

Carol A. Hill

# Original Sin with Respect to Science, Origins, Historicity of Genesis, and Traditional Church Views

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*In the matter of origins, the anthropological and DNA evidence shows that Homo sapiens dates from ca. 200,000 YBP (Years Before the Present) in Africa and humans migrated around the world from Africa starting at ca. 60,000 YBP. By ~10,000 YBP humans are known to have practiced agriculture and husbandry in the Near East, with Genesis 4:2 placing Adam and Eve in the Ubaid archeological period (~5000 BC) in southern Mesopotamia. This evidence brings up the seemingly insurmountable problem of how sin could have been biologically transmitted by Adam and Eve to the entire human race as in the Augustinian doctrine of original sin. This paper is the first of three consecutive articles on different aspects of original sin. The first two (Hill and Clouser) are each dependent on the other: Hill's article describes the science related to origins, historicity, and traditional church views; Clouser's article theologically supports Hill's proposals that Adam and Eve were not the first humans, but that they were real people. The third article (Murphy) deals pastorally with the origin of original sin.*

Keywords: origins, original sin, anthropology, archaeology, historicity of Genesis, pre-Adamites

A substantial portion of the western church today holds to the doctrine of original sin as it was worked out by Augustine.<sup>1</sup> He considered Adam and Eve to have been the biological parents of the entire human race, so as to be consistent with all people being guilty of sin from birth due to Adam's failure to obey God. In this article, I will approach the subject of Augustine's doctrine of original sin from the scientific evidence, state three main science-theology responses to that evidence, and provide the evidence for the historicity of the Genesis text. I will end this article by briefly examining the Augustinian doctrine of original sin and by proposing that a spiritual, rather than a physical, transmission of sin can be reconciled with science. However, since I am not a trained theologian or biblical scholar versed in the history of the church,

the important theological implications for some of the positions taken here will be supported by Roy Clouser in the next article.

## Scientific Evidence Related to the Doctrine of Original Sin

We will begin by examining the scientific evidence for human origins: first, the anthropological and DNA evidence since it pertains to the earliest humans; second, the archeological evidence since it pertains to the time when Genesis says that Adam and Eve resided in the four-rivers-of-Eden area of Southern Mesopotamia;

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Period	Date	Homo Species/Artifacts
<b>Pre-Paleolithic</b>		
Hominids	~6,500,000–2,500,000 YBP	<i>Australopithecus</i> (“Lucy”).
Homo	~2,500,000–1,500,000 YBP	<i>Homo habilis</i> ; earliest tool maker; flaked tools.
	~1,500,000–400,000 YBP	<i>Homo erectus</i> ; flaked and chopping tools, fire control. Found in Europe, Israel, Africa, Asia (“Java man,” “Peking man”).
<b>Paleolithic</b> (paleo = old, lithic = stone)		
<b>Lower Paleolithic</b>	~1,000,000–45,000 YBP	<i>Homo neanderthalensis</i> (~650,000–45,000 YBP); <i>Homo denisovan</i> (~300,000–50,000 YBP); <i>Homo naledi</i> (~300,000 YBP); ritual burials, flint tools, fire, spears, pendants, carvings. <i>Homo sapiens</i> located in Africa (~200,000 YBP); stone hand-axes, huts, bone markings, use of ocher, “Mitochondrial Eve,” “Y-Chromosome Adam.”
<b>Middle Paleolithic</b>	~120,000–45,000 YBP	<i>Homo sapiens</i> migrate out of Africa in two waves: a minor one at ~100,000 YBP (Nubian), and a major one at ~60,000 YBP (fig. 2); <i>Homo floresiensis</i> (~100,000–50,000 YBP).
<b>Upper Paleolithic</b>	~45,000–20,000 YBP	<i>Homo sapiens</i> appear abruptly in Europe at ~45,000 YBP ( <i>Cro-Magnon</i> ). Neanderthals coexist and interbreed with <i>Homo sapiens</i> in Europe from ~45,000–40,000 YBP. Cave art, sculptures, beadwork, weaving, spears, ritual burials, use of primitive boats. Animism and shamanism (?).
<b>Mesolithic</b> (meso = middle, lithic = stone)	~20,000–10,000 YBP	<i>Homo sapiens</i> : Natufian, Kebaran cultures in Europe; bow-arrow, cave art, “Venus” figurines. Use/trade of obsidian and bitumen in Middle East. Animism and shamanism.
<b>Neolithic</b> (neo = new, lithic = stone)		
Pre-Pottery	~10,000 YBP–5000 BC	<i>Homo sapiens</i> ; beginnings of agriculture and domestication of animals. Animism, beginnings of polytheism. “Cheddar Man” in Great Britain at ~8000 YBP.
Pottery	~5500–5000 BC to present Adam, Cain	Mesopotamian culture; irrigation, first cities, temple building, polytheism; early pottery.
<b>Chalcolithic</b> (chalco = copper; use of copper)	~5000 BC–3200 BC Tubal-Cain	Metallurgy (copper); city-states, warfare between cities; “Ötzi the Ice Man” in Europe.
<b>Bronze Age</b> (use of bronze)	~3200 BC–1200 BC Noah (~2900 BC) Abraham (~2000 BC)	Metallurgy (bronze = copper + tin); boat making; import and export of goods; city-states consolidated into countries.
<b>Iron Age</b> (use of iron)	~1200 BC–600 BC Solomon-David	Manufacture of iron; larger-scale warfare. Biblical history well founded.

**Table 1.** Chart of anthropological and archeological periods, including where Adam and his descendants fit in time according to Genesis. Note that the first archeological evidence of “religiously modern humans” (for example, cave art, ritual burials) dates from the Upper Paleolithic, but it could also extend into the latter part of the Middle Paleolithic. **YBP** = **Years Before Present**, **BC** = **Years Before Christ**.<sup>2</sup>

