

Evolution as a Christian Theme

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1. Setting the scene

The title I have chosen is likely to seem provocative to the average American reader, I suppose. Evolution as a Christian theme? When school boards across the U.S. are being told that the theory of evolution poses a threat to the Christian faith of those for whom they are responsible? When the teaching of evolution has come to be associated with the widest variety of social ills in the minds of a sizeable percentage of the U.S. population?

However did it come to this? Turn the clock back a century or so to when Darwin's hypothesis about the transformation of species over time had come to be accepted by the vast majority of the scientific community. In his book *Darwinism and the Divine in America*, Jon Roberts remarks that at this point: "most Protestant intellectuals ... like most other literate Americans ... regarded the scientific community's endorsement of the transmutation hypothesis as sufficient grounds for believing that it was a valid interpretation of the origin of life." As believing Christians, they had thus become convinced that it was necessary: "to set the tenets of Christian theology within an evolutionary framework. Toward this end, they took the position that gradual, continuous and progressive change was paradigmatic of the way that God had chosen to operate."¹

"Theistic evolutionism," as this view came to be called, took different forms, reflecting the variety of scientific opinions at the time about the mechanisms of evolution, and specifically about the sufficiency of natural selection as an explanation of evolutionary transformation. Some proponents of the theistic reading of the new theory argued for the need of divine guidance to account for the progressive character of the evolutionary sequence, yielding a modified argument from design for the existence of a Designer to replace the more ambitious design argument that Darwin's theory had undermined. There was a widespread conviction that the origination of species by means of an intelligible natural process of the sort Darwin had proposed suggested "a more worthy conception of an infinite Designer than an infinity of separate interferences."²

But this conviction was by no means shared by all. Roberts comments that a significant minority of American Protestant leaders:

confronted by the theory of organic evolution and the higher criticism of the Bible, began to construct a systematic discourse of scriptural infallibility that precluded compromise with rival secular sources ...

[concluding that] conflict between the clear message of the Bible and the verdict of scientists was tantamount to conflict between an infallible vehicle of divine truth and the fallible conclusions of human beings.³

In the intervening years, the polarity between the two positions that had already begun to crystallize more than a century ago has not lessened, as one might have expected that it would, as the lines of evidences for the broadly Darwinian version of origins have multiplied. Indeed, the polarity has, if anything, become more marked, in the U. S. at least, as a wider and wider array of issues, scientific, philosophical, theological, and (especially) political have become involved.⁴ The heated controversies around so-called “creation-science” from the 60s through the 80s, and the new debates occasioned by proponents of “intelligent design” who have come to terms with evolution to a limited extent, have conspired to keep the alleged incompatibility between Christian belief and the standard accounts of evolution in the headlines in one way or another.

Instead of dealing directly with this messy debate, I will turn from the present to the distant past, to the early days of the Christian community, as its thinkers faced the formidable task of formulating a theology that would knit together in a single coherent system of belief the disparate clues that were scattered across the pages of Scripture, aided on occasion in that task by the sophisticated philosophies of the Roman world. It might seem far-fetched that we should find in the theological constructions of that distant time anything that would lend credence to our effort here to present evolution, that quintessentially modern theory, as a complement to Christian belief. But as we shall see, the account of cosmic origins developed by St. Augustine, the preeminent theologian of the early Christian church, can be plausibly seen as a step in the direction of what the nineteenth century would call theistic evolutionism. A step, no more, but a real step all the same. Augustine was obviously not a Darwinian, nor did he propose the transformation of one species into another. But his bold claim that each species originally developed in a gradual way offered a precedent from a distinctively Christian perspective that could have assured the theologians who first faced the challenge of how to respond to *The Origin of Species* that someone had opened the way for them a long time before.⁵

2. Creation *ex nihilo*

Presupposed by any Christian account of cosmic origins is, of course, the distinctive Christian doctrine of creation. To lead into our main topic, then, it will be helpful to say something first about creation *ex nihilo*, best translated in paraphrase perhaps by something like: bringing-to-be in the absence of prior materials.⁶ Some of the most eloquent passages in the Old Testament speak of Yahweh’s role in fashioning the great cosmic structures of sun and stars, land and sea. The psalmist addresses Yahweh in a familiar passage:

You stretch the heavens like a tent; you build your palace on the

waters above.

Using the clouds as your chariot, you advance on the wings of the wind.

You use the winds as messengers and fiery flames as servants.

You fixed the earth on its foundations, unshakeable forever and ever.

You wrapped it with the deep as with a robe, the water overtopping
the mountains.

At your reproof the waters took to flight, they fled at the sound of
your thunder

Cascading over the mountains into the valleys, down to the reservoir
you made for them.

You imposed the limits they must never cross again....

You made the moon to tell the seasons; the sun knows when to set....

Yahweh, what variety you have created, arranging everything so wisely! ⁷

In passages like this one, “creating” sounds like fashioning from materials already available, just as would be the case with a human maker. Their aim was to emphasize the dependence of everything on Yahweh; there was no attempt to introduce the far less intuitive notion of creation *ex nihilo*. The primary passage to which theologians of the early Church turned was, of course, the opening verse of *Genesis*: “In the beginning, God created the heavens and the earth. Now the earth was a formless void.” No pre-existent materials apparently; the heavens and the earth sprang into being in response to the divine command. The newly created earth, void of form, would then be ready to have form imposed on it later in a more conventional act of fashioning.

