

Perspectives on Creation

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The following article will attempt to present different ways of reading and thinking about Genesis and about Science. The reader must judge whether I have been successful or not – the creation narrative is a complex development and there are many ways of reading and understanding the account. Is one method to be preferred above another? I don't know, but I suspect that it was so written to provide sustenance to every generation over a period spanning thousands of years. A reader from antiquity (from a different culture) brings a different perspective to the text than a modern reader. I understand Genesis as containing layers of meaning and depths of revelation, and with discovery of different “strata” new insights into an ancient text should emerge.

Different Reader Perspectives

Literal Perspective

The first, most prevalent (and oldest) perspective is a “literalist” reading of the text: the text means exactly what it says. This seems straightforward – a week of creation, man made from clay and placed in Eden, the earth and universe about 6,000 years old. However, on closer examination exegetical problems emerge. Where does it say that the earth (let alone the universe) is 6,000 years old? The age of the earth is calculated from generational lists but these lists may be nominal or incomplete. A literal reading understands the creation of the sun as occurring on day four but is that correct? Moreover, day seven is not modified with the “evening/morning” formula – how do we understand this in a literal sense? The text obviously holds more meaning than a simple “literal” reading would suggest.

Metaphorical Perspective

Perhaps we should read the account as an extended metaphor or as an allegory? The use of certain words such as “lamps” for the luminaries and mention of seasons (i.e. feasts) anticipate the tabernacle. This is confirmed by the giving of a law (don't eat) and the layout of Eden (as a sanctuary with cherubim and East entrance). Moreover, this is clearly a priestly account with emphasis on activity that separates and divides elements in accordance with the holiness code. Furthermore, the slaughter of Abel (at the entrance to Eden) and the sending away of Cain mirrors the Day of Atonement ritual.¹ The Bible concludes with paradise restored - a “new heavens and earth”, using imagery and metaphor that links the end (*Eschaton*) with the beginning (*Creation*).

The conclusion seems straightforward; the history of Israel has been reprojected in the guise of a creation account. Adam represented Israel under the law and we should refrain from reading into the text the creation of a particular individual (or the world for that matter) and treat the text as an extended metaphor/allegory. However, this is theologically unsatisfying; the apostle Paul treats Adam as a real person and other scriptures understand the creation accounts as reflecting the very real omnipotence and power of Yahweh. In the end, excising any literal meaning from the text will also rob the text of any metaphorical/allegorical meaning.

¹ See P. Wyns, “Day of Atonement” *CeJBI* 1/3 (2007): 22-28.

Psychological Perspective

The Genesis account presents an interesting psychological perspective as the story of Adam mirrors the developmental stages of man.² Childhood can be equated with the initial stage of innocence in which Adam is found. Like a child Adam is aware of death but it holds no fear for him. The child is protected and nurtured by the parents and respects parental judgement and knowledge of the world.

Therefore the relationship between Adam and God parallels the relationship between child and parent. Indeed, when Adam is given a partner he is informed that this will be the first step in distancing himself from his parents (in this case God is both “mother” and “father”). Adam’s rebellion against God shares many characteristics with the adolescent search for identity and the need to challenge authority. Adam only becomes fully self aware after he has sinned and judgement is pronounced; “You are doomed to die” (Alter³). At this juncture Adam realises that he is “naked” – he has become fully self-conscious and recognizes that his situation is one of complete vulnerability (nakedness).⁴ His newly acquired “knowledge” allows him to “see” (their eyes were opened) his situation with complete clarity; his self-consciousness has come at a terrible price. It should be recognized that Adam’s maturation and growing process was only completed when he sinned!

Lyn M. Bechtel goes so far as to say, “Adolescence is not “rebellion” or “sin” but natural and critical growth in which there is questioning, a quest for freedom, and new identity formation (Erikson, 1963, 1969). Maturation into adolescence occurs with the accumulation of experiences, and so children are ready to engage life on a more multifarious level. Now disobedience *is appropriate and necessary* because obedience would stifle psychological maturation and critical thinking”.⁵

The post-sin Adam was no automaton but a fully independent, thinking, self-aware *moral being* that could chose to turn his back on God. He was also a weak, vulnerable creature subject to death. His newly acquired “knowledge” allowed him to form his own moral judgements and direct his own life (in that sense he was like the *Elohim*) – but here is the rub - Adam would never know the consequences of many of his actions until it was too late. The acquisition of the knowledge that allowed him to determine his own destiny would lead to a world of moral ambiguity and unintended consequences. ⁶ Man became a moral creature with a conscience; able to chose between right-and-wrong, to feel shame and guilt, and ever burdened with an awareness of his deficiencies and vulnerabilities.⁷

² The depiction of Adam bears a resemblance with Erikson's Stages of Psychosocial Development

³ The translation offered by R. Alter in “Genesis” gives the correct sense of the Hebrew usually translated as; “You shall surely die” Robert Alter, *Genesis: Translation and Commentary* (W. W. Norton & Company, 1997)

⁴ See the section on the “serpent” for analysis of “nakedness”

⁵ Lyn M. Bechtel, “Developmental Psychology in Biblical Studies” in *Psychology and the Bible: From Freud to Kohut, Volume 1 of Psychology and the Bible: A New Way to Read the Scriptures* (eds. J. Harold Ellens, Wayne G. Rollins, ABC-CLIO, 2004), 127-128.

⁶ Think here of global warming as just one example.....what about GM foods? Do we really understand the long term outcomes of the scientific decisions and moral judgements that we make? We obviously cannot cope with the knowledge that we have illegitimately acquired. In contrast. Yahweh has knowledge, wisdom and *foreknowledge*.

⁷ Contemporary scientists in ethology and evolutionary psychology seek to explain conscience as a function of the brain that evolved to facilitate altruism and cooperation within societies. People without the benefit of empathy or a conscience are known as psychopaths, sociopaths or narcissists. They choose what will benefit them as individuals despite the consequences for others and feel no shame or guilt. The

It is increasingly recognised that there is something strange about consciousness in terms of evolutionary development. Eminent philosopher, Thomas Nagel, concludes that Darwinian materialism has failed as a comprehensive scientific explanation for reality. Nagel rejects both reductionist and emergent physical explanations for consciousness, stating that “consciousness is the most conspicuous obstacle to a comprehensive naturalism that relies only on the resources of physical science.”⁸ Nagel even goes so far as to admit; “Even though the theistic outlook, in some versions, is consistent with the available scientific evidence, I don’t believe it, and am drawn instead to a naturalistic, though non-materialist, alternative.”⁹

Lest we be accused of “quote mining” it should be stated that Nagel is an ardent atheist with no predilection toward theism he is not advocating “God made it” as a solution simply stating the fact that some forms of theism do not contradict available scientific evidence on the existence of consciousness and that “materialism” (Darwinism) as it now stands cannot explain it.

The fact that humans are capable of abstract reasoning, mathematics, language etc is an enduring mystery to science. It seems that we “evolved” that way in order to be able understand the universe.¹⁰ Isolated, primitive, “unscientific” societies have the ability to perform higher mathematics (even though they never use these abilities in their simple hunter-gatherer lifestyle and had no previous contact with civilization they readily grasp abstract concepts) – therefore “modern humans” have an in-built ability, one that cannot be explained away as an “evolutionary trait” (even one that “piggybacked” on other traits) as consciousness is not necessary for survival of the species. Such a *highly developed consciousness* is unnecessary for the continuity of life (animals don’t have it) but it is required in order to make sense of the world.

