

## How is contemporary biology used for ideological purposes?

Sub-title: The Unnaturalness of Biology and Naturalism

### Introduction

In this essay, I will argue that contemporary biology is being used by some scientists and thinkers (though not most) for the ideological purposes of metaphysical naturalism. While I'll use the term 'naturalism' for short, metaphysical naturalism is the belief that there is no God, or anything like God<sup>1</sup>. If there is no God, then it seems the physical universe is all there is. And while some supernatural beliefs are compatible with atheism, i.e. ancestral spirits, platonic objects, etc., naturalism goes further. Naturalism universally negates the supernatural. The wedding of biology and fad philosophy happens by taking science and falsely adding on metaphysical doctrines: negating theistic intent in the evolutionary process, explaining away human beliefs in divine purpose through explaining their origins, and universal reductionism seeking to make life insignificant.

It was G.K. Chesterton who, a little over one hundred years ago, prophesized that "take away the supernatural, and what remains is the unnatural"<sup>2</sup>. Chesterton appropriates a fine understanding of nature amidst an ocean of confused, hyperbolic atheist apologetics, seeking to wed their polemical philosophical agenda with genuine science. Not that the word nature has always been concise in the academic understanding of its meaning; Robert Boyle in fact once wrote a book in 1686 identifying eight different senses of the word 'nature' in relation to the study of what we would call science, but what at that time was called natural philosophy<sup>3</sup>.

Here I wish to discuss what I mean by nature and what I mean by naturalism, and Boyle can help. Boyle sought to refashion natural philosophy from the Aristotelian notion of nature having four causes to a more self-limiting notion of nature as the established order or settled

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<sup>1</sup>Alvin Plantinga defines naturalism as the belief that "there is no such person as God, or anything like God." Paul Draper defines naturalism as "the hypothesis that the natural world is a closed system, which means that nothing that is not a part of the natural world affects it." I find both these definitions implicitly concede the other (both quotes found in [www.patheos.com/blogs/hallq/2013/05/naturalism-has-a-bunch-of-definitions/](http://www.patheos.com/blogs/hallq/2013/05/naturalism-has-a-bunch-of-definitions/)). I define God as the eternal, necessary Being who knows all truths, can do anything logically possible, whose nature is equivalent to goodness itself, and as such is the creator and sustainer of all contingent reality (which would include us).

<sup>2</sup>Chesterton, GK (1905), *Heretics*, London: John Lane Co, p. 99.

<sup>3</sup>Birch, T (1966), *Robert Boyle, The Works: Volume 5*, Georg Olms Verlangsuchhandlung, pp. 167-169.

course of things. Aristotle's four causes were the material cause - that out of which X is made; the formal cause - the form or account of what X is to be; the efficient cause - the primary source of X coming into being and changing; and the final cause - the *telos* or purpose of X, what X is for. As the 'Scientific Revolution' was in the process of superseding Aristotelian physics, Boyle was in the process of superseding natural philosophy to focus on material and efficient causes, and leaving formal and final causes to metaphysics. He delineated the study of nature in philosophy to mechanism and intrinsic teleology to other philosophies. So by nature I mean the normal and ordered course of things within the material manifold of spacetime physicality - that which is repeatable in testing or observation. Philosopher Michael Ruse notes succinctly that science "by definition deals only with the natural, the repeatable, that which is governed by law"<sup>4</sup>. Ruse defines what Boyle made clear as the object of the scientific process.

Boyle's work is what one may call the beginning of methodological naturalism - a specific principle of modern science that limits its explanations to repeatable phenomena, laws and initial conditions, not agency or intrinsic *telos*. The rationality behind this is to extend the strength of knowledge about the normal course of the natural world as far as possible. Phillip Kitcher writes that science is meant "to provide a naturalistic account as far as one can," because "the cognitive goal of science is to attain significant truth...insofar as it is possible for beings with our limitations to do so"<sup>5</sup>.

Methodological naturalism is accessible to naturalists and theists, because for every Richard Dawkins there is a Ronald Fisher. This fact historically has been the case. In his essay, 'Creationism, Intelligent Design, and Modern Biology', Ronald Numbers discusses that, in the past and still today, while metaphysical naturalism "denied the existence of a transcendent God, methodological naturalism implied nothing about God's existence and activities"<sup>6</sup>. Science assumes a methodological naturalism for practical purposes because the whole nature of science is to be as self-restraining an enterprise in explanation as possible so to gather as much reliable knowledge about the physical world as possible. Some have said, like Dawkins, that

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<sup>4</sup>Ruse, M (1982), *Darwinism Defended*, Reading, MA: Addison-Wesley, p. 332.