The Old Latin translation used here, the standard one in the early Church, has been questioned by some modern exegetes and their preferred translation loses the *ex nihilo* suggestion: “At the beginning of God’s creating of the heavens and the earth, when the earth was wild and waste....”⁸ Indeed, the majority view among Old Testament scholars today is that for a variety of textual reasons (e.g., the waters divided off from land on Day Two seem to have been there before the creative activity began), this verse was not intended to point to *creatio ex nihilo*.⁹ But since we are interested in the original formulation of the *ex nihilo* version of creation in the early Christian Church, this modern revision of the translation of the Hebrew text of these verses in *Genesis* does not affect the historical issue. It would seem, however, that the testimony of the Old Testament was in the end equivocal in regard to creation’s being *ex nihilo*. The issue of whether or not the opening creative act drew upon pre-existent materials was obviously not a matter of major concern to the original authors.¹⁰

But it was of deep concern to the Christian theologians of the first few centuries. The reason was simple: the influential philosophies of the day, if they would have allowed an original “creation” at all, tended to assume that it was from a pre-existent material element that was in some sense the origin of defect. In this way, they could account for the presence in the world of evil without attributing it to the Maker. From the Christian standpoint, as this began to crystallize in the first few centuries, this was unacceptable because it limited the scope of

the Creator's power: it implied that the universe was not entirely of the Creator's making.

Some of the first Christian theologians (Justin Martyr, Athenagoras, Tatian) were led, in part, by the Platonic precedent to emphasize the role of a pre-existent formless matter, without however ruling out the possibility that such matter would itself have called for an original *ex nihilo* coming-to-be. A few (like the author of *The Shepherd of Hermas* and Theophilus of Antioch) were explicit in their assertion of an *ex nihilo* origin but without much elaboration. Origen went further and argued strongly that such an origin was an essential part of the Christian message.¹¹

By the fourth century, the *ex nihilo* understanding of divine creation had become more or less standard among Christian writers. Prominent among them were those theologians who took the six-day account in *Genesis* 1 as a subject of extended commentary (the "Hexaemeral" or "Six-Day" writers) like Basil of Caesarea and Gregory of Nyssa. Writing in 378 A.D., Basil favored a relatively literal approach to the biblical text and argued that creation *ex nihilo* was clearly affirmed by it. Further, he maintained, the creation must have been the origin of time itself; the evident limitations that temporality set upon anything subject to it could not possibly be attributed to the transcendent Creator. Influenced by Basil, Ambrose of Milan developed this thought further. Both authors relied primarily on Scripture as warrant for their accounts of creation though Ambrose in particular showed himself to be familiar with a variety of Roman philosophical sources also.

3. Augustine on creation

All this by way of introduction to Augustine, whose distinctive account of what the creation amounted to is our main concern here. In his thirties in Milan, he had determined to spend his life in the sort of contemplation and conversation appropriate, as he saw it, to the philosopher. He was impressed above all by the work of Plotinus whose account of the One and the sequence of emanations from the One offered a metaphysics of impressive scope and depth. With his conversion to Christianity in which Ambrose played an important role, Augustine's ambitions changed radically. In him, Christian theology and the philosophies he had absorbed entered into active dialogue with one another as he pursued the goal in his writings, as he put it, of "a faith seeking understanding."

His earlier years as an enthusiastic Manichaean made the issue of cosmic origins an immediate and urgent one. Born in Babylon around 216 A.D., Mani created an eclectic religion with elements drawn from every religious source accessible to him: from Zoroastrianism, Judaism, Buddhism, and even Christianity itself. His teaching featured an uncompromising dualism between polar opposites portrayed as antagonists engaged in ceaseless warfare: Light versus Darkness, Good versus Evil. His dramatic cosmogony was as different from the Christian one as might well be imagined: two Forces that existed

independently of one another, by contrast with the single all-powerful Creator of Christian belief; a universe torn by constant strife between Good and Evil in contrast with one whose Creator had declared at each stage of its making that it was good.

In a series of works spanning a career that led him from Milan back to his native North Africa where, as bishop of Hippo, he exerted a wider and wider influence on the Christian community of his day, Augustine constructed a sophisticated doctrine of creation that would become a reference point for all later accounts right up to the present day. He looked for warrant both to the biblical text and to current philosophical insights. For him, the two sources converged on a single vision of a Creator who exists necessarily and creates a universe *ex nihilo* which is altogether dependent on the Creator for its continued existence. This was obviously the antithesis of the Manichaean world-view he had earlier set aside, both in its content and in the sources on which it drew.

Further developing a theme already found in the Hexaemeral authors, Augustine argued that such a Creator would necessarily be free of the severe limitation that time lays upon the creature: a past already gone, a future that is not yet, and a present that is no more than a fleeting moment. In his view, time defines the condition of the creature, dependent on the Creator for all that it is. The Creator, then, cannot be subject to it. In Books X and XI of his *Confessions* he explores some of the implications of this. The Creator is “eternal,” not as enjoying an existence that just goes on and on, but as being outside such temporal description entirely: “In eternity nothing passes, for the whole is present, whereas time cannot be present all at once.”¹² The act of creation is a single timeless act from the Creator’s perspective, in which past, present, and future (our categories, not the Creator’s) come to be together.¹³ “We speak of ‘before’ and ‘after’ in the relationship of creatures, although all is simultaneous in the creative act of God.”¹⁴ Once again, the original bringing-to-be of the universe (creation) which we distinguish from its continued maintenance in being (conservation) are one and the same from the Creator’s perspective.¹⁵

With this as preparation, we can now go on to see how this distinctive understanding of Creator-creation would dispose Augustine to propose an equally distinctive account of cosmic origins, one very different from the separate successive makings spread out over a period of time suggested by *Genesis* 1, if literally interpreted.

4. “All things together”

The Manichaeans had subjected this *Genesis* story of cosmic origins to withering criticism as incoherent and primitive. The issue was of first importance to them since their own account of the strife between Good and Evil in the formation of the universe was central to their dualistic world-view. Realizing this, Augustine from the beginning of his career as a theologian

sought to counter their challenge. Two early commentaries on Genesis, the second one unfinished, left him dissatisfied. Finally, in 401 A.D. he began the composition of *De Genesi ad litteram*, which would occupy him on and off for 14 years. The work was planned as a “literal” commentary, not in our sense of that term, but in contrast to the then popular “allegorical” mode which interpreted the Old Testament as prefiguring the New. “Literal” for him meant something like “in the sense intended by the author” which could, as we will see, depart very far from the literal as we would see it.