Even the renowned scientist and co-discoverer of DNA, Francis Crick, found consciousness a legitimate avenue of research and later in his career he became a theorist for neurobiology and the study of the brain. In his book, *The Astonishing Hypothesis*¹¹ he posits that “a person’s mental activities are entirely due to the behaviour of nerve cells, glial cells, and the atoms, ions, and molecules that make them up and influence them.” However, as Nagel (and many other scientists and philosophers) point out, a purely materialistic explanation is insufficient when it comes to explaining consciousness.

If the universe is purposeless and without ultimate meaning then consciousness is nothing but a cruel hoax - why do creatures evolve with an awareness of their existential pointlessness?

The Christian theistic worldview has a better explanation for consciousness. Christian philosopher Gregory Ganssle offers a succinct explanation: “If God exists, then the primary thing that exists is itself a conscious mind of unlimited power and intellect. This mind has its own first-person perspective, and it can think about things. The notion that such a mind, if it creates anything, would create other conscious minds that have their own first-person perspectives and can think about things is not a great mystery.”¹²

argument would be that evolution selected for survival of society (the species) rather than the individual. However, ruthless psychopaths have often “advanced civilisation” and an argument can be made that psychopaths unencumbered by conscious are more true to the creed of survival of the fittest.

⁸ Thomas Nagel, *Mind and Cosmos* (New York: Oxford University Press, 2012), 35.

⁹ Quoted from: “The Core of Mind and Cosmos”, T. Nagel (August 18, 2013 9:00 pm NY times).
http://opinionator.blogs.nytimes.com/2013/08/18/the-core-of-mind-and-cosmos/?_r=0

¹⁰ See the thoughts of physicist/mathematician/philosopher Paul Davies on “The Mind of God”
<http://www.firstthings.com/article/1995/08/003-physics-and-the-mind-of-god-the-templeton-prize-address-24>

¹¹ F. Crick, *The Astonishing Hypothesis: The Scientific Search For The Soul* (Scribner reprint edition. 1995).

¹² Gregory E. Ganssle, “Dawkins’s Best Argument against God’s Existence” in *Contending with Christianity’s Critics* (ed. Paul Copan and William Lane Craig; Nashville: B&H Publishing Group, 2009), 81.

Literary Perspective¹³

A literary perspective, such as the “framework interpretation” employs the structure of Genesis 1 to read meaning into the text. G. Wenham sums it up as follows,

It has been unfortunate that one device which our narrative uses to express the coherence and purposiveness of the creator's work, namely, the distribution of the various creative acts to six days, has been seized on and interpreted over-literally... The six day schema is but one of several means employed in this chapter to stress the system and order that has been built into creation. Other devices include the use of repeating formulae, the tendency to group words and phrases into tens and sevens, literary techniques such as chiasm and inclusio, the arrangement of creative acts into matching groups, and so on. If these hints were not sufficient to indicate the schematization of the six-day creation story, the very content of the narrative points in the same direction.”¹⁴

The noted Hebraist A. Berlin averred, “We are now in the aesthetic, or literary age. The most avant-garde books on the Bible are studies of narrative or poetry, or applications of literary theory to the biblical text.”¹⁵ Questions of historicity are, for the most part, irrelevant; what are paramount are deliberations upon aesthetics. Conforming to what has been termed the classical approach to aesthetics, this category of biblical criticism obtains the meaning of a passage from “the interrelation of its parts, the formal character of its composition, and the universal application of the ideas it expresses ... which the text generates by its shape and composition”.¹⁶

Socio-Historic Perspective

The Socio-Historic perspective might use such tools as comparison – comparing Genesis with ANE creation myths. This is a legitimate line of scholarly enquiry and the findings are mixed as there are some cultural similarities (as we would expect) but many more dissimilarities. The conclusion of many scholars is that Genesis is *polemical* – that it was written to purposefully demythologize and counter many of the current myths. In the context of comparative religion Genesis is unique as it posits a primary cause (God), does not make the primary cause subject to the laws of the universe (transcendent); creation is not depicted as the result of a dualistic battle between “gods” but as a planned, orderly progression from chaos to order.

Another tool that might be used is source analysis (Documentary Hypothesis) in order to detect underlying sources in the text. This is a “deconstructionist”, some might say “reductionist”, method that looks at textual units rather than the whole story and often (if not performed correctly) finds “contradictions” between units. In the past century, such an approach was all the rage and consequently led to a reader perspective that saw Genesis as put together from different sources as a sort of (poorly executed) “cut and paste” exercise. Modern scholarship has largely moved away from that older view and

¹³ In this section we are dependent on M. Kay, “On literary theorist’s approach to Genesis 1: Part 1” from <http://creation.com/Literary-theory-1>

¹⁴ G. J. Wenham, *Genesis 1-15* (Waco, Texas: Word Books, 1987), 39–40.

¹⁵ A. Berlin, “Narrative poetics in the Bible”, *Prooftexts* 6:273, 1986 as cited in *The Book and the Text: The Bible and Literary Theory* (ed. R. M. Schwartz; Oxford: Basil Blackwell, 1990), 13.

¹⁶ J. Barton, “Reading the Bible as Literature: Two Questions for Biblical Critics” *Journal of Literature & Theology* 1/2 (1987): 135–136.

appreciates more the holistic textual harmony between the units.¹⁷ However, not all the results of source critical analysis are dismissed out of hand because *there are stylistic differences* between units, not only in the use of the divine names (Yahweh/Elohim), but also in the thematic content (i.e., Genesis 1 which is clearly a “priestly” account). How do we reconcile this? I have no doubt that sections were written (or perhaps orally passed on) by Moses, others by Aaron (the priest), some by Joshua (who described Moses’ death), and that under inspiration the various sources were edited by prophets (like Samuel etc). Therefore the underlying “sources” *could have* detectable influences from northern/southern Israel, from priest/prophet, but that does not mean that they are contradictory because the mind behind the revelation, guiding the outcome, is the mind of God. So, as with all other perspectives we should take away what is useful (some of the analysis is very astute) and discard the dross.

Covenant Perspective

A covenant perspective understands creation as part of Yahweh’s ongoing covenant with man and seeks to systematically place creation within a wider covenant context (Noah/Abraham/Israel etc). There is some merit to this position first put forward by the work of W. Eichrodt and G. E. Mendenhall¹⁸ and later progressed by W. Dumbrell who contends that the biblical picture of creation implies eschatology. He suggests that humanity is the agent through whom the aims of creation will be ‘realised’, and that the Sabbath of Genesis 2:1-4a is the goal of creation. He makes the point that the description of elements of creation as ‘good’ and the final assessment of all things as ‘very good’ are not statements about ‘perfection’ but that the creation corresponds to ‘divine intention’.¹⁹ More recently, covenant theology has been progressed in the work of N. T. Wright as a tool for understanding the writings of Paul.²⁰

Feminist Perspective

A feminist perspective acts as a corrective to the view that the OT is oppressively patriarchal with women accorded a subsidiary, less important role. This is patently untrue as the “mothers in Israel” (Rachel, Leah, and Sarah) often functioned autonomously with discretionary freedom within their societies. P. Tribble comments, “Discerning within Scripture a critique of patriarchy, certain feminists concentrate upon

