



# Approaching Genesis and Science: Hermeneutical Principles and a Case Study

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The unlike is joined together,  
and from differences results the most beautiful harmony,  
and all things take place by strife.  
Heraclitus, Fragments 126

**Abstract:** The purpose of the present paper/article is to discuss the hermeneutic principles used in reading ‘God’s two books,’ creation and Scripture, together. The first part of the paper outlines and recommends the hermeneutical principles and procedures used by Galileo Galilei (1564-1642) in the Copernican controversy conflict between the Church and (Christian) scientists on the right to interpret scripture and how to do this informed by science. In the second part of the paper these principles and procedures are applied to a case study on the apparent conflict between the doctrine on common descent in evolutionary biology and the traditional understanding of Adam and Eve as the sole progenitors of humankind. A recent attempt by Joshua Swamidass to synthesize mainstream evolutionary theory with a high-view interpretation of Scripture is commended for allowing the scientific consensus to prompt a reconsideration of the traditional ‘spinal cord reflex’ against evolutionary understandings of humankind’s descent among Evangelical scholars. For the same reason it is recommended that sandboxes for interpretative and hypothesizing experimentation are created in both the academy and the church in order for various syntheses between interpretations of Scripture and scientific theories to be discussed without inquisitory strategies hindering a healthy and constructive debate.

**Keywords:** Genesis; Evolution; Science; Adam; Creation

## God's Two Books

The relationship between interpretations of Genesis and (pre)scientific theories has always occupied Christian scholars.<sup>1</sup> As early as the third century AD Anthony the Great wrote that ‘my book is the created nature, a one always at my disposal whenever I want to read God’s words,’<sup>2</sup> and among the Church Fathers explicit mentioning of God’s two books, Scripture and creation, can be found in the writings of Basil the Great (c.329-379), Gregory of Nyssa (c.335-395), Augustine (354-430), John Cassian (360-430/435), John Chrysostom (347-407), Ephrem the Syrian (c.306-373) and Maximus the Confessor (c.580-662). Augustine, for example, regards creation as ‘a great book’<sup>3</sup> and describes how God, who mercifully clothed naked Adam and Eve after the fall with a skin, likewise stretched out the ‘firmament of your book’ like a skin in order for us to ‘read’ about his mercy.<sup>4</sup> In the Middle Ages references to the two-books metaphor may be found in the writings of, among others, Bernard of Clairvaux (1090-1153), Hugh of St. Victor, (1096-1141), St. Bonaventure (1217-1274), St. Thomas Aquinas (1224-1274), Thomas of Chobham (c. 1255-1327), Dante Alighieri (1265-1321), Thomas of Kempis (1380-1471) and Raymond of Sebond (c. 1385-1436), and though the reformer Martin Luther did not use the metaphor itself, he clearly regarded Scripture and creation God’s twin revelations. In his commentary on Gal 4:9 he writes, for example, that ‘[t]here is a twofold knowledge of God: the general and the particular. All men have the general knowledge, namely, that God is, that He has created heaven and earth, that He is just, that He punishes the wicked, etc. But what God

thinks of us, what He wants to give and to do to deliver us from sin and death and to save us – which is the particular and the true knowledge of God – this men do not know’ (Luther 1963, 399; WA 15,608).<sup>5</sup> Nature and history are, Luther argues elsewhere, *larvae Dei* God’s masks’ (WA 17,2,192; 40,1,174).<sup>6</sup>

The purpose of the present paper is not to track the pedigree of the *concept* of God’s two books, but to discuss the hermeneutic principles used in ‘reading’ them together. The first part of the paper outlines and recommends the principles for bringing the two ‘books’ together used by Galileo Galilei (1564-1642). In the second part of the paper the principles are applied to a case study on the apparent conflict between the doctrine on common descent in evolutionary biology and the traditional understanding of Adam as the sole progenitor of humankind.

## The Renaissance as a Hermeneutical Turning Point

In the Patristic and Middle Ages, Giuseppe Tanzella-Nitti argues, the idea of dialectic opposition between the two books is unknown: ‘Authors are not concerned about showing or demonstrating their “harmony,” in the contemporary meaning of the word. Rather, they want to show their common dignity as divine revelation and their role to provide mankind with a true knowledge of the unique God [...] The two Books are discussed and compared without any need for healing or rectifying any conflict’. The transition to the Renaissance, however, is a hermeneutical turning point. ‘The development of natural studies and experimental observations carried out in the late Renaissance,’ Tanzella-Nitti continues,

‘introduced the idea that we can approach the world of the divine without the mediation of sacred Scripture, of theology or scholastic philosophy, and of course without the mediation of any Church’ (Tanzella-Nitti 2004, 14; quote from online version).

The hermeneutic picture painted by Tanzella-Nitti is slightly distorted, however, since ‘natural studies and experimental observations’ was practised before the Renaissance, and already Augustine, for example, saw tensions between God’s two books and made efforts to harmonize them. Besides, *outside* the authority of the Church, such pre-scientific exercises were indeed practised in a ‘secular’ or ‘pagan’ setting, so the situation described by Tanzella-Nitti only applies to pre-scientists working under the auspice and authority of the Church.

Tanzella-Nitti is correct to argue, however, that, though God, for the Renaissance scientists, were still the author of the book of Nature, the concept of Nature as a book became more and more secularized and separated from its original theological setting with two important consequences. Firstly, from being a book ‘all men’ could read, reading the book of Nature now became a matter for scientists, as remarked, famously, by Galileo Galilei in his *Il Saggiatore* from 1623:

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles and others geometric figures without which it is humanly impossible to understand a single

word of it; without these, one wanders about in a dark labyrinth (Galilei 1968, 232).

Secondly, the alienation of the book of Nature permitted readings that eventually brought it into conflict with the reading of Scripture. And it was none other than Galilei himself, of course, who became the centerpiece of the first significant conflict between the Church and (Christian) scientists on the right to interpret scripture and how to do this informed by science.<sup>7</sup>

Our interest is not so much in the theological and political specifics of that conflict, but, again, in how the readings of the two books were brought to bear on one another, and how (if at all) this may be of help in the next and still on-going significant conflict between readings of the two books, namely between creationist interpretations of Scripture and scientific theories of evolution.

A ‘creationist,’ at a broad level, is, according to Stanford Encyclopedia of Philosophy:

someone who believes in a god who is absolute creator of heaven and earth, out of nothing, by an act of free will. Such a deity is generally thought to be ‘transcendent’ meaning beyond human experience, and constantly involved (‘immanent’) in the creation, ready to intervene as necessary, and without whose constant concern the creation would cease or disappear. Christians, Jews, and Muslims are all Creationists in this sense (Ruse 2018).