<sup>5</sup>Kitcher, P (1993), *The Advancement of Science: Science without Legend, Objectivity without Illusions*, Oxford University Press, p. 157.

<sup>6</sup>Numbers, RL (2010), 'Creationism, Intelligent Design, and Modern Biology', in *Biology and Ideology from Descartes to Dawkins*, eds. Alexander, DA and Numbers, RL, University of Chicago Press, p. 325.

ever since Darwin it is now possible to be an intellectually fulfilled atheist<sup>7</sup>. This naïve, linear view of science and ultimate reality is not new. For instance in 1931, biologist Julian Huxley wrote:

*“In the face of the advance of scientific understanding the controlling functions of God the Ruler, as they were confidently assumed by simpler theology, have gradually dwindled away. With final realization of the universality of natural law and its automatic, inevitable workings, such a god is reduced to the position of a spectator...This, it appears to me, is the only logical conclusion of the belief in a personal or super-personal absolute god who is external to his world, when it is confronted with modern science.”<sup>8</sup>*

Now why think such a thing as that? Surely the god of William Paley looks a bit bleak in the face of modern science (although Huxley held what is now an outdated view of natural law and its 'inevitable workings'), but that is not the God of classical theism whose essence is His existence. The God of the patriarchs Abraham, Isaac, and Jacob is also the God of saints Augustine, Aquinas, and Anselm, and of scientists Robert Boyle, Michael Faraday, and James Clerk Maxwell. What Huxley discusses is not science, but a naturalism that goes all the way back to Democritus and Leucippus. In fact, it does not matter scientifically what the religious beliefs of Huxley are. Those discussions are outside the realm of science. It ought to be made clear that any confusion between the ideas suggested by science, whether religious or otherwise, and science itself should be carefully avoided. Ideas suggested by science can have dual directions.

An example is the evolutionary biologist and Russian Orthodox Theodosius Dobzhansky, who pioneered the fusion of evolutionary theory with Mendelian genetics. In his famous essay, 'Nothing in Biology Makes Sense Except in the Light of Evolution', Dobzhansky continues what Darwin did in *The Origin of Species* by using a bit of natural theology to argue that life on earth

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<sup>7</sup>Dawkins specifically states: “Darwin made it possible to be an intellectually fulfilled atheist”. Dawkins, R (1986), *The Blind Watchmaker*, New York: WW Norton & Company, p. 6.

<sup>8</sup>Huxley, J (1931), *What Dare I Think? The Challenge of Modern Science to Human Action & Belief*, New York: Harper & Brothers, pp. 234-235.

is not *specialy* created, but superintended and sustained through the process of a divine Creator. He mentions that a god of the gaps would be a bad designer when we look at “the tremendous biologic success that is the human species and, on the other, forms of adaptedness as narrow and as constraining as those” of overspecialized species. Yet, the process of organic diversity unfolding over time becomes understandable only if:

*“[God] has created the living world not by caprice but by evolution propelled by natural selection. It is wrong to hold creation and evolution as mutually exclusive alternatives. I am a creationist and an evolutionist. Evolution is God's...method of creation.”<sup>9</sup>*

### **Refuting Purpose in the Evolutionary Process**

The wall that, I have argued, is separating science from metaphysics is the insistence on testing only the reproducible and falsifiable—things like material causes and efficient causes. The philosopher Karl Popper in his book, *Objective Knowledge*, outlines the aim of science: “the conjecture to find satisfactory explanations leads us further to the idea of improving the degree of satisfactoriness of the explanations by improving their degree of testability, that is to say, by proceeding to better testable theories”<sup>10</sup>. This aim stands in somewhat of a contrast to what he calls essentialism: the view that science must seek ultimate explanations in terms X’s essential properties, something akin to its form and finality<sup>11</sup>.

The more I can draw predictions from an explanatory hypothesis, the more scientific it becomes because the more falsifiable it becomes. I can, if it is internally coherent, show that it is not true, and this improves in degrees of satisfactoriness the possible explanations. If the testability of a claim makes it more scientific, then the less testable it is, the less scientific of a

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<sup>9</sup>Dobzhansky, T (1973), ‘Nothing in Biology Makes Sense Except in Light of Evolution’, *American Biology Teacher* 35, 125-129. Dobzhansky’s theistic evolution is nothing new. Charles Darwin mentioned “the Creator” in the ending sentence of his book, *On the Origin of Species*, beginning in its second edition, that “life, with its several powers, having been originally breathed by the Creator into a few forms or into one”. One should also read his letter from 1879, when he mentions examples of Christians like the Anglican Charles Kingsley and the American botanist Asa Gray, and says that “It seems to me absurd to doubt that a man may be an ardent Theist & an evolutionist” (Darwin, C. R. to Fordyce, John, 7 May 1879, found at [www.darwinproject.ac.uk/letter/entry-12041](http://www.darwinproject.ac.uk/letter/entry-12041)). I speculate not on Darwin’s own beliefs, rather merely to say that he saw no inherent conflict between his Theory and the Doctrine of Creation.