¹⁷ D. F. Watson and A. J. Hauser comment as follows: “See Rendtorff’s terse assessment of source criticism: “I believe that the traditional Documentary Hypothesis has come to an end” (“Paradigm,” 44). A few lines later he adds, “The Wellhausen paradigm no longer functions as a commonly accepted presupposition for Old Testament exegesis.” Rendtorff’s statement sounds both bold and obvious. It is quite clear that for many scholars the documentary hypothesis has moved to the sidelines. The fact that Rendtorff’s statement sounds bold only indicates the resiliency with which the documentary hypothesis has dominated 20th century scholarship. Times are changing, however, and perhaps a thoroughgoing reappraisal of the fundamentals of Old Testament scholarship are in order. Already in 1978, D. J. A. Clines had expressed serious concern about the tendency in Old Testament scholarship to emphasize reconstructing the sources of the biblical text, and to atomize the text, both tendencies resulting in the neglect of the final form of the text (*The Theme of the Pentateuch* (Sheffield: Sheffield Academic Press, 1978, 7-15)). Today, a growing number of scholars share Clines’ concern.” D. F. Watson and A. J. Hauser, *Rhetorical Criticism of the Bible: A Comprehensive Bibliography with Notes on History and Method*, (Leiden: E. J. Brill, 1994), fn. 5, p. 6.

¹⁸ W. Eichrodt, *Theologie des Alteren Testaments* (Leipzig: Hinrichs, 1933); G. E. Mendenhall, “Covenant Forms in Israelite Tradition,” *BA* 17 (1954): 50-76. .

¹⁹ W. J. Dumbrell, *Covenant and Creation: An Old Testament Covenant Theology* (Sydney: Lancer, 1984), 26-31.

²⁰ N. T. Wright, “Creation and Covenant” in *Paul: In Fresh Perspective* (London: SPCK, 2005, 21-39; http://ntwrightpage.com/Wright_Creation_Covenant.htm

discovering and recovering traditions that challenge the culture. This task involves highlighting neglected texts and reinterpreting familiar ones. Prominent among neglected passages are portrayals of deity as female. A psalmist declares that God is midwife (Ps. 22:9-10): *Yet thou art the one who took me from the womb; thou didst keep me safe upon my mother's breast.* In turn, God becomes mother, the one upon whom the child is cast from birth: *Upon thee was I cast from my birth, and since my mother bore me thou hast been my God.* Although this poem stops short of an exact equation, in it female imagery mirrors divine activity. What the psalmist suggests, Deuteronomy 32:18 makes explicit: *You were unmindful of the Rock that begot you and you forgot the God who gave you birth?*²¹

Eve as the “mother of the living” was instrumental to the unfolding plan of salvation and any interpretation which seeks to diminish her role or place ontological “blame” is simply a replay of Adam’s game. Adam may not have been fooled by the serpent but that does not absolve him from responsibility. As the “gardener” Adam should have removed the “serpent” from Eden. He should have refused the reasoning offered by Eve. Did Adam stand by and idly watch Eve touch and eat the fruit and conclude that as nothing immediate happened it would be safe for him to do so? Even if Eve did not eat the fruit in the presence of Adam, but offered it after she had partaken, Adam could still have refused and offered himself as propitiation for her failure (that is what Christ does). Adam and Eve were partners in temptation and have the same status (if not the same roles) before God, and this holds true whether the temptation is understood literally or metaphorically.

Scientific Perspective

The scientific perspective is perhaps the least useful when reading Genesis. We might ask which scientific perspective? Do we use a “comparative” (socio-scientific) method reading Genesis against other ANE cultures? The problem is that we don’t know if the same terms of reference apply between Israelite culture and contemporary cultures, therefore our socio-scientific analysis becomes an exercise in linguistics and semantics as there is no such thing as “science” until the Greek era. Science and religion were not separate disciplines in the ANE (or with the Greeks for that matter). Should we compare the “science” of Genesis with modern science? Genesis is clearly not a scientific treatise so we are not comparing “like with like” - science is not about truth claims but about explaining observable phenomenon and extracting explanations (laws etc); these need to be placed within a wider framework as a materialistic approach alone cannot explain everything (this is recognized by many philosophers both modern and ancient).

Moreover, such an exercise supposes that modern science is the standard by which everything “scientific” should be measured. Is that a legitimate conclusion when 96% of the universe is still unknown,²² when quantum physics and general relativity cannot (yet) be made to work together, when abiogenesis fails to produce even pre-biotic life and when the emergence of consciousness is still not understood? It is possible that scientists of the future will look back at some of the current theories and find them inadequate. Science is not a “god” and does not have all the answers. That said, it would be

²¹ Dr. Tribble is Baldwin professor of sacred literature at Union Theological Seminary, New York. This article appeared in the *Christian Century* February 3-10, 1982, p. 116.

<http://www.religion-online.org/showarticle.asp?title=1281>

²² According to NASA in 2012, the mass composition of the universe can be broken down into: Heavy Elements 0.03%, Neutrinos 0.3%, Stars 0.5%, Free Hydrogen and Helium 4%, Dark matter 23%, and Dark Energy 72% (where is the remaining 0.17%?). But if 96% of the Universe is in the form of unseen substances, does this not mean that there is the possibility of hidden structure?

<http://science.time.com/2013/03/28/look-close-somethings-strange-in-the-photo-of-the-universe/>

foolish to dismiss all the advances in scientific knowledge but Genesis should not be held hostage by our incomplete knowledge of the universe.

Other Perspectives

The critical methods and perspectives now to be found are numerous, and the above overview should not be regarded as comprehensive. We have not included Textual Criticism, Form Criticism and Tradition History, Redaction Criticism, Canonical Criticism, Rhetorical Criticism, Narrative Criticism, or Postmodernist Criticism. Of course, some of the aforementioned are not perspectives but rather methods or tools that result in the emergence of different reader perspectives, and many of these methods overlap or have points of contact with each other.

Can we bring any other perspectives to the text? I feel that we can *and must* look at the texts in different ways. Without a rigid methodology this is difficult, but using the most appropriate interpretive tools and keeping an open mind it must be possible to integrate different reader perspectives so that polyvalent meaning emerges. Perhaps the best way to demonstrate what such an approach would look like is to enter into a dialogue with the text that allows us the freedom to question and investigate. Here follows such a free ranging discussion with the goal of discovering perceptions that enhance (not replace) existing reader perspectives.

Creation Days

The length of the creation days was examined in a previous paper,²³ which concluded that they are described as ordinary 24 hour days. Some have suggested that these days represent the days of “divine fiat” in which the decree is relayed to the angels but this seems unlikely as the work is inspected and pronounced good at the end of each day. Creative work is not just delegated on each day it is also satisfactorily completed. Others suggest that the seven days are undefined epochs of time but if that is the case why are they presented as the seven days of an ordinary working week?

In the previous paper, we noted Walton’s suggestion that this is God’s way of expressing the *creation of time*.²⁴ According to Walton, God’s first act was to create “time” and he supports this textually on the basis that there is a metonymy between the Hebrew for light (*’ôr*) and for day (*yôm*) in Gen 1:3-5. Walton understands “light” as a “period of light” (i.e., time) in concert with “daytime” (which also includes night in the 24 hour cycle). We noted that Walton’s suggestion held merit but objected that from an earthly perspective the passage of time can only be measured through the day/night pattern and the seasonal cycle. So, even if we accept Walton’s proposal we are still stuck with “time” being defined within a 24 hour morning/evening framework.

