

Ancient African Insights about Creation and Nature which Relate to Modern Physics: Augustine and Dionysius of Alexandria

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Pre-modern insights about the cosmos do not typically have much credibility in the academy, and yet historians are aware that the atomic theory is ancient.¹ Several other modern theories of physics also have ancient precedents, and they may offer us valuable and intellectually attractive insights about the doctrine of Creation and for dealing with our present ecological challenges. The insights of Augustine and Dionysius of Alexandria, two ancient North African thinkers, are, I suggest, particularly pertinent. Of course Augustine's reflections on creation and nature have received much attention, most recently from Rowan Williams, E. P. Meijering, Richard Sorabji, and Jaroslav Pelikan.² But these scholars do not engage this Church Father in dialogue with modern physics and ecological concerns. Likewise, though there has been relatively little attention given to Dionysius, I suggest in this article that there is in fact much to glean from study of his work.

Careful text study of Dionysius' *On Nature, Against Sabellius*, and other epistles as well as a rich mix from the Augustinian corpus including *City of God*, his commentaries on Genesis, and *The Confessions*, reveal that there is more to the thought of these Fathers on Creation than their reliance on Greek philosophy and its dualism. Both offer surprisingly modern-sounding observations about God's relationship to nature. In accord with modern physics, they not only affirm atomic theory, they also suggest what it is that holds the cosmos together. Both identify this reality as God. Both view God as that which binds nature together, and is part of the cosmos and yet transcends it. Dionysius even construes God in this capacity as energy. (Later in this article I consider connections between this line of thinking and both the Big Bang theory and the Higgs boson theory.) For Dionysius as well as for Augustine, creation is rooted in a reality which selflessly gives itself away to all realities of the cosmos for the good of the whole. Both also seem to posit something like the survival of the fittest, again for the good of the whole.

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The Journal of the ITC

Given this collective construal of nature and their views of sin, both Augustine and Dionysius have ways of depicting how nature is affected by human wrong-doing, depictions that help us understand what is going wrong with nature today. Dionysius' concept of sin as being oriented towards the belly which clouds reason and Augustine's idea of sin as concupiscence together suggest that our selfishness alters the other-directed symmetry of the created order. Both African Fathers agree that even though creation may have been more than the sum of its parts before the Fall, it was nonetheless not the greatest of all realities. For our sinful quest for self-fulfillment leads to an infatuation with just a part of creation, not with the whole. This idea of sin as disregard for nature's balance and the equal importance of all its elements may be a valuable insight for understanding the dynamics involved in the ecological crisis. Augustine's idea that as a result of the Fall God began to rule by means of ranks and differences among creatures and Dionysius' claim that our sin leaves us ignorant of where the world is heading and subject to evil may also illuminate the consequences of our sinful condition on nature. In addition, in examining the interplay of God's actions and human activity in the thought of Augustine and Dionysius, we gain insight into how they viewed God's role in natural events. And given the convergence of such ideas with those of modern physics, contemporary theologians interested in dialogue with the sciences may yet find value in them. We turn first to the analysis of relevant texts, beginning in chronological order with the more well-known positions of Augustine.

Augustine on Creation and Nature

When engaging in apologetics or dialoguing with the Manichees, Augustine relies on Neo-Platonic conceptions to construe the created order. In *On Free Will* he contends that all created things owe their existence to the form in which they were created. And every corporeal form derives its existence from the supreme form, which is truth, or God.³ Even later in his career, Augustine echoes these Platonic commitments in *City of God*, contending that every corporeal object has a form. Participation in the form entails that the object participates in something that belongs to the ideal world. And the One Who created matter and is supreme in the ideal world is God.⁴ Platonic construals emerge again in Augustine's reflections on Creation in his *Confessions* as he considers the

Ancient African Insights About Creation and Nature

need for matter to have forms, though he insists that these forms were themselves created.⁵