<sup>10</sup>Popper, K (1972), *Objective Knowledge: An Evolutionary Approach*, Oxford University Press, p. 195.

<sup>11</sup>Ibid., pp. 196-204.

conjecture it is. So when claims are made about how divine actions are occurring, or not occurring, they move themselves out of the province of science. In evolutionary biology, such claims can be made about the direction of life's common descent and modification, the rise of sentience, and the contingency in evolutionary history. An example of the former is Richard Dawkins. Dawkins writes in *The Blind Watchmaker*:

*"The only watchmaker in nature is the blind forces of physics, albeit deployed in a very special way... Natural selection, the blind, unconscious automatic process which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and no mind's eyes. It does not plan for the future. It has no vision, no foresight, no sight at all."<sup>12</sup>*

Note the use of the words 'blind' and 'unconscious' to describe the evolutionary process operating according to natural selection. It has no purpose in mind. However, the process of genetic mutation of individual gene variations may be random or purposeless in that it is irrespective of their usefulness to the organism, but to say evolution is blind or unconscious in the sense that a mutation does not see or does not think is not what Dawkins is getting at. Dawkins is saying evolution does not allow a higher supernatural explanation to incorporate, superintend, and sustain this lower level phenomenon. How is this scientifically demonstrable? By principle, the supernatural cannot be falsified by the natural. If I am a biologist and I go out to study the natural world, and I come back to report the nonexistence of the supernatural because all I have observed is the natural world, not the supernatural, I beg the question. I am already assuming the natural world is all-there-is. I just see no immediate usefulness in a modification by some deity.

Stephen Jay Gould gave an interesting and much more nuanced response to this kind of vision of evolution in his book, *Wonderful Life*<sup>13</sup>. Gould argued the evolutionary process involved so much contingency - "contingency is a thing unto itself, not the titration of

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<sup>12</sup>Dawkins, R (1986), *The Blind Watchmaker*, New York: WW Norton & Company, p. 5.

<sup>13</sup>Gould, SJ (1989), *Wonderful Life: The Burgess Shale and the Nature of History*, New York: WW Norton & Company.

determinism by randomness”<sup>14</sup> - that any dominion of the Lord was almost nonexistent. His title alludes to the 1946 James Capra film, *It's A Wonderful Life*. In the film, the audience gets to see the character George Bailey, played by Jimmy Stewart, live his life in the small town of Bedford Falls and never leave; he has every chance to leave and go on to adventure and success, but reluctantly and swiftly stays to sacrifice for those whom he loves. One Christmas Eve and about to commit suicide by jumping in a river, George sees a guardian angel named Clarence fake suicide. George immediately jumps in, not to die, but to save Clarence. So then Clarence famously shows George what the world would be like if he had never been born. That is, the audience gets to see the tape of life rewound and see what becomes of Bedford Falls without George Bailey, and it is vastly different in every way. Gould thought the same could be for the evolution of life. If we rolled back the tape of life, there may have been no dinosaur extinction or Cambrian explosion. So evolution is not oriented toward any goal. This kind of biological counterfactual history gives naturalism a new boost:

*“The divine tape recorder holds a million scenarios, each perfectly sensible. Little quirks at the outset, occurring for no particular reason, unleash cascades of consequences that make a particular feature seem inevitable in retrospect. But the slightest early nudge contacts a different groove, and history veers into another plausible channel, diverging continually from its original pathway. The end results are so different, the initial perturbation so apparently trivial.”<sup>15</sup>*

Gould used the Burgess Shale to demonstrate his point - the fossils found were of the types of organisms who failed to survive. But he maintains that they might have easily done so. In which case, humans just as easily might have not evolved. So, the tree of Life is not one in which humans have been the apex of progress; it is more like the straggly bush of Life, and we are a single twig out of countless possibilities. All twigs are dispensable, no more desirable than another, and arriving via an accidental process of DNA replication. Evolution has no direction.

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<sup>14</sup>ibid., p. 51.

<sup>15</sup>ibid., pp. 320-321.