Augustine was preoccupied mainly by the Manichaean challenge to the six-day account and he took a dramatic way of responding to it. He proposed first of all that “day” in this account could not possibly be understood in the everyday sense of the term, “day”: It is not to be taken in the sense of our day, which we reckon by the course of the sun; but it must have another meaning, applicable to the three “days” mentioned before the creation of the heavenly bodies. This special meaning of “day” must not be maintained just for the first three “days,” with the understanding that after the third “day” [i.e. when the sun makes its first appearance] we take the word “day” in its ordinary sense. But then we must keep the same meaning even to the sixth and seventh days.¹⁶

But if these are *not* literally days, how is the narrative of *Genesis* 1 to be interpreted? Instead of suggesting that “day” might simply connote an indeterminate period of time, as he could easily have done, he decided to eliminate the notion of a temporal sequence of making altogether.¹⁷ Relying on a text in *Sirach*: “He made all things together,”¹⁸ Augustine supposed that in some sense “all things” were already present in the first instant of the universe’s temporal appearance; there was no need for a six-day sequence of supplemental additions on the Creator’s past. He could, of course, have taken the *Sirach* verse to refer to the creation from the *Creator’s* atemporal perspective which did indeed straightforwardly imply a making of “all things together.” But he chose to refer it in *our* temporal perspective to the first instant of the universe’s existence: “all things” were somehow already there from the beginning.

Augustine was undoubtedly influenced here by his readings in the popular philosophies of the day, notably by Stoic cosmology which supposed a version of “all things together” at the moment of cosmic origin, and also by the emanation processes postulated by Plotinus which presupposed that the essences of all things were there potentially to begin with. But his own distinctive understanding of creation on the part of a Creator who is not himself subject to temporal process might also have led him to resist the idea of later supplementations being needed to complete the Creator’s plan for the universe. He could have seen reason to question the idea that an omnipotent Creator would not have endowed the universe with a sufficiency of resources from the beginning.

5. Seedlike principles

But a question remains. In what sense *could* “all things” have come into being

at the moment of the universe's temporal origination? Gregory of Nyssa had already paved the way for an answer:

The sources, causes, and potencies of all things were collectively sent forth in an instant, and in this first impulse of the Divine Will, the essences of all things assembled together: heaven, aether, star, fire, air, sea, earth, animal, plant—all beheld by the eye of God.... There followed a certain necessary series according to a certain order ... as nature, the maker, required ... appearing not by chance ... but because the necessary arrangement of nature required succession in the things coming into being.¹⁹

The language is reminiscent both of Plotinus (the essences already present at the first instant of the material universe's existence) and of Stoic cosmology, with its emphasis on the sufficiency of the regular operations of nature to realize the potencies present from the beginning. Gregory even included, as the Stoics also did, the non-living world of star and earth in his panorama of universal development.

Augustine introduced a powerful metaphor of Stoic origin: "*rationes seminales*" or seedlike principles that are present from the cosmic beginning, in each of which is contained the potential for the later development of a specific living kind. According to one ancient commentator, Aetius: "The Stoics made god out to be intelligent, a designing fire which methodically proceeds towards creation of the world, and encompasses all the seminal principles according to which everything comes about according to fate."²⁰ Augustine narrowed the scope of the "seedlike principles" to living kinds only, where the seed-metaphor fits more comfortably. More significantly, he narrowed it further to make each principle responsible only for the *first* appearance of a particular living kind, thus implying that this was a "seed" of a quite different sort to the familiar one.

The Greek theologians had already noted the significant role played by earth in all the makings described in *Genesis 2*. In contrast to the summoning into existence by an act of the divine will described in the first chapter, the "makings" mentioned in the second chapter (excepting that of woman) are said to have had earth as the material, an earth that has just been watered and thus made fruitful. Augustine draws attention to the essential role attributed here to earth and water in the first appearance of each natural kind at its appropriate moment. His proposal is that potencies, causal possibilities, must have been implanted in the matter of the first creation, potencies that would in due time lead to the later "creation" of each kind, here more exactly described as a fashioning from materials already at hand, unlike the coming to be from nothing prior, characteristic of the first appearance of a source of those materials.

In the Old Latin translation of the text that Augustine used, the second account of creation begins: "This is the book of the creation of heaven and earth. When day was made, God made heaven and earth and every green

thing of the field before it appeared above the earth.”²¹ Augustine gives an elaborate construal of this passage, noting different possible ways to read the text. The phrase that particularly caught his attention was the reference to plants that existed within the earth before making their appearance above ground. It provided him with a ready analogy on which he could draw to support his more general thesis about the role of potential existence within the earth prior to appearance in mature form when conditions were right.

How literally were analogies of this kind to be taken here? The seedlike principles are clearly not seeds in any ordinary sense. Augustine readily admits that they are difficult for us to imagine since they are of their nature hidden from view. Analogies can help: “There is, indeed, in seeds some likeness to what I am describing because of the future developments stored up in them. Indeed, it is the seedlike principle that is the more basic of the two, since it comes before the familiar seeds we know.”²²

He goes further:

In the seed then, there was invisibly present all that would develop in time into a tree. And in the same way we must picture the world, when God made all things together, as having all things that were made in it and with it when day was made. This includes not only heaven, with sun, moon and stars...but also the beings which earth produced in potency and in their causes before they came forth in the course of time.²³

The force of this analogy lies in the notion of potentiality: the original creation contained within it the potentialities for all the living kinds that would later appear. The seedlike principles were conceptually distinct from one another, but Augustine did not think of them as distinct physical bodies that lay somehow embedded, after the fashion of ordinary seeds, within the primal matter. They were real, they were physical, but they did not have to occupy a specific location as a seed would.²⁴ To assert that the seedlike principle for a particular natural kind lay within the earth meant no more (and no less) than that the earth had conferred upon it what it would take for that natural kind to develop eventually within it in a natural way: “All things were created by God in the beginning in a kind of blending of the elements, but they could not develop and appear until the circumstances were favourable.”²⁵

It sounds as though the seedlike principle was enough of itself, once the environment was right, to produce the new kind in a natural way, that is, by virtue of the “causal connections,” as Augustine calls them, that the Creator implanted from the beginning within matter generally. Is this, then, what is meant by the “making” attributed to the Creator in the second story of creation? Granted that no new act of creation, of radical bringing-to-be, was needed, was no further, lesser, supplementation of the causal capacities of matter on the part of the Creator required?