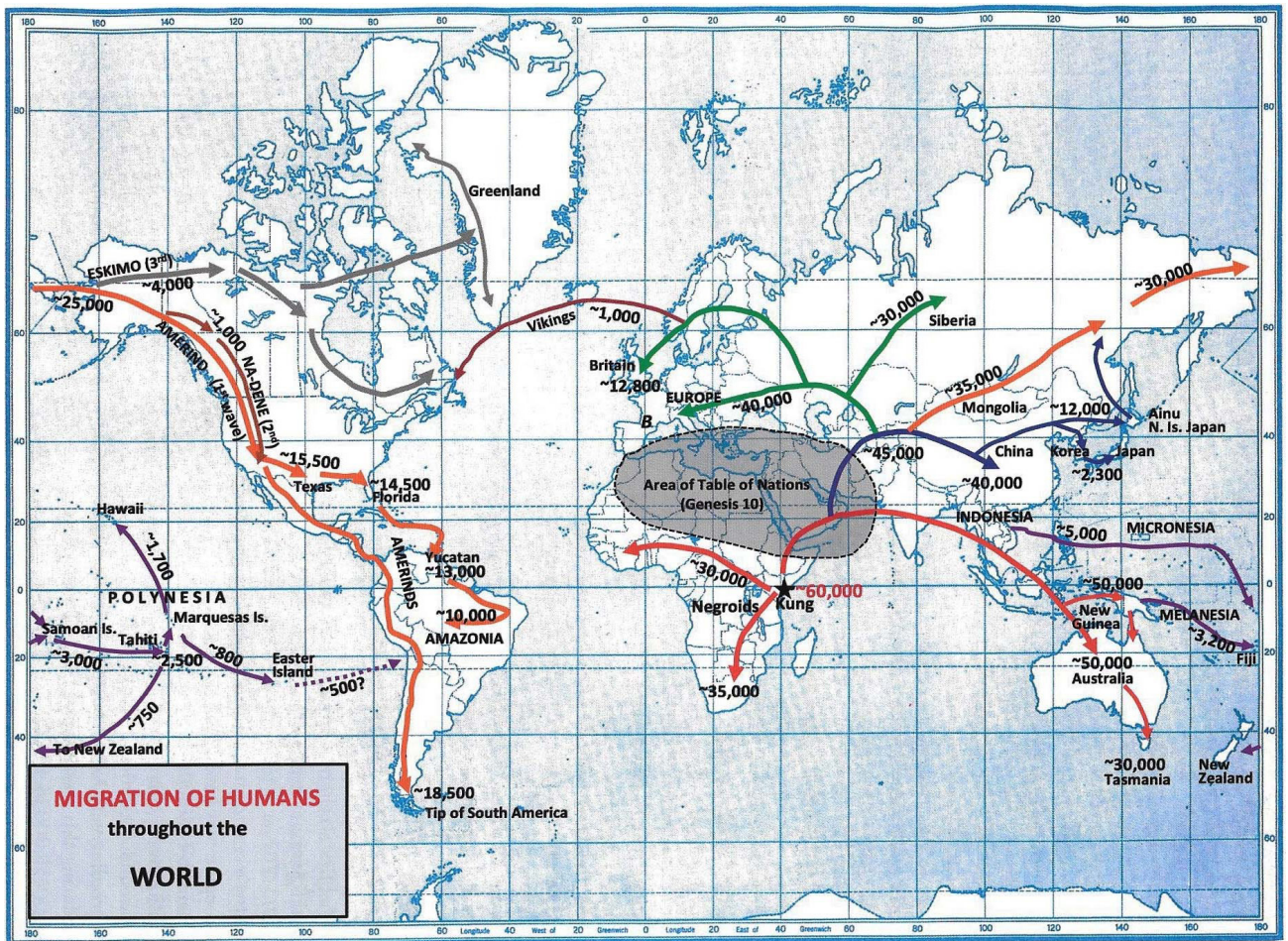
third, the technological evidence from early Mesopotamia that shows the sophistication of Adam's world; and fourth, the ethnological and linguistic evidence for the Table of Nations and Tower of Babel.

*Anthropological and DNA Evidence for Placing Homo sapiens in the Paleolithic*

The anthropological evidence for the appearance of humans in the fossil record is in direct conflict with the doctrine of Adam and Eve being the first humans who biologically transmitted original sin to the entire human race. Table 1 shows the anthropological evidence for the better-known *Homo* species and the approximate times that they lived. As you go forward in time on this chart, the more fossil, DNA, and artifact evidence becomes available, and the dates get more specific and reliable. *Homo sapiens* is the youngest of these *Homo* species, and is thought to

have evolved in Africa approximately 200,000+ YBP in the Paleolithic.<sup>3</sup> It has also been established from DNA evidence that *Homo sapiens* interbred with both *Homo neanderthalensis* (Neanderthal) and *Homo denisovan*, because there are small amounts of DNA of these two *Homo* species in the DNA of some humans today (and of human DNA in Neanderthal bones).<sup>4</sup>

Based mainly on DNA evidence, figure 1 shows the migration of *Homo sapiens* out of Africa and around the world. The earliest, but relatively minor, migration out of Africa and into the Middle East is believed to have occurred ca. 100,000 years ago,<sup>5</sup> but the major migration of humans out of Africa occurred at about 60,000 YBP, and then from there, this mass migration extended to all parts of planet Earth (fig. 1). It is known that most humans alive today are related to this last migration, based on the DNA sampling of



**Figure 1.** The main (~60,000 YBP) migration routes of humans (arrows) throughout the world, starting in eastern Africa with the !Kung people (black star). The gray area denotes the ethnological extent of the Table of Nations: i.e., the area where the descendants of Noah migrated after the flood (Genesis 10). All the dates are Years Before Present (YBP). B = Basque.

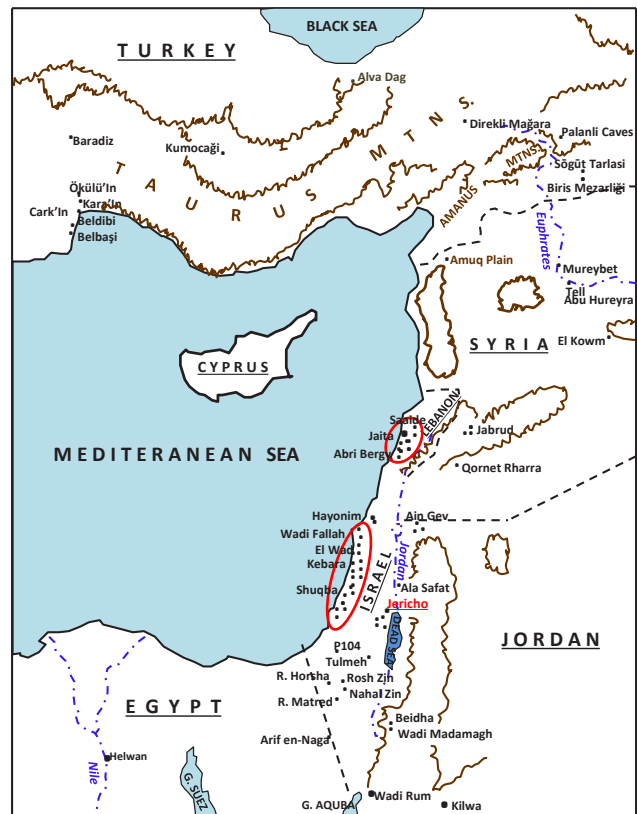
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millions of modern humans and on human remains found in the fossil record.

### Archeological Evidence for Placing Adam and Eve in the Neolithic-Chalcolithic

In the Mesolithic (~20,000–10,000 YBP, table 1), humans began to inhabit the area around the Mediterranean Sea, and by about 12,000–10,000 YBP the Natufians were already cultivating wild wheat and barley (fig. 2).<sup>6</sup> It is also known that the domestication of cattle, sheep, and goats occurred ca. 10,000 YBP in areas surrounding Mesopotamia. Genesis 4:2 also places Adam and Eve in this same time frame because it says that “Abel was a keeper of sheep, but Cain was a tiller of the ground” (Gen. 4:2, KJV). Culturally modern humans arrived in southern Mesopotamia in the time frame of 5500–5000 BC, as documented by the archeological evidence of early cities, irrigation, temple building, and pottery types.<sup>7</sup> Genesis 4:17 (NIV) states that “Cain was then building a city, and he named it after his son Enoch,” implying that the building of cities in Mesopotamia had begun by this time. Thus, the Bible (and C-14 dating) squarely places Adam and Eve in the Ubaid Period of the Chalcolithic (~5500 BC–3800 BC), which approximately concords with the genealogies of Genesis 5. This concordance also continues for later archeological periods in Mesopotamia and with biblical persons and events (table 2).