Though the Encyclopedia proceeds to define creationists very narrowly as ‘Young Earth Creationists,’ the term is not used by the present author (nor by, for example, old earth creationists or proponents of evolutionary creationism) in

this narrow definition. In its present use it spans positions from theistic or evolutionary creationism to young earth creationism, that is, from positions that read the Biblical text literalistically and in conflict with evolutionary biology to approaches that allow for non-literalistic interpretations that may be compatible with evolutionary understandings of the origins of the universe and life.

### Concordism

The crucial question in bringing science and faith together is not so much *whether* God has written two books but how we should understand the *relationship* between them in our search for answers to the questions of origin. The various positions are often described in terms of a continuum from concordism to non-concordism with ‘concordism’ covering approaches that see a concord or agreement between what the two books have to say about the origin of cosmos, life, species and man, and non-concordism’ expressing views that consider the two books as two separate sources of knowledge with no overlap.<sup>8</sup>

Hugh Ross and Kenneth Samples, in *Old Earth or Evolutionary Creation?*, have a useful model of the continuum from ‘hard’ concordant via ‘soft’ concordant and non-concordant approaches to ‘hard’ non-concordant ones (Keathley, Stump, and Aguirre 2017, 22–24). According to the ‘hard’ non-concordant model God’s two books are two separate sources for knowledge with no overlap whatsoever. Since they address different domains (of faith and science), they may, and indeed do, according to this view, provide different explanations of life’s origin without these explanations contradicting each other. According to the ‘soft’ non-concordant model there is a minimal

overlap between what the two sources of knowledge addresses. Proponents of the two non-concordant models typically argue, therefore, that Scriptural creation theology and evolutionary biology are two different *and* equally true explanations on the questions of origin. Most evolutionary creationists prefer this complementary model and acknowledge, on the one hand, that Scripture states explicitly that the cosmos had a beginning, but also hold, on the other hand, that Scripture nowhere explains *scientifically* how life began. Furthermore, proponents of both non-concordant models have a ‘deistic’ tendency to downplay God’s supernatural intervention and a corresponding emphasis on seeing God’s creative activity as a *direction* of the evolutionary processes. For the same reason proponents of these models – in particular those who favor the ‘hard’ non-concordant model – argue that it is science, not Scripture, that answers our questions of origin.

Over against this non-concordant approach stands two concordant models which both view the relationship between Bible and science as a ‘fusion’ or an ‘interaction.’ The first model, also known as ‘hard’ concordism, attribute scientific meaning to all Biblical texts referring to creation and holds that all scientific observations have theological implications. Proponents of this model – especially young-earth creationists – typically argue that it is possible to find scientific information in the Bible regarding dinosaurs, Neanderthals, particle physics, etc. The other model, often labeled ‘soft’ concordism, assumes a greater overlap between what Bible and science addresses than in the ‘soft’ non-concordant model, but a lesser overlap than in the ‘hard’ concordist model. In this approach, most

texts in the Bible are considered scientifically neutral or irrelevant, and the scientific data is generally not assumed to have theological implications. This model is typically assumed by old-earth creationists, who, on the one hand, argue that Gen 1-11 is a factual, chronological description of the origin of the universe, and that texts such as Job 37-39, Ps 104, and Prov 8 contribute with important scientific information on Gen 1-11. On the other hand, it is also argued that there are scientific details which are *not* addressed by the Bible, and that scientific data on the origin of the universe should be integrated in a constructive interaction with the Biblical information. A characteristic of both concordant models is, furthermore, an emphasis on God's supernatural creativity as an explanation on the questions of origin, and that there are aspects in the origin of the universe which science is unable to explain because it lies outside the scope of science.

What needs to be added to or at least emphasized in the models outlined by Ross and Samples is, however, that no matter how comprehensive or minimal the overlap may be, it is an overlap between two different 'magisteria,' namely between scientific data (and their various interpretations) and Scripture (in its different understandings). In 1997 Stephen Jay Gold argued that science and religion are two 'nonoverlapping magisteria' (Gould 1997; cf. 2002). Gould drew the term 'magisterium' from Pope Pius XII's encyclical *Humani generis* (1950) and defined it as 'a domain where one form of teaching holds the appropriate tools for meaningful discourse and resolution' (Gould 2002,5). Whereas science, Gould argues, 'tries to document the factual character of the natural world, and to develop theories that coordinate and explain these

facts,' religion 'operates in the equally important, but utterly different, realm of human purposes, meanings, and values' (Gould 2002,4). Contrary to Gould's concept of 'nonoverlapping magisteria' (NOMA), according to which the difference is between facts and values, Scripture in the 'soft' models *does* describe factual events and phenomena albeit in a different 'language' and with a different intent. Scripture's 'language' is not scientific in the modern sense of the word, and scriptural 'data' cannot be mined and analysed scientifically (in the modern sense of the word) through 'systematic observation and experimentation, inductive and deductive reasoning, and the formation and testing of hypotheses and theories'. It is a non-sequitur, however, that Scripture for that reason cannot contribute to our understanding of 'facts.' For two reasons.

First, Francesca Rochberg has recently argued – in what many reviewers consider the potential successor and replacer of the influential *The Intellectual Adventure of Ancient Man* (Frankfort et al. 1946) – that it amounts to a 'lingering afterglow of scientism and positivism from the last century' to reserve the terms 'science' and 'rationality' for post-Babylonian, Western culture (Rochberg 2016, 140; cf. Mieroop 2017). Rochberg describes how the ancient Mesopotamians used analogical thinking, i.e. correspondences between otherwise unrelated phenomena, to interpret their world, and argues that, though

[t]he roles of analogy and analogical thinking have been slow to gain recognition as important parts of science ... analogy plays an important part in both the literary and the scientific imagination, as it did in the scholarly imagination of the

scribes. Assyrian and Babylonian divinatory, astrological, magical, and medical texts that characteristically deal in correspondences and properties testify to one important context for the use of analogy in cuneiform scholarship (Rochberg 2016, 156–157).

The ancient Mesopotamians were not, in other words, ignorant of their world, and though their observations of reality had a different *purpose* than that of modern science, they produced, nonetheless, knowledge of that reality:

[T]he investigation of what [David] Brown called ‘observed reality,’ that is to say, the phenomena of the ancient scribe’s perception, experience, and imagination, was undertaken not so as to understand ‘observed reality,’ that is, nature as such, or what we might call the workings of a structured world, but to interpret the perceived, experienced, or imagined phenomena for the purpose of divination, that is, to know what things meant. In the process of pursuing this goal, much was known of the world, including how parts of it ‘worked’ (Rochberg 2016, 125).