At times, Augustine hesitates to say so, in regard to some comings-to-be, at

least. To assert this would have raised a troublesome issue: does the new kind of animal come to be as infant or as adult? If infant, how does it survive? If as adult, the ordinary laws of nature would not suffice to bring it about, and a further miraculous intervention on God's part would be needed. Augustine leaves the matter open:

In either case, whichever way God made [Adam's body], He did what was in accordance with His almighty power and wisdom. God has established in the temporal order fixed laws governing the production of kinds of beings and qualities of beings and bringing them forth from a hidden state in full view, but his will is supreme overall. By his power He has given numbers to his creation, but He has not bound his power by these numbers.²⁶

The "numbers" referred to here are the laws of nature. Augustine often drew upon a sentence from *Wisdom* (11, 21); "Thou hast ordered all things according to measure, number, and weight," to describe the kind of order that the Creator imposed on the activity of the physical world. In these chapters of the *De Genesi* he goes out of his way, as he frequently does elsewhere in his theological works, to convey that God is not bound by this order. He can depart from it by way of miracle, and this too is "natural" but only in the broader sense that openness to miracle is a basic trait of the natures that the Creator brought to be.²⁷ Augustine makes it clear; however, that miracle would not ordinarily be involved for the seedlike principle to give rise to the appropriate natural kind when "the conditions are right." What the Creator's "making" would amount to in those cases would be the regular conservation in being afforded to all creatures and their actions, ordered as they are by the "numbers" by which they have been constituted. It seems fair to say that Augustine would invoke "special" action on the Creator's part, i.e. miracle, in the gradual coming-to-be of the natural order only when something apparently impossible is in question, like the production directly from the earth of the adult animal body by means of the multiple causalities bestowed on matter at the beginning.²⁸

It is possible now to see how the postulation of seedlike principles goes some way towards resolving the troublesome tension between the two *Genesis* chapters. Chapter 1 can be taken to describe the instantaneous bringing into existence of the primal matter, containing within it the causal resources for all the kinds that would later appear and therefore in a real sense are already within it. Chapter 2 follows the subsequent history of the working out in time of these causal possibilities and the actual first appearances "from the earth" of plants, wild beasts and birds.

There are loose ends, of course, as Augustine was the first to admit, notably in regard to the appearance of the animal, and especially the human, body. If the seedlike principles were not sufficient of themselves to bring that appearance about, so that some sort of supplementary action on God's part was required, a "making" in a stronger sense then, could one properly hold that the matter of the

initial creation already in a real sense “contained all things?” Augustine tries to meet this objection by allowing a second extended sense of “seedlike principle” but it is at best a strained response. In what follows, the term will be used in Augustine’s primary sense to designate an agent compatible with the regular causal order of the physical world, capable of bringing about the appearance of a new physical kind when the environmental conditions are propitious.

The function of the seed-principle in brief, then, was to explain how one can say both that God made all things together and that the various sorts of living things made their appearance only gradually over unspecified periods of time. The stated warrant for this solution was scriptural, although Augustine could, in fact, call on relatively few texts that would support his position directly.²⁹ Equally important, then, it would seem, would have been implicit support from certain features of the natural philosophies of his day as well as from his own broader understanding of the relationship between Creator and creature. By interpreting the role of “earth” in the *Genesis* account as the source of specific causal potencies within which the future of the cosmos was contained, Augustine pointed the way to a new and ingenious account of cosmic origins which could draw upon protoscientific analogies with seeds and their hidden power, as well as on an insight into how the Creator could make use of his creature, time, to accomplish his ends. Thus the two facets of God’s creative action, origination and conservation, were brought clearly into view and the ground was laid for characterizing these — admittedly not until many centuries later — in terms of creation and evolution.

6. Augustine’s cosmogony: later history

In the meantime, many factors conspired together to cause Augustine’s innovative sketch of a cosmogony to fade gradually from memory. The first and most obvious of these was the appealing story line of the rival six-day narrative, literally understood. If one could overlook the discrepancies between *Genesis* 1 and *Genesis* 2, here was a homely picture of the Creator at work, completing the entire furnishing of the universe in the course of a week. By comparison, Augustine’s notion of seedlike principles would have seemed unintuitive and the process of their slow maturation far-fetched.

A second reason for the gradual eclipse of Augustine’s proposal was the ascendancy of Aristotle’s natural philosophy from the latter part of the 13th century onwards. The cosmogony of seedlike principles, congenial to a neo-Platonist, would not appeal to someone who regarded the eternity of each living kind as the ultimate basis for teleological explanation. In such a perspective, the idea of the universe’s having had a beginning was already difficult to accept. But if the notion of creation were to be allowed, an equally abrupt origin by way of direct creation of each kind would have seemed preferable to a gradual development from seed-principles of a thoroughly non-Aristotelian kind.