Gould and Dawkins are one side of this philosophical debate. But as far back as 1888, botanist Asa Gray, a champion of Darwin in America, urged “in the philosophy of [Darwin’s] hypothesis, that variation has been led along certain beneficial lines”<sup>16</sup>. Gray was probably implying that God had grounded the process of variation in some way as to lead to ‘certain beneficial lines’. One can argue that the God of classical theism is designing in the world, drawing the process out from potentiality to actuality as the moon draws out the tide<sup>17</sup>. What we see in evolution is not an accident in the grander sense. The truth is that biological life is a material reality and that the very potentiality of life is built into physics and chemistry itself. Evolution, therefore, is a predictable property of nature allowed to occur by the laws of physics and governed by the laws of physics. Evolutionary processes explore what biologists call adaptive space—new creative ways for life to emerge, and here is seen the grandeur that Darwin spoke of at the end of *The Origin of Species*. For the naturalist, these laws are brute facts. But for the believer, these laws are the expression of a Will desiring the flourishing of his creatures.

Contemporary biology can have something to say about this side. Simon Conway Morris, a Cambridge evolutionary paleobiologist who personally worked on the Burgess Shale, has written in works such as *Life’s Solution*<sup>18</sup> that what we see in evolutionary convergence shows just the opposite. For Morris, the organisms from the Burgess finding did not survive because they were not adapted to their environment. And that environment was what it was because of the laws of chemistry and physics. And these laws of nature favor certain sorts of development over others. The laws constrain the sorts of paths organisms can take via adaptation. These organisms will become sensitive to light, heat, sound, and thus develop over time eyes, touch, ears. One sees across the spectrum very certain ways that nervous systems develop. This is called evolutionary convergence—the tendency of different species to have descendants that develop independently the same traits. In ‘Tuning Into the Frequencies of Life’, Morris surveys

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<sup>16</sup>Gray, A (1888/1963), ‘Natural Selection not Inconsistent with Natural Theology’ in *Darwiniana*, Harvard University Press, pp. 72-145.

<sup>17</sup>For instance, David Bentley Hart notes “Thus it made perfect sense for Gregory of Nyssa and Augustine to speculate that, while the act of creation is timeless, the world had unfolded progressively in time, out of its own intrinsic potencies and principles, with nature acting as the craftsman”. Hart, DB (2013), *The Experience of God: Being, Consciousness, Bliss*, Yale University Press, p. 26.

<sup>18</sup>Morris, SC (2003), *Life’s Solution: Inevitable Humans in a Lonely Universe*, Cambridge University Press.

many different documented examples of convergence, and writes that the phenomenon of evolutionary convergence is, within any clade of organisms,

*“Ubiquitous, and...interestingly, in successive diversifications within a clade convergence becomes increasingly prevalent [sic]; in essence, the clade “runs out of things to do.” In such cases, it is generally the case that the character states that turn out to be homoplastic are often relatively simple. It is important to stress, however, that in terms of the emergence of complex biological properties, such as those associated with social structure and intelligence, convergences again are found to be widespread.”<sup>19</sup>*

The key here is the development of intelligence. Intelligence, which is centered in the prefrontal cortex of the brain, is not found just in humans and other higher primates, but also dolphins and possibly octopi. So intelligence has developed as a convergent trait. Now while this debate has differing well-researched sides<sup>20</sup>, Morris makes the case that given enough time, the evolution of something like humans is inevitable. He concludes that “Wherever life exists, there will, in due course, evolve mind. Whether it is always our type of mind is altogether another question”<sup>21</sup>.

The question of God’s dominion amongst creation is itself a theological debate. The point remains, nevertheless, that theistic intent is consistent with the evolutionary paradigm despite the philosophical add-ons from different scientists. Evolutionary theory, when properly understood, is plausibly consistent with God’s providential guidance; the theory can, however, rule this out when you add something else to it. But that something else—a philosophical premise, not a scientific one—is the unparsimonious metaphysical premise of naturalism.

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<sup>19</sup>Morris, SC (2007), ‘Tuning into the frequencies of life: a roar of static or a precise signal?’ in *Fitness of the Cosmos for Life: Biochemistry and Fine-Tuning*, eds. Barrow, J, Morris, SC, Freeland, SJ and Harper Jr, CL, Cambridge University Press, p. 215.

<sup>20</sup>I should note that Richard Dawkins actually agrees with Morris’ thesis (see <http://biologis.org/blog/was-humanity-inevitable/P0>).

<sup>21</sup>Morris, SC (2007), ‘Tuning into the frequencies of life: a roar of static or a precise signal?’ in *Fitness of the Cosmos for Life: Biochemistry and Fine-Tuning*, eds. Barrow, J, Morris, SC, Freeland, SJ and Harper Jr, CL, Cambridge University Press, p. 218.