Since the Hebrew Bible – in any dating of its texts – was produced in the same cognitive environment and for a like-minded audience, we should expect (some of) its ‘language’ to be not only phenomenological but also *analogical*. And though its ‘observations of reality’ also had a different purpose than that of modern science, we should assume that pursuing their goal, the scribes responsible for the Hebrew also acquired knowledge of the world. We should not expect, in other words, to find ‘values’ only, but also ‘facts’ about reality in Scripture. The nonoverlapping elements are not facts

and values, but facts produced by different conceptions of science.

Second, since it is beyond the limits of modern science to account for transcendent causes, Scripture may – at least for the theistic (or deistic) scientist – testify to phenomena undetectable by scientific method. The term ‘undetectable’ is chosen deliberately over ‘inexplicable’ to avoid a ‘God-of-the-gaps’ concordism in which God becomes a stand-in for gaps in scientific knowledge. It is important to define very carefully, what is meant by ‘gaps.’ Dietrich Bonhoeffer, in a letter to Eberhard Bethge, 29 May 1944, argued

how wrong it is to use God as a stop-gap for the incompleteness of our knowledge. If in fact the frontiers of knowledge are being pushed further and further back (and that is bound to be the case), then God is being pushed back with them, and is therefore continually in retreat. We are to find God in what we know, not in what we don’t know’ (Bonhoeffer 1997, 310–12; letter to Eberhard Bethge, 29 May 1944).

The present writer fully concurs with such a rejection of a stop-gap concordism, but only if it is clarified that the expressions ‘what we know’ and ‘what we don’t know’ is understood as ‘what we know or don’t know from modern scientific analysis and interpretation of observable reality’ and thus allows Scripture to complement knowledge resulting from modern scientific research on empirical data with knowledge based on the possibility that phenomena may have transcendent causes. For the theistic (and deistic) scientist factual phenomena, in other words, may be caused by other than materialistic and naturalistic causes.

### Galilei's hermeneutical principles

In the book *Controversy of the Ages* subtitled *Why Christians Should Not Divide over the Age of the Earth* Theodore J. Cabal and Peter J. Rasor II argue that the hermeneutical principles used Galilei in the Copernican controversy may be helpful in the current debate on how to read and science and Scripture together.

The authors are well aware of the differences between the Copernican controversy and the current challenge from evolutionary biology. In the Copernican controversy both parties shared the same theistic worldview. An often-mentioned example is

Robert Boyle (1627-1691), who thought of scientific research as worship with the scientist as priest and nature as temple. Johannes Kepler, too, considered himself a priest in the temple of nature. It is to be emphasized, therefore, that the scientists of the 1500s and 1600s all had a Christian point of departure. They were devoted Christian believers and considered their science an investigation of nature, not a challenge to the creator. For the same reason they all tried to find concordance between God's two 'books,' Bible and nature. In Darwin's time (1809-1882) science was no longer practised based on a Biblical worldview, and Darwin's evolutionary discoveries only strengthened the empirical and positivistic worldview, which, from the beginning of the 1800s, had made its way into science. Darwin, after the publication of *The Origin of Species* in 1859, described himself as an agnostic, and probably ended up as an atheist (Cabal and Rasor II 2017, 51-58).

Or as Jes Fabricius Møller has it in an article on reactions against Darwinism in

Denmark in the period 1860-1900: 'There can be no doubt that an openly proclaimed support to Darwinism often goes hand in hand with a denouncement of Christianity' (Møller 2000, 70; my translation). For the same reason Darwinism (or Neo-Darwinism as it is called today) is closely connected with a worldview in which the origin of life in all its forms is given purely naturalistic explanations, and in which there is no room for a transcendent God's supernatural creative acts. An application of the criteria used in the Copernican controversy requires, therefore, a distinction between the scientific data (the fossil record, astronomic observations, etc.) and possible interpretations of these data (e.g., an evolutionary understanding of the fossil sequence in the empirical verifiable geological record and a dating of the age of the universe on the basis of astronomic observations), so that explanations demanded by a methodologically atheistic, naturalistic worldview, are discarded in favor of interpretations of the data which are consistent with a Biblical worldview.

Another difference *not* mentioned by Cabal and Rasor between the Copernican controversy and the present discussion on creation and evolution is that the conflicts should be placed on different levels as far as the theological consequences are concerned. Whether the sun circled the earth or the earth the sun had little consequence on matters essential to the Christian faith, whereas the discussion on creation and evolution may have a serious impact on the core understanding of anthropology, hamatology and – consequently – salvation.

Where the Copernican controversy is helpful, however (and Cabal and Rasor argues this convincingly), is in the 'theological conservatism principle' exempli-

fied by Galilei's tackling of the conflict between his own heliocentric worldview and the contemporary consensus on Biblical cosmology. In two letters to the astronomer Antonio Castelli in 1613 and the Grand Duchess Christina in 1615, respectively, Galilei described a procedure involving two interpretive criteria and two interpretive steps. The two criteria were 1) Scripture, not interpretations of the Scripture, is inerrant, and 2) nature and Scripture cannot contradict each other. The two interpretive moves were 1) that traditional interpretation must take precedence over scientific theories on which there is no consensus, but that 2) scientific theories on which there *is* consensus should call for reinterpretation of the Bible. Two criteria that in many ways express the soft concordist approach described above. The crux of the matter is, however, how these criteria were practised, and this is where Cabal and Rasor's proposal is so useful. The criteria were applied in a three-stage process, described by Cabal and Rasor with the sentences 'The two can never wed,' 'The two can court,' and 'The two can wed on these terms,' and it is this *process* they recommend in the contemporary discussion on the questions on origin (Cabal and Rasor II 2017, 40–47).

### **They Can Never Wed**

The interpreters of the Bible in the Copernican controversy practised a theological arm's length principle characterised by a skeptical approach to new scientific theories that were seemingly incompatible with Scripture. The immediate reaction was, therefore, that 'they could never wed.'

### **The Two Can Court**

As the old worldview came under more and more pressure and the new heliocent-

ric cosmology was deemed less and less problematic, interpreters began – with Cabal and Rasor's expression – to 'court' each other. In this phase, very few interpreters accepted the new worldview, but more and more interpreters began to take it under serious consideration. A characteristic for this 'consideration' was, according to Cabal and Rasor, that it was made 'innocent' or 'safe' to discuss (Cabal and Rasor II 2017, 41–43).

