

第一章 自然神学とその再構築

第二章 「宗教と科学」関係論の基礎

- 1 形而上学再考
- 2 ホワイトヘッドの宗教論
- 3 プロセス神学の挑戦
- 4 プロセス神学と「宗教と科学」関係論

4 プロセス神学と「宗教と科学」関係論

(1) ダーウィンとダーウィン主義

< Livingstone, David N., **Re-placing Darwinism and Christianity**, in: David C. Lindberg and Ronald L. Numbers (eds.), *When Science & Christianity Meet*, The University of Chicago Press 2003 >

it has not even been possible to come to a final judgement on the religious sentiments of Charles Darwin himself. (183)

I think it is a mistake to hope for closure on the final state of Darwin's soul.

These jottings surely confirm the conclusion that Darwin's religious beliefs "never entirely ceased to ebb and flow ... At low tide, so to speak, he was essentially an undogmatic atheist; at high tide he was a tentative theist; the rest of the time, he was basically agnostic --- in sympathy with theism but unable or unwilling to commit himself on such imponderable question. (187)

He had, for instance, absorbed the essentials of William Paley's *Natural Theology* during his years at Cambridge, and its flavor was to linger in his own writings in manifold ways.

Such correspondences provided Darwin with a captivating analogy: natural selection.

Darwin moving casually between God and Nature

Darwin's indebtedness to theology should not be limited to architectural echoes of Paley.

(188)

All in all science and religion were thoroughly interwoven in Darwin's life and thought.

(189)

(2) 有神論的自然主義としてのプロセス神学

John B. Cobb, Jr. and David Ray Griffin (eds.), *Mind in Nature: Essays on the Interface of Science and Philosophy*, University Press of America 1977

< Griffin, David Ray: **Religion and Scientific Naturalism. Overcoming the Conflicts**, State University of New York Press 2000

Creation and Evolution, in: Griffin[2000], pp.241-310 >

At the heart of the conflict between religion and scientific naturalism the issue of creation and evolution. This centrality of evolution in the conflict.

Darwin himself, a deistic creation of the universe and even of the first organic beings

most of Darwin's followers have believed the spirit of Darwinian scientific naturalism to imply

a completely nontheistic account of the universe (241)

Agreement on the central role played by Darwinian evolutionary theory in the genesis of late modern atheism (242)

it is no wonder that the antagonism between the two camps has been so extreme.

Creationists / Evolutionists

although the conflict between Darwinism and scientific creationism has been especially intense, the disappearance of scientific creationists would not mean an end to the conflict between science and religion around the issue of evolution. Rather the conflict is much more fundamental.

Harmony between science and religion will only be possible, accordingly, if our culture settles on a position that transcends both supernaturalistic creationism and Darwinian evolutionism.

Fortunately for the prospect of an integral worldview that is satisfactory for both religious and scientific purposes, there is good reason to believe that both of these worldviews are false.

I will show how the Whiteheadian form of theistic naturalism provides resources for developing a version of theistic evolutionism that can do justice both to the facts that count in favor of evolution and those that count against the neo-Darwinian theory of it. (243)

it is necessary to sort out the various dimensions of that comprehensive theory known as "Darwinian evolutionism"

DE1(Darwinian Evolutionism1): microevolution, DE2:macroevolution

DE3:naturalism, DE4:uniformitarianism, DW5: methodological atheism

DE6:positivism, DE7: determinism, DE8:all macroevolution is to be understood entirely in terms of the processes involved in microevolution, DE9:all subsequent species of life ...

have come about through evolutionary descent from the first form of life solely through natural selection operating upon random variations, DE10: gradualism, DE11: nominalism,DE12:complete atheism, DE13: meaningless, amoral, DE14: nonprogressivism

• DE1

Microevolution involves minor genetic and sometimes phenotypical changes within a species, or even the transformation of members of one species into a new species in one technical sense of that term. (244)

Evolutionism even in this limited sense contradicts the idea that all species are absolutely fixed.

In any case, Darwinian evolutionism1, ..., is now uncontroversial. (245)

• DE2

The idea of macroevolution is most fundamentally the idea that all present species of living things have in some way descended from previous species over a very long period of time.

When evolutionists distinguish the fact of evolution from the (Darwinian) theory of evolution, it is usually evolutionism2 to which they refer. although evolutionism in this sense is not distinctively Darwinian, it is essential part of evolutionism in the Darwinian sense. (245)

• DE3

whatever the explanations for macroevolution be, they must be entirely naturalistic, at least in the minimal sense of not involving miraculous, supernatural interruptions of the normal causal

processes. (245f.)