It is instructive to see what Thomas Aquinas made of this in his prolonged

effort to fashion a modified form of Aristotelianism that would be hospitable to Christian belief.³⁰ His high regard for Augustine shows in his account of cosmic origins where he presents Augustine's view as an open alternative to a literal reading of the *Genesis* text: "At the first beginning of the world, the active principle was the Word of God who produced animals from material elements, either in mature form as some holy writers say, or virtually, as Augustine teaches."³¹ Aquinas is nowhere specific about Augustine's distinctive contribution, a seedlike principle proper to each living kind. In fact, it is not clear that he understood this to be the thrust of Augustine's argument overall:

It must, however, be observed that Augustine differs from other writers in his opinion about the production of fishes and birds, just as he does about the production of plants. For while others say that fishes and birds were produced in their mature form on the fifth day, he holds that the nature of the waters produced them on that day in potency only.³²

He is careful to note that Augustine understood the succession of "days" non-literally, interpreting them instead to signify the ordering of the natural kinds. But "the nature of the waters" as responsible for the first appearance of each kind of bird and fish? For Augustine, it was much more specific than that. Speaking of the generation of animals, Aquinas insists: "those things that are naturally generated from seed cannot be generated naturally in any other way."³³ Would he allow that they could be generated naturally, that is, without need of a special intervention on the Creator's part from a seedlike-principle, as Augustine proposed? For an Aristotelian like himself, the whole notion of a "seedlike principle" that could of itself generate a new natural kind when the environmental conditions were right would surely have been implausible.

Before leaving Aquinas, it would be worthwhile to pause a moment to see how he handled a discrepancy between the *Genesis* account, taken literally, and the accepted natural knowledge of his day. The Creator is said to have set a "firmament" on the second day between the waters above and those beneath. The "firmament" would originally have been understood to be a solid divider of some sort, supporting the waters above. But in the Aristotelian universe there was no such divider. The "firmament" ought then to be interpreted as the air, Aquinas says, an element not mentioned in the *Genesis* account because it might have seemed, at the time the account was composed, to be no more than incorporeal space:

It should rather be considered that Moses [assumed to be the author of *Genesis*] was speaking to ignorant people, and that out of consideration for their weakness he put before them only such things as are apparent to sense... It is not evident to all that air also is corporeal, for there have been philosophers who said that air is nothing and called the space filled by air a vacuum. Moses, then, while he expressly mentions water and earth, makes no express mention of air by name, to avoid setting before ignorant persons something beyond their knowledge.³⁴

The exegetical principle that Aquinas invokes has come to be called the “principle of accommodation.” Moses could not have been expected to make his narrative conform to the truths of natural philosophy of a later age since this would have thoroughly confused the audience of his own day. The task of the theologian, therefore, is to interpret the text, thus accommodated, to the best natural knowledge of his own time. This lesson, ignored later, alas, by Galileo’s judges, should be kept firmly in mind when we return to our main concern: evolution as a Christian theme.

But for the moment, back to the Augustinian cosmogony and its gradual fading from view. Despite Aquinas’ respectful treatment, the seedlike principles were virtually forgotten in the period of neo-Aristotelian dominance that followed. But a fresh reason for this eclipse was soon to make its appearance: the influence of the Protestant Reformation. The appeal to *sola Scriptura* as the single guide of Christian faith and the correlative insistence on the accessibility of the sense of Scripture to Christian readers generally meant, in effect, a decisive turn towards literalism in biblical interpretation, first of all among followers of the Reform and then by way of response among their opponents in the Counter-Reform as well. The allegorical and in other ways extended interpretations of earlier ages became suspect and a view of the Scripture as a verbal dictation on God’s part began to make its way. There were no human witnesses to the first stages of the universe’s existence, all the more incentive then to take the Genesis narrative as revealed (how else could it be known?), and thus *prima facie* to be taken literally. In such a climate, the seedlike principles stood little chance of acceptance.

Forward a century or so and one further reason appears for supposing that the origin of natural kinds required the direct intervention of the Creator in natural process and a consequent disregard for any suggestion that the potentialities for all that would come later were there from the beginning. Descartes did suggest something like this latter view in his *Discourse on the Method* (1637). He proposed that the laws of mechanics, immediately accessible to us and operating on an initial chaos of particles in motion, would eventually bring about complex bodies like stars and planets and even, over the course of time, living things, plant and animal. He could give no real clues as to how exactly all this would come about but his conviction that it would was to influence profoundly the “mechanical philosophy” of the century that followed.

There was a vigorous negative response to his idea from many “naturalists,” people like Robert Boyle and John Ray, who were beginning to construct detailed studies of the living world. It was abundantly evident to them from their researches that the structures and instinctive behaviors of the animal world were precisely calibrated to the needs of each individual species and specifically to the environment in which that species found itself. How could this have come about? Certainly not from the operation of the laws of mechanics alone, over no matter how great a time. To adjust the anatomical structure and the characteristic behavior of a species in this way was obviously beyond the powers of the animal species itself since this harmonization of means to end could only

be the work of superior intelligence. Whatever, then, of the inanimate realm of star and planet where the laws of mechanics might well suffice for their original formation, the living world demanded the intervention of a Designer to bring to be the ancestral members of each living species of creature.

The argument was a persuasive one. There did not seem to be any plausible way in which a natural process could originate kinds of organisms so delicately attuned to their environment and their way of life. The interposition of intelligence appeared to be the only possible explanation. Thus the existence of a Designer of some sort could fairly be claimed to be the testimony of natural science itself. And the designing of ancestor organisms came close enough to the *Genesis* story to make the transition from the Designer to the Creator-God of the Christian tradition a plausible one. In an age of growing unbelief, partly prompted by the new sciences of nature themselves, here was a new apologetic for Christian theism that could call on one of those sciences itself for at least partial accreditation.

The thrust of this new “natural theology,” as it came to be called, was to oppose any suggestion that the potentialities for the later natural development of living things were already fully present in the primordial universe. Defenders of natural theology would have commented on Augustine’s cosmology, had they known about it, that in this context later intervention on the Creator’s part was absolutely required to supplement the potentialities already present in earth and water in order to impose the intricate design required for the formation of the ancestral organisms.

Natural theology relied on the apparently obvious inability of a natural science of laws and immanent causal processes to explain how key features of the living world could have first come to be. It encouraged Christian believers to expect gaps of one kind or another in the conventional explanatory capacities of the natural sciences when faced with the problem of accounting for the origin of living kinds. Conversely, it led them to be skeptical of cosmogonies of the Cartesian sort that placed the potentialities in the initial cosmic state for all the kinds that would later come to be, thus undermining a powerful apologetic approach through Design. Augustine would not have been granted a hearing for his view of origins during the heyday of the argument from Design.