The Lutheran theologian Andreas Osiander, who wrote the anonymous introduction to Copernicus' *De revolutionibus orbium coelestium* from 1543, encouraged readers to regard Copernicus' ideas as mathematical speculation with a hypothetical status, and the consequence was that a space was created in which (not least Lutheran) scientists could develop various models to describe the universe. Models that, importantly, were deemed compatible with Scripture. The challenge in this phase was, therefore, whether these models should be based on scientific theories, on Scripture, or a combination of both. And it was Galilei himself who came up with an approach that solved his own conflict (albeit only after his death) and has turned out to be useful in similar controversies.

### **The Two Can Wed on These Terms**

The 'courting' phase moved, as is well known, interpreters from all confessions to acknowledge heliocentrism as the correct interpretation of the scientific data, and, consequently, to regard the traditional worldview as a misinterpretation of Scripture. Science didn't correct Scripture, but a better or true interpretation of the scientific data corrected *both* the existing geocentric interpretation of Scripture and the geocentric interpretation of the scientific data.



An important point for Cabal and Rasor is that all this, i.e., the three-phase process, did not happen overnight. It took generations of tough discussions and inquisitory battles before a new consensus emerged. It was only after the publication of Newton's *Principia* in 1687 – 144 years after the death of Copernicus – that the controversy decreased.

Another point is that 'the devil is in the detail,' since Galilei violated his own principle that only scientific theories on which there is consensus should call for new interpretations of Scripture, since he argued for a reinterpretation of Scripture *before* the heliocentric worldview had gained consensus among scientists. Though mathematical models had questioned the Ptolemaic or geocentric worldview already in Galilei's time, it took a Johannes Kepler (1571-1630), Tycho Brahe (1546-1601), Isaac Newton (1643-1727), and many others before a consensus *demanding* reinterpretation of Scripture emerged.

### A Case Study: The First Human Couple

One of the most challenging issues in bringing 'God's two books' together is the apparent conflict between Scripture's claim that all humans descend from a first human couple and the neo-Darwinian assertion that we are descended from an ape-like population of at least several thousand and that there never was a bottle-neck of two. In the following we shall try to apply the Galilean hermeneutic described above by looking at, first, the relevant texts from Scripture, and, secondly, at a new approach to the scientific data published recently by Joshua Swamidass.

### Scriptural Data

As far as common descent is concerned, the question is how to understand the narrative on Adam and Eve in Gen 2-3, and how other texts in the Bible refer to that story. To answer the first question we need to determine, first, the text's genre. Is it an account of a historical event in which everything should be taken literally? Is the narrative a symbolic or archetypal story? Or all the above? The answer may not be as simple as we would expect (or like). Against an understanding of the text as literal history is that it makes use of themes or mythemes also found in, primarily Mesopotamian, primeval or proto-historical texts. This is true for creation of man from earth/clay, first creation as a fertile and harmonious place, rivers flowing from that place and watering the rest of the world, the tree of life, a snake depraving man of eternal life, and the barring of man from returning to paradise. Is the author using these motifs or mythemes to tell the inspired and true version of primeval history? A full discussion is outside the scope of this article, but the discussion is, nonetheless, necessary, since the appearance of so many parallels between the Mesopotamian and Biblical texts is suggestive (cf. Kofoed 2015; 2016a; 2016b [in Danish]).

It is not only in the comparative material outside the Biblical text but also in the text, however, where we find features suggesting that the Biblical text is not *just* literal history. The lexeme אָדָם *ʾādām* is not used indisputably as a personal name until Gen 4:25 where it is stated euphemistically that 'Adam knew his wife.' In Gen 2-3, the Hebrew אָדָם *ʾādām*, which is both a generic term for 'man' and the personal name 'Adam,' is used with a prefixed, definite article, and since Hebrew

never fronts personal names with the definite article, it should be translated '(generic) man,' *not* 'Adam.' It could be argued, for the same reason, that the lexeme behind the translation 'Eve' is also not used as a personal name, since 'she' is referred to as 'helper' אֵזֶר *ēzer*; Gen 2:18), and woman' (אִשָּׁה *ʾiššāh*, Gen 2:22). And though the name הַוְוָה *hawwāh* given by 'man' to his 'woman' in Gen 3:20 may be *transliterated* (roughly) as 'Eve,' its *meaning* is 'life.' This is clear from the subsequent explanation 'because she was the mother of all living' in Gen 3:20, and illustrated by Gen 4:1, where 'man' impregnated this '[mother of] life' with Cain.

To this could be added that הַוְוָה *hawwāh* does not appear anywhere else in the Old Testament as a personal name. Does this mean that we should understand not only אָדָם *ʾādām* and הַוְוָה *hawwāh* as representatives for 'man' and '[mother of] life' but also Cain and Abel as representatives of shepherds and farmers (Gen 4:2)? That is, in the same way as Jabal in the following pericope is representative of 'those who dwell in tents and have livestock' Gen 4:20), Jubal of 'those who play the lyre and pipe' (Gen 4:21), and Tubal-Cain who 'was the forger of all instruments of bronze and iron' (Gen 4:22)? If so, it would allow for the development from the hunter-gatherer culture at the end of the Paleolithic era (100.000 – 12.000 B.C.) via the agriculture in Mesolithic period (12.000 – 7.500 B.C.) to the beginning urbanization and domestication of animals in the Neolithic period (7.500 – 4.000 B.C.) which, according to the consensus, took thousands of years, not – as a non-representative reading of Genesis 4 implies – a few generations.

The features discussed suggest that the author may not have used the language to

refer literalistically<sup>9</sup> to historical processes, events and persons, and that we, consequently, should understand אָדָם *ʾādām* and הַוְוָה *hawwāh* representatively. An understanding of the text's genre which may be supported by parallels in the Mesopotamian sources, where the names of individuals between creation and the flood often are representative of the people or cultures they founded and/or represent (cf. Lowery 2013).