**Figure 2.** Seventy-eight Early Neolithic Natufian sites in the eastern Mediterranean area, ~12,000 to 10,000 years ago, by which time the Natufians were already cultivating wild wheat and barley. Within the circled areas, many of the less prominent sites are not named. This map shows that people groups inhabited the Near East long before 6,000 years ago, the age of Earth claimed by young-earth creationists. Modified from James Mellaart, *The Neolithic of the Near East* (London: Thames and Hudson, 1975).

Archeological Period	Archeological Assigned Age	C-14 Dates (calibrated)	Biblical Person/Event
Ubaid	~5500–3800 BC	ca. 6000–4000 BC	Eridu, Adam and Eve?
Uruk	~3800–3100 BC	ca. 4000–3350 BC	Tubal-Cain, Jabal, Jubal?
Jemdet Nasr	~3100–2900 BC	3350–2960 BC	Shuruppak, Noah and flood?
Early Dynastic I	~2900–2750 BC	2960–2760 BC	Nimrod?
Early Dynastic II	~2750–2600 BC	2760–2655 BC	Tower of Babel?
Early Dynastic III	~2600–2350 BC	2655–2260 BC	
Dynasty of Akkad	~2350–2150 BC		
Third Dynasty of Ur	~2150–2000 BC		
Old Babylonian	~2000–1600 BC		
			Abraham = ~2000 BC
			Joseph = 1800 BC

**Table 2.** Archeological periods of Mesopotamia and their possible correlation with people, places, and events in Genesis. If Adam lived in southern Mesopotamia, where Genesis says the Garden of Eden was located, it would have been at the beginning of the Ubaid Period, since that is the earliest archeological period identified for that area. The radiocarbon (calibrated C-14) dates are from a variety of sources.<sup>8</sup>

In the Chalcolithic (chalco=copper), the mining, transportation, and metallurgical working of copper ore began in the Middle East and Europe at about 5000 BC or a little before (table 1). This was also the time when larger city-states arose in the region, and when foreign trade relations began to range far and wide. Raw materials were acquired from all over the Near East and Middle East, and objects, techniques, and artistic artifacts of various origins began flowing into Chalcolithic settlements. This was the time period when the famous “Ötzi the Iceman” lived in the mountainous border between Italy and Austria 5,250 years ago (fig. 3),<sup>9</sup> and it is into this Neolithic-Chalcolithic time frame that Genesis places Adam and Eve and Cain and Abel. That there were other people coeval with Adam and Eve and Cain and

Abel at this time and place, is seen in Cain finding a wife from a group of people outside the Garden of Eden, and building a city from that population (Gen. 4:17).

### *Technological Evidence for the Sophistication of Adam’s World*

After the Chalcolithic, during the Bronze Age (~3200–1200 BC)—or within the period that Noah lived (ca. 3100–2900 BC; tables 1 and 2)—the technological prowess of the Mesopotamians began to advance quickly. The Mesopotamians had what is considered to have been one of the first technologically based civilizations. The Mesopotamians developed astronomy and mathematics. They invented the wheel and potter’s wheel; they discovered how to make glass. In architecture, they developed the arch, dome, and vault and they laid out the plans for cities, temples, and canals. They invented writing and a numbering system, and they also set up a legal system and compiled collections of laws. Their literature included epic texts, ritual texts, chronicles, prayers, hymns, proverbs, love poems, laments, and myths.<sup>10</sup> Some of these technological advances are evident even in the Ubaid Period, during which time Adam and Eve and their immediate descendants lived (table 2). Bitumen for the caulking of boats has been documented for the Ubaid Period; the Tigris and Euphrates Rivers were diverted into canals during this time; and Ubaid architects were familiar with geometric principles such as 1:2, 1:4, 3:5, 3:4:5, and 5:12:13 triangles for laying out buildings.<sup>11</sup> The world of Adam and Eve was *not* that of an aboriginal pair living in the far distant past, but a civilization starting to develop technological sophistication.



**Figure 3.** Reconstruction of Ötzi the Iceman, showing his clothes, copper axe, and bow and arrows; also note his clothes of animal hides and plant fibers. He also has the oldest known tattoos on his body (not shown). Ötzi was roughly contemporaneous with Adam (around 5000 BC), but at this time his world in Europe was primarily one of hunting and gathering, not one of agriculture and husbandry. Ötzi’s body and his belongings are on display in the South Tyrol Museum of Archeology in Bolzano, northern Italy. Google image.

Pictographic writing arose in Mesopotamia around the end of the fourth millennium, as did the establishment of a well-developed system of numbers and measures. Writing evolved from clay tokens (fig. 4A) to markings on envelopes enclosing these tokens, to impressed signs on tablets, to pictographic script (fig. 4B).<sup>12</sup> By Jemdet Nasr time (ca. 3000–2900 BC, or when Noah lived; table 2), the tablet-pictographic stage had been reached, but it wasn’t until about 2500–2000 BC that narrative and religious writings were being recorded on clay (cuneiform) tablets.

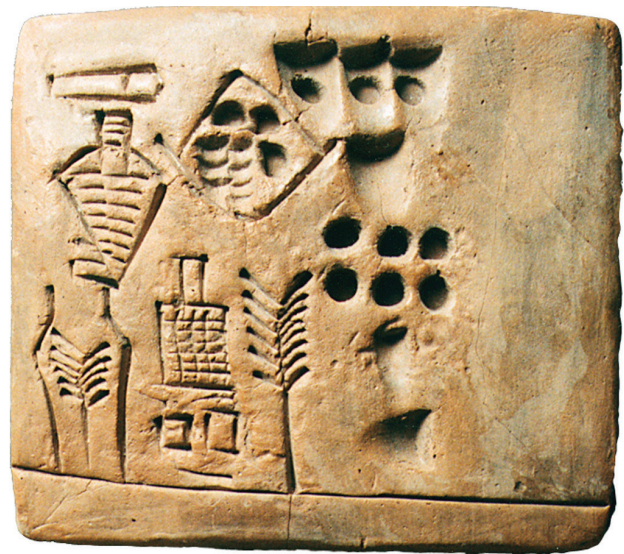
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Thus, ca. 2500 BC would have been the earliest that the Genesis stories could have been written down and copied by scribes. Before that time, they would have been passed down orally.



**Figure 4A.** Tokens from Susa, around 3300 BC, used throughout the Near East for counting commodities. *Musée du Louvre, Département des Antiquités*; image by Denise Schmandt-Bessart, with her permission.



**Figure 4B.** Early pictographic script from Uruk, made using a reed stylus with a prismatic tip. It is probable that Noah read/wrote pictographic script. *The Schøyen Collection MS1717, Oslo and London*.