However, the Sabbath day **is not modified with the evening/morning formula**. Day seven is included in the creation week **and yet it has no time constraint**. This should be understood in an eschatological sense - man was made to enjoy eternity in the presence of God. The last day of the week is therefore timeless, it is translated literally as:

²³ See P. Wynn, “Interpreting Genesis 1” *CeJBI* 8/2 (2014): 13-26.

²⁴ According to Walton Genesis emphasises functional origins as opposed to material origins. Walton maintains that the ancients thought of existence in terms of function in society and culture, and, in their view, true existence is achieved only when mankind can benefit from these functions in the presence of God (pp. 27, 36). Walton understands the days of Genesis as a literal seven day period in history, sometime after the material creation, when God assigned the cosmos its real intended functions, prior to his taking up residence in it as his temple. John H. Walton, *The Lost World of Genesis One: Ancient Cosmology and the Origins Debate* (Downers Grove, IL: Intervarsity Press, 2009).

“.....and finished God on day the seventh”

.....but this day has no evening or morning!

This has obvious implications for how the other days are understood because they all fall within the **same week!** The first “six days” are deliberately contrasted with the last “timeless” day and this suggests that we understand the creation “week” as an initial period governed by time (marked by the passage of evenings and mornings) followed by a period outside the space-time continuum. In that case, the “six days” of creation should be understood nominally - they are six periods of “time” marked (expressed) by the passage of day/night, seasons etc followed by a “timeless” period; together this forms a “week”.

Time only holds relevance for mortal beings not for God. Man measures time in hours, days and years. We cannot even imagine life without the passage of “time” or what it means to dwell outside of time. To exist outside of time (and space) in some sort of perfect “present” must mean that every different possible future (and past) must be accessible and knowable. It is what we call omniscient and omnipresent but how can we really understand what that means? In essence, we all live in the “past” because the “present” is an infinitesimally fleeting moment, in fact Einstein demonstrated in the theory of general relativity that gravity causes the curvature of space-time and science is still grappling with the concept of time – is it illusory relative or non-existent? However, from a human, “earthly” perspective, “time” requires external markers and these are provided by the revolutions of our earth producing the seasons and the day/night rhythm. In these patterns the presence (or absence) of light is so important that nature (and our bodies) has developed a biological clock known as a circadian rhythm; a process that displays an endogenous, entrainable oscillation of about 24 hours. If nothing else, this fact alone expresses our “time bound earthly nature”.

Day six concludes with the statement; “Thus the heavens and the earth were finished, and all the host of them” (Gen.2:1). The term “host” (array/multitude) is sometimes used to describe armies but in this case the array refers to innumerable stars.²⁵ Abraham is told that his descendants will be as innumerable as the stars and Daniel is told that at the resurrection the wise will shine like the stars (Dan.12:2-3). The saints form the array of the heavens and it is only when “all the host of them” are fashioned that the work can be declared as completed in the *inclusio* at the end of day six.

If we have not yet entered into God’s “rest” it can surmised that creative processes are *still ongoing* and will only be *finished* when the new creation (new heavens and earth with all the “host”) suddenly appears. Only then will the purpose of creation be fulfilled and “time” (whatever it means) will culminate in the Sabbath, for God will be “all in all” (1 Cor. 15:28). This means that the “week” extends from the first creative act until the *Eschaton* and that divine creative activity is still ongoing! God will not “rest” until his saints have been “created”.

The Formation of Man

Did God literally shape man out of soil and breathe into him? The description given is of an *elemental* creative act where inanimate material is brought to life and *sustained* by God. Can we treat this text as a metaphorical summary of long naturalistic processes or does it describe a radical intervention? In what sense was Adam fashioned? The Genesis account does not describe a new evolutionary stage of development but rather animation from inert materials. While it is literally true that man decomposes to “dust” this is not a commentary on the chemical composition of man (which is essentially the same as

²⁵ The same word is used metaphorically in Dan 8:10 where some of the “host and the stars” are cast to the ground.

that of animals), or on his DNA structure, or on a natural process, but on his **nature** which is “of the earth and earthy” (1 Cor.15:47) in other words man is part of his environment. In biblical terms we are from “below” and God is from “above”.....man is not transcendent; he is inescapably bound by his environment and by the laws that govern the universe. This is an important point to grasp- man is not separate from his physical world. In contrast God is not limited or constrained by the strictures of the space-time continuum even though everything lives and moves and has its being in him.

It seems that the creation of Adam holds both metaphorical and literal meaning - however, the *creative (fashioning) mechanism is not explained in detail* as it is not relevant to the story. All we need to know is that God “made or fashioned” Adam and that Adam is essentially “soil/clay/dirt” (man is elemental and physical). Unlike God, Adam is part of the material world and is only alive because he is animated by God’s spirit.

Was Adam the first man? Science suggests that modern humans share ancestors with other hominids. It seems undeniable that other hominids have walked the earth (whether they are directly related to modern humans or not) but this need not be a problem as it is also undeniable that all modern humans are related and have a common progenitor.

All modern humans share common genetic ancestors and these have been termed “mitochondrial Eve” and “Y-chromosome Adam”. Despite the biblical nomenclature it would be a mistake to assume that geneticists understand all modern humans as products of a biblical “Adam and Eve”. Matrilineal descent goes back to our mothers, to their mothers, until all female lineages converge. DNA from the mitochondria, the energy powerhouse of the cell, is carried inside the egg, so only women pass it on to their children. According to geneticists “mitochondrial Eve” was not the first modern human female, but instead just one of thousands of women alive at the time with an unbroken lineage that continues on today. (For instance, if an ancient woman had only sons, then her mitochondrial DNA would disappear, even though the son would pass on a quarter of her DNA via the rest of his genome or if a woman was infertile or had a daughter who died the mitochondrial DNA lineage would disappear).

Similarly, “Y-chromosome Adam” is not thought to have even been contemporaneous with “mitochondrial Eve” and therefore mating with her would be impossible, so “Y-chromosome Adam” was the most successful of a group of “Adams”. Anthropological genetic science is a developing field and two major studies of modern humans’ Y-chromosomes suggest that ‘Y-chromosome Adam’ and ‘mitochondrial Eve’ may have lived around the same time after all.²⁶

If the extent of the differences between the genetic material of two populations and the mutation rate are known, then the time at which two populations diverge can be calculated. Most studies rely on genetic comparisons between humans and chimpanzees to determine the average mutation rate for humans and this has recently been challenged.²⁷ Of course, if the determined mutation rate is wrong it produces large discrepancies in the timescales. Even if the mutation rate is known, molecular clock analysis is still remarkably imprecise; typical uncertainties are on the order of $\pm 50,000$ years. The original “population size” (e.g. a group of Adams and Eves) also plays a role in modelling as estimates of the ancestral population size of humans are based on genetic diversity.

²⁶ G. D. Poznik, *et al.*, *Science* 341 (2013): 562–565 and P. Francalacci, *et al.*, *Science* 341, (2013): 565–569.

²⁷ Phillip Endicott *et al.*, “Evaluating the Mitochondrial Timescale of Human Evolution,” *Trends in Ecology and Evolution* 24 (2009): 515–21.