## Explaining Away Religious Belief

Chesterton also made the remark that he had no problem with the scientist seeking to *explain* the origins of humanity, only the scientist seeking to *explain away* the origins of humanity<sup>22</sup>. It seems curious when explaining the origins of religious belief becomes an enterprise to debunk it. Cognitive philosopher Daniel Dennett joined the ranks of the new atheists when he published his book, *Breaking the Spell: Religion as a Natural Phenomenon*, in 2006<sup>23</sup>. His thesis is exactly what the subtitle says: religion is a natural phenomenon ignited by natural evolutionary processes. Dennett apparently was able to finally connect the amoeba to the Madonna. Yet assuming his argument is sound, so what? Of course religion is a natural phenomenon; one can say that just from observing the world; money and politics could also be natural. It seems quite strange what the big deal is—no one believes in religion. Religion in the abstract is neither true nor false, since the doctrines of religions are by their nature particular. It matters which religion and which claims of revelation.

Explaining the causes of religious belief, or rather psychoanalyzing it, is nothing new. It is not even surprising that religious belief (specified belief in supernatural beings) arises naturally, at least to Christians. Notable Christian theologians have long thought humans have an innate awareness of the divine, whether John Calvin's *Sensus Divinitatis* or what Saint Thomas Aquinas called a human's confused knowledge of God. Biologist Edward O. Wilson uses sociobiology to argue that religious belief and practice arises out of humanity's instinct for survival, fears, and tribal history: "Religion is...empowered mightily by its principal ally, tribalism. If the religious mythos did not exist in a culture, it would be quickly invented, and in fact it has been everywhere, thousands of times through history"<sup>24</sup>. He then approvingly quotes the Roman poet Lucretius, who wrote "Fear was the first thing on earth to make gods"<sup>25</sup>.

Scientist Karl Giberson and philosopher Mariano Artigas, in *The Oracles of Science*, critique E.O. Wilson's work on religion:

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<sup>22</sup>Chesterton, GK (1925/2008), *The Everlasting Man*, San Francisco: Ignatius Press, p. 42.

<sup>23</sup>Dennett, DC (2006), *Breaking the Spell: Religion as a Natural Phenomenon*, Viking.

<sup>24</sup>Wilson, EO (1998), *Consilience: The Unity of Knowledge*, New York: Knopf, p. 257.

<sup>25</sup>Ibid., p. 257.

*“Understanding religion, for Wilson, means providing an evolutionary explanation for its origins...The argument takes for granted that God does not exist, which implies that things must be explained by their evolutionary origins, as determined by science. But no convincing arguments against the existence of God are advanced, and the evolutionary explanations of the origin of religion are speculative, inadequate, and supported by the scantiest of evidence.”<sup>26</sup>*

For E.O. Wilson, the implications of whether God exists or not are not even considered by his work; he simply assumes atheism and the narrative of religion as essentially a primeval artifact from a tribal age. If one is to do science and speculate on its religious or irreligious implications, one should be fair and rational. To be rational, at least in the humanities, implies recognition that rationality happens not in a vacuum, very rational people can disagree with for good reasons, and an opponent’s position should be represented at its best. Already assuming atheism and religion as merely some tribal invention does not meet those categories very well.

My mentioning of E.O. Wilson is not so much a specific critique of naturalism imposing on science. Rather, I mention Wilson to illustrate what often happens in popular science, particularly biology: the agenda of naturalism seeping into the distribution of scientific interpretation to the general public. Giberson and Artigas outline who they have found to be the six great popular science writers of the last several decades: Carl Sagan, Steven Weinberg, Stephen Hawking, and important here, Stephen Gould, Richard Dawkins, and E.O. Wilson. These writers are either tolerant but dismissive of religion or antagonistic to it. The latter three, in disseminating biology to the interested public, do not disclaim their naturalism.

Another account of religion’s origin is the analysis of group selection from the evolutionary biologist David Sloan Wilson. He argues in *Darwin’s Cathedral*<sup>27</sup> that religion is essentially a means of social control involving fictitious belief. Take, for instance, his analysis of Calvinism, which aims to see if the detailed properties of John Calvin’s church “can be

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<sup>26</sup>Giberson, K and Artigas, M (2007), *Oracles of Science: Celebrity Scientists versus God and Religion*, Oxford University Press, p. 213.

<sup>27</sup>Wilson, DS (2002/2009), *Darwin’s Cathedral: Evolution, Religion, and the Nature of Society*, University of Chicago Press.

interpreted as adaptation to its environment”<sup>28</sup>. Wilson’s analysis argues that knowing the details of John Calvin’s Geneva clearly supports “a group-level functional interpretation of Calvinism. Calvinism is an interlocking system with a purpose: to unify and coordinate a population of people to achieve a common set of goals by collective action”<sup>29</sup>. One problem with this analysis is that it still assumes there is nothing substantive to Calvinist doctrine for its adoption as reasons that Calvinists did so. I would not just assume it is false before I address an analysis of a religion and its creeds and practices. Philosopher Alvin Plantinga comments on this specific passage that “believing in God, like believing in the past or in other people, typically doesn’t have any purpose or aim at all”<sup>30</sup>. One may reply that there is more to Christianity and Calvinism than just holding beliefs - there surely is. There is a love of God, prayer, acts of charity, liturgy, apprehending the divine in the least of us, etc. Wilson may be right; I am happy to admit that he might have good data and arguments. But he still begs the question of naturalism with regard to religious belief; ideology still seeps into the science.