There is, however, also an 'on the other hand.' Though there *are* good arguments for the assertion that the *personal names* 'Adam' and 'Eve' does not appear until Gen 4:25, it could be argued that the absence of the prefixed definite article in אָדָם *ʾādām* in the clauses '[a]nd to Adam [אָדָם] he [God] said' (Gen 3:17) and '[a]nd the Lord God made for Adam and for his wife garments of skins' (Gen 3:21) point in the opposite direction. Especially because we would have expected the use of אָדָם *ʾādām* ('man') + הַוְוָה *hawwāh* ('[mother of] life') - not אָדָם *ʾādām* ('man') + אִשָּׁה *ʾiššāh* ('his wife') if a representative meaning was intended. Though the editors of *Biblia Hebraica Stuttgartensia* remark that the missing definite article in both Gen 3:17 and 3:21 must be an error on behalf of the Scribe and that we ought to add the particle in our reading, it is with no basis in the manuscripts. It would, furthermore, be awkward if verse 21 should be translated '[a]nd the Lord God made for the human/man and for his wife garments of skins,' since generic 'man' already at this point consisted in man and woman. Furthermore, when, in Gen 4:1, it is stated that 'man' or 'Adam' (depending on whether we understand it generically or personally) 'knew his wife,' the Hebrew הַוְוָה *hawwāh* is prefixed with the direct object marker אֵת, indicating that it is a *particular* הַוְוָה *hawwāh* - presumably

‘Eve.’ And whereas Gen 4:1 has אָדָם *ʾādām* prefixed with the definite article in the meaning (generic) ‘man,’ Gen 4:25 has אָדָם *ʾādām* *without* the definite article in the meaning (the person) Adam.’ Besides, Adam,’ in 4:25 clearly refer to the same אָדָם *ʾādām* mentioned in 4:1, and there are good arguments, therefore, for understanding *both* אָדָם *ʾādām* and הַוְוָה *ḥawwāh* in 4:1 as personal names. And since they are likely to be personal names in the narrative on Cain and Abel, would it not also be natural to understand them as such in the preceding narrative? Such an understanding is also supported by the fact that Gen 2:4-26, according to the *toledot*-structure with a new *toledot* beginning only in 5:1, seems to consist of connected narratives. Finally, it could also be argued that, since all the other names in the genealogies of Gen 5 and 1 Chron 1 is understood as personal names, אָדָם *ʾādām* should be taken as the individual progenitor of the following descendants.

As far as the Old Testament is concerned, the possible mentioning of the personal name Adam in Hos 6:7, where it is stated that ‘like Adam they transgressed the covenant’ with ‘they’ referring to Ephraim and Judah in verse 4. That it is only a ‘possible’ mentioning has to do with the fact that ‘Adam,’ according to Jos 3:16 also is a city, and that the breaking of the covenant mentioned in Hos 6:7 could have taken place in the *city* Adam not in the *person* Adam. The context of Hos 6 is of little help in deciding which meaning was intended. On the one hand, ‘Adam’ is mentioned together with other placenames such as Gilead in verse 7 and Shechem in verse 9. On the other hand, the following verses refer to other persons or groups of individuals, namely evildoers (v.8), priests (v.8), and House of Israel, Ephraim and Judah (vv.10-11).

The strongest indicator of its intended meaning is perhaps that the preposition כְּ ‘like’ – as in ‘like [the person] Adam’ – and not the preposition בְּ ‘in’ – as in ‘in [the city] Adam’ – is used. And though the editors of *Biblia Hebraica Stuttgartensia* suggest that the text should be emended to בְּאָדָם ‘in Adam’ – presumably because the preceding verses mention placenames – the text should be preserved, since there is no basis in the manuscripts for such an emendation. Even if we allow for an understanding of Adam as a personal name in Hos 6:7, it could both be understood as a reference to Adam as a representative or a personal name, so the attestation in Hosea cannot be used to determine which meaning of אָדָם *ʾādām* was intended in the contested verses in Gen 3.

In the New Testament, ‘Adam’ is attested in Luk 3:38, Rom 5:14, 1 Cor 15:22;45, 1 Tim 2:13-14 and Jud 14. In Luk 3:38, ‘Adam’ appears in Jesus’ genealogy through Joseph’s line, and since this use of ‘Adam’ is taken from genealogies – presumably those of Gen 5 and 1 Chr 1, it adds nothing new to the Old Testament attestations already discussed. The same is true for Jud 14, where Jude, with a quote from the pseudepigraphal 1 Enoch 1:9, states on his ungodly contemporaries that ‘[i]t was also about these that Enoch, the seventh from Adam, prophesied.’

The remaining New Testament attestations are different, however, in that they do have a bearing on the understanding of ‘Adam’ in Gen 2-4. In Rom 5:14 Paul writes that ‘death reigned from Adam to Moses, even over those whose sinning was not like the transgression of Adam, who was a type of the one who was to come.’ Paul makes the theological point from the comparison that ‘if many died through one man’s trespass, much more

have the grace of God and the free gift by the grace of that one man Jesus Christ abounded for many,' (v.15), and 'as one trespass led to condemnation for all men, so one act of righteousness leads to justification and life for all men. For as by the one man's disobedience the many were made sinners' (vv.18-19). In 1 Cor 15, the use of 'Adam' stands in parallel to the one just discussed, albeit with more focus on the 'life' mentioned in Rom 5:18: 'For as in Adam all die, so also in Christ shall all be made alive' (v.22). Furthermore, and with a quote from the Greek translation of Gen 2:7: 'Thus it is written, "The first man Adam became a living being"; the last Adam became a life-giving spirit' (v.45). The final New Testament attestation of 'Adam' is in 1 Tim 2:13-14, where Paul as an explanation for the subordination of woman to man writes that 'For Adam was formed first, then Eve; and Adam was not deceived, but the woman was deceived and became a transgressor.' Besides these mentionings of 'Adam,' it is also relevant to mention Acts 17:26, where Paul states that 'he [God] made from one man [ἐξ ἑνὸς] every nation of mankind.'

It is also of interest that one of the so-called deuterocanonical or apocryphal writings, the Wisdom of Solomon, in the 1st century A.D. describes Adam as the 'father of the world' in its statement on Lady Wisdom: 'She preserved the first formed father of the world, that was created alone, and brought him out of his fall, And gave him power to rule all things' (Wisd 10:1-2; KJV). We find the same understanding of Adam in an earlier apocryphal writing, namely the Book of Tobit (4th-5th century B.C.), in which it is stated of God that 'Thou madest Adam, and gavest him Eve his wife for an helper and stay: of them came mankind'

(Tob 8:6; KJV).

Together with the aforementioned three uses of 'Adam' in *corpus paulinum*, these attestations are no doubt the greatest challenge for readings that understand 'Adam' in Gen 2-3 exclusively as a representative let alone a symbolic character. Furthermore, since the post-canonical attestations demonstrate that Adam and Eve are understood consistently as the first human couple and that the fall was understood as a historical event, the burden of proof is on those, therefore, who assert that 1) Adam and Eve were *not* historical persons, that 2) Gen 3 should *not* be understood as a narrative on a historical fall.