### *Ethnological and Linguistic Evidence for the Table of Nations and Tower of Babel*

As shown in table 2, the genealogies of Genesis 5 also concord with other known archeological periods in Mesopotamia, and also with biblical persons and events. If the migration scenario shown in figure 1 is correct, then what about the Table of Nations described in Genesis 10 and the Tower of

Babel described in Genesis 11? Doesn't the Table of Nations imply that all the world's peoples are descended from Noah? And doesn't the Tower of Babel story say that Noah's descendants built a tower that reached to the heavens, "and from thence did the LORD scatter them abroad upon the face of all the earth" (Gen. 11:9, KJV)? This line of scientific research is called *ethnology*, which is the branch of anthropology that deals with racial origins and distributions. The Table of Nations traces the lineages of Noah's sons, Shem, Ham, and Japheth, to regions that roughly surround the Mediterranean-Near East area (the gray oval of fig. 1), and linguistic and ethnological studies have verified that the Table of Nations is correct in its tracing of the sons of Noah<sup>13</sup>—but not over the entire planet Earth! Thousands to tens of thousands of years ago, the major human racial groups that we know of today had *already* spread around the world (fig. 1). [See buttress 1 in the next article by Roy Clouser.<sup>14</sup>]

The Genesis 11:1 passage, "And the whole earth was of one language, and one speech" (KJV), in connection with the Tower of Babel, may refer to the ancient Sumerian language, which was the "universal" (to Mesopotamia) language used by the Sumerians until by about 2700–2600 BC (table 2, "Tower of Babel?"). After this time, the Sumerian language was gradually replaced by Early Semitic and Old Akkadian dialects, and by about 2400 BC, it became replaced as a "living language" but still remained as a written language.<sup>15</sup> A date of around 2750–2600 BC for the dispersion of languages story in Genesis 11 also correlates in time with other ancient Sumerian stories on the same topic.<sup>16</sup> The "scattering of people" and the "dispersion" of languages other than Sumerian both imply the migration of some of Noah's descendants out of Mesopotamia at approximately this time (fig. 1, gray area).

The purpose of this entire scientific section has been to show that the placement of Adam and Eve and their immediate descendants into a late Neolithic world is correct (table 1), and that the Old Testament begins its story at that time *and not before*. That is, the intent of the Old Testament was *not* to cover the entire human race as it existed throughout planet

Earth at that time (fig. 1), but was *primarily* concerned with the genealogical line from Adam to Christ, and only marginally concerned with non-Adamite people groups or the non-Israelite (Gentile) line of Adam. In other words, it is *Jewish covenantal history*, not human history. God chose to take his plan of redemption to all people *through this line*, starting with the sin of Adam in the Garden of Eden and leading to the forgiveness of sin by Christ.

## The Church's Response to the Scientific Evidence in the Matter of Original Sin

There are three main Christian interpretations of original sin that are popular today.

### 1. *Young-Earth Creationist View*

From the archeological evidence discussed above, it appears that young-earth creationists are approximately correct in their view that Adam and Eve lived about 6000–7000 years ago in Southern Mesopotamia (table 2). But their position, that Adam and Eve were the ancestors of all other humans, is *not* correct because *Homo sapiens* occupied the entire Earth (fig. 1), and specifically the Mediterranean region (fig. 2), way before that time. While the date set by young-earth creationists for a historical Adam and Eve (~4000 BC) based on the Genesis genealogies is probably not far wrong, the young-earth creationists' denial of all of the anthropological, archeological, and genetic (DNA) evidence related to human origins and to original sin renders this position of Adam and Eve being the first parents of the human race untenable.

### 2. *Progressive Creationist View*

Progressive creationists attempt to solve the problem of how sin could have been biologically transmitted by Adam and Eve to the whole human race by placing them in time between ca. 200,000–50,000 years ago in Africa in order for them to have lived *before* the migration of humans over planet Earth (table 1; fig. 1).<sup>17</sup> However, many serious problems exist with the idea of Adam living approximately 50,000 or more years ago, along with a Noachian flood of somewhat lesser age. If the genealogies of Adam are

to be believed at all, Adam is not far removed in time from the flood or the Table of Nations, and certainly not by tens to hundreds of thousands of years. This whole scenario simply does *not fit* with the evidence *specified by Genesis*, which places Adam and Eve in the Neolithic Period after the advent of farming and husbandry. Not only is the timing wrong, but the place is also wrong. Genesis specifically places Adam and Eve in the Garden of Eden where the four rivers of Eden meet near the Persian Gulf (Gen. 2:10–14)—not somewhere in Africa as per the DNA evidence (fig. 1). In addition, according to Genesis, the Noachian flood occurred in Mesopotamia, within the Mesopotamian hydrologic basin.<sup>18</sup>

Other difficulties with the progressive creationist view abound. First, can the “gaps” in the genealogies of Genesis possibly be stretched back this far? Gaps of a few hundred years (at the most) are justifiable from scripture, but gaps stretching back 50,000 to 200,000 years? Could the ark described in Genesis have been constructed by a Paleolithic or Mesolithic Noah using stone scraper and chopper tools (table 1)? Where Noah “fits,” according to Genesis, is in the Bronze Age (ca. 3200–1200 BC), where the technology was by then sophisticated enough for the construction of large boats and for the export and import of materials (such as wood for constructing the ark) to and from Southern Mesopotamia. Furthermore, since literary writing was not invented until about 2500–2000 BC (fig. 4),<sup>19</sup> these early dates imply that the Genesis stories had to have been transmitted orally for tens of thousands to hundreds of thousands of years. All of these stretches of credibility are insisted upon by progressive creationists in order to maintain Adam and Eve as the biological ancestors of the entire human race.

### 3. *Evolutionary Creationist View*

The evolutionary creationist view was expounded by Denis Lamoureux in his 2008 book *Evolutionary Creation: A Christian Approach to Evolution*. In this book, Lamoureux promotes evolution, but he also considers the people and events in the early chapters of Genesis (before Abraham) to be unhistorical, fictional, legendary, or archetypical. Specifically for Adam, Lamoureux has this to say:

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First, Adam never actually existed ... Second, Adam never actually sinned. In fact, it is impossible for him to have sinned because he never existed. Consequently, sin did not enter the world on account of Adam ... Adam never existed and this fact has no impact whatsoever on the foundational beliefs of Christianity.<sup>20</sup>

One reason why Lamoureux and others take this view of scripture is that they consider aspects of the early Genesis stories to be purely fictional: for example, talking snakes and creating Eve from Adam's rib in the Adam and Eve story. However, in my book *A Worldview Approach to Science and Scripture*,<sup>21</sup> I disagree with this position and consider Adam to have been a historical person and the fictional aspects of the Genesis stories to be the result of the way the biblical authors/scribes wrote literary texts from their ancient religious worldview. Modern historians attempt to record "just the facts," but biblical history is colored by the worldview of the ancient biblical scribes, and that worldview must be stripped away to reveal the *real* history.<sup>22</sup>

A strict evolutionary creationist view that denies the historicity of Adam creates a number of serious theological questions that, in my judgment, *do* impact the foundational beliefs of Christianity. First, if the people of Genesis are not historical, then why does the Bible go to such great lengths to establish the genealogies of Genesis, Numbers, Chronicles, Ezra, Nehemiah, Matthew, and Luke? First Chronicles begins with *nine* chapters of "begots." Second, if these genealogies are not real, then where do the unhistorical people end and the historical people start? Do real people start with Abraham, as maintained by some evolutionary creationists, and if so, what lineage did he come from? Third, since the New Testament refers to the people and the events in the Old Testament as being historical, doesn't this affect the credibility of the entire Bible? If Lamoureux's above statement is true and Adam was not a historical person, then what becomes of the foundational doctrines of the "Fall," original sin, and Paul's entire theology of Christ as the new Adam and his dying to save us from sin?

### Historicity of the Genesis Text

The evolutionary creationist position that Adam was not a historical person makes impossible the Augustinian doctrine of original sin, so we will now examine the evidence for the historicity of the opening chapters of Genesis.