Recently, a rival theory has arisen in evolutionary psychology on the causes of religious beliefs. And it is important to stress causes, not reasons. My cause for believing in God and attending mass certainly may arise from evolutionary mechanisms, but those certainly are not my reasons for doing so. This theory is that religious beliefs are not themselves adaptive, but arise as by-products from different evolutionary mechanisms that are adaptive for other reasons. Evolutionary psychologist Paul Bloom outlines in his paper ‘Religious Belief as an Evolutionary Accident’<sup>31</sup> two different adaptive mechanisms that give evolutionary explanations for the human inclination to hold religious beliefs, like the reality of the afterlife or the existence of at least one deity: the Hypersensitive Agency Detection Device (HADD) and an Intuitive Dualism. The former, HADD, is the human inclination to read intent into nature, which makes it easier for our species to process information. We look at mechanisms in nature and see agency, maybe ancestral spirits or some type of god. The latter is the tendency to divide

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<sup>28</sup>Ibid., p. 91.

<sup>29</sup>Ibid., p. 118.

<sup>30</sup>Plantinga, A (2011), *Where the Conflict Really Lies: Science, Religion, & Naturalism*, Oxford University Press, p. 146.

<sup>31</sup>Bloom, P (2009), ‘Religious Belief as an Evolutionary Accident’, in *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion*, eds. Schloss, J and Murray, M, Oxford University Press, pp. 118-127.

human beings into body and soul—a kind of common-sense Cartesian dualism. We see each other as embodied persons, rather than persons *qua* bodies. This assumed divide then gives an intuitive plausibility to the existence of the self after the disintegration of the body: ‘it’s not me who dies, but my body’.

Bloom goes on to say that while “it is true that nothing from the empirical study of human psychology can refute religious belief, certain theories can challenge the rationality of those who hold such beliefs”<sup>32</sup>. He tries to make a parallel to a woman who would believe there is life on Mars because she likes to think that. She could be right for all we know *a priori*. However, wishful thinking does not give one tenable or safe beliefs because wishful thinking can normally render to someone a very similar but false belief. However, this example is a false parallel, because it assumes that such an evolutionary explanation (of certain mechanisms that incline us to hold religious beliefs) could not just as well be incorporated into a higher theistic explanation. Now of course God could intend us to have an inclination to believe in the divine. But God could intend many things we would not attribute to Him. Consider the following analogy<sup>33</sup>. A statue of the Madonna in an Italian church is observed to be weeping; however, it is eventually discovered that the apparent tears are bat urine - the bats are staying in the church ceiling. This explanation of the statue’s tears is logically consistent with a higher supernatural explanation; God could have wanted the statue to appear to be weeping and so the bats were instruments of his will. This example still resists being incorporated into a larger supernatural explanation. It is very ad hoc and strongly suggests nothing more than coincidence. Logical consistency, this example shows, is not the same as logical plausibility.

Does this case of evolution accounting for religious belief make religious belief less tenable (as Richard Dawkins representatively writes: “The irrationality of religion is a by-product of a particular built-in irrationality mechanism in the brain”<sup>34</sup>)? Justin L. Barrett writes

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<sup>32</sup>Ibid., p. 125.

<sup>33</sup>van Inwagen, P (2009), ‘Explaining Belief in the Supernatural: Some Thoughts on Paul Bloom’s ‘Religious Belief as an Evolutionary Accident’ in *The Believing Primate: Scientific, Philosophical, and Theological Reflections on the Origin of Religion*, eds. Schloss, J and Murray, M, Oxford University Press, p. 135.

<sup>34</sup>Quoted in Barrett, JL and Clark, KJ (2011), ‘Reidian Religious Epistemology and the Cognitive Science of Religion’, *Journal of the American Academy of Religion*, 79(3), 1–37, p. 2.

in an essay<sup>35</sup> (with philosopher Kelly James Clark) that this inclination is very much in line with Calvin's notion of *Sensus Divinitatis* - that we are made with an intuitive awareness of the divine in a broader sense rather than some belief in the one Living God. This propensity for religious belief thus sets the groundwork for the possibility of entering into a relationship with the one Living God. If evolution is God's tool of creation for human beings to exist and enter into a loving union with the Divine, then it is expected that, just as evolution gives us many of our abilities to live biologically, it gives us abilities to live spiritually. As Barrett puts it: "The initial function of the god-faculty, if there is a God, may be to make humans aware, in the most ordinary of circumstances, of the sacred dimension of reality...God might be willing to concede culturally specific differences in order to produce the, by and large, true but very basic and inchoate belief in a divine being"<sup>36</sup>. Clearly, knowing the origins of religious belief explains away nothing.