Besides, the history of interpretation is uniform for a reason, since it is very difficult to comprehend how the New Testament texts can be understood differently than an affirmation of Adam and Eve as historical persons, of the fall as a historical event, and of mankind as descending from the first couple. It is noteworthy, for example, that neither N. T. Wright nor Kenton Sparks disputes such an understanding but *admit* that Paul understood Adam and Eve as historical persons and the fall as a historical event. When they, nevertheless, state that the narratives in Gen 2-3 should be interpreted representatively or as symbolic stories, it is because Paul, in their interpretation of the New Testament texts, shared his contemporaries' errant understanding of Gen 2-3 .

Despite the preponderance of arguments for an understanding of Adam and Eve as historical individuals, the textual arguments for a representative interpretation must, nonetheless, be entertained as a valid reading since there *are* features in the texts challenging an exclusively 'historical' understanding. This is true for the

representative role Adam and Eve *also* play in Gen 2-3, and the fact that they appear neither in prose nor poetry in the rest of the Old Testament (with Hos 6:7 as a possible exception). In the New Testament, a representative role could be supported by the fact that Paul, in Romans and 1 Corinthians, does not mention the individual who, according to Gen 3, was the first to sin, namely *Eve*. Instead, it is *Adam*, who is singled out, probably as a representative for both of them. The challenge for the traditional interpretation is therefore that, if Adam should be understood as representative for (generic) man in Rom 5 and 1 Cor 15, why should he not also be understood representatively in Gen 2-3?

The purpose here is not to settle the case, but the discussion suggests a model that both acknowledges 1) the representative role played by Adam and Eve in Gen 2-3, 2) the unmistakable reference to Adam and Eve as the first human pair, and 3) the fall as an historical event. Models operating with Adam and Eve as purely symbolic or literary figures seem impossible to reconcile with Scripture, while it seems *difficult* to argue for models open to Adam and Eve not being the only humans around at the time referred to in Gen 2-3. The modifier 'difficult' is chosen deliberately in the assessment of the latter, since it is worth discussing whether Adam' in Rom 5 and 1 Cor 15 can be understood as a reference to Adam and Eve as representatives of a group of people created through planned or directed evolution.

### The Scientific Data

The general consensus in evolutionary biology is that the best explanation (to put it mildly) of the available scientific data is the hypothesis of common descent and speciation, which says that all orga-

nisms now on earth trace back to a single progenitor, and that there never was a bottleneck of two individuals in the process of speciation that resulted in the evolution of hominins. Joshua Swamidass, Associate Professor of Laboratory and Genomic Medicine at Washington University in Saint Louis, *accepting* this consensus, has recently suggested that the exclusive focus on genetic ancestry has created a discussion on false opposites that allows true discourse between interpreters of 'God's two books' to be suppressed.

The problem is, according to Swamidass, that whereas evolutionary biology discusses the reproductive origin of humans by tracing the origin of stretches of DNA, i.e., in terms of *genetic* descent, Scripture bases its arguments on *genealogical* descent, i.e., the reproductive origin of people (S. J. Swamidass 2018b, 6). Interpreting Scripture in terms of the modern, scientific category of *genetic* descent, creates, in other words, a false dichotomy between the consensus of evolutionary biology and interpretations by scholars with a high view on Scripture.<sup>10</sup> If, instead, the two sets of data are interpreted according to their own categories, a different picture emerges. Using the emic categories of Scripture and contemporary science, respectively, to bring the 'two books' together, Swamidass suggests the following scenario:

Entirely consistent with the genetic and archeological evidence, it is possible Adam was created out of dust, and Eve out of his rib, less than 10,000 years ago, living in a divinely created garden where God might dwell with them, the first beings with opportunity to be in a relationship with Him. Perhaps their fall brought accountability for sin to all their natural descendants. Leaving the Garden, their offspring

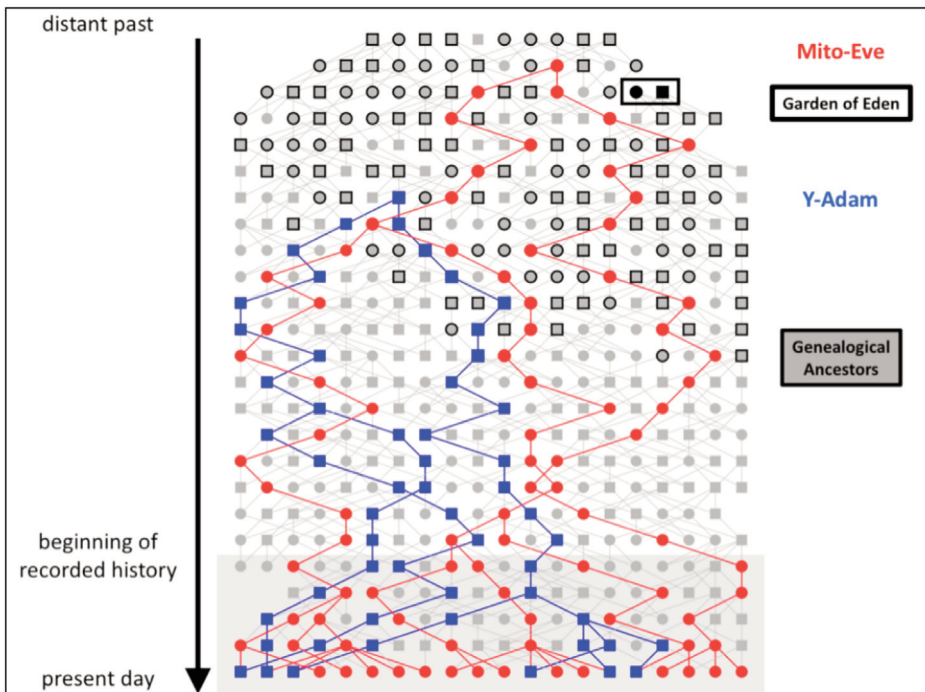
blended with their neighbors in the surrounding towns. In this way, they became genealogical ancestors of all those alive when recorded history begins about 6,000 years ago. Adam and Eve, here, are the sole-progenitors of all mankind. So, evolution presses in a very limited way on our understanding of Adam and Eve (S. J. Swamidass 2018b, 3).