But, of course, the heyday did not last. Darwin and Wallace hit on a way to simulate the effect of intelligent design by the operation of natural selection over extended periods of time. Whether this mechanism would of itself be sufficient to account for the immense intricacy of the living world was by no means obvious, but it did mean that a viable cosmogony that assumed the potentialities for the evolution of species to be present from the first now appeared to be within reach, if by no means established as yet to everyone’s satisfaction. To those who had been brought up to believe that a form of special creation, either as described in *Genesis* 1 or as postulated in natural theology, was central to the Christian worldview, this was a direct challenge. It would not have occurred to them that a cosmogony compatible with this new theory had

been part of that worldview long before natural theology had been heard of and when the approach to Genesis 1 had been more nuanced than it later became.

My purpose here has been to resurrect the Augustinian precedent, not as a historical curiosity, but as an initiative of real relevance to those who see evolution not as a threat to Christian faith, but quite on the contrary, as an acceptable complement to the Christian doctrine of creation. And so to finish, let us explore this theme with the benefit of a science that Augustine did not have but whose role he implicitly anticipated.

7. Evolution as a Christian theme

When Augustine wanted to make the case for his own account of cosmic origins, he had first to convince his readers that the main alternative in their eyes, a literalist reading of the six-day narrative in *Genesis*, should be set aside. He pointed, as we saw, to the obvious inconsistency in applying a day-based division before the sun itself came to be. But he seems to have felt that no extended argument was needed to undermine the propriety of reading *Genesis* 1 and 2 throughout as historical narrative. Perhaps it was the influence of the unapologetic recourse to metaphorical interpretation characteristic of the Alexandrian tradition of biblical exegesis. Or, more likely, it was the harsh, and probably widely known, critique of the *Genesis* chapters, literally understood, on the part of the Manichaeans. At any rate, Augustine did not labor the case for turning away from the literalist reading; he must have thought its inadequacy to be fairly obvious.

Looking back at the debate about cosmic origins among rank-and-file Christians in the U.S over the past century, it is obvious that Augustine's assumption in this regard cannot be taken for granted today. In the extended controversy over "creation-science," many of the protagonists of this version of origins were clearly reading the *Genesis* narrative as history. Yet there is a wide consensus among biblical scholars today that *Genesis* 1 and 2 were clearly not intended to be read in this way. The narratives themselves derive from quite different periods, *Genesis* 2 being much the older, dating perhaps to around the 10th century B.C., at the very dawn of Israel as a nation. *Genesis* 1 was composed in post-exilic times five centuries later. Exegetes point out that the two accounts are in many respects not consistent with one another.³⁵ In *Genesis* 2, for example, the first human was formed before any other life appeared on earth, whereas in *Genesis* 1, he appears only on the sixth "day" when all the other forms of life are already in place. Evidently, when the two accounts were finally joined by a late editor, not much effort was made to harmonize them. This of itself would indicate that they were not being presented as historical narratives but rather as making a series of important theological points about the relationship of God to human beings, the relationship of humans to other creatures, the relationship of man to woman, and the importance of the Sabbath and of the Mosaic law. The aim of these chapters was not cosmological, then, though the earnest reader of today could easily be misled in that regard. It would be wrong, therefore, to turn to these

chapters when seeking to construct a historical account of cosmic origins of Christian inspiration. This would be to misunderstand their original purpose.

There was one great weakness in Augustine's original account of the *rationes seminales*. How were they supposed to work? What sort of process could bring a new species to be when conditions were right? Analogies with the growth of a seed in earth when the earth is watered were all very well but it was hard to envision any sort of natural process that would produce a radically new kind. And if the process were not a natural one but required some kind of supplementation to nature on the Creator's part, it would undermine, or at least seriously weaken, Augustine's claim that the potentialities for all the kinds that would come later were already present in these seedlike principles from the beginning.

He realized that his readers would find it difficult to imagine the hidden process by which the seedlike principles mature. But this, he insisted, should not lead them to deny the possibility of such a process. After all, we cannot imagine the hidden processes responsible for aging either, yet we know they are there: "The principle which makes this development [aging] possible is hidden to the eyes but not to the mind." We can infer to its presence, even though it is not visible to us. More generally, then, "by another kind of knowledge we conclude that there is in nature some hidden force by which latent forms are brought into view."³⁶ The potentialities for the later development of each natural kind were there right from the start, of that Augustine was convinced by "another kind of knowledge" than the testimony of direct sense-experience. He could not be any more specific than that about this "other kind of knowledge."

The complex indirect arguments on which Darwin and his successors could count were, centuries later, to spell out what that "other kind" could amount to. Darwin showed how, indeed, a seedlike principle *could* operate. It was a far more complex affair than even Augustine, imaginative as he was, could ever have anticipated. A process of selection among inheritable genetic variations, operating over immense stretches of time was an idea that itself took a very long time to mature and which is still in the process of development. The "other kind of knowledge" employs a mode of inference unfamiliar to the natural philosophy of earlier ages, one where the direct testimony of the human senses plays only a limited, if still indispensable, role. The theory of evolution, with all of its variety of supporting evidence, thus can complement the Augustinian cosmogony in a remarkable way. The space left by Augustine for a later generation to fill in his account of how the Creator enabled the living kinds to develop in a natural way from the potentialities contained within the newly-formed universe can now be tentatively filled, and we have a plausible cosmogony which respects at once the findings of the natural sciences and the deepest insights of the Christian theology of creation.

It is well to be clear about what is being claimed here. Augustine was not a proto-Darwinian; he did not suggest, nor indeed would he have thought it

possible, that one species could naturally give rise to another. Each seedlike principle was linked to a specific natural kind, that kind corresponding to its idea in the Creator's mind. Such a kind was not subject to change; when it appeared, further development of the "seed" ended and the kind was permanently established. Could this be described as a "theory of evolution?"