### **Reductionism**

An old BBC radio debate in 1948 between logician Bertrand Russell and intellectual historian Frederick Coplestone discussed the existence of God. Coplestone argued from the principle of sufficient reason - the idea every contingent thing has an explanation of its existence - that God is the explanation of all contingent things. Coplestone got to the existence of the universe, and Bertrand Russell responded that the question of why the universe exists is a meaningless question. The universe existing was just a 'brute fact.' This brutishness of an explanation is the goal of reductionism, and it has naturalistic pretensions. Naturalism holds the universe is all there is, but the existence of the universe requiring an explanation cannot be answered by naturalism. Thomas Aquinas mentions in his *Summa* this naturalist objection to higher levels of ultimate explanations, like those above science: "It seems that everything we see in the world can be accounted for by other principles, supposing God did not exist. For

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<sup>35</sup>Ibid.

<sup>36</sup>Ibid., p. 29.

all natural things can be reduced to one principle which is nature"<sup>37</sup>. For the naturalist, the universe is self-explanatory.

Now do this to Darwinian evolution and we have Dawkins making the brute statement of human life in the universe: "the universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind pitiless indifference"<sup>38</sup>. While this statement is not a scientific one in any sense, it is made by a biologist who held for years a chair for the Public Understanding of Science at the University of Oxford. Dawkins' statement misuses the authority science renders him. Alister McGrath observes: "Dawkins moves with remarkable alacrity from the debatable (yet entirely possible) statement 'Darwinism discloses no purpose to human life' to the rather problematic assertion that 'there is therefore no purpose to life' "<sup>39</sup>.

The notion of no teleology in biology is not held by all biologists. Ernst Mayr wrote in *Toward a New Philosophy of Biology* that many phenomena in biology can be accurately labeled teleological, insofar as two features characterize them: (1) they are seemingly purposeful, directed towards a goal (like finding food), and (2) they consist of active behaviour.<sup>40</sup> For Mayr, "some criticisms of the notion of teleology in a biological context usually rest on philosophical pre-commitments, rather than on biological observations"<sup>41</sup>.

Now assume for the sake of argument that reductionism, the scientific project to reduce all explanations to only one fundamental explanation of bottom-up causation, works. If we had a full scientific description of humankind, that in no way gives us a cumulative explanation of humankind. Certainly, sequencing the human genome gives us greater insights into our material cause, and new discoveries from our evolutionary history shed light on our efficient cause. These findings, however, affect nothing about whether human life is a brute fact or has

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<sup>37</sup>Aquinas, T. 'Question 2. The existence of God' in the *Summa Theologica* of St. Thomas Aquinas, trans. Fathers of the English Dominican Province, 2<sup>nd</sup> revised edition 1920. Sourced at [www.newadvent.org/summa/1002.htm](http://www.newadvent.org/summa/1002.htm).

<sup>38</sup>Quoted in McGrath A (2010), 'The Ideological Uses of Evolutionary Biology in Recent Atheist Apologetics' in *Biology and Ideology from Descartes to Dawkins*, eds. Alexander, DA and Numbers, RL, University of Chicago Press, p. 339.

<sup>39</sup>Ibid.

<sup>40</sup>Ernst Mayr (1988), *Toward a New Philosophy of Biology: Observations of an Evolutionist*, Harvard University Press, pp. 38-66.

<sup>41</sup>McGrath A (2010), 'The Ideological Uses of Evolutionary Biology in Recent Atheist Apologetics' in *Biology and Ideology from Descartes to Dawkins*, eds. Alexander, DA and Numbers, RL, University of Chicago Press, p. 339.

some kind of metaphysical form and finality. Knowing the material cause of women and men in no way negates the form of what is meant to become of us. Likewise, unraveling the rainbow of how we descended from the tree of life in no way negates why we were first meant to be deprived of the Tree of Life. Even if science cannot discover formal and final causality, so what? Science has its limits, as any discipline has. There being no metaphysical truth of man *qua* man follows from evolutionary theory as much as the premise 'there is therefore no purpose to life' follows from the premise 'Darwinism discloses no purpose to human life'. This genetic reductionism misappropriates the central existential human question: *who am I?* The mystery of being, "I am that I am", is that we experience an undisputable impression that there is something of us greater than the sum total of our experience. I am the totality of my experiences, yet I reflect on my experience. I thereby experience my reflection on my experience - a person is born, distinct from any other. What or who is this 'I' thrust into existence? A soul? It is a naiveté to not recognize the importance of questions above genes.