Most suggestive of cutting-edge scientific insights are Augustine's reflections on how creation transpired. In the *City of God* he contends that it is silly for critics to imagine time before creation when God was active, for there was no such thing as time before the universe was made. Elsewhere he claims that the universe was not created in time, but with time.⁶

The *Confessions* also include the African Father's reflections on creation's relation to time from God's eternal perspective. He begins that discussion by noting that the heavens and earth must have been made, for they change. And they must have been made by God because God is good, which entails that they are good. Because God is beautiful, the heavens and earth are beautiful (Ps 27:4; Zech 9:17). Compared to God, though, they are not good and beautiful.⁷ Though not coeternal with God, the heavens partake in His eternity, and that is why their creation is not mentioned in the enumeration of the days in Genesis, he contends.⁸

In eternity, he adds, nothing passes, but all is present.⁹ Time and the universe began together, so there was no time when God was not creating, for there was not time before creation.¹⁰ The implication is that God is still creating.

Such insights have implications for how God creates. They mean that before all times God is Creator, for nothing is hidden to eternal knowledge. It is like when a canticle is sung: nothing is unknown to the singer, both what has been sung and what remains to be sung.¹¹ In eternity God is Creator, for He knows all time like a singer who knows a song in its entirety.

Augustine deals with the problem of the length of creation with apologetics in view in his *On Genesis Literally Interpreted*. He claims that since God's creative act is single and simultaneous (in establishing eternal patterns of created realities, rather like Platonic forms), the six days of the Genesis accounts might (but do not necessarily have to) be construed as articulating accurate categories for our mind. Augustine also interprets the light God created as the divine likeness of intellection. Thus, since God illumines us by working through our intelligence, creation was present in that sense as continuous (Ps.104). However, all that can be known (like the Greek universal forms) already exists. Thus, creation is in that sense complete, created all at once simultaneously like a tree is created all at once in its seed. God's creative and illuminating light is both sequential

The Journal of the ITC

and simultaneous, much like new days happen on earth (the sun rises), and yet day and night occur simultaneously all over the earth once and for all. In his *City of God*, Augustine makes a related affirmation about God's continuing work in creation through natural means by referring to God as a fountain from which all blessings flow and of His creative energies without which no earthly goods can be generated.¹²

Convergences with Post-Einsteinian Ontology

Many of Augustine's reflections on the topics of creation, time, and eternity have striking similarities to how Einstein and Darwin understood such realities. For example, Augustine claimed that atoms cannot keep themselves together, and that God therefore must bring them together through His Providence.¹³ When we combine this insight with Augustine's claim that God is like an infinite sea and creation, a sponge penetrated by the sea, then similarities to quantum physics (even the Higgs Boson theory) become clear. This theory posits that when particles enter a molasses-like field, the particles stick together and acquire mass. This field is said to be invisible – and so has been referred to as the “God-Particle.”¹⁴ Relevant here is Augustine's image of the sponge that, when thrown into the sea fills with ocean water, much like God's ubiquity.¹⁵ The African Father's claim that God brings the various atoms together entails that God function like the elementary Higgs Boson particle, being *in* them yet transcending them, like water is in the sponge but is infinitely greater than the sponge.

Augustine also offers remarks reminiscent of Einstein's view of time. He contends in his *Confessions* that because the created realities can change from one form to another, they may be put in motion and so experience the vicissitudes of time. Anticipating Einstein's insight, Augustine claims that time is not yet absolute, but only came into existence with creation. Augustine adds to this that all temporal realities must die if the beauty of their temporal sequence is to be preserved.¹⁶ This death does not contradict the goodness of creation. In a comment with rich constructive implications for our post-Darwinian world, Augustine claims that part of the harmonious beauty that God has established in the universe is by means of the principle of “survival of the fittest.”¹⁷

Augustine's observations converge with the theory of relativity insofar as they both presuppose that time is related to motion. His vision of eternity—that in it nothing passes but all is present—is also in line with

Ancient African Insights About Creation and Nature

the theory of relativity's idea that at the speed of light there is no time.¹⁸ The African Father's concept of God being ever at rest yet always working is most consistent with his concept of eternity (regarded as the speed of light), a reality in which all events are simultaneous.¹⁹ It is evident how much Augustine's view of Creation and nature converges with core insights of modern quantum physics.

Dionysius on Creation and Nature

Much like his younger episcopal colleague Augustine, Dionysius affirms what we know as atomic theory, but dialogues with it in a critical way. In line with Augustine's thinking, he notes that atomic theory entails no need for a creator. Yet he insists that a creator is mandated, just as a cloak cannot be made without a weaver and as a house does not spontaneously arrange its stones without a builder or architect.²⁰ There is no way to account for the movement of the heavenly bodies without some captain or director, he contends. He regards the universe and its components as a vast circular choir.²¹ Much as individual members of the choir relinquish their autonomy for the good of the whole, so Dionysius posits that the atoms are brought together by God Who is energy. The African Bishop also rebuts those who claim that matter was not created, but merely arranged and regulated by God, insisting that matter is generated (created) by God.²²

By implication Dionysius offers very modern-sounding insights about how God created and regulates matter, or gets the atoms to function as a choir. He speaks of God as impassable, immutable, and energetic.²³

The idea of God as energy is most suggestive of the insights of the Big Bang theory, which posits that the energy from the Big Bang continues to expand. This energy creates magnetic fields. Physicist Peter Higgs has theorized that there is a field in which all the particles that enter acquire mass.²⁴ Energy is what creates or holds together matter as we know it. Dionysius' vision of God as energy seems to reflect this. No less than Augustine, Dionysius of Alexandria has much to say about Creation and nature that relates to modern physics.

Nature Since the Fall: Common Themes and Ecological Implications

Given this collective construal of nature along with common views of sin, both Augustine and Dionysius have ways of depicting how

The Journal of the ITC

nature is impacted by human wrong-doing, images to help us understand what is going wrong with nature today. Both Dionysius' concept of sin as being oriented towards the belly which darkens reason and Augustine's idea of sin as concupiscence suggest that our selfishness alters the other-directed symmetry of the created order.²⁵ Both these African Fathers agree that before the Fall, creation may have been more than the sum of its parts, and yet it is still not the greatest of realities. But our sinful quest for self-fulfillment leads to an infatuation with just a part of creation, not with the whole. This idea of sin as disregard for nature's balance and the equal importance of all its elements may be a valuable insight for understanding the dynamics involved in the ecological crisis. Augustine's idea that as a result of the Fall God began to rule by means of ranks and differences among creatures, and Dionysius' claim that our sin leaves us ignorant of where the world is heading and subject to evil, may also illuminate the consequences on nature of our sinful condition.²⁶

Reviewing in closing the interplay of God's actions and human activity in the thought of Augustine and Dionysius helps us understand how these two scholars understood God's role in natural events, an issue which is very important for comprehending ecology and our responsibilities for it. Both men at times assert a strong doctrine of Providence.²⁷ Both also essentially assert that although God causes something to happen, it does not follow that there is no power in the human will. But our will does what God wanted it to do.²⁸ This orientation follows quite logically from their respective efforts to talk about the relationship between God and the cosmos: God is like the ocean that has its way with the sponge and yet it is the sponge that does the floating. Similarly, we can do nothing without energy, though it is we who act on the energy. Given these modern-sounding, fertile perspectives, and in view of these Fathers' convergence with modern quantum physics, these insights may be worth pursuing by contemporary theologians interested in dialogue with the sciences.

NOTES

1. Augustine, *Epistles* (410), IV.31/ *Nicene and Post Nicene Fathers*, First Series, Vol.1 (reprint; Peabody, MA: Hendrickson, 1995), 449; *Lactantius, Divinarium Institutionum* (n.d.), III.XVII/ *Ante-Nicene Fathers*, eds. Alexander Roberts and James Donaldson, Vol.7 (reprint, Peabody, MA: Hendrickson, 1996), 86; Dionysius of Alexandria, *Libris de Natura* (n.d.), I.IIA-III/ *Ante-Nicene Fathers*, Vol.6, 85-87.

Ancient African Insights About Creation and Nature

2. Rowan Williams, "Creation," in Allan D. Fitzgerald, *Augustine through the Ages: An Encyclopedia* (Grand Rapids, MI: Wm. B. Eerdmans, 1999), 251-254; Rowan Williams, "'Good For Nothing'? Augustine On Creation," *Augustinian Studies* 25 (1994): 9-24; Richard Sorabji, *Time, Creation, and the Continuum: Theories in Antiquity and the Early Middle Ages* (Chicago, Ill: University of Chicago Press, 1983); E. P. Meijering, *Augustin über Schopfung, Ewigkeit und Zeit: Das Elfte buch der Bekenntnis* (Leiden: E. J. Brill, 1979); Jaroslav Pelikan, *The Mystery of Continuity: Time and History, Memory and Eternity in the Thought of St. Augustine* (Charlottesville, VA: University of Virginia Press, 1986). Also worth further consideration is Jared Ortiz, "*You Made Us for Yourself*": *Creation in St. Augustine's Confessions* (Minneapolis: Fortress, forthcoming).

3. Augustine, *De libero arbitrio* (387/388-395), II.xvii.46; II.xviii.49; II.xv.39; II.xiii.36/ *The Library of Christian Classics*, Vol.6, ed. J. H. S. Burleigh (Philadelphia: Westminster Press, 1963), 164, 166, 159-160, 193.

4. Augustine, *De civitate Dei* (413-426), XI.26/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 220.

5. Augustine, *The Confessions* (399), XII.III.3; XII.XII.15; XII.XV.19; XII.XXIX.40/ *Nicene and Post Nicene Fathers*, First Series, Vol.1, 176, 179, 180, 188.

6. Augustine, *De civitate Dei*, XI.5-6/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 207; cf. *Ibid.*, XII.15/ 235-236; Augustine, *De Genesi ad litteram* (c.399/415), V.5.12.

7. Augustine, *The Confessions* (399), XI.IV.6; XIII.XX.28/ *Nicene and Post Nicene Fathers*, First Series, Vol.1, 165,199.

8. *Ibid.*, XII.IX.9/ 178.

9. *Ibid.*, XI.X.12; XI.XII.14; XI.XIII.16/ 167,168; cf. Augustine, *Tractates on the Gospel of St. John* (c.406/421), XXI.5/ *Nicene and Post Nicene Fathers*, First Series, Vol.7, 190.

The Journal of the ITC

10. Augustine, *The Confessions*, X.XIII.15-16; XI.XXX.40/ *Nicene and Post Nicene Fathers*, First Series, Vol.1, 167-168,174.

11. Ibid., XI.XXX.40/ 174-175.

12. Augustine, *De civitate Dei*, XXII.24/ *Nicene and Post Nicene Fathers*, First Series, Vol.2, 502; Augustine, *De Genesi ad litteram* (c.399/415), I.17.32-35; IV.27.44ff. (esp.30.47); V.23. 44-45; *The Works of Saint Augustine: A Translation for the 21st Century*, ed. J. E. Rotelle (Hyde Park, NY: New City Press, 1990), 1/12:183-184, 267ff., 299-300. See Augustine, *The Confessions*, XII.2.2ff.; XII.12.15/ *Nicene and Post Nicene Fathers*, First Series, Vol.1, 176ff., 179, for the point about how Augustine envisages God establishing patterns of created realities, like the forms. Also see Augustine, *On the Trinity* (c.410), III.9/16/ *Nicene and Post Nicene Fathers*, First Series, Vol. 3, 62.

13. Augustine, *Epistles* (410), IV.31/ *Nicene and Post Nicene Fathers*, First Series, Vol. 1, 449.

14. Brian Greene, *The Hidden Reality* (New York: Alfred A. Knopf, 2011), 79, 63, 48; cf. Cynthia Crysdale and Neil Ormerod, *Creator God: Evolving World* (Minneapolis: Fortress Press, 2013), 67. Modern string theory also posits a reality which transcends our perceived realities, leaving space for God.

15. Augustine, *The Confessions*, VII.V.7; IV.XI.18/ *Nicene and Post Nicene Fathers*, First Series, Vol. 1, 104-105,74; Augustine, *Tractates on the Gospel of St. John* ((c.406/421), II/10/ *Nicene and Post Nicene Fathers*, First Series, Vol.716-17.

16. Augustine, *The Confessions*, XII.XII.15/ *Nicene and Post Nicene Fathers*, First Series, Vol. 1, 179; *Ibid.*, XI.XXX.40, 174; Augustine, *De civitate Dei*, XI.6/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 208; Augustine, *De libero arbitrio* (387/388-395), II.xvi.42/ *Library of Christian Classics*, Vol. 6, 196-197; Augustine, *De Genesi ad litteram imperfectus liber* (393/394; 426/27), 3.8/ *The Works of Saint Augustine*, 1/13:117-118; Augustine, *De Genesis adversus Manichaeos* (388/389), 1.2.3./ *The Works of Saint Augustine*, 1/13:40-41; Augustine, *De Genesis*

Ancient African Insights About Creation and Nature

ad litteram (c.399/415), V.5.12/ *The Works of Saint Augustine*, 1/13:282; cf. Albert Einstein, "Letter to W. DeSitter," March 25, 1917.

17. Augustine, *De civitate Dei*, XII.4/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 228.

18. Augustine, *The Confessions*, XI.XI.13/ *Nicene and Post Nicene Fathers*, First Series, Vol. 1, 167; cf. Albert Einstein, "Zur Elektrodynamik bewegter Körper," *Analen der Physik* (1905): 891-921.

19. Augustine, *The Confessions*, XIII.37.52/ *Nicene and Post Nicene Fathers*, First Series, Vol. 1, 207; cf. Augustine, *On the Trinity*, XII.7/10/ *Nicene and Post Nicene Fathers*, First Series, Vol. 3, 159.

20. Dionysius, *Libris de Natura*, I,IIA,III/ *Ante-Nicene Fathers*, Vol.6, 85, 87.

21. *Ibid.*, III/ 88.

22. Dionysius, *Libris Adversus Sabellium* (n.d.)/ *Ante-Nicene Fathers*, Vol. 6, 91.

23. *Ibid.*

24. Greene, 18-19 ,38-41, 48-50, 63-64.

25. Dionysius, *Exegetical Fragments* (n.d.), I.II.14/ *Ante-Nicene Fathers*, Vol. 6, 113; Augustine, *De civitate Dei*, XIV.15-16/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 275-276; Augustine, *De perfectione iustitiae hominis* (4150, XIII.31/ *Nicene and Post Nicene Fathers*, First Series, Vol. 5, 45.

26. Dionysius, *Exegetical Fragments* (n.d.), I.II.14-16/ *Ante-Nicene Fathers*, Vol. 6, 113; Augustine, *De civitate Dei*, XIX.11,13-17/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 407, 409-413.

27. Augustine, *De peccatorum meritis et remissione et de baptism parvulorum* (411), II.32/ *Nicene and Post Nicene Fathers*, First Series,

The Journal of the ITC

Vol. 5, 57; Augustine, *De civitate Dei*, III.4/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 228; cf. Dionysius, *Epistolae* (n.d.), XI.3/ *Ante-Nicene Fathers*, Vol. 6, 107.

28. Augustine, *De civitate Dei*, V.9.10/ *Nicene and Post Nicene Fathers*, First Series, Vol. 2, 92; cf. Dionysius, *Exegetical Fragments* (n.d.), II48/ *Ante-Nicene Fathers*, Vol. 6, 117.