In a broad sense, perhaps, but only in a broad sense. The dictionary does give "gradual development" as one of the meanings of the term "evolution." And Augustine's cosmogony does provide for the gradual development of living kinds over an indefinitely long period of time. It asserts the sufficiency of the potentialities latent in the initial cosmic state for the kinds that will later appear. In both these respects it resembles modern theories of evolution. But the analogy of a seed gradually maturing on which Augustine mainly relies is much more overtly teleological than is the usual notion of evolution today. This latter carries with it a transformist overtone: it is populations that evolve, not individuals, and they do not evolve towards a preset goal as a seed would. To avoid misunderstanding, it might be best to describe Augustine's view of cosmic origins as "gradualist" rather than evolutionary. It is not as a "theory of evolution" that it figures here but rather as opening the way to portraying the contemporary theory of evolution as consonant with the Christian doctrine of creation.

One further clarification may be in order. The appeal to Augustine's cosmogony to show how a modern theory of a gradual evolution of living forms is consonant with Christian theology is not intended to endorse one particular theory of evolution over another. In particular, there is no suggestion that a theory of a *specifically* neo-Darwinian kind is the one that the Augustinian precedent favors. It is a matter for scientists to decide which theory fits the immense mass of evidence best. It may well be that the neo-Darwinian theory will be supplemented or modified in ways that we cannot anticipate. But we can be sure that the resultant will still be a theory of evolution, involving common descent. It is also safe to say that at present the neo-Darwinian synthesis is the one that has by far the widest support among scientists in the field. Though figures as diverse as Gould, Morris, Prigogine, Kauffman, have intriguing suggestions to make, there is no other comprehensive theory on offer that would claim to supplant the neo-Darwinian one. One further reason for the focus here on this latter account is that it is taken by many to offer a particular challenge to Christian theology. To finish, let us see very briefly how one might respond to that challenge in the light of the foregoing.

8. Meeting objections

Augustine's understanding of the role of the Creator in bringing the universe into existence suggests an immediate response to two linked objections that have sometimes been raised, not so much to the idea of evolution itself as to two central features specifically of neo-Darwinian theory. The two features are, first, the emphasis that the Darwinian theory lays on chance, and second, its dispensing with the need to invoke the agency of an Intelligence actively

guiding the evolutionary process, in that way making its presence known by directly bringing about transitions that surpass the ordinary powers of nature.

The heritable variations on which natural selection works are described by biologists as “chance,” not as uncaused, but as random relative to the improvement of population fitness. They are not individually shaped, that is, by the specific needs of the population. Describing the process, in consequence, as “blind,” critics of theism infer from this to the absence of a Creator from cosmic process generally. The response of some Christians who have evidently overlooked the traditional distinction between the primary causality exercised by the Creator and the secondary causality proper to the creature has been to admit in effect the logical validity of this argument and reject, in consequence, the premise on which it is based: neo-Darwinian theory itself. Their assumption seems to be that reliance on “chance” in the Darwinian sense would negate the purposive character expected of the action of a Creator. They argue, further, that tradition tells us that we should be able to discern the essentially miraculous action of a shaping Intelligence in the process by which living kinds originated.

In the light of the Augustinian doctrine of creation, it should not be difficult to see where these objections fail. In that perspective, a “chance” event is as much the work of the Creator as are the laws of nature themselves. The Creator can achieve the Creator’s purposes just as easily by means of “chance” events as by means of those laws. There is absolutely no reason why long-term selection over random heritable variations should not have been the Creator’s way to bring about the Creator’s ends, exhibiting in that way the sort of primary causality as well as the finality proper to the Creator of all that is.

Indeed, there might even have been a reason why this would be the way the Creator would choose! If the broad framework of the Darwinian thesis is sound, as almost all today’s working biologists believe, there *might*, just might, I say, have been no other simple way in which the complexities of the living world *could* have been brought about without the need of further intervention in the natural order on the Creator’s part. Or to revert to Augustine’s terms, there might have been no other way in which the potentialities, the “seedlike principles,” implanted in the universe by the Creator in the first moment of its existence could have been sufficient of themselves to allow the diversity of living kinds come to fruition, as Augustine supposed they were. We can never know whether this is the case, of course, but it is a possibility well worth keeping in mind.

Those who recoil from the role given to chance in this context hark back to the “Design” style of argument inherited from the 17th century and the easy apologetics it fostered. Arguments of this sort, unlike the teleological arguments of medieval theology, function by postulating discernible departures from the natural order. The Creator is supposed to have originated in a “special” way certain complexities in living structure that could not have come about in any “natural” way, that is, in conformity with the laws of nature to which

the scientists of today have access. In other words, these proponents of what nowadays goes under the label of “Intelligent Design” implicitly assume the inadequacy of the original creation to bring about the Creator’s ends without further later causal supplementation on the Creator’s part. Calling in reply to this on a distinction familiar to medieval theology, they appear to conflate the order of nature with the order of grace; they seek miraculous signs in nature of a kind that would seem appropriate, rather, to the order of grace.

Those who are persuaded by Augustine’s vision can discern finality in the intricate web of evolutionary gropings that the Creator has woven, given the outcome they have brought about. They do not need as testimony a finality that would, in effect, proclaim the inability of the powers with which the Creator originally gifted the universe to accomplish an end for which that universe was evidently destined. They can see supreme finality, transcendent purpose, in a creative act that from the beginning imparts the causal resources sufficient for the glorious profusion of all the living kinds that would come later.

NOTES

¹Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859-1900*, Notre Dame: University of Notre Dame Press, 1988, pp. 233-4. See also by the same author: “Darwinism, American Protestant Thinkers and the Puzzle of Motivation” in Ronald L. Numbers and John Stenhouse eds., *Disseminating Darwin: The Role of Place, Race, Religion, and Gender*. Cambridge: Cambridge University Press, 1999, 145-172, at pp. 148, 158; David N. Livingstone, *Darwin’s Forgotten Defenders: The Encounter between Evangelical Theology and Evolutionary Thought*. Grand Rapids: Eerdmans, 1987.