#### *A Worldview Approach to the Historicity of Genesis*

What is a worldview approach to scripture? "Worldview" is all aspects of a culture bound up into a different way of thinking about the world; it is a *mindset* that *stems from* a culture, not the culture itself, and that mindset can differ significantly between subgroups within a culture. The worldview approach is not a theological position like the three creationist views just discussed. It is an *approach* to the science-scripture debate that tries to interpret scripture with respect to *both* the scientific and biblical evidence, while also considering the worldview of the ancient authors/scribes who wrote the text from oral accounts.<sup>23</sup>

A worldview approach tries to resolve the conflict between science and scripture by proposing that the basic problem with compatibility involves understanding the prescientific worldview of the biblical authors. It is a mistake to try and impose our twenty-first-century scientific worldview on the ancient biblical text; this error is the main reason why there is so much confusion and contention in the science-scripture debate. Why should we expect these stories to reflect our modern scientific viewpoint when they were produced by a prescientific, preliterate culture? We should accept them as being from that *time and place* and from *their* viewpoint, with God interacting with, and accommodating the worldview of, this ancient people group.<sup>23</sup> Other authors—such as John Walton in his *Lost World* book series and Johnny Miller and John Soden in their book *In the Beginning ... We Misunderstood*,<sup>24</sup>—have taken a worldview approach from a theological perspective to apologetics, but since the main purpose of this article is to cover the science as it relates to original sin, such a perspective is not discussed in this article.



A worldview approach disagrees with all three of the above creationist views, and it also disagrees with the theological position that “we cannot continue to rely on a historical reading of a symbolic narrative.”<sup>25</sup> In contrast to this attitude, I would argue that these two factors (historical and symbolic) should *not* be considered as separate; rather, these factors must be combined in order to arrive at a *truly historic view of scripture*. Thus, a perfectly “literal” interpretation of the early Genesis stories combines historical events intertwined with the worldview of the biblical authors/scribes, and one must understand the worldview aspects in order to get to what the text meant to the people it was written for. If this is not done, the symbolism makes the text seem mythological and at odds with science and reason (*our* reasoning, not *theirs*). A worldview approach considers Adam and Eve and the Garden of Eden, Noah and the flood, and the patriarchs from Adam to Abraham to have been historical persons and events.

#### Were Adam and Eve Real Persons?

Why do many Christians and most non-Christians believe that Adam and Eve were fictional or mythological? Because if Adam and Eve were historical persons, then how does one explain the many fanciful aspects to the Garden of Eden story, such as Adam being formed from the “dust of the ground,” the creation of Eve from Adam’s rib, and a talking snake? This is where the concept of worldview comes in. In the case of Adam and Eve, the ancient Mesopotamian literary customs and motifs must be kept in mind because, until Abraham moved from Ur (in Mesopotamia) to Palestine, that is where the oral stories of creation and Adam and Eve originated.

The literary conventions of the ancient Mesopotamians included analogy, carefully woven into language, and the use of repetition, which included not only words but also numbers, phrases, and structural elements. Also, in the worldview of the Mesopotamians, language not only stated facts, but it could also establish them (such as God saying in Genesis 1, “Let there be light”; by this statement, in the minds of the ancients, light was created).<sup>27</sup> They also loved a play on words: for example, *adam* (generic humans) in Genesis 1 and *Adam* (a specific

human in Genesis 2). None of this play on words was gratuitous; it was the very basis of intellectual thought. And, while this type of thought, or worldview, is foreign to our way of thinking, it still needs to be considered because where the biblical authors/scribes were “coming from” is essential to the correct interpretation of Genesis.

Specific examples of using familiar phrases or puns include Adam being formed from the “dust of the ground,” which is a *poetic* figure of speech, one that always signifies mortality in the Old Testament<sup>28</sup> – that is, this was a way of asserting mortality rather than the description of an act. The creation of Eve from Adam’s rib comes from a Sumerian “play on words,” where the word for “rib” could for the ancients alternately mean “life,” and in Sumerian literature, the “lady of the rib” came to be identified with the “lady who makes live”<sup>29</sup>; that is, this story could be attributed to the Sumerians writing the original story from their literary worldview. Still another example is the serpent motif of Genesis 3. In ancient Near East writings, serpents played prominent roles as adversaries of both humans and gods in the Genesis text, and also in other ancient Near Eastern literature, such as in the Mesopotamian *Enuma Elish* myth and in the Egyptian pyramid texts.<sup>30</sup> The important point here is that while the Adam and Eve/Garden of Eden story could have involved real people residing in a real place, the writing of this story by the biblical authors was commensurate with the use of figurative images in narratives common to the ancient Near East. How else to describe the appearance of Satan in the Garden of Eden except by using the snake motif, since that was the appropriate imagery in the minds of these people? Thus, these stories actually *authenticate* the ancientness and historicity of the Genesis text.

#### Was Noah a Real Person?

From the 600-year-old age of Noah and from the supposed claim of a global flood by young-earth creationists, many biblical scholars have dismissed Noah as a historical person and the flood as a historical event. A worldview approach interprets Noah’s age to be numerological, rather than numerical, and the flood to have been a historical *local* flood in the

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Mesopotamian hydrologic basin, rather than a global flood, because the geologic evidence precludes a universal interpretation.<sup>31</sup> However, if Noah was a real person, is there any evidence of his historicity? Remember that in the scientific evidence section, we talked about how ethnological studies have traced the linguistics and lineages of Noah's sons, Shem, Ham, and Japheth, to parts of the Near East (fig. 1). The fact that these studies are scientifically credible implies that Noah and his immediate descendants were *nonfictional*. With regard to lineage tracing, a present-day tribe linked to Noah is the Adites (box 1, People of 'Ad).<sup>32</sup> They claim to be descended from 'Ad, the great-great-grandson of Noah through the line of Shem (Shem-Aram-Uz-'Ad), and who, according to Islamic tradition, were the first (Semitic) inhabitants of the Dhofar region of southern Arabia and the legendary "lost city of Ubar." [These people still speak Shehri, an ancient dialect of the Semitic (meaning "from Shem") language. Thus the question can be asked: How could Noah have been a fictional person when he fathered generations of identifiable offspring, some of whom are still alive today?] All of this is striking confirmation of the Genesis account!

### Were the Patriarchs Real Persons?

The worldview approach considers all of the patriarchs from Adam to Abraham to have been historical people, as documented by the genealogies of the Old and New Testaments. Why such a pre-occupation with detailed descent records if it were not theologically important that Adam be genealogically related to Christ, the "second Adam"? If these patriarchal genealogies do comprise a historical record, then why do many Christians and non-Christians dismiss the patriarchs so readily? The main reason is that the patriarchal ages are of unbelievably long duration and this automatically makes the patriarchs suspect as historical persons. However, what these people are missing in their rejection of these patriarchal genealogical records is the dual numerological-numerical worldview of the biblical authors/scribes. The numbers dealing with patriarchal ages are numerological (sacred numbers); they are not numerical (real numbers),<sup>33</sup> and this tradition of exaggerated "long reigns" for gods and kings seems to have been a common religious tradition for the peoples of the ancient Near East.<sup>34</sup> They (the biblical authors/scribes plus the people they wrote for) knew that these

Box 1.