Using mathematical models, the heterozygosity of a population can be computed at any point in time from the heterozygosity of the ancestral population and the original population size. When an experiment was conducted with two sheep released on an isolated island eventually producing seven hundred offspring the measured diversity exceeded the predictions made by the models by up to a factor of four. The models underestimated the genetic diversity of the actual population.²⁸

Moreover, population size is cyclical and can be influenced by factors like polygamy and extinctions (like a flood or epidemic etc) can cause genetic bottle necks where populations are rapidly reduced in size. Whether or not “mitochondrial Eve” and “Y-chromosome Adam” can be equated with their biblical counterparts, all modern humans must have converged at some stage of the timeline to an irreducible singularity of descent unless we want to assume the spontaneous emergence of a “group” of modern humans which is implausible even in naturalistic terms.

If the progenitors of all modern humans originated with a dyad it follows that their descendants must have intermarried. Human descent must of necessity have derived from incestuous unions as there was no prohibition against consanguineous relationships until the Law of Moses. Indeed, it was the norm in the ANE, especially societies such as those of Ancient Egypt and others, brother–sister, father–daughter, and mother–son, cousin-cousin, aunt-nephew, uncle-niece, and other combinations of relations were practised among royalty as a means of perpetuating the royal lineage. Abraham married his half-sister and Jacob was sent to his uncle Laban and married both of his daughters.

Biblical chronology is selective and therefore daughters are rarely mentioned in chronological lists. In fact Genesis 4 only mentions three females; Adah and Zillah (the wives of Lamech) and Zillah’s daughter (Naamah) – but they are only mentioned because they are pertinent to the recounting of Lamech’s vengeful poem. Also, biblical chronologies are not comprehensive (they often skip a generation listing a son as a grandson) moreover, we cannot discount the use of notional number structuring for describing the longevity of individuals (such as in the Sumerian King List) indicating that the length of the pre-history is undetermined.²⁹ The result of this phenomenon is that we do not know the size of the population or the male/female ratio in the time of Cain. However, it seems that polygamy was the norm, with the most successful males having multiple wives. This means that some male lineages may have been genetic “dead–ends” and that competition for females was probably fierce.

It is of course a truism that in-breeding compounds mutations and leads to increased risks of congenital disease and deformity in offspring. In fact, the tracing of female genetic origins is based on the rate of mutation in mitochondrial DNA. However, the first humans were made in the image of the divine and pronounced “very good” and as the degenerative process is time dependent the early population would have been healthy. The Hebrew word *ishshab* is the word for “woman,” and it means “from man.” It is a derivation of the Hebrew words *‘yishb* and *enowsh*, which both mean “man.” This can be seen in Genesis 2:23 where the name “woman” (*ishshab*) is given to one who came from Adam. Although the woman shared material with the man it implies similarity without necessitating cloning; this would boost the genetic diversity of any progeny. The earliest man’s partner was called his *ishshab* and Cain’s partner is also called his *ishshab* indicating the likelihood of a consanguineous relationship – one that bears some sort of correlation, either directly (like Adam to Eve) or indirectly (a sister or niece). In any case, all creatures

²⁸ Renaud Kaeuffer *et al.*, “Unexpected Heterozygosity in an Island Mouflon Population Founded by a Single Pair of Individuals” *Proceeding of the Royal Society* B274 (2007): 527–33.

²⁹ See the Appendix in Andrew Perry, *Old Earth Creationism* (Sunderland: Willow Publications, 2013), 93–98.

originate with a dyad and in that aspect man is no different, so the origins of every species must commence with connatural reproduction.

The Law of Moses forbade exogamous and consanguineous relationships and from a genetic viewpoint that was a sensible prohibition as it maintained racial separation (holiness) as well as genetic diversity. Even in the modern era we have societies (especially in the Middle East) that promote consanguineous relationships and those societies are characterised by higher than average genetic abnormalities.

In the biblical context Adam was the first creature made in the image of God. The Bible is not interested in relating the fate of other hominids because they were not “in the image” (whatever that might mean). Therefore, in the biblical *and scientific sense* Adam was the first “man” because he is the progenitor of *all modern humans living today* and he is defined as different from anything that went before because he is fashioned in the “image” – Adam (modern humans) is **not defined as “man” because he bears a resemblance with previous hominids but because (in some sense) he resembles God.** It is this quality that differentiates modern humans from any preceding hominids.

Reproduction and Death

From the Genesis account it can be extrapolated that death was already present *outside the Garden of Eden*. This can be inferred from the fact that reproduction was inbuilt into the natural world because all living things had the ability to reproduce after their kind and contained “seed”. Moreover, when Adam named the animals³⁰ he realized that he had no partner. This suggests that gender differentiation existed in the animal kingdom. Reproduction is necessitated by the presence of death; in the case of immortality (i.e. the angels) there is no need for marriage or reproduction. Therefore the Genesis narrative depicts Adam as placed in a world where the cycle of life and death, continuing seasons and normal natural phenomenon are already long established. However, Adam is located in a special place where he is able to fellowship with God and where he is protected from the vagaries of life. It is sometimes inferred from Romans 5:12-13 that death was introduced into the animal kingdom as well:

Therefore, just as through one man sin entered into the world [*Kosmos*], and death through sin, and so death spread to all men, because all sinned—for until the Law sin was in the world [*Kosmos*], but sin is not imputed when there is no law. (NASB)

Note that the emphasis here is on “men” (spread to all men) in the context of “law”. Paul is obviously drawing parallels between Mosaic Law and the Edenic prohibition. Paul highlights the fact that “all sinned” in obvious reference to *men* (not animals because they do not sin). Paul’s argument is that although death reigned in the intervening period (between Adam and Moses) sin was not imputed (in a national sense) because there was no Law of Moses. Paul is clearly speaking about the human “*Kosmos*” just as the Fourth Gospel often uses the word “*Kosmos*” as a technical term for the “Jewish world”(cf.12:19; 7:4; 3:19; 1:29; 8:26; 15:19; 17:14), so also Paul uses the term in a limited fashion. The term cannot be extrapolated to include the natural world particularly as his argument is concerned with “men” and “law”.³¹

³⁰ Naming implies his “Lordship” over the natural order – animals were brought before Adam by God.

³¹ Pauline use of the term is polyvalent and flexible; sometimes specific (denoting the Jewish cultural world) at others more universal. When he combines the context of *kosmos* with “law” he is limiting the term to the Jewish (Mosaic) *kosmos*. e.g., in Rom 3:19 Paul has the Jews in mind (under the law) and he adds; “that all the world (*kosmos*) may become guilty”. The reference here is to the guilt of the Jewish “world” induced by disobedience to the Law.

The fact that animals were created with reproduction in mind demonstrates that death was part of the natural world before Adam entered the scene; animals do not possess higher consciousness but are guided by the hand of instinct. It is sometimes objected that God pronounced each day's work as "good" and this could not be the case if death (with the exception of man) was present in the natural world. However, such value judgements cannot be made; we can only accept that the natural world conformed to divine specifications. That the natural world is "red in tooth and claw" is true but the natural world is not deliberately cruel, malicious, wasteful or capricious. Animals do not destroy their environment and every natural element gives glory to the creator's wisdom. Moreover, death has a useful function in the scheme of nature in providing food and fertilizer for eco-systems. Death is not consciously perceived by animals in the same way as by humans. Although some animals display funerary rites (i.e., elephants) attribution of human emotions to animals is anthropomorphic; animalistic survival instinct cannot be equated with human consciousness of death. Animals live in the "moment" and enjoy each "moment" on the other hand humans often fear the future and seldom enjoy the "moment". Animals do not suffer from existential angst, only humans (and this is more painful than any momentary creaturely suffering).