²Taken from F. A. Mansfield, “Teleology, Old and New,” *New Englander*, n.s. 7 (1884): 222, quoted in Roberts, *Darwinism and the Divine*, p. 126.

³Roberts, “Darwinism, American Protestant Thinkers,” p. 160.

⁴A standard source would be Ronald Numbers, *The Creationists: The Evolution of Scientific Creationism*. Berkeley: University of California Press, 1992.

⁵The Augustinian precedent was indeed noted as early as 1871 by a distinguished Catholic biologist in England, St. George Mivart, in his book, *The Genesis of Species* (New York: Appleton, 1871). Oddly, the hint was noted by very few in the theological debates of the decades that followed.

⁶“From nothing,” the conventional translation, might suggest that “nothing” can be regarded as a sort of ghostly material for an act of making.

⁷Psalm 104, *The New Jerusalem Bible*. New York: Doubleday, 1971.

⁸*The Five Books of Moses*, translated by Everett Fox. New York: Schocken Books, 1983.

⁹See Dianne Bergant and Carroll Stuhlmueller, “Creation According to the Old Testament,” in *Evolution and Creation*, edited by Ernan McMullin. Notre Dame: University of Notre Dame Press, 1985, 153-175, at p. 159; Richard J. Clifford, “Creation in the Hebrew Bible,” in *Physics, Philosophy, and Theology*, ed. R. J. Russell et al. Rome: Vatican City Press, 1988, 151-67.

¹⁰The only explicit reference in the Bible to the original creation’s being *ex nihilo* comes in a late work, not part of the Hebrew canon: “I urge you, my child, to look up at the sky and the earth. Consider everything you see there and realize that God made it all from nothing.” (2 *Maccabees* 7:28) Once again there is some debate today as to the proper interpretation of the phrase: “from things that did not exist.” And the voice is that of the mother of the Maccabees, testimony perhaps only to her own personal belief. At any rate, the early Fathers drew heavily on this text as evidence for the *ex nihilo* understanding of creation.

¹¹Gerhard May, *The Doctrine of Creation from Nothing in Early Christian Thought*, translated by A. S. Worrall. Edinburgh: Clark, 1994; N. Joseph Torchia, *Creatio ex nihilo and the Theology of St. Augustine*. New York: Peter Lang, 1999.

¹²*The Confessions*, translated by Maria Boulding. London: Hodder & Stoughton, 1997, XI, 11, 13. The term “eternal” in current usage is often taken to connote an unending passage of time. A term like “atemporal” would convey the meaning of Augustine’s doctrine more faithfully.

¹³In Augustine’s strongly held view, there was never a time at which the universe did not exist, strictly speaking. In a famous passage, he tells of a questioner who asks: “What was God doing before He created heaven and earth?” and reports the flippant answer: “He was getting Hell ready for people who inquisitively peer into deep matters.”(*Confessions*, XI, 12, 14). Augustine purports to disapprove of “exposing a serious questioner to ridicule” but of course his real complaint would have been that this answer would imply that there had been such a time.

¹⁴Augustine, *The Literal Meaning of Genesis* (LMG), translated by John H. Taylor. New York: Newman, 1982, 2 volumes; volume 1, IV, 56.

¹⁵LMG, V, 12 and 27.

¹⁶LMG, IV, 43. Translation slightly modified.

¹⁷That left him with the problem of what to make of the six-fold division of “days.” His tentative solution was to refer it to the progressive growth in the angelic knowledge of the “ordered arrangement according to causal structure” of the infant universe (LMG, IV, 33). It should be added that Augustine was firm in interpreting other features of the *Genesis* account (the “waters above the firmament,” for example) in a highly literal manner.

¹⁸Sirach, 17, 1; LMG, V, 27. This was the Old Latin translation of the Hebrew; more recent exegesis prefers: “He made the *entire* universe” which would undercut the point Augustine wished to make.

¹⁹Gregory of Nyssa, *Apologetic Treatise on the Hexaemeron*, in *Patrologia Graeca*, ed. J. P. Migne, 44, col. 72; translated in Ernest Messenger, *Evolution and Theology*, New York: Macmillan, 1932, p. 24; translation slightly modified.

²⁰Aetius 1. 7. 33 in *The Hellenistic Philosophers*, edited by A. A. Long and D. N. Sedley. Cambridge University Press, 1987, vol. 1, 46A. The editors comment: “Seminal principles’ describe the mode of god’s activity in matter, a rational pattern of constructive growth which is both the life of god and the ordered development of all particular things,” p. 277.

²¹Later translators have agreed in substituting for “before it appeared” something like “there was as yet no vegetation upon the earth.”

²²LMG, VI, 11.

²³LMG, V, 45.

²⁴See Michael J. McKeough, *The Meaning of Rationes Seminales in St. Augustine*, Washington: Catholic University of America Press, 1926, pp. 33-5. McKeough cites numerous Catholic writers, beginning with Edmund Thamiry (*De rationibus seminalibus*, Paris, 1905) who debated the meaning and significance of the doctrine of seedlike principles in the early part of the 20th century

²⁵*De Trinitate*, III, 9.

²⁶LMG, VI, 13.

²⁷The term “natural” is used in this essay, however, in the more usual sense where God’s “special” action is not involved.

²⁸See McMullin, *Evolution and Creation*, pp. 13-15.

²⁹And two of those, as we have seen, rely on an Old Latin translation of the Hebrew that would no longer be favored today.

³⁰McMullin, *Evolution and Creation*, pp. 16-20.

³¹Thomas Aquinas, *Summa Theologica*, I, q. 71, a. 1, ad 1.

³²*Summa Theologica*, I, q.71, a.1, c.

³³*Summa Theologica*, q. 71, a. 1, ad 1.

³⁴*Summa Theologica*, I, q. 68, a. 3, c.

³⁵See, for example, Bergant and Stuhlmüller, “Creation According to the Old Testament, p.15.

³⁶LMG, VI, 16.