## "WE ARE THE PEOPLE OF 'AD"

“While investigating the well of the Oracle of 'Ad, we had visitors, tribesmen who drifted down from the mountains. Their bearing was elegant; their hair, done up in fine braids and tinted blue, had the fragrance of frankincense. Members of the Shahra tribe, they spoke in addition to Arabic, their own peculiar chirping, sing-song language, called by the early explorers 'the language of the birds.' They confirmed that indeed, the well was still known as a well of the People of 'Ad ... and one of their number, speaking in crisp, Cambridge-accented English, matter-of-factly told us, 'You know we are the people of 'Ad.'" (Nicholas Clapp, *The Road to*



*Ubar: Finding the Atlantis of the Sands*, p. 139.) Photo on <https://www.youtube.com/>, "Harun Yahya Perished Nations, The People of 'Ad Part 1."

numbers were exaggerated, but this did not concern them because their worldview included a dual concept of numbers. *We* have no such dual conception of numbers in our modern worldview, and so the exaggerated ages in Genesis make the patriarchs unbelievable to us. These symbolic numbers merely represented the character or accomplishments of those to whom they were attributed; for example, in the Sumerian King List, one king was said to have reigned for over 28,000 years. Thus, our *modern* rejection of Genesis numbers is simply a difference in worldview concerning the ancients' interpretation of numbers—which again attests to the historicity of the Genesis text.

In all of the historicity examples just discussed (Adam and Eve, Noah, and the patriarchs), the premise “we can't rely on a historical reading of a symbolic narrative” is based on being unaware of how the concept of worldview affects the understanding of Genesis, and/or on the false assumption that if stories have symbolism in them, then they must not be historic. I would argue that an interpretation of the narrative that takes into account the worldview of that day is more historical than one that dismisses the account as fiction, because it considers the *mindset* of the ancients who wrote the text, and *this in itself is a part of that history*. Or, to paraphrase Conrad Hyers: To faithfully interpret Genesis is to be faithful to what it really means as it was originally written, not to what people living in a later time assume or desire it to be.<sup>35</sup> [See buttress 2 of the next article by Roy Clouser.<sup>36</sup>]

## Struggling with the Doctrine of Original Sin

The biological transmission of original sin, along with Adam and Eve being the first parents of the human race, does seem to be one of the major science-scripture problems for Christians to resolve. Richard J. Mouw, in his chapter “Safe Spaces” in *How I Changed My Mind about Evolution*, made this comment:

I still haven't settled on a plausible answer to this question ... I want to hang on to what the apostle Paul says: that it's by one person that sin came into the world and it's by one person that

we have been rescued from that sinful condition ... but I'm struggling with it.<sup>37</sup>

And so is everyone else who is trying to reconcile this major stumbling block to their faith with the scientific evidence. Since it is the purpose of this article to try and reconcile science with scripture in the matter of original sin, we must now turn to the subject of the Augustinian doctrine of original sin, because that is where the task of reconciliation lies. Here I will cover only the aspects of Augustine's doctrine that apply to the science; for the theological and philosophical aspects, see the next article by Roy Clouser.

### *The Augustinian Doctrine of Original Sin*

The theological position that some in the western church follow today concerning original sin is called the “Augustinian doctrine” because it was formulated by Augustine (AD 354–430). Since then, original sin has been traditionally regarded as a depravity, or tendency to do evil, which was biologically transmitted to the entire human race as a consequence of Adam's Fall. After being made an official doctrine by the Roman Catholic Church at the Synod of Orange in AD 529,<sup>38</sup> and confirmed by the AD 1530 Lutheran Augsburg Confession,<sup>39</sup> this “biological transmission of original sin” theology still continues to be a doctrine that many churches teach.

This Augustinian position, more than any other, seems to be crucial to the science-scripture debate on original sin. It is one of the reasons why young-earth creationists adhere to a 6,000-year-old Earth and take a global (all-humanity-died) stance on Noah's flood. It is the main reason why progressive creationists, in order to comply with the scientific evidence, move the date of Adam and Eve back further and further from tens to hundreds of thousands of years into the Paleolithic, even though *both* scripture and the science of archeology place them in a Neolithic-Chalcolithic time-frame. It is also a primary reason why evolutionary creationists deem Adam-up-to-Abraham to be unhistorical persons, and why many non-Christians (especially scientists) reject the Bible entirely.

To solve the problem that the Augustinian doctrine of original sin poses with respect to the scientific

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evidence, I again appeal to a worldview approach for a possible reconciliation. Intrinsic to the worldview approach is the basic concept that biblical exegesis is not a static process, but that it should be subject to an increased knowledge of science, history, and linguistics that needs to be reconciled with scripture.<sup>40</sup> This concept not only applies to our understanding of ancient cultures such as those of Genesis, but it also applies to theologians who have interpreted original sin over the centuries since Christ—from the early theologians of the church to theologians today; that is, *their* knowledge base must also be part of our judgment of their theology as well as the theology itself! Therefore, it is important to recall that the biological transmission of sin, and the idea that Adam and Eve were the first humans, was a *theology* constructed by Augustine, based on the knowledge base of *that* day (fifth century AD), whereas the Bible itself does not specifically say that Adam and Eve were the first humans; rather, it alludes to Adam and Eve *not* being the first humans.<sup>41</sup> We, in the modern world, have come to the “conclusion” that Adam and Eve could not possibly have been the first humans, only because we base our views on the DNA and other scientific evidence of *our* day.

### *Spiritual or Physical Death?*

Can an alternative view of original sin be made theologically compatible with both science and scripture? And is making Adam the first historical human an absolute necessity? From a worldview approach, and from the scientific and scriptural evidence, the only alternative that seems to make sense is that the “death” of Adam and Eve, as directly experienced after eating of “the fruit of the tree which is in the midst of the garden” (Gen. 3:2–4, KJV), was *spiritual*, not physical. An important clue to a spiritual interpretation is 1 Corinthians 15:22: “For as in Adam all die, so in Christ all will be made alive” (NIV). How are we made alive in Christ? We are “born again” — not physically, but spiritually. We are born again to eternal life. Adam, as a human, was “doomed to death” (the meaning of the Hebrew phrase in Gen. 2:17), but from the Garden of Eden onward, a whole new kind of death and life enters into the picture—spiritual death and eternal life. This same idea of a spiritual rather than physical inheritance is also

expressed in Galatians 3:7 and 3:19: “Know ye, therefore, that they which are of faith, the same are the children of Abraham ... and if ye be Christ’s, then are ye Abraham’s seed and heirs according to the promise” (KJV). Is scripture claiming that all believers are the biological (genetic) sons or offspring of Abraham? No, it is claiming that believers are the *spiritual* offspring of Abraham and therefore heirs to the promise made by God way back in Genesis.

### *The Origins Connection*

What connection, then, does a spiritual interpretation of original sin have with the science-scripture debate of origins and with the anthropology of *Homo sapiens*? If the transmission of sin from Adam has no biological restriction, then it puts *no time limit* on when Adam and Eve had to have lived—except for the time limit placed on it by the Old Testament, which alludes to other people having lived *alongside* Adam’s line (Gen. 2:14–17).<sup>42</sup> Furthermore, if almost the entire human race had populated planet Earth by ~5000 BC (fig. 1), then it implies that the Old Testament was never written to include the entire human race and thus Adam and Eve were the parents of only those in the *covenant* line of Adam leading to Christ. While contrary to many Old Testament scholars (both past and present), who have understood Genesis 1–11 as referring to the human race, this position is the *only* one that can be harmonized with the massive amount of anthropological and archeological evidence as it relates to scripture.