Another fact, often overlooked, is the occurrence of extinction events. Why did God allow dinosaurs to roam the earth and then wipe them out? Of course, we don't know the answer to that question but we can observe the results and speculate. It is the occurrence of extinction events and historical climate change, plate tectonics, etc. that allowed vast reservoirs of fossil fuels to be formed in the earth's crust. Without those fuels civilization and "modern life" would not be possible and the earth would not be able to support such a huge (technologically advanced) human population. On the other hand, without those fuels we would not be facing our own extinction event! Is it coincidence (*sic*) that the bulk of these fuels lie in Arab lands thus reinforcing the geo-political influence of Israel's neighbours? Without death in the natural world there would not be any fossil fuels - nature *is required* to be a dynamic, complex, evolving system (which includes death) for these processes to work and God in his foreknowledge formed everything in advance to provide for man! (God saw that it was "very good"). Unfortunately we have been foolish and profligate with these gifts because (unlike God) we do not know the ultimate consequences of many of our actions. We have not nurtured these gifts; we have squandered and abused them.

Adam and Eve existed in a state of stasis while they dwelt in Eden. The Garden of Eden should be understood as a sanctuary (temple) that allowed Adam to commune with God. Although Adam was not immortal he enjoyed the benefits of immortality while he remained in the divine presence. He did not suffer from degenerative process and though he was aware of death at an intellectual level, the fear of death did not penetrate his self-consciousness.

It seems that Eden itself was saturated in mist (fog) in the same way that the inner sanctum of the temple was shrouded in incense. No irrigation was necessary in Eden (no man to till the ground), however, outside "the Garden" there were rivers (and seas), obviously sustained by regular rainfall.

Therefore, we have an "inside" Eden and an "outside" Eden with the Garden representing a controlled environment. In scientific terms, an experiment is an orderly procedure carried out with the goal of verifying, refuting, or establishing the validity of a hypothesis. Controlled experiments provide insight into cause-and-effect by demonstrating what outcome occurs when a particular factor is manipulated. The factor that is "manipulated" here is the introduction of the "serpent" into an idyllic setting.

The Serpent

Is the serpent literal or metaphorical? Does the serpent represent the externalisation of falsehood? From a literal viewpoint the serpent is a strange creature – a cold blooded, often poisonous, relic from a different era³² that sheds its skin as it grows (giving the impression of immortality), with some snakes displaying vestigial limbs. Whether literal or metaphorical the text informs us that the “serpent was more cunning than any beast of the field which the Lord God had made” (Gen.3:1). This is an important point because no matter how the serpent is viewed it was “made” by God.

Alter remarks that the Hebrew employs a typical word play here, punning on the word “cunning” (*`arum*) and nakedness (*`arom*) of the previous verse (Gen.2:25). The serpent’s cunning is therefore indirectly linked with “nakedness”. Nakedness need not indicate sexual shame, but rather *vulnerability* as it describes a poor person unprotected from the cold (Job 24:7), it was used by Isaiah to announce coming judgement against Ethiopia by walking around naked and barefoot indicating that they would be humiliated and led away as slaves, chained and naked (Isa.20:2-4) and Micah was commanded to go about “barefoot and naked” as a sign of impending judgement (Mic.1:8), unfaithful Jerusalem is described as “naked and bare” in her youth (i.e., slaves in Egypt, Ezek.16:7,22) and Hos.2:3,5 depicts the judgement of God stripping Israel naked, as at birth (i.e., completely vulnerable). So “nakedness” indicates vulnerability – mankind had become slaves to sin-the “cunning” of the serpent wrought death, alienation and existential angst.

The serpent is cunning or shrewd and this can be understood in a positive sense (the word is often used positively in Proverbs) or in a negative sense. It is often employed to denote human reasoning or wisdom and therefore it can be used negatively (Job 5:12; 15:5) or positively (as by Jesus); “shrewd as snakes and innocent as doves (Matt.10:16) the disciples were given power to tread on serpents and scorpions during their preaching mission (Lk. 10:19; “serpent” is most certainly used in a symbolic sense in that passage).

Dating back to Chalcolithic times, snakes appeared in Mesopotamia as cultic symbols on pottery and bronze castings. In the Gilgamesh epic the wise serpent robs the hero of a plant that could give him immortality and the Egyptian Pharaoh wore a serpent crown, the cobra indicating divine power and protection. It seems that serpent symbolism was widespread in the A.N.E.

The serpent was condemned to “eat dust” – this is not literal but is used to indicate the humiliation of an enemy (Ps. 72:9; Isa. 49:23; Mic. 7:17) and crawling on the belly classes the serpent as an unclean animal under the Law. In the kingdom the serpent *will still* “eat dust” (Isa. 65:25) his humiliation has now become permanent, but more importantly the serpent is rendered harmless (Isa. 11:8) no longer able to inject his poison into the innocent child (like he did in Eden). The language in Isaiah is clearly symbolic – the wolf and lamb feeding together (the lamb being Christ and the wolf a symbol for Benjamin)³³ with the lion (of Judah) eating straw with the beast of burden (Israel). The image is one of harmony – no more enmity – no more religious differences in the “holy mountain” as the serpent has been neutralised and rendered harmless.

³² According to Science, reptiles are distantly related to dinosaurs and more recently related to the amphibian class. In a literal sense reptiles are left over from a different (ancient) world.

³³ See Gen.49:27 and note that the apostle Paul was a Benjamite (Rom. 11:1) who persecuted Christ, just as Saul persecuted David. In Acts 9:5 Paul is depicted as “kicking against the pricks” (i.e., trying to neutralise the sting) as he viewed the Christian movement as a serpent to be crushed underfoot!

Civilization

Civilization was the answer to human vulnerability (Adam and Eves' nakedness) – the building of cities³⁴ (sanctuaries in imitation of Eden) and control of the natural world by developing societies based on agriculture and animal husbandry. Weapons and tools were manufactured and cultural and religious expression flourished. Thus, science *is first applied in the service of civilization* in order to *control* the natural world³⁵ and create an idyllic space where man can express himself *away from God*. Recently, a renowned scientist commented that we should be actively searching for an earth 2.0 in preparation for when we need to abandon our beautiful planet! Such is the folly of man that we fail to comprehend that it is *because of our alienation* from God that we carry within us the seeds of our own destruction - we cannot flee from ourselves. Civilization became the **fig-leaf**³⁶ that covered human vulnerability but if left unchecked civilization will ultimately destroy humanity. As the Psalmist recognized –there is no refuge outside of God – certainly not one that can be constructed by man (whether on this planet or in another cosmos!).

Conflicting Reader Perspectives

The creation account represents only 0.39% of all the Hebrew words of the Old Testament (WMT version). Despite the briefness of the creation account I hope that I have demonstrated the complexity, art, subtlety, theological and psychological significance and outright genius of the composition. There are many ways to read Genesis. Is one method to be preferred above all others or can we procure something from all of them? Do we ignore scientific, textual and historic advances and preserve some sort of unchangeable interpretation (like an insect fixed in amber)?

I believe that would be to the detriment of our understanding and that an inflexible approach will eventually implode under its self-imposed boundaries. God is unchanging, but his word is dynamic, complex and adaptable so that it is able to speak truth in each generation. Each generation will bring different perspectives when reading that word and in each generation those perspectives will need to be tested.