When interpreting scientific data, individuals can blur the line between science and philosophy in their interpretation of the data. In these situations, the difference between methodological naturalism and naturalism as metaphysical doctrine is muddled in the confusion. One example is the genetic reductionism of Dennett: "An impersonal, unreflective, robotic, mindless little scrap of molecular machinery is the ultimate basis of all the agency, and hence meaning, and hence consciousness, in the universe"<sup>42</sup>. But let's take a description on bottom-up causation in the context of genes by two Oxford evolutionists, Richard Dawkins and Denis Noble. Dawkins in *The Selfish Gene* writes that all human behaviour comes down to our genes:

*"Now they swarm in huge colonies, safe inside gigantic lumbering robots, sealed off from the outside world, communicating with it by tortuous indirect routes, manipulating it by remote control. They are in you and in me; they created us, body and mind; and their preservation is the ultimate rationale for our existence."*<sup>43</sup>

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<sup>42</sup>Dennett, DD (1996), *Darwin's Dangerous Idea: Evolution and the Meanings of Life*, New York: Simon & Schuster, p. 203.

<sup>43</sup>Quoted in Noble, D (2006), *The Music of Life: Beyond the Genome*, Oxford University Press, p. 12.

Compare this to Denis Noble, who inverts the above passage on genes in *The Music of Life*:

*“Now they are trapped in huge colonies, locked inside highly intelligent beings, molded by the outside world, communicating with it by complex processes, through which, blindly, as if by magic, function emerges. They are in you and me; we are the system that allows their code to be read; and their preservation is totally dependent on the joy we experience in reproducing ourselves. We are the ultimate rationale for their existence.”<sup>44</sup>*

The former statement is a gene-reduced view of humans; the latter is a human-uplifted view of genes. In fact, Noble argues that from a purely biological view what matters is not what gene mutations one has, but how they are used in genetic circuits. The two quotes feature two biologists from the same university looking at the same thing, yet viewing it in different ways. This suggests the issue is quite complicated, and the line between methodological and metaphysical naturalism sometimes blurs when interpreting the significance of scientific findings. Erroneous thought happens by forgetting that science remains agnostic to higher levels of explanation. Dawkins mistakes a scientific approach with a reductive, scientific philosophy.

But what if there are emergent causes found by science? George F. R. Ellis, a noted expert in system dynamics, writes in his paper ‘On the Nature of Causation in Complex Systems’ that in any complex system there can, depending on the context, be five different top-down causes<sup>45</sup>. He uses evolution as an example of top-down causation via the environment detailing biological microstructure:

*“Through the process of evolutionary adaptation, the environment (along with other causal factors) fixes the specific DNA coding...The survival of the organism is the fitness criterion, leading to existence of all those detailed conditions which must be fulfilled for*

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<sup>44</sup>Ibid.

<sup>45</sup>Ellis, GFR (2008), ‘On the Nature of Causation in Complex Systems’, *RSSA Centenary Transactions* paper, pp. 1-48. [www.mth.uct.ac.za/~ellis/Top-down%20Ellis.pdf](http://www.mth.uct.ac.za/~ellis/Top-down%20Ellis.pdf). p. 2.

*survival to be assured. This meta-goal is generally the same for every organism because it is what leads to the existence of populations that fit environmental niches better than competitors.”<sup>46</sup>*

Ellis argues that the context of the environment determines what DNA structures develop because of greater meta-goals of causation. In biology, as well as in many other complex systems, there are different levels of causes and therefore different levels of explanation. In simple systems, a reductive method works perfectly. In complex systems, it is the opposite. In fact, Ellis concludes that Aristotle was correct on his four causes in the contextual variance of complex systems: material cause is X’s physical level of explanation, formal is X’s immediate level of explanation, efficient is X’s contextual relations, and final is X’s ultimate level of explanation<sup>47</sup>.

The physical world of the laboratory may not be looking for the metaphysical, but scientific fact is not divorced from or devoid of metaphysical truth. Insert a rejection of the supernatural, and what remains is the methodologically unnatural. Likewise, a natural level of explanation is in harmony when the supernatural is the higher level of explanation, because the supernatural, as Frederick Coplestone demonstrated, explains why there is the natural. Take away one respectful level of explanation from another, and what remains is ideology. Maintain the different levels, and biology grows in peace.

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<sup>46</sup>Ibid., p. 16.

<sup>47</sup>Ibid., p. 30.