A *spiritual* interpretation of original sin also relates to pre-Adamite humans (table 1), and to the migration of humans around the world (fig. 1). In this view, the “spiritual nature” of humankind would have involved a *gradual* and *evolving* awakening of “religious consciousness” and ideas of morality—a long process of attaining the spiritual capacity and longing to seek and comprehend God. This spiritual awakening was universal to humankind with the geographical migration and expansion of the human race (fig. 1), so that by the time of Adam, *all* human groups had attained this religious consciousness and thus could be held accountable for sin.<sup>43</sup> Essentially, this process involves the idea that in the “fullness of [evolutionary] time,” God decided to interact with

the humans he created. It also involves the concept of progressive revelation, in that God did not reveal the knowledge of good and evil, atonement by the blood of animals, the Law, or the incarnate Christ as the ultimate atonement for sin, until all human groups were spiritually ready to receive these covenants. If we acknowledge a pre-Adamite status of “male and female,” then we must also acknowledge that these humans were created in God’s image, because such a relationship is stated in Genesis 1:26.

## Conclusion

The intent of this article is to present the solid science of anthropology and archeology to the modern church because it bears heavily on the church’s interpretation of the Augustinian doctrine of original sin. The science of anthropology confirms that, in the matter of origins, *Homo sapiens* extends back to at least 200,000 YBP, while the science of archeology and also scripture squarely place Adam and Eve in the Neolithic-Chalcolithic (~7000 YBP) and *not before*. Therefore, it is concluded that Adam and Eve could not have been the parents of the human race, but instead were the first parents in the genealogical line of the Old Testament that led to Christ in the New Testament. In other words, the Old Testament is Jewish covenantal history, *not* human history. This article also affirms the historicity of Genesis: Adam and Eve and the Garden of Eden, Noah and the flood, and the patriarchs from Adam to Abraham were real people and events, but the “symbolic” aspects of the Genesis text must be interpreted from the worldview of the ancient biblical authors/scribes because this symbolism is *part of real history*. †

## Notes

<sup>1</sup>Mark A. Noll, *The Scandal of the Evangelical Mind* (Grand Rapids, MI: Eerdmans, 1994), 232; and Dean E. Arnold, “Why Are There So Few Christian Anthropologists? Reflections on the Tensions between Christianity and Anthropology,” *Perspectives on Science and Christian Faith* 58, no. 4 (2006): 266–82, <https://www.asa3.org/ASA/PSCF/2006/PSCF12-06Arnold.pdf>.

<sup>2</sup>All tables and figures and box 1 are taken from *A Worldview Approach to Science and Scripture* © Copyright 2019 by Carol Hill. Published by Kregel Publications, Grand Rapids, MI. Used by permission of the publisher. All rights reserved.

<sup>3</sup>Ian McDougall, Francis H. Brown, and John G. Fleagle, “Stratigraphic Placement and Age of Modern Humans

from Kibish, Ethiopia,” *Nature* 433 (2005): 733–36, <https://www.nature.com/articles/nature03258>; and Kate Wong, “The Oldest *Homo sapiens*,” *Scientific American* 317, no. 3 (2017): 12–14.

<sup>4</sup>Richard E. Green et al., “A Draft Sequence of the Neandertal Genome,” *Science* 328, 5979 (2010): 710–22, <https://science.sciencemag.org/content/328/5979/710.full>; Bruce Bower, “Oldest Known Human DNA Analyzed,” *Science News* 186, no. 11 (2014): 8–9; Tina Hesman Saey, “Human DNA Found in Neandertal Bone,” *Science News* 189, no. 6 (2016): 6; and Guy S. Jacobs et al., “Multiple Deeply Divergent *Denisovan* Ancestries in Papuans,” *Cell* 177 (2019): 1010–21, [https://www.cell.com/cell/pdf/S0092-8674\(19\)30218-1.pdf](https://www.cell.com/cell/pdf/S0092-8674(19)30218-1.pdf).

<sup>5</sup>Jeffrey I. Rose, “New Light on Human Prehistory in the Arabo-Persian Gulf Oasis,” *Current Anthropology* 51, no. 6 (2010): 850–54, 864, <https://doi.org/10.1086/657397>; and Bruce Bower, “Stone Tools Hint at Earlier Human Exit from Africa,” *Science News* 179, no. 5 (2011): 5–6.

<sup>6</sup>Jean-Louis Huot, “The First Farmers at Oueili,” *Biblical Archaeologist* 55, no. 4 (1992): 188–95, <https://doi.org/10.2307/3210313>; and Richard J. Fischer, *Historical Genesis: From Adam to Abraham* (New York: University Press of America, 2008): 30–31, 35.

<sup>7</sup>James Mellaart, *The Neolithic of the Near East* (London, UK: Thames and Hudson, 1975), 29.

<sup>8</sup>Robert McC. Adams, *Heartland of Cities: Surveys of Ancient Settlement and Land Use on the Central Floodplain of the Euphrates* (Chicago, IL: University of Chicago Press, 1981), 60; Fekri A. Hassan and Steven W. Robinson, “High-Precision Radiocarbon Chronometry of Ancient Egypt, and Comparisons with Nubia, Palestine and Mesopotamia,” *Antiquity* 61, no. 231 (1987): 119–35, <https://www.cambridge.org/core/journals/antiquity/article/abs/highprecision-radiocarbon-chronometry-of-ancient-egypt-and-comparisons-with-nubia-palestine-and-mesopotamia/5C5ACFF5BFFF466D6FCFFC276FC1CD16>; and Carrie Hritz et al., “Mid-Holocene Dates for Organic-Rich Sediment, Palustrine Shell, and Charcoal from Southern Iraq,” *Radiocarbon* 54, no. 1 (2012): 65–79, <https://www.cambridge.org/core/journals/radiocarbon/article/midholocene-dates-for-organic-rich-sediment-palustrine-shell-and-charcoal-from-southern-iraq/DC96E229A1ADE3230E868D529DCEF6E1>. Hassan and Robinson dated the Jemdet Nasr/Early Dynasty 1 boundary at 2960 ± 167 cal BC (time of Noah’s flood?). Two occupation sites of Hritz et al. that are related to key biblical persons are (1) Eridu = 5837–5644 cal BC, base of mound (first city, according to cuneiform texts; possibility of abode of Adam & Eve?) and (2) Jemdet Nasr = 2917–2898 cal BC (“home town” of Noah). Absolute dates vary somewhat between different sources, but a rough estimate for the time when Adam and Eve lived is about 5500–5000 BC, and for Noah and the flood around 2900 BC.

<sup>9</sup>James H. Dickson, Klaus Oeggel, and Linda L. Handley, “The Iceman Reconsidered,” *Scientific American* 288, no. 5 (2003): 70–79, <https://www.scientificamerican.com/article/the-iceman-reconsidered-2005-01/>; and Bruce Bower, “Ice-man has the World’s Oldest Tattoos,” *Science News* 189, no. 2 (2016): 5.

<sup>10</sup>Carol Hill, *A Worldview Approach to Science and Scripture* (Grand Rapids, MI: Kregel Publications, 2019), 62–63.