The idea that creation has a first cause (God)³⁷ who is not bound by the physical universe was a revolutionary (revelatory) perspective in the ancient world of polytheism. When the Bible describes the

³⁴ Projected Urbanization is 60% of the world population by 2030. Mega-cities cause many environmental problems and become “heat sinks”. The first murderer was also the first city builder (Gen.4:17) and his descendant (also called Cain) the developer of the first metal weapons. Tubal-Cain is the Aramaic and Hebrew forms of the same word i.e., smith or merchant related to acquisition and materialism. This seems to be the biblical commentary on “civilization”. For an excellent biblical/philosophical treatment of civilization see Jacque Ellul, *The Meaning of the City*, (reprint Paternoster Press, 1997).

³⁵ It was intended that Man have authority over the natural world (Gen 1:26, 28) but this deteriorated into a relationship of control and despotism (fear and dread; Gen 9:2); the world was subjected to vanity and man was no longer prohibited from consuming animals. It is obvious that animals were already used for sacrifice as well as animal products (skins etc). After the deluge consumption of animals was no longer prohibited although it was undoubtedly already practiced (by some) before the deluge. Subjection to vanity is often referred back to the introduction of death but if death already existed (in the natural world) what does it mean? The world was subject to “vanity” because man had usurped and distorted the role of benevolent “Lordship” over creation conferred to man by God – mans’ alienated status subject the natural world to exploitation (Rom 8:22).

³⁶ In the Bible the fig tree often represents Israel. In that case the fig-leaf represents the cloak of nationalism, exclusivity and traditions with which Jewish society “covered its nakedness”. In other words Jewish civilization becomes the refuge from the vulnerability of sin and death.

³⁷ The cosmological argument is a closely related set of arguments for the existence of a First Cause (or instead, an Uncaused cause) to the universe, and by extension often used as arguments for the existence

socio-psychological development of humans it anticipates a scientific discipline that did not even exist and highlights a problem (consciousness) with which science is still grappling. Moreover, when Genesis comments on civilization it places the greatest human achievements in perspective – a project driven by conquest (murder) and existential angst - one that results in despoiling the earth. So few words, yet they contain so much truth.

What then can we say about scientific perspectives on creation? Genesis was (obviously) not written to answer scientific questions but that does not necessarily mean that the account contradicts science. A Young Earth Creationist (YEC) approach understands the account literally, ignoring the fact that much of Israel's history is deliberately schematized, often divided into chronological units (some of them overlapping) in order to emphasize theological points. The Temple is commenced 480 years, or 12 generations of 40 years each, after the Exodus, and 430 years pass between the building of the Temple and its destruction. The basis of some of the schematization is the Jubilee cycle of 420 years and 70 years exile on which the 490 years of Daniel are structured. The numbers 420 and 430 (and multiples of them) reoccur throughout scripture. Ezekiel is instructed to lie on his side for 390 days and subsequently 40 days (total 430 days) representing the iniquity of Israel and Judah. The days of Daniel are multiples of 420 ($3 \times 420 = 1260$) and 430 ($3 \times 430 = 1290$) and addition of the weighted gifts brought at the consecration of the tabernacle in Num. 7 is 2520 shekels ($= 6 \times 420$). The Sabbath at the end of the creation week has *no time marker* in Genesis, yet in Revelation the Sabbath is portrayed as a 1,000 years. If we calculate the generational lists and interpolate from the millennium we can conclude that the whole history of earth from beginning to end is a mere 7,000 years!

However, we cannot take a *schematic chronology* (based on incomplete/nominal generations) and turn it into an *absolute* chronology. The 1,000 year Eschaton is itself a reflection of “*a thousand years are in thy sight as yesterday when it is past*” (Ps 90:4). The ancients had no standard “calendar” until the Seleucid era. Each civilization dated their history on the hand of particular events that were important to them (for example the ascension/reign of a king etc) making it difficult to establish reference points between different civilizations. Nowadays we standardize secular chronology by referencing to the year zero- either before or after Christ (or Common Era). One of the problems of establishing sacred chronology is the scarcity of common references points with secular history. The schematization of history in the OT highlights the importance of the last 6,000 years of human history; it does not tell us when the universe began (Ussher deduced that the first day of creation began at nightfall preceding Sunday, October 23, 4004 BC, in the proleptic Julian calendar, near the autumnal equinox).

What can we say then of Theistic Evolution (TE)? Does God simply create the framework (physical laws) and allow natural process to proceed unabated? Could we, in principle harmonize a metaphorical reading with such an understanding (provided we reject the separate theory of abiogenesis [AG])?³⁸ There are however problems with accepting TE, just as there are problems with accepting YEC. Systems scientist Peter Corning points out that living systems cannot be reduced to underlying laws of physics:

Rules, or laws, have no causal efficacy; they do not in fact “generate” anything. They serve merely to describe regularities and consistent relationships in nature. These patterns may be very illuminating and important, but the underlying causal agencies must be separately

of an "unconditioned" or "supreme" being, usually then identified as God. It is traditionally known as an argument from universal causation, an argument from first cause, the causal argument or the argument from existence.

³⁸ “Abiogenesis” (AG) is the chance origination of life from lifeless chemicals, through exclusively natural, unguided processes. Acceptance of TE does not necessarily imply acceptance of AG.

specified (though often they are not). But that aside, the game of chess illustrates ... why any laws or rules of emergence and evolution are insufficient. Even in a chess game, you cannot use the rules to predict “history” — i.e., the course of any given game. Indeed, you cannot even reliably predict the next move in a chess game. Why? Because the “system” involves more than the rules of the game. It also includes the players and their unfolding, moment-by-moment decisions among a very large number of available options at each choice point. The game of chess is inescapably historical, even though it is also constrained and shaped by a set of rules, not to mention the laws of physics. Moreover, and this is a key point, the game of chess is also shaped by teleonomic, cybernetic, feedback-driven influences. It is not simply a self-ordered process; it involves an organized, “purposeful” activity.³⁹

We may set up the “rules” of a chess or cricket game but that does not mean we can predict the outcome! Even with the very “fine-tuned” rules⁴⁰ that we have in our universe it is possible that an entirely different kind of world would emerge.

This means that even TE would necessitate more than just establishing the “rules” and then standing back and “letting it rip”. Further, a purely mechanistic view of TE would disallow the “supernatural”, as that kind of intervention would upset a materialistic understanding of natural processes. However, our faith is based on acceptance of the “supernatural” – for the resurrection of Christ should be considered a “creative act” (and is often described as such in the NT), an act that cannot be explained by *natural process* nor can it be relegated to the realm of “metaphor”.

And here we must admit the limitation of our knowledge both in a scientific and theological sense. We might ask what kind of body the resurrection body is. The apostle Paul would probably say “stupid question” (thou fool, 1Cor.15:36), for although there are all kinds of celestial bodies and biological forms, and although each seed generates a plant after its kind the same cannot be extrapolated to the resurrection. What is “sown” actually dies and what is raised is something incomprehensible; “It is sown a natural body; it is raised a spiritual body” (v.44). So, if we only accept “natural processes” (natural body) as the *creative mechanism* we are still left with the necessity of divine intervention to transform that which is natural into that which is spiritual.