Darwinism was part of, and soon became the spearhead of, the movement toward scientific naturalism, in which all ideas about supernatural interventions would be excluded from the positive content of science. (246)

• DE4

naturalism must involve uniformitarianism, which means that only causal factors operating in the present can be employed. two dimensions: ontological uniformitarianism and geological uniformitarianism

Ontological uniformitarianism, which rules out supernatural divine interventions

Geological uniformitarianism, which rules out occasional catastrophes

In Darwin's mind and that of his followers in earlier times, these two meanings of uniformitarianism were closely linked, (246)

• DE5

biological evolution occurs without any theistic guidance whatever. Evolutionism in this sense rules out not only supernatural interventions, ... but also any kind of directing influence by a purposive power transcending these finite beings and events

this metaphysical exclusion of ongoing divine activity is not simply an optional interpretation of the scientific doctrine of Darwinism, Rather, "the metaphysical statement is the essential foundation for the scientific claim". The "scientific doctrine... does not involve merely a methodological atheism

an intellectually fulfilled atheist

Darwin's theory was enthusiastically welcomed by those who want a science fully autonomous from theology: (247)

• DE6

its positivism, according to which all causes of evolution must be at least potentially verifiable through sensory observations. Darwin's theory of evolution by means of natural selection was part and parcel of a movement for a completely positivistic science,

This insistence on explanation in terms of nothing but causal factors that are observable through the senses, at least in principle, is virtually identical with the insistence on exclusively physical or material causes, (248)

Darwin's theory was evidently embraced so rapidly by so many fellow scientists not because Darwin had convinced them that natural selection was the sole, or at least the primary, factor, which he did not, but simply because his theory,, fit into the program of Victorian naturalism by suggesting that the existence of life and even human culture could be understood in completely materialistic terms. (249)

• DE7

predictive determinism

the doctrine that the world is, without exception, a deterministic system of causes and effects. In any case, Darwin accepted the idea, which had been growing since the eighteenth century, that science requires predictability, which in turn requires determinism, which in turn requires the

exclusion of all teleology or final causation in the purposive causation. (249)

Darwinian evolutionary theory is completely reductionistic and deterministic (although some Darwinists today reject this feature because of quantum indeterminacy). (250)

• DE8

all macroevolution is to be understood entirely in terms of the processes involved in microevolution.

Darwinian evolutionism⁸ is at the heart of the controversies between neo-Darwinists and other evolutionists, as the latter do not believe that macroevolution can in principle be explained in terms of the factors sufficient for microevolution, whereas the former do. (250)

• DE9

the doctrine that all subsequent species of life, both living and extinct, have come about through evolutionary descent from the first form of life solely through natural selection operating upon random variations, understood primarily in terms of random genetic mutations.

the "modern synthetic theory" or the "evolutionary synthesis," which synthesizes original Darwinism with Mendelian genetics and makes some other modifications.

The new agreement, in particular, was that "purpose forces played no role at all." (251)

The desire to regard natural selection as virtually the sole creator of all living forms leads to the tendency, in fact, to insist that mutations are random in an even stronger sense.

Darwin was clear that he did not know the cause of mutations, saying that "variations in the domestic and wild conditions are due to unknown causes." (253)

The other most controversial factor excluded by the evolutionary constitution known as neo-Darwinism is "the inheritance of acquired characteristics."

Darwin himself accepted this factor, (254)

• DE10

macroevolution proceeds gradually, through a step-by-step process comprised of tiny steps. (254)

Darwin was warned against this gradualism by several fellow scientists, including his advocate Thomas Huxley. (255)

gradualism as the essence of naturalism and the repudiation of divine intervention. (256)

• DE11

nominalism

a rejection of the position often called "Platonic realism," according to which forms, archetypes, or ideas are really real, being somehow inherent in the nature of things. (256f.)

Nominalism is the doctrine that the names for these forms are merely names, not pointing to entities that really exist in any sense.

Darwinism is fully nominalistic, rejecting the realism about forms upon which the typological approach ... was based.

This nominalism provides a link between the gradualism of Darwinism and its rejection of any type of theistic influence on the evolutionary process, not simply supernatural interruptions of this process. (257)

they(forms) might serve as "final causes" or "attractors," through which the jump from one coherent type to another could be rendered somewhat intelligible. (258)

• DE12

it is completely atheistic. This is arguably true, in the sense that the principles of Darwinism imply atheism, so that the "spirit of Darwinism" can be said to be atheistic.

he (Darwin) endorsed.... what is now usually called deism.

Some interpreters have suggested that Darwin's deism was a passing phase, that in his later years he became fully atheistic or at least agnostic. The implausibility of this contention has been shown by Gillespie. (258)

Darwin was part of the movement for a scientific naturalism, which meant a separation of science from the supernaturalistic framework, (259)

The contention that Darwin should have been an atheist follows also from the principle of positivistic materialism,.... In speaking of an intelligent First Cause of the universe, Darwin obviously violated this positivistic ideal.