The interbreeding necessary for the model may be alluded to in Gen 6:1 and Num 13:33, Swamidass mentions, and even if we identify Adam as early as 6,000 years ago, Swamidass continues, we may ‘still estimate he would be ancestor of everyone alive by AD 1, before Paul writes Romans and the ministry of Jesus begins. The point is that all these accounts, including a literalist and traditional account of a de novo Adam, they fit without contradiction with evolutionary science’ (S. J. Swamidass 2018b, 3–4). The explanation for this is given, helpful-

ly for the scientifically challenged (including the present author), in a graphic illustration:

The illustration, Swamidass explains,

show a cartooned pedigree, a genealogy, from past (top) to present (bottom). Squares and circles denote men and women, respectively, with lines indicating parentage. Red and blue individuals are those in the genetic lineages to a single ancestor, Mito-Eve and Y-Adam, respectively, with no relevance to Adam and Eve of Scripture. In contrast, every individual with a black border is a common genealogical ancestor of all those in recorded history (grey box). The Scriptural Adam and Eve (the black box and square) are created from the dust and a rib less than 10,000 years ago, have no parents, are in the Garden of Eden (black box), and are genealogical ancestors of everyone in history (S. J. Swamidass 2018b, 4).



Swamidass is not unaware of the challenges to the model posed by other aspects of the relevant texts from Scripture, not least the question of how, when and upon whom the image of God was bestowed. Was it also bestowed, for example, on the lines outside the garden with which the descendants of the couple in the garden interbred? If nevertheless, Swamidass asserts, ‘important theological status transmits to us by genealogical descent, exclusively from Adam and Eve, then they would be our sole-genealogical progenitors, but not our sole genetic progenitors. Keep in mind that sole-progenitorship allows intermixing with other lines’ (S. J. Swamidass 2018b, 3). In other words: True humanity, i.e., *Ādām Adam* in the Pauline sense (Rom 5; 1 Cor 15), appears for the first time in the couple in the garden. All humans, therefore, descend *genealogically* from the אָדָם *ādām* and חַוְוָה *ḥawwā<sup>h</sup>* of Gen 2-4, whereas all humans *genetically* speaking, trace back to non-human progenitors, i.e., to hominins (and *their* hominid progenitors) outside the garden without the *imago Dei*.

When we make a firm distinction between ‘genealogical ancestry’ – which is the interest of the Biblical text – and ‘genetic ancestry’ – which is the focus of evolutionary biology – we guard against superimposing a ‘genealogical’ agenda on the interpretation of the scientific data. By suggesting that we grant legitimate autonomy to the Biblical text in its definition of the term ‘human,’ we similarly guard Biblical interpretations against ‘genetic’ eisegesis. And the scenario suggested by Swamidass in his synthesis of the genealogically focused Biblical texts and genetically oriented evolutionary biology might be ‘an account,’ in the words of Swamidass, ‘where no conflict lies’ (S. J. Swamidass 2018b, 4).

The point here is not whether the scenario suggested by Swamidass is – or is not – a convincing synthesis of mainstream evolutionary theory and Scriptural interpretations which adhere to a high view on Scripture, but the commendable approach Swamidass takes to the question so pressing for Galilei and so urgent today: In the apparent contradiction between interpretations of God’s two books, is there a new path that can be walked that interprets the data of both with uncompromisable seriousness? Just as both the Catholic Church and individual Christian scholars from both Catholic and Protestant Churches eventually came to ask whether, in the light of the overwhelming scientific consensus on the heliocentric worldview, it was possible to interpret the Biblical text ‘heliocentrally,’ Swamidass invites us to ask, In the light of the overwhelming scientific consensus on the evolutionary origin of man, is it possible to interpret the Biblical texts and the scientific data in a complementary rather than contradictory way?

Swamidass’ point of departure is, of course, that the scientific consensus now has become so overwhelming that interpreters of Scripture no longer can uphold the ‘the-two-can-never-wed-approach,’ and that time has come to seriously ‘court’ evolutionary theories. Given that is the case, and applying the principles of Galilei discussed above, the next questions are *whether* and, given a positive answer, *on which conditions* ‘the two can wed.’

It goes without saying that the naturalistic or materialistic worldview under which mainstream evolutionary biology operates is utterly incompatible with a Scriptural worldview, and that the scientific data must be interpreted in accordance with the latter if serious ‘courting’ is to

take place. But there are other conditions, that must be met as well. An ‘uncompromisable’ interpretation of the Biblical texts (i.e., an interpretation which adheres to a high view on Scripture) seems to be an understanding, as we have seen, of the אָדָם ʾādām and חַוְוָה ḥawwā<sup>h</sup> of Gen 2-4 as both representatives of and sole genealogical pro-genitors of humankind.

Another ‘uncompromisable’ interpretation seems to be that the description of God’s creative work is incompatible with the clockmaker-god of Deism, and that we need to allow for a more active role on God’s part. Such a role is, however, largely undetectable by science, since scientific analysis is based on natural – not supernatural – causation. Whether or not God created the first humans *de novo* or through directed evolution, is a related (and difficult) question, of course, but the picture emerging from Gen 1-2 is not of a passive and uninvolved but very creative and intervening God. And though this intervention, again, may not be detectable for scientific inquiry, it needs to be taken into consideration in ‘courting’ evolutionary theories. Christian scholars must, in other words, insist that the principles of natural causation underlying mainstream evolutionary theories must be supplemented by supernatural ones. Not as a god-of-the-gaps-argument, but as a necessary corollary to the worldview of Scripture. How, when, and to which degree supernatural causation took place is another matter on which Scripture is not clear and on which scholars adhering to a high view on Scripture, consequently, disagree.

Whether the scenario suggested by Swamidass honours these ‘uncompromisable’ interpretations of Scripture is a matter of debate, of course, but that’s the whole idea! Keeping in mind that the Copernican controversy took generations

if not centuries to solve and reminding ourselves of the dynamic and provisional character of scientific theories as well as the distinction between the authoritative *norma normans* and the derived *norma normata*, we should not expect the ‘Darwinian controversy’ to be solved overnight. Just as it took a Kepler, Brahe, and Newton before it became obvious that the scientific consensus demanded a new interpretation of Scripture, it may take several ‘post-Darwins’ until (if at all) it becomes pressing or necessary to change the traditional readings of the creation accounts in Genesis.

## Discussion

The purpose of recommending a debate on the compatibility or complementarity of evolutionary theories and interpretations of Scriptures along the lines of the Copernican controversy is not to foreshadow a similar result, namely that, just as Renaissance interpreters eventually caved in to heliocentrism, Christian interpreters will also come to accept readings compatible with some form of evolutionary theory. The process may, of course, lead to the result that ‘the two can never wed.’ Ted Cabal, for example, writes elsewhere that ‘Darwinism has been courted and hybridized by even young-earth creationists (e.g. widespread speciation), but conservative evangelicals have remained opposed to an evolutionary first couple, believing it entails serious theological problems,’ and that he is ‘biblically unauthorized to accept’ evolutionary creationism as described by representatives of BioLogos (Keathley, Stump, and Aguirre 2017, 66–67). Though for Cabal, the process has obviously (already?) convinced him that the courting will never result in a wedding, Cabal shares the view of Swamidass, that the time has come for



Christian interpreters to ‘court’ theories of evolutionary science. And the negative outcome of Cabal’s process should be understood – in the light of Cabal’s own emphasis on the ‘non-overnightness’ character of the debate – as a contribution to that debate.