Does this mean that I reject *natural process* out of hand? At the risk of accommodating the charge of being “*all things to all men*” (1 Cor.9:22) I say “not so”. It is apparent to me that natural process is integral to the warp and woof of life – creating life with the in-built ability to adapt makes sense (the question is one of degree).

³⁹ P. A. Corning, “The Re-Emergence of ‘Emergence’: A Venerable Concept in Search of a Theory”, *Complexity* 7 (6) (2002): 18–30 (14).

⁴⁰ The fine tuning of the universe is a different problem usually resolved by hypothesising the existence of a multiverse (so increasing the probability of at least one universe emerging with our physical constants) supposedly supported by the asymmetry found in photographs of cosmic background radiation. However, this may just be noise (see links) or a purely random occurrence (probability of one in a few hundred) or caused by as yet unknown underlying structures in the universe (dark matter/energy). Moreover, theories are constantly revised or updated – Stephen Hawking has recently revised his black-hole theory in accommodation of quantum physics- apparently radiation and energy *can escape* from black-holes.

<http://theconversation.com/cosmic-radiation-the-dawn-of-new-physics-or-statistical-slip-up-30108>
<http://sci.esa.int/planck/51563-all-sky-maps-of-the-cosmic-microwave-background-at-nine-frequencies/>

Of course a proponent of TE might object that there is simply no evidence for intervention (a new creative act) interrupting a background of ongoing natural processes. Naturalistic processes posit an *unbroken link* (origin of the species) from the present to the past on the basis of the fossil record and DNA evidence. This evidence suggests an uninterrupted progression from simple life forms in the past to higher life forms in the present. However, a master builder is able to use “new bricks” or “old bricks” when building a house and in the case of a renovation perhaps a combination of both. There is in my view no reason why existing material cannot be creatively rearranged to produce a new organism.

Horizontal Gene Transfer (HGT) serves as a cautionary tale against a paradigm of simple linear progression. HGT refers to the transfer of genes between organisms in a manner other than traditional reproduction. This mechanism (HGT) lies at the basis of antibiotic resistance in bacteria but higher organisms have been demonstrated to possess large amounts of “foreign” material. For example, cows are known to possess 25% reptile (snake) DNA. Prof. David Adelson, study lead and head of Molecular and Biomedical Science at the University of Adelaide told Australian ABC News. “But what we’ve shown is that there are DNA segments...called jumping genes...which are able to jump between species.” The similar DNA sequence that the two species share is able to “cut and paste itself within the genome,” and thus replicate itself and jump to another species, Adelson explains. In that way, it’s similar to how a retrovirus like HIV works, except it has “no way of making an infectious particle, so it’s a bit of a mystery how it gets from [one] species to another,” Adelson concedes.⁴¹

Although HGT is known to occur in bacteria because they form connective tubes (called pili) and exchange little bits of DNA, like sharing software, it occurs rarely in a multicellular host and that mostly through retroviral infection. However, such large scale incorporation of new material smacks of the type of “genetic engineering” that humans practise when they add jelly fish genes to pigs to make them glow in the dark, it is therefore difficult to understand how (and why) a retrovirus can accomplish this. Moreover, evolutionists admit that it wreaks havoc with the *phylogenetic tree (tree of life) as it contradicts a linear progression. If genes can jump laterally across the “branches” of the tree how can one state with confidence that all commonality can be explained by vertical (up the tree trunk) reproduction/adaptation?*⁴²

What then of the creation narrative? There is nothing in Genesis that prevents us understanding the earth as being very ancient; there is also every reason to understand the intention of the text as pointing to a *schematically young earth*. This is not contradictory; it is simply the way scripture works; combining literal, metaphorical and ontological meanings.

When did “Y-chromosome” Adam live? We are not told but Genesis describes human prehistory depicting agriculturists (Cain) and pastoralists and graziers (Abel). Agriculture is a prerequisite for civilisation and agriculturalists have always driven out nomadic herders before establishing cities. This is the situation described in Genesis and it compliments what is known about the history of civilization with

⁴¹ Study: *Cows Are 25 Percent Snake*, by Erika Eichelberger and *Genes jump from snakes to cows* online @ <http://www.motherjones.com/blue-marble/2013/01/dna-cows-snakes-adelaide-flinders-study> <http://www.abc.net.au/news/2013-01-03/snake-genes-27hitchhike27-into-cow-dna/4451308> [cited Feb 2014]

⁴² “The flow of genes between different species represents a form of genetic variation whose implications have not been fully appreciated. Here I examine some key findings on the extent of horizontal gene transfer (HGT) revealed by comparative genome analysis and their theoretical implications. In theoretical terms, HGT affects ideas pertaining to the tree of life, the notion of a last universal common ancestor, and the biological unities, as well as the rules of taxonomic nomenclature”. M. Syvanen, “Evolutionary Implications of Horizontal Gene Transfer” *Annual Review of Genetics* Vol. 46: 341-358 (Volume publication date December 2012).

the oldest cities first appearing in the regions described in Genesis. The materialization of *modern humans* made in the “image” and creating cities is the first step in the Bible story. Without agriculture civilisation is not possible, without civilisation writing is not possible, without writing the Bible story could not be reliably passed on. When did this occur? According to science the appearance of anatomically modern humans occurred between 100,000 to 60,000 years ago with civilization “taking off” about 10,000 years ago (after the last ice age). The story of Adam is therefore the story of behaviourally modern humans.....our story.

Do we understand creation in a purely material way or does it encompass functionality? Once again I believe that both material and functional elements are intended. God appointed the sun and moon on day four (assigned it a function) to regulate the feasts just as God assigned a covenant function to the rainbow.⁴³

The question of localism or universality is also legitimate.⁴⁴ For example, the flood can be conceived as a local event or a universal event. Biblical evidence (and science) suggests that it was a local catastrophe rather than a world- wide event. In the same manner we can ask if the establishment of a temple (Eden) occurs within a local environment where function is accorded and where it is described in phenomenological and metaphorical terms rather than ontologically.

New approaches to Genesis may be open to the criticism that they are simply a response to the challenge of science, thus making the word of God subservient to human reasoning. Such a charge assumes that a literalist hermeneutic is the only correct approach when it is evident that Paul often employed allegory when interpreting Scripture and some of the (pre-scientific) “early church fathers” (e.g. Augustine) freely employed allegory when interpreting creation.

This is not an appeal to read Genesis either allegorically or literally, nor is it appeal to adopt TE, YEC or Special Creation but to allow for the freedom of hermeneutics. We need to do more Bible study not more science.

In the words of W. A. VanGemenen:

But the Spirit of God calls on each generation to adapt anew to God's revelation. He is the power of God who applies the word of God to a new situation. He transforms human beings, interpretations, and traditions. As long as he is operating in and through the word, the community of God's people lives in the tension between stability and adaptability.⁴⁵

⁴³ Unless we want to argue that the universe had different physical laws before the flood (which is impossible) or that it never rained before the flood (despite seas and rivers and therefore climate existing).

⁴⁴ See for example, A. Perry, *Special Creationism* (3rd edition; Sunderland: Willow Publications, 2015).
<http://www.lulu.com/shop/andrew-perry/special-creationism/paperback/product-22015011.html>

⁴⁵ W. A. VanGemenen, “Prophets, the Freedom of God, and Hermeneutics”, *WTJ* 52.1 (1990): 79-99, 96.
http://www.biblicalstudies.org.uk/article_god_vangemenen.html