Darwin's solution involved deism plus natural selection. That is, God's activity was removed from any direct activity with the often cruel and grotesque contrivances of nature. God was directly responsible only for the general structure of the universe, the laws of nature, and the first form or forms of life, with all the details left to random variations and natural selection. On this basis, Darwin said, the contrivances that are "abhorrent to our ideas of fitness" are not morally intolerable: (260)

The fact that Darwin himself did not adopt an atheistic stance does not contravene the conclusion that atheism is implied by the spirit of Darwinism. Of course, the move from deism to atheism has severe consequences, one of which is a completely meaningless universe. But better a world with no meaning, many believe, than a world with a horrible meaning.

a third alternative (261)

• DE13

another dimension that was not part of Darwin's own worldview: the idea that the evolutionary process is not only meaningless but also amoral, in the sense that it provides no moral norms.

(261f.)

because there is no meaning in nature, we have to create our own.

Accordingly, Darwinian evolutionism¹³ entails that, insofar as we have the twofold sense that our lives are finally meaningful and that some ways of living are morally better than others from an ultimate perspective, this sense is illusory. Although these nihilistic beliefs were no part the Darwin himself, they are implications of contemporary neo-Darwinism. (262)

• DE14

A final dimension of Darwinian evolutionism is that it is nonprogressive. There is said to be no general trend behind or within the macroevolutionary process to produce organisms that are "higher" or "better" or "more valuable" than those that came earlier. As a result of the felt need of many "to distinguish the consequences of neo-Darwinian natural selection from the older progressivist theories, "says Matthew Nitecki,.. (262)

a criterion for progress depends upon a standard not provided by Darwinian evolutionism. (263)

The fact that Darwin himself was not fully atheistic would lead us to expect that he would not have denied progress in such a thoroughgoing way. The truth, in fact, that progress was central to Darwin's own theory. (264)

Darwin as an "evolutionary deist"

Darwin's belief in evolutionary progress was "a direct consequence of Darwin's ... regarding natural selection to be a secondary cause responsive to the primary cause of divine wisdom." Because he believed that the evolutionary progress reflected divine wisdom and purpose, Darwin could believe that there was an objective standard in terms of which to speak of progress from lower to higher forms of life.

Darwin included the existence of human beings, with their distinctive capacities, as a reason for believing in divine purpose, saying that it is impossible to conceive "this immense and wonderful universe, including man with his capacity of looking far backwards and far into future, as the result of blind chance or necessity." Although Darwin did give up his early theological view that the details of the world reflected a divine plan, he accepted until the end the belief that results of a general nature were preordained by the "general laws" imposed by the Creator.

Darwin could still believe that beings with moral and intellectual qualities were intended.

(265)

the spirit of Darwinism / Darwin himself

the various reasons for considering it inadequate (pp.265-290)

more philosophical issues: neo-Darwinism, materialistic, positivistic, deterministic,
nominalistic, atheistic theory

more strictly scientific issues:

Need-Induced Inheritable Variations, the fossil problem, the Rise of Life Itself

a Wider Naturalism (pp.290-310)

- Whitehead, Whiteheadian theism, Theistic Guidance Without Supernaturalism
- DE1-4 / DE5-14
- distinction between supernaturalistic and naturalistic theism

One reason for the hesitancy to discuss the failures of neo-Darwinism in a global way has surely been the perceived need to "keep the faith" in the face of the creation science movement... The more general problem is the assumption that the neo-Darwinian view of evolution provides the only naturalistic alternative to supernaturalistic creationism. ... a more helpful framework than the hitherto dominant one for looking open-mindedly at all the relevant evidence and developing more plausible hypotheses.

This wider naturalism provides three new elements: a panexperientialist ontology, a nonsensationist doctrine of perception, and a naturalistic theism. (290)

Real Chance / Real Evolution / Naturalism and Uniformitarianism / Theistic Guidance Without Supernaturalism / Evil / Cosmic Support for Truth, Beauty, and Morality / Evolutionary Progress / Cosmic Meaning / Radical Empiricism and Uniformitarianism / Beyond Reductionism and Determinism (290-298)

Implications for Scientific evolutionary theory (298-309)

Macroevolution Unconstricted / Inheritance of Novelty / Divinely Induced Novelty / Evolutionary Progress and the Criterion of Success / Inner Gradualism and Outer Saltationism / Whitehead and Punctuated Equilibria / Whitehead on Divinely Induced Ideals / No Supersaltations / The Origin of Our Universe
Summation (309-310)

Real Chance

much microevolution occurs by means of natural selection of changes resulting from mutations random

every individual, meaning most precisely each individualized event, is an occasion of experience with at least some degree of spontaneity. each such event is casually influenced by all prior events. By putting these two factors together, we can speak of "chance" in the true sense of the term. (291)

Real Evolution

Naturalism and Uniformitarianism

evolution of every type occurs without benefit of any supernatural interruptions of the normal causal processes of the universe, some kinds of causality to be perfect natural (291)

This point implies that Darwinian evolutionism⁴, which is now identical with the doctrine of ontological uniformitarianism, is enthusiastically affirmed. (292)

Theistic Guidance Without Supernaturalism

Because most Darwinists have evidently been unaware of the distinction between supernaturalistic and naturalistic theism, they have assumed that the rejection of supernaturalism required the rejection of theism of all sorts.

able to consider whether a naturalistic form of theism might help in constructing a more adequate theory of evolution.

