), 260.

¹⁰³ Harold, *The Way of the Cell*, 205.

¹⁰⁴ Cf. Koons, “The Check Is in the Mail: Why Darwinism Fails to Inspire Confidence”.

¹⁰⁵ Fodor observes: “it’s important to see that the phylogeny could be true even if the adaptationism isn’t . . . the classical Darwinist account of evolution as primarily driven by natural selection is in trouble on both conceptual and empirical grounds.” He castigates those who assert “We can’t do without biology and biology can’t do without Darwinism”: “The biologist Theodosius Dobzhansky said that nothing in biology makes sense without Darwinism, and he is widely paraphrased . . . Shake a stick at a Darwinist treatise and you’re sure to find, usually in the first chapter, claims for the indispensability of adaptationism. Well, if adaptationism really is the only game in town, if the rest of biology really does presuppose it, we had better cleave to it warts and all. What is indispensable therefore cannot be dispensed with, as Wittgenstein might have said. The breaking news, however, is that serious alternatives to adaptationism have begun to emerge; ones that preserve the essential claim that phenotypes evolve, but depart to one degree or other from Darwin’s theory that natural selection is the mechanism by which they do. There is now far more of this sort of thing around than I am able to survey.” - “Why Pigs Don’t Have Wings”. Fuller thinks Dobzhansky is wrong: “Neo-Darwinism could be abandoned tomorrow, and most research programs in genetics – and other biological disciplines – would continue apace. Of course, this is not an argument against the validity of neo-Darwinian knowledge claims, but it does argue against their indispensability.” - Fuller, *Science vs Religion?*, 132. In *Dissent Over Descent* Fuller writes: “The vast majority of published research in the biomedical sciences makes little or no reference to evolution . . . it may be that public professions of faith in evolution by scientists are best interpreted as simply making solidarity with the reigning orthodoxy . . . Much of the biology that currently flies under the banner of ‘Darwinism’ relies little, if at all, on the bone of contention between evolutionists and ID theorists; namely, whether life has developed over a very extended time-frame through purely self-organizing natural processes.” (32 & 231.)

¹⁰⁶ Behe, *The Edge of Evolution*, 3.

¹⁰⁷ Fuller, *Science vs Religion?*, 132. Cf. Koons, “The Check Is in the Mail: Why Darwinism Fails to Inspire Confidence”.

¹⁰⁸ Behe, *The Edge of Evolution*, 10.

¹⁰⁹ Nagel, “Public Education and Intelligent Design”, 192.

¹¹⁰ Ibid. Fodor reports: “an appreciable number of perfectly reasonable biologists are coming to think that the theory of natural selection can no longer be taken for granted. This is, so far, mostly straws in the wind; but it’s not out of the question that a scientific revolution – no less than a major revision of evolutionary theory – is in the offing . . . Darwinists have been known to say that adaptationism is the best idea that anybody has ever had. It would be a good joke if the best idea that anybody has ever had turned out not to be true . . . The high tide of adaptationism floated a motley navy, but it may now be on the ebb. If it does turn out that natural selection isn’t what drives evolution, a lot of loose speculations will be stranded high, dry and looking a little foolish.” - “Why Pigs Don’t Have Wings”.

¹¹¹ Nagel, “Public Education and Intelligent Design”, 192 & 199.

¹¹² Ibid., endnote 11.

¹¹³ Behe, *The Edge of Evolution*, 146.

¹¹⁴ Ibid., 101 & 135. Cf. Prof. Ralph Seelke, “What Can Evolution *Really* Do?”

http://www2.uwsuper.edu/rseelke/What%20Can%20Evolution%20Really%20Do_05.doc; Intelligent

Design The Future, “Micro or Macro? Microbiologist Ralph Seelke on Evolution”

http://intelligentdesign.podomatic.com/entry/eg/2008-01-03T12_49_31-08_00; Stuart Pullen, *Intelligent*

Design or Evolution? Why the Origin of Life and the Evolution of Molecular Knowledge Imply Design

(Raleigh, NC: Intelligent Design Books, 2005); Dr J.C. Sanford, *Genetic Entropy & the Mystery of the*

Genome (New York: Elim Publishing, 2005); David Swift, *Evolution under the microscope* (Stirling:

Leighton Academic, 2002); John C. Lennox, *God’s Undertaker: Has Science Buried God?* 2nd edition,

(Oxford: Lion, 2009).

¹¹⁵ Nagel, “Public Education and Intelligent Design”, 199.

¹¹⁶ Cf. Rick Durrett & Deena Schmidt, “Waiting for Two Mutations: With Applications to Regulatory Sequence Evolution and the Limits of Darwinian Evolution”, *Genetics* 180: 1501-1509 (2008)

<http://www.genetics.org/cgi/content/full/180/3/1501>; Michael J. Behe, “Waiting Longer for Two

Mutations: Published Letter in Response to Durrett & Schmidt”, *Genetics* 181: 819-820, (2009) <http://www.discovery.org/a/9461>; Durrett and Schmidt, “Reply to Michael Behe”, *Genetics* 181: 821-822 (2009) <http://www.genetics.org/cgi/content/full/181/2/821>; Michael J. Behe, “Waiting Longer for Two Mutations” <http://www.discovery.org/a/9611>; Michael J. Behe’s Amazon Blog http://www.amazon.com/gp/blog/A3DGRO0IO7KYQ2/ref=cm_blog_blog/102-1065209-4286505.

¹¹⁷ Nagel, “Public Education and Intelligent Design”, 202.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid., 188. Note that to *displace* design is not that same as *contradicting* design.

¹²¹ Ibid., 202.

¹²² Ibid., 202-203.

¹²³ Ibid., 199.

¹²⁴ Ibid., 202-203. As Nagel candidly comments in *The Last Word* (Oxford University Press, 1997): ‘I want atheism to be true and am made uneasy by the fact that some of the most intelligent and well-informed people I know are religious believers. It isn’t that I don’t believe in god and, naturally, hope that I’m right in my belief. It’s that I hope there is no God! I don’t want there to be a God; I don’t want the universe to be like that. My guess is that this cosmic authority problem is not a rare condition and that it is responsible for much of the scientism and reductionism of our time.’, 130-131.

¹²⁵ Ibid.

¹²⁶ Johnson, *The Wedge of Truth*, 16-17.

¹²⁷ Monton, “Is Intelligent Design Science? Dissecting the Dover Decision”, 6.

¹²⁸ Cf. The closing interview of Ben Stein’s *Expelled: No Intelligence Allowed* (Premise Media/Vivendi Entertainment, 2008).

¹²⁹ Phillip E. Johnson, “Intelligent Design in Biology: The Current Situation and Future Prospects”, *Think* (The Royal Institute of Philosophy), February 19, 2007 <http://www.discovery.org/a/3914>.