An important precondition for the debate is to create the same ‘sandbox’ for interpretative and hypothesizing experimentation as called for by the Lutheran theologian Andreas Osiander in the above-mentioned foreword to Copernicus’ *De revolutionibus orbium coelestium*, for various syntheses between interpretations of Scripture and scientific theories to be discussed without inquisitory strategies hindering a healthy and constructive debate. Initiatives taken by institutions and organisations like Discovery Institute, The Faraday Institute for Science and Religion, BioLogos and Reasons to Believe must be welcomed, therefore, since they have created precisely such sandboxes where models for interpretations of the scientific data can be developed and discussed. And the dialogue between representatives of BioLogos and Reasons to Believe with professors from Southern Baptist Seminary as facilitators – published in the already mentioned book *Old-earth or Evolutionary Creation?* – is exemplary of the ‘courting’ necessary for clarifying whether traditional understandings of Scriptural texts on the questions of origin should be revised. The same is true for research projects like the *Creation Project* of the Carl F. H. Henry Institute for Theological Understanding at Trinity Evangelical Divinity School, with its declared purpose to ‘to catalyze a field of study around the doctrine of creation that is faithful to Scripture and informed by scientific evidence’ (The Creation Project 2016). The

same is true *in principle* for organisations like Creation Ministry International, Institute for Creation Research or Answers in Genesis, but – and there is a ‘but’! – a characteristic of these organisations is that they usually demand a particular (and usually traditional) interpretation of Scripture as a precondition for ‘courting’ scientific theories. An obvious example is the *addendum* to the two Chicago Statements on Biblical Inerrancy /Hermeneutics (CSBI/H) suggested by the organisation Answers in Genesis, which sets as a condition for ‘courting’ scientific theories that interpreters agree on the following affirmation and denial:

We affirm that the great Flood described in Genesis 6–9 was an actual historic event, worldwide (global) in its extent and extremely catastrophic in its effect. As such, it produced most (but not all) of the geological record of thousands of meters of strata and fossils that we see on the earth’s surface today.

We deny that Noah’s Flood was limited to a localized region (e.g., the Mesopotamian valley of the Tigris and Euphrates Rivers). We also deny that the Flood was so peaceful that it left no abiding geological evidence. We further deny that the thousands of meters of sedimentary rock formations with their fossilized remains were largely produced after or before the Flood or even before Adam (Answers in Genesis n.d.).

These are interpretations, however, on which there is no consensus among interpreters with a high view on Scripture, that is, interpreters who adhere to the principles of the CSBI/H, and since the CSBI/H is open to disagreement on these matters it could well be argued that the *addendum* suggested by Answers in Genesis runs counter to the spirit of the

CSBI/H. This does not necessarily mean that ‘creation science’ of Answers in Genesis is unimportant or scientifically unsustainable, and interpreters of Scripture need to include this research in their process of ‘courting.’ The problem is, however, that the interpretative exclusivity of these organisations makes it impossible for dissidents to play in the same sandbox, and that the scientific theories of these organisations tend to become isolated and marginalized in relation to the broader scientific discourse necessary for clarifying whether they are better explanations of the scientific data than other models.

In addition to the need for such sandboxes for *scholarly* discussion, we need similar arenas for lay interaction in the

church. This is somewhat more challenging, of course, since, unlike organisations which usually promotes one particular model or view, many churches want to create an environment that is inclusive of more than one interpretation. If the rhetoric is based on the empirical data and shows respect for proponents of differing interpretations of these data, and if a ‘Galilean’ strategy is followed, it should be possible, however, to create an atmosphere in which a high view on Scripture can be combined with sound conservative skepticism towards and critical testing of new scientific theories without creating the expectation that crises between God’s two books on this level are likely to be solved in one’s own generation.

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## Notes

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<sup>2</sup> Reported by Socrates Scholasticus, *Historia Ecclesiastica*, IV, 23 (PG 67, 518).

<sup>3</sup> *Sermones*, 68, 6 (PLS 2, 505).

<sup>4</sup> *Confessiones*, XIII, 15, 16

<sup>5</sup> The distinction between general and natural revelation was not Luther's invention, of course, since it was introduced already by Thomas Aquinas (c.1225-74), who defined 'natural theology' as the task of discovering what we can know about God and his truth wholly apart from special revelation.

<sup>6</sup> I thank my colleague Peter Olsen for these references.

<sup>7</sup> Pivotal was of course texts on the mobility of the sun (Josh 10:12-13//Hab 3:11; Ps 19:4-6; Ecc 1:5), and the stability of the earth (1 Sam 2:8; 2 Sam 22:16; Isa 24:18; Job 9:6; 38:4-6; Ps 18:15; 93:1; 96:10; 102:25; 104:5; Prov 8:27-29; 48:13; 1 Chron 16:30; Joh 17:24).

<sup>8</sup> A different approach may be found in the suggestion by the late Ian Barbour who, in 1988 (and in an elaborated version in his 1990 Gifford lectures) suggested that the relationship between science and religion be understood in terms of the four models of conflict, independence, dialogue, and integration (Barbour 1990; for a brief outline of the models see Giberson 2018).

<sup>9</sup> Wikipedia's distinction between and definition of literalistic and literal readings is representative of how it is used by the present writer: 'Biblical literalism or biblicism is a term used differently by different authors concerning biblical interpretation. It can equate to the dictionary definition of literalism: "adherence to the exact letter or the literal sense," where literal means "in accordance with, involving, or being the primary or strict meaning of the word or words; not figurative or metaphorical"' (Wikipedia 2018).

<sup>10</sup> One representative expression of such a 'high view' would be the two statements issued by International Council of Biblical Inerrancy (ICBI), namely *Chicago Statement on Biblical Inerrancy* (CSBI) and *Chicago Statement on Biblical Hermeneutics* from 1978 and 1982. ICBI was officially dissolved in september 1987, and all historical documents were transferred to Dallas Theological Seminary's archive, from where they may still be accessed (<http://library.dts.edu/Pages/TL/Special/main.shtml>).