Whiteheadian theism is fully naturalistic: Divine influence in the world is a regular, necessary part of the normal causal process, not an occasional interruption of this process, and it is consistent with uniformitarianism, because divine influence is said to occur in basically the same way always and everywhere:

God is not a being external to the universe, in the sense of one who, being able to exist apart from any universe of finite beings whatever, created our universe ex nihilo. That view of God implies that, because the universe's causal processes and principles had been freely created, they could be freely interrupted. In this naturalistic theism, by contrast, God is essentially the soul of the universe, which entails that God and a universe, meaning a multiplicity of finite events, exist with equal necessity, being coeternal. These causal principles, not being contingent, cannot be interrupted. They, like God, exist naturally, belonging to the very nature of things.... there are no interruptions of the basic cause-effect relations. (292f.)

Evil

Because of this crucial difference from theism of the supernaturalistic type, the return to

speaking of God does not bring back the problem of evil. All the creatures have some power of their own, which cannot be canceled or overridden. Each creature has the twofold power to exert at least some iota of self-determination and some power to influence others. Although the divine power is unique in many ways,... , it is nonetheless one of the multitude of powers within the all-inclusive system influencing every finite event, not a power outside the system that can interrupt its systemic causal patterns. The divine power is persuasive, not coercive or unilaterally determining. (293)

Cosmic Support for Truth , Beauty, and Morality

Thanks to its inclusion of this soul of the universe, Whiteheadian naturalism need not be nominalistic.... The soul of the whole can provide a home for the eternal forms (which Whitehead called "eternal objects"), be they logical, mathematical, geometric, moral, or aesthetic forms. This dimension of the soul of the whole provides a ground from which forms of all types can pervade the universe. The eternal forms are the material of the divine persuasion.

The divine aim is most fundamentally aesthetic. God seeks beauty of every type. (293)

Evolutionary Progress

Given the divine aim at increasing the beauty or intrinsic value of experience, we have a standard for speaking of progress, and we can say that, insofar as the evolutionary process has tended over time to bring forth creatures with increasingly more capacity for realizing more complex forms and thereby experiencing greater intrinsic value, progress has occurred. We need not try to affirm Darwinian evolutionism¹⁴. The recovery, within the naturalistic context, of a Cosmic Purpose and Valuation allows us to affirm explicitly our sense, which it is virtually and perhaps actually impossible to eradicate, that the higher animals really are "higher" from a nonrelativistic viewpoint. (295)

Cosmic Meaning

the consequent nature of God

Our lives will have immortality in the everlasting divine experience. ... we looked at reason to believe that one of the latest evolutionary breakthroughs achieved by the persuasive power of the divine Eros may be the capacity of the human soul to survive the death of its physical body. (296)

we can have a worldview that, besides supporting the basic presuppositions of Christianity and other theistic religions, also provides a more adequate framework for science than did the materialistic version of naturalism. (309)

We have also found that the scientific community, to develop an adequate evolutionary theory, will evidently need a worldview involving freedom, purposive causation, and even a naturalistic theism. and that the religious community, to have a form of theism that is not falsified by the world's evils and other fact, requires an evolutionary naturalism, accordingly to which a world such as ours could only have come about by a long, slow, step-by-step process. (309f.)

(3) 「宗教と科学」関係論の基礎を求めて

- ・形而上学再考
- ・「日常 / 科学 / 宗教 / 形而上学」の連関
 - 一般化あるいは上昇
 - 日常・意味から宗教へ
 - 科学的世界観から形而上学へ
- ・「宗教と科学」における宗教から、そして科学から
 - なぜ神なのか、価値・目的・観念・意味の実在性と現実化、その根拠付け・保証
 - 自然主義の選択、科学的世界観との整合性(非科学であっても、反科学でないために)
- ・ホワイトヘッドとプロセス神学による「宗教と科学」の再統合の試みの評価
 - 残された問題：
 - 形而上学の神と宗教の神との関係はどのようになるのか
 - 自然主義で最終的かつ完全に問題ないのか
- ・「意味論 意味世界と意味根拠」の構造論から、形而上学へ
 - パネンベルクとプロセス神学との双方の示唆を受けて