<sup>11</sup>Robert J. Forbes, “Bitumen and Petroleum in Antiquity,” *Studies in Ancient Technology* 8 (Leiden, The Netherlands: Brill, 1964), 92; J. N. Postgate, *Early Mesopotamia – Society*

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- and *Economy at the Dawn of History* (London, UK: Routledge, 1992), 174; and H. W. F. Saggs, "Mathematics and Astronomy," chap. 13 in *The Greatness That Was Babylon: A Sketch of the Ancient Civilization of the Tigris-Euphrates Valley* (New York: Hawthorn, 1962), 445–53.
- <sup>12</sup>Denise Schmandt-Besserat, *How Writing Came About* (Austin, TX: University of Texas Press, 1996); and \_\_\_\_ *When Writing Met Art: From Symbol to Story* (Austin, TX: University of Texas Press, 2007).
- <sup>13</sup>James Mellaart, *The Neolithic of the Near East* (London, UK: Thames and Hudson, 1975), 29; and Kenneth A. Kitchen, *On the Reliability of the Old Testament* (Grand Rapids, MI: Eerdmans, 2003), 431–38.
- <sup>14</sup>Roy Clouser, "Three Theological Arguments in Support of Carol Hill's Reading of the Historicity of Genesis and Original Sin," *Perspectives on Science and Christian Faith* 73, no. 3 (2021): 146–47.
- <sup>15</sup>J. N. Postgate, *Early Mesopotamia – Society and Economy at the Dawn of History* (London, UK: Routledge, 1992), 37; and D. O. Edzard, "The Sumerian Language," in *Civilization of the Ancient Near East*, vol. 4, ed. J. M. Sasson (New York: Scribners, 2019), 2109.
- <sup>16</sup>Kitchen, *On the Reliability of the Old Testament*, 426.
- <sup>17</sup>Hugh Ross, *The Genesis Question* (Colorado Springs, CO: New Press, 1998).
- <sup>18</sup>Carol A. Hill, "A Time and A Place for Noah," *Perspectives on Science and Christian Faith* 53, no. 1 (2001): 24–41, <https://www.asa3.org/ASA/PSCF/2001/PSCF3-01Hill.html>; and Carol A. Hill, "Qualitative Hydrology of Noah's Flood," *Perspectives on Science and Christian Faith* 58, no. 2 (2006): 120–29, <https://www.asa3.org/ASA/PSCF/2006/PSCF6-06Hill.pdf>.
- <sup>19</sup>Jöran Friberg, "Numbers and Measures in the Earliest Written Records," *Scientific American* 250, no. 2 (1984): 110–18, <https://www.scientificamerican.com/article/numbers-and-measures-in-the-earlies/>.
- <sup>20</sup>Denis O. Lamoureux, *Evolutionary Creation: A Christian Approach to Evolution* (Eugene, OR: Wipf and Stock, 2008), 319, 367.
- <sup>21</sup>Carol Hill, *A Worldview Approach to Science and Scripture* (Grand Rapids, MI: Kregel Publications, 2019).
- <sup>22</sup>Kitchen, *On the Reliability of the Old Testament*, 63–64.
- <sup>23</sup>Hill, *A Worldview Approach to Science and Scripture*.
- <sup>24</sup>Carol A. Hill, "A Third Alternative to Concordism and Divine Accommodation: The Worldview Approach," *Perspectives on Science and Christian Faith* 59, no. 2 (2007): 129–34, <https://www.asa3.org/ASA/PSCF/2007/PSCF6-07Hill.pdf>.
- <sup>25</sup>John H. Walton, *The Lost World of Genesis One* (Downers Grove, IL: IVP Academic, 2009); \_\_\_\_ *The Lost World of Scripture* (Downers Grove, IL: IVP Academic, 2013) 320; \_\_\_\_ *The Lost World of Adam and Eve* (Downers Grove, IL: IVP Academic, 2015); and J. V. Miller and J. M. Soden, *In the Beginning ... We Misunderstood* (Grand Rapids, MI: Kregel Publications, 2012).
- <sup>26</sup>This is a position held by many people, but which was recently expressed by Tatha Wiley, "A Reconceived Response," in *Original Sin and the Fall: Five Views*, ed. J. B. Stump and C. Meister (Downers Grove, IL: IVP Academic, 2020), 178.
- <sup>27</sup>Jack M. Sasson, ed., *Civilizations of the Ancient Near East* (New York: Scribner's, 1995), 1818.
- <sup>28</sup>Walton, *The Lost World of Adam and Eve*, 73; and Roy Clouser, "Reading Genesis," *Perspectives on Science and Christian Faith* 68, no. 4 (2016): 246, <https://www.asa3.org/ASA/PSCF/2016/PSCF12-16Clouser.pdf>.
- <sup>29</sup>Samuel N. Kramer, *History Begins at Sumer* (London, UK: Thames and Hudson, 1961), 209–10.
- <sup>30</sup>W. C. Kaiser, senior editor, *NIV Archaeological Study Bible* (Grand Rapids, MI: Zondervan, 2005), 8; and Walton, *The Lost World of Adam and Eve*, 129.
- <sup>31</sup>Carol A. Hill, "The Noachian Flood: Universal or Global?," *Perspectives on Science and Christian Faith* 54, no. 3 (2002): 170–83, <https://www.asa3.org/ASA/PSCF/2002/PSCF9-02Hill.pdf>; Carol Hill et al., eds., *The Grand Canyon, Monument to an Ancient Earth: Can Noah's Flood Explain the Grand Canyon?* (Grand Rapids, MI: Kregel, 2016). The topics of (1) a numerical interpretation for the advanced ages of the patriarchs; (2) Noah's flood being a historical flood; and (3) a local (non-global) flood based on the geologic evidence can be found in Hill, *A Worldview Approach to Science and Scripture*, chapters 4, 5, 6, and 7.
- <sup>32</sup>A fascinating detective story about the search for the Adites' "lost city of Ubar" is Nicholas Clapp's book, *The Road to Ubar: Finding the Atlantis of the Sands* (Boston, MA: Houghton Mifflin, 1998).
- <sup>33</sup>Carol A. Hill, "Making Sense of the Numbers of Genesis," *Perspectives on Science and Christian Faith* 55, no. 4 (2003): 239–50, <https://www.asa3.org/ASA/PSCF/2003/PSCF12-03Hill.pdf>.
- <sup>34</sup>Diodorus Siculus, *Diodorus on Egypt*, trans. Edwin Murphy (London, UK: McFarland, 1985), 32–33; and James K. Hoffmeier, *Israel in Egypt: The Evidence for the Authenticity of the Exodus Tradition* (Oxford, UK: Oxford University Press, 1996), 41.
- <sup>35</sup>Conrad Hyers, "The Narrative Form of Genesis 1: Cosmogonic, Yes; Scientific, No," *Journal of the American Scientific Affiliation* 36, no. 4 (1984): 212, <https://www.asa3.org/ASA/PSCF/1984/JASA12-84Hyers.html>.
- <sup>36</sup>Clouser, "Three Theological Arguments in Support of Carol Hill's Reading of the Historicity of Genesis and Original Sin," 147–48.
- <sup>37</sup>Richard J. Mouw, "Safe Spaces," in *How I Changed My Mind about Evolution: Evangelicals Reflect on Faith and Science*, ed. Kathryn Applegate and J. B. