

Lessons from Augustine's *De Genesi ad Litteram—Libri Duodecim*

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Augustine's work *De Genesi ad Litteram—Libri Duodecim* (*The Literal Meaning of Genesis in Twelve Books*) has been used by theistic evolutionists and progressive old-earth creationists to suggest that Christians who hold to a recent creation are an embarrassment to the Gospel and undermine the Christian message. However, a more careful contextual examination of this work of Augustine suggests that other lessons need to be learnt. In this paper, I will draw out four lessons from Augustine's work.

A number of theistic evolutionists and progressive old-earth creationists have quoted a passage from Augustine's work *The Literal Meaning of Genesis* (*De Genesi ad Litteram*) in order to direct its force as a lesson for young-earth creationists. Two notable examples are from Denis Alexander and John Lennox,¹ although they are not alone in using this passage. Alexander writes that Christians who question evolution and promote creationism or intelligent design are an embarrassment to other Christians, and through their work, he believes, they 'risk bringing the gospel into disrepute' and turn genuine seekers of faith away from Christianity.² Lennox, an old-earth creationist and a sympathizer of intelligent design, also suggests the passage teaches that Christians should not hold too firmly to non-essential parts of the Bible in case that puts people off Jesus Christ and the Gospel.³ Lennox discusses this in relation to the Galileo affair and recognizes the difficulties that arise between the needs of science and biblical interpretation, although he comes down in favour of reading the creation account more symbolically in light of the present scientific paradigm. He also appeals to the teaching of some of the Church Fathers, such as Irenaeus and Justin Martyr to support his case for old-earth creationism, although he does not take into account the clear numerical-millennial scheme in their writing.⁴ In other words, as with several early Church Fathers, the six days of creation were symbolic of 6,000 years of earth history.⁵

I will look at the Augustinian passage in question in further depth, and in its proper context, and ask what questions we can learn from it. For this study use is made of John Hammond Taylor's translation and introductory comments.⁶ I will respond to the claims made by Alexander and Lennox, and also look at the wider context with some reference to work by Ernan McMullin⁷ and a very useful paper by Jennifer Hart Weed on Augustine and Galileo.⁸ Several passages in this work of Augustine throw up some

issues that are of importance and relevance to the relationship between science and faith, and shed light upon the nature of theoretical science and the interpretation of Scripture.

Augustine's interpretation of Genesis

Augustine wrote several works on Genesis out of a desire to challenge the Manicheans and Gnostics (figure 1). He wanted to hold together the literal and figurative, the spiritual and material in the Old Testament writing. From these challenges to Christian faith he desired to set the Genesis creation account in its literal, historical sense and recognize the goodness of God in creation. His work was also thoroughly Trinitarian; Jesus as the Word of God, and the Holy Spirit brooding over the waters, were seen in the account of creation, along with the Father. Augustine found his first two attempts to be somewhat unsatisfactory, as they remained largely allegorical. So, this final literal reading of Genesis, *De Genesi ad Litteram—Libri Duodecim* (*The Literal meaning of Genesis—A Commentary in Twelve Books*) was borne out of a desire to present a more literal understanding of Genesis, setting it in its 'proper historical sense'.⁹ The aim of the literal sense interpretation of Genesis was partly to get to grips with understanding the intention of Mosaic authorship, but it was also aimed at offering 'a faithful record of what happened' (Latin; *an etiam secundum fidem rerum gestarum asserenda et defendenda sint*) concerning the 'facts that are narrated' (Latin; *quae facta narrentur*).¹⁰ However, this historical sense allowed room for spiritual agents to act in time. For this reason Augustine's literalist position does not correspond with the literalism of modern naturalistic science that excludes divine agency.

Now it is acknowledged that Augustine understood that there was often more than one interpretation of the meaning of some passages of Scripture, for instance the meaning of 'day' and 'night' and 'light' and 'day' in the opening verses of



Figure 1. *Saint Augustine Disputing with the Heretics*, in Museu Nacional d'Art de Catalunya, originally from the high altar of the Church of the Convent of Sant Agustí Vell, Barcelona, c. 1470/1475–1486.

Genesis prior to the creation of sun and moon, or whether that first light was spiritual or physical light. Over such obscure matters an open mind was required, he thought, but he often read passages in Genesis in both a literal and symbolic light with the symbolism pointing towards Christ.¹¹ He struggled to accept that all the days of creation were literal 24-hour periods because of the nature of light prior to the formation of the sun. Instead he followed Philo and the Alexandrian school in holding that God had created all things at once at some point during the Creation Week. But Augustine also held to an age of the earth at less than 6,000 years old, noting that those works that argued for deep time were ‘highly mendacious’, arising from pagan philosophers.¹²

In his literal reading of Genesis, he urged restraint and respect among Christians on matters that are open to question and obscure, otherwise he thought there was the risk of falling into error. An example of such an obscure matter is whether or not the stars and planets are the abode of angelic spirits.¹³ But he urged Christians to hold to faith on important doctrinal matters and not be overawed by *theoretical* science that may arise out of pagan works. For Augustine there was no strict separation between the spiritual and physical as

modern naturalistic science demands, but instead he believed that there is a strong sense of overlap, seeing the activity of God in creating and upholding the world through the Word of God. Augustine sought to show proper respect to both *operational* science and to Scripture, thus desiring a sense of harmony and holding to a unity of knowledge. Jennifer Hart Weed provides a useful account of Augustine’s belief in this area and Galileo’s interpretation of it.¹⁴ I want now to look in further depth at these aspects of Augustine’s thinking.

Lesson 1—Do not be lazy and ignorant in defending the literal reading of Genesis

The passage quoted by Alexander and Lennox is as follows:

“Usually, even a non-Christian knows something about the earth, the heavens, and the other elements of this world, about the motion and orbit of the stars and even their size and relative positions, about the predictable eclipses of the sun and moon, the cycles of the years and the seasons, about the kinds of animals, shrubs, stones, and so forth, and this knowledge he holds to as being certain from reason and experience. Now, it is a disgraceful and dangerous thing [Latin; *Turpe est autem nimis et perniciosum ac maxime cavendum*] for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking non-sense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn. The shame is not so much that an ignorant individual is derided [Latin; *errans homo deridetur*], but that people outside the household of the faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we toil, the writers of our Scripture are criticized and rejected as unlearned men. If they find a Christian mistaken in a field which they themselves know well and hear him maintaining his foolish opinions about our books, how are they going to believe those books in matters concerning the resurrection of the dead, the hope of eternal life, and the kingdom of heaven, when they think their pages are full of falsehoods on facts which they themselves have learnt from experience and the light of reason? Reckless and incompetent expounders of holy Scripture bring untold trouble and sorrow on their wiser brethren when they are caught in one of their mischievous false opinions and are taken to task by those who are not bound by the authority of our sacred books. For then, to defend their utterly foolish and obviously untrue statements, they will try to call upon Holy Scripture for proof and even recite from

memory many passages which they think support their position, although ‘they understand neither what they say nor the things about which they make assertion’.¹⁵

Now, we should be humble enough to acknowledge that there is a lesson here for Christian creationists. The lesson is that we should not be lazy in our apologetic work, but that hard work is necessary, involving a team effort. We should spend time understanding properly the arguments we seek to criticize and develop well-thought-out and coherent responses to secular or theistic critics of a literal reading of Genesis, and in relation to the sciences, theology, history and specialist areas such as philology (the linguistic study of ancient texts). We should also do this in a loving Christ-like manner, and recognize that some scientific questions about the physical act of creation may be too mysterious to answer. Thus there is need for respect, and restraint over trivial matters. This is not about personal intelligence, but about the hard work of education to overcome the weakness of ignorance. Anyone wanting to develop ministry in creation science, theology, or other areas should really study hard over many years. Augustine spoke of his own labour in this regard; the metaphor he used was in terms of picking and winnowing wheat to reveal the kernel. The irony is, however, that some theistic critics of young-earth creationism highlight this Augustinian concern without always understanding the depth of creationist writing and thinking. Neither do they seem to delve deeper into understanding the passage outlined by Augustine in the wider context. So, the lesson is that creationists should be careful to study and work hard, although the way it is used for attack by Alexander and others is somewhat misguided. All of us need to pay attention to accuracy and context.

Lesson 2—Commitment to a ruling scientific paradigm can later prove embarrassing to the Gospel

Lennox also quotes the passage above and uses the Galileo affair as an example of Christian authority holding at bay an advance in science, believing the position was held partly because it was thought to have had scriptural support. Galileo in fact challenged Aristotelian geocentricism that was embedded in Catholic doctrines; the church was wedded to the ruling scientific paradigm in holding to a fixed earth, as Lennox notes (figure 2).¹⁶ Galileo in fact used several Augustinian passages from *De Genesi ad Litteram* to support his case against geocentricism in his letter to the Grand Duchess Christina.¹⁷ However, using Augustine’s writing and the Galileo affair together against those who hold to a young-earth is problematic. Augustine recognized the existence of the Aristotelian fixed-earth position, but also noted that there were some Christians *in his own time* who held that the

heavens were stationary, which suggested that the earth must move through the firmament. There were two theoretical views, but neither was properly demonstrated and he did not believe there was any need to spend time harmonizing Scripture with either of them.¹⁸ It may show, I think, that the early church was not wholly committed to geocentricism, as some commentators suggest. The irony is, however, that the best geocentric science of Augustine’s day would have been seen as reasonable because the observational evidence could be fitted with a complex mathematical model and theory, as also could the belief that the earth moved in a helio-centric alternative. Neither could be properly tested.

Acceptance of the ruling paradigm in Galileo’s time meant that expounders would have avoided the scorn of secular mockers, even though we may see now that what they believed was false. From this we may note that caution needs to be used in applying the above injunction to others because the best science one holds to in one period may be mocked in coming generations. This is because science changes whereas Scripture does not, although there are disagreements over interpretation. Lennox notes the dilemma, but he does not acknowledge that creationists may one day be vindicated in rejecting the ruling scientific paradigm relating to the age of the earth. However, creationists believe that neither observational science nor theoretical science can determine the age of the earth because the creation is not repeatable. We need to rely upon revelation to determine these matters. All we can do is construct theoretical models that are coherent and consistent with a literal biblical interpretation. I believe the creation account raises different issues to the Galileo affair because the movement of the solar system is now measurable in real time, and we can test it by sending satellites into orbit. The creation account cannot be tested scientifically because it is historical. Also, as Lennox rightly notes, belief in geocentricism arguably arose with pagan



Figure 2. *Galileo Facing the Roman Inquisition*, by Cristiano Banti 1857.

philosophers such as Aristotle,¹⁹ whereas the creation account has come to us through divine revelation and not through human observation. Where Scripture might seem to support geocentricism it is only through incidental phenomenological language as Lennox notes; i.e. Ecclesiastes 1:5, “The sun rises, and the sun goes down, and hastens to the place where it rises.”²⁰ The creation account is not incidental, although that still leaves questions over interpretation. However, for these reasons Lennox’s comparison between the Galileo affair and young-earth creationism is not sustainable. The lesson of the Galileo affair is that commitment to a ruling secular or pagan scientific paradigm may later prove embarrassing to the Gospel.

Lesson 3—We should recognize a distinction between operational science and theoretical science, which may be false philosophy

This brings us to the third lesson, and it relates to drawing a distinction between operational science, which can be tested directly, and theoretical science, involving speculations about the past or present. There is a distinction between evidence gathered in the physical sciences and theories that may arise out of secular or pagan texts that are contrary to Scripture. This is something that creationists have long pointed out, although it often falls on deaf ears. Augustine writes:

“When they are able, from reliable evidence, to prove [Latin; *demonstrare*] some fact of physical science [Latin; *natura rerum veracibus = true nature of things*], we shall show that it is not contrary to our Scripture. But when they produce from any of their books a theory contrary to Scripture, and therefore contrary to the Catholic faith, [Latin; *Quidquid autem de quibuslibet suis voluminibus his nostris Litteris, id est catholicae fidei contrarium protulerint*] either we shall have some ability to demonstrate that it is absolutely false, or at least we ourselves will hold it so without any shadow of a doubt. And we will so cling to our Mediator, ‘in whom are hidden all the treasures of wisdom and knowledge’, that we will not be led astray by the glib talk of false philosophy or frightened by the superstition of false religion.”²¹

Augustine here urges us to hold firmly to revealed faith even if some of the theoretical sciences seem to be at odds with Scripture and the doctrines of the Catholic Church. Where Augustine differed from the beliefs of modern Reformed evangelicals is that authority was placed in the church as well as in Scripture, although he did not see any contradiction in this because the official doctrines of the Catholic Church he considered to be grounded upon Scripture. Hart Weed identifies the distinction between

operational and theoretical aspects, and suggests that Augustine would probably have disagreed with Galileo over the question of respect and adherence to Catholic authority, noting that Catholic authority also extended to matters of biblical interpretation. And because both geocentricism and heliocentricism were theoretical questions they could not be demonstrated scientifically (in the time of both Galileo and Augustine) there would have been no need to harmonize the claimed movement of the earth with Catholic dogma in Augustine’s thinking.²²

Although McMullin notes a distinction in Augustine’s thinking between knowledge (Greek; *epistêmê*) and opinion (Greek; *doxa*) he does not emphasize this, but draws out a couple of points that do not seem to capture Augustine’s essential argument. McMullin offers several principles from the above passage, the first two of which are as follows:

“*Principle of Priority of Demonstration (PPD)*:

When there is a conflict between a proven truth about nature and a particular reading of Scripture, an alternative reading of Scripture must be sought.”²³

“*Principle of Priority of Scripture (PPS)*: Where there is an apparent conflict between a Scripture passage and an assertion about the natural world grounded on sense or reason, the literal reading of the Scripture passage should prevail as long as the latter assertion lacks demonstration.”²⁴

In response to the first point, PPD, it is noteworthy that Augustine does not highlight the conflict, but implies that there would be no conflict between evidential facts of nature and Scripture when properly understood. McMullin also seems to broaden Augustine’s understanding of demonstration in science here. On the second point, PPS he suggests the conflict is between a literal reading and “assertions about the natural world grounded on sense or reason”. However, for Augustine, the conflict arises between Scripture and the works of pagan philosophers, particularly the Manicheans. Ironically McMullin notes this context earlier, but then ignores the significance of it here.

Augustine held two positions towards claims in *theoretical* science that he saw as contrary to Scripture. Firstly, that Christians should seek to show that the claim is false, or if that is not possible, they should hold it as false ‘without any shadow of doubt’ because it is merely theoretical, untestable, and contradictory to Christian doctrines. He urges Christians not to be led away or frightened by false religious teachings and erroneous philosophy masquerading as established science. Where physical evidence can be demonstrated through operational science, then that ought to be accepted, but not necessarily theoretical science.

A possible objection to this is the suggestion that Augustine was not really concerned with a modern view of science with its division into operational and theoretical

aspects. However, it is clear that Augustine was drawing a distinction between demonstrations (Latin; *demonstrare*) of the true nature of things (Latin; *natura rerum veracibus*) with ideas that arise out of false philosophy or pagan religious sources. Galileo appeals to this passage of Augustine in his defence and makes similar comments relating to the operational and theoretical aspects of science, thus giving additional support to the relevance of Augustine's distinction.²⁵

However, Galileo took the distinction further in a direction beyond Augustine's intention. Firstly, in defence of his own position, Galileo suggested that physical truths that are properly demonstrated need not be subordinated to Scripture; secondly, that the onus is upon those who hold a stated theoretical proposition false to show that it is false, and not the other way around.²⁶ Galileo wrote for instance:

“Now if truly demonstrated physical conclusions need not be subordinated [Italian; *a posporre*] to biblical passages, but the latter must rather be shown not to interfere with the former, then before a physical proposition is condemned it must be shown to be not rigorously demonstrated—and this is to be done not by those who hold the proposition to be true, but by those who judge it to be false.”²⁷

The first position here gives a degree of independence to science and offers support to methodological naturalism; although, unlike modern secular science, Galileo was seemingly not advocating that *theoretical* science should be independent of Christian faith.²⁸ This does however raise theological difficulties for Christians engaged in secular science, and raises questions about the ultimate grounding of truth, i.e. is truth grounded in God or in mankind? We may note, however, that the very ability to undertake operational science arises out of revealed theological commitments, i.e. the doctrine of mankind created in the image of God (the *imago Dei* includes a redeemed rational or noetic capacity), the intelligibility of creation, a belief in order and objective truth.²⁹

There is insufficient space to discuss this fully here, but I would note that within an Augustinian scheme there is a dependency upon divine grace that allows us to read nature accurately. Augustine believed that natural knowledge is not wholly reliable, and instead held that divine grace is necessary to ‘heal the eyes of the heart’ (Latin; *sanare oculum cordis*) before we are able to see the handiwork of God from the wonders of creation. Augustine wrote that “Our whole business ... in this life is to heal the eye of the heart so that God might be seen.”³⁰ For the non-believer this capacity is weakened because of sin, although the human mind and soul had been created “after the image of God ... that it is able to use reason and intellect in order to understand and behold God.”³¹

From this Augustinian doctrine, Reformed theologian Abraham Kuyper held that the regenerated and unregenerate mind would reach different conclusions about science and the natural world. The Christian mind, under the influence of the Holy Spirit, would maintain a commitment to Scripture and view the present condition of the world as fallen, while the unregenerate mind would not accept Scripture and see the present condition of the world as normal. For Kuyper, though, there were two exceptions to this division; one was in terms of direct sensory observations; the second in terms of use of formal logic such as mathematics. In much of the sciences and in mathematics there could be agreement because of a common grace that is retained by humanity, even in an unregenerated state, but only if there is a commitment to objective truth by all. A belief in common grace then allowed Kuyper to recognize that the non-believer may retain at least some capacity to study the world.³²

Harrison has also suggested that Galileo maintained that science was possible because the inner light of the image of God was not completely extinguished by the Fall, and that human beings retain a capacity for logic and mathematics (figure 3).³³ This was also Augustine's understanding. The ability to do operational science, then, is grounded and dependent upon Judeo-Christian commitments that arise out of revealed theology. Despite recognition of the dependency of human reason upon God, Galileo was wrong to suggest that operational science need not be subordinate to Scripture. This is because a literal reading of Scripture as well as a number of Christian doctrines support and provide justification to operational science. Scriptural precedence then offers a degree of freedom to human reasoning. Perhaps we ought to read Galileo's claim for scientific independence from Scripture in light of it being a personal defence.

Galileo's second point places a near impossible burden upon Christian theologians and scientists to defend revealed



Figure 3. Galileo and Viviani, by Tito Lessi 1892.

faith (as creationists know all too well), and misrepresents Augustine. His second argument also effectively asserts the priority of science and places the church in a subordinate position in relation to the claims of theoretical science. Instead, from Augustine, Christians may hold a theoretical proposition false if it conflicts with revealed faith, without having to show that it is false. Hart Weed suggests that Augustine would not have agreed with Galileo on the burden of proof in relation to helio-centrism because of the church's authority, and its commitment to geocentrism and prior condemnation of Copernicus.³⁴ However, from a Protestant perspective, there was some benefit to society in Galileo working to free the sciences from unwarranted and excessive Roman Catholic authority. Instead Protestants place authority in Scripture.

Creationists should not be faulted for following Augustine's guidance in challenging philosophy that pretends to be operational science, but is theoretical and arises out of the pagan beliefs or the secular human mind. For instance when faced with the theoretical narrative of molecule-to-man evolution and 'deep time' one may legitimately argue that it is not demonstrated, and therefore hold it as false, because it is at odds with the literal text of Genesis, nor is it part of operational science. Alvin Plantinga has further argued that Christians may move beyond methodological naturalism where appropriate and undertake theistic or Augustinian science; that is where knowledge gathered from faith may inform science.³⁵ Augustine recognized that trying to understand how God created matter in time is problematic, and that Christians may disagree about it with several interpretations possible, but he also cautioned against getting carried away with pagan philosophy masquerading as science, and saw deep time as 'mendacious'.³⁶

Lesson 4—Do not be weak and faint away in the face of secular science

As noted, while theistic evolutionists and old-earth creationists are quick to point creationists to lesson 1, they do not go on to carefully elaborate other lessons in the Augustinian text. The final lesson encourages Christians to not be overawed and 'faint away' from the text of Genesis by the eloquence and learning of 'irreligious critics' they may encounter in the natural sciences. Augustine in fact considers this to be more dangerous than the problem of uneducated believers speaking nonsense in the sciences.

"But more dangerous is the error of certain weak brethren [Latin; *Periculosius autem errant quidam infirmi fratres*] who faint away when they hear these irreligious critics learnedly and eloquently discoursing on the theories of astronomy or on any of the questions

relating to the elements of this universe. With a sigh, they esteem these teachers as superior to themselves, looking upon them as great men; and they return with disdain to the books which were written for the good of their souls; and, although they ought to drink from these books with relish, they can scarcely bear to take them up. Turning away in disgust from the unattractive wheat field, they long for the blossoms on the thorn. For they are not free to see how sweet is the Lord, and they have no hunger on the Sabbath. And thus they are idle, though they have permission from the Lord to pluck the ears of grain and to work them in their hands and grind them and win-now them until they arrive at the nourishing kernel."³⁷

From this I think Christians need to be robust and fair in response and not be intimidated by the demands of secular science and institutions. However, one may wonder whether theistic evolutionists and progressive creationists sometimes seem to esteem secular reasoning too highly and seek to re-interpret Scripture in light of the perceived needs of secular theoretical science. As discussed, Augustine would not have supported this, holding in balance both the symbolism and the literal-historical reading. But we also need to be careful about judging fellow Christians and using pejorative language, which may divide; instead we need to argue our case with respect towards fellow believers even if in a firm manner. Augustine warns us not to be ashamed in the face of secular theoretical science, but be strong and stand firm in valuing the text of Genesis and what it means for Christian believers. Trying to bring out the meaning of Scripture Augustine likens to the gathering, threshing, and winnowing of wheat.

Conclusion

In this piece, then, I have tried to draw out a number of lessons for Christians from Augustine's third literal reading of Genesis. Theistic evolutionists and progressive creationists should be more careful in how they use it against creationists because there is a danger of taking it out of its own context. Superficially it seems an easy tool to use against opponents, but the wider context points in other directions that are distinctly challenging for all of us. It ought to be noted that those who hold to a literal reading of Genesis are closer to the heart of Augustine's teaching than opponents believe. So what lessons are there?

Firstly, that all of us should work and study hard to get to grips with what secular scientists believe, but also to accurately represent the position of other Christians we might disagree with and present our case in a respectful manner. We should also avoid trivial matters, although Augustine thought defence of the age of the earth was

important. Secondly, holding to a ruling paradigm in science may later prove to be a false enterprise. Thirdly, we may draw a distinction between theoretical science that often arises out of pagan beliefs and philosophy, and operational science that may be demonstrated in real time. Christians are under no obligation to accept the former if it is contrary to Scripture, even as we accept the latter. Galileo's interpretation of Augustine was not strictly correct, but his position has influenced the development of the independence view of the relationship between science and faith, for instance through the application of methodological naturalism to both *operational* and *theoretical* science. Science is often seen to have priority over revealed faith, even among some Christians working in science. This error needs to be acknowledged and addressed. The creationist approach to the relationship between science and faith is much closer to Augustine's position than opponents acknowledge. Fourthly, that we should not be faint hearted or afraid to defend the text of Scripture, even in its literal sense, in the face of pressure from secular science.

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- Taylor, ref. 6, p. 6 points to and quotes Augustine's comments in the *Retractions* 2.50 or 2.24. Also see Augustine, *De Genesi ad Litteram*, 1.17.34, Taylor, ref 6, p. 39, "the plain meaning of historical facts".
- Augustine, *De Genesi ad Litteram*, 1.1.1; Taylor, ref. 6, p. 19. See also Taylor, ref. 6, pp. 9–11.
- For instance Augustine, *De Genesi ad Litteram*, 1.1.2., in Taylor, ref 6, p. 19, "Scripture is to be explained under both aspects". Also *The City of God*, 15.27, 'The Ark and the deluge, and that we cannot agree with those who receive the bare history, but reject the allegorical interpretation, nor with those who maintain the figurative and not the historical meaning' Schaff, P. (Ed.), NPNF1-02, ref 6, pp. 307–308.
- Augustine, *The City of God*, 12.10, 'Of the falseness of the history which allots many thousand years to the world's past', in Schaff, P. (Ed.), NPNF1-02, ref 6, pp.232-233. See also Zuiddam, B., Augustine: young earth creationist, *J. Creation* 24(1):5–6, 2010; and Galling, P. and Mortenson, T., Augustine on the Days of Creation: A look at an alleged old-earth ally, *Answers in Genesis*, 18 January 2012.
- Augustine, *De Genesi ad Litteram*, 2.18.38, Taylor, ref 6, p. 73; also McMullin, ref. 7, pp. 292–293, 2006, draws out a Principle of Prudence from this.
- Hart Weed, J., ref 8, points out (pp. 146–148) that Galileo used Augustine's passage from *De Genesi ad Litteram*, (2.18.38) for his own defence.
- Augustine, *De Genesi ad Litteram*, 1.19.39, Taylor, ref. 6, pp. 42–43.
- Lennox, ref. 1, p. 36; See also McMullin, ref. 7, p. 272.
- See Hart Weed, ref. 8, p. 146. She uses page references from Galileo Galilei, Letter to the Grand Duchess Christina, in *Discoveries and Opinions of Galileo*, translated and edited by Drake, S., Doubleday, New York, 1957. For instance: Augustine, *De Genesi ad Litteram*, 2.18.38—in Galileo, *Letter*, p. 176; and Augustine, *De Genesi ad Litteram*, 1.21.41—in Galileo, *Letter*, p. 194. Published in Italian *Opere di Galileo Galilei*, Edizione Nazionale, Favaro, A. (Ed.), Giunti-Barbera, Firenze, vol. v, pp. 309–348, 1968.
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- Lennox, ref. 1, p. 36.
- Lennox, ref. 1, pp. 15–19, 30–36.
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- See Hart Weed, ref. 8, p. 150. She disagrees with McMullin on the point of Augustine and Catholic authority.
- McMullin, ref. 7, pp. 294–295.
- McMullin, ref. 7, pp. 295–296. McMullin raises a couple of other Principles that I don't have space here to discuss.
- Galileo, ref. 17, pp. 175 & 194.
- Galileo, ref. 17, pp. 194–195.
- Galileo, ref. 17, pp. 194–195. This is quoted and discussed by Hart Weed, ref. 8, pp.150–151. See Favaro's Italian edn, p. 327.
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- Peter Harrison has produced some very useful works that show how a more literal interpretation of Genesis, which arose out of the Protestant Reformation, enabled a more literal reading of nature, and that Baconian science developed as an attempt to overcome the noetic effect of the Fall of Adam. Harrison P., *The Bible, Protestantism and the Rise of Natural Science*, Cambridge University Press, Cambridge, 1st paperback edn, 2001; Harrison, P., *The Fall of Man and the Foundations of Science*, Cambridge University Press, Cambridge, 2007.
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- Harrison, ref. 29, pp. 100–106; McMullin, ref. 7, p. 295, points out that this was also Augustine's understanding.
- Hart Weed, ref. 8, p. 151.
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- Augustine, *City of God*, 12.10, 'Of the falseness of the history which allots many thousand years to the world's past', in Schaff, P. (Ed.), NPNF1-02, ref. 6, pp. 232–233.
- Augustine, *De Genesi ad Litteram*, 1.20.40, in Taylor, ref. 6, pp. 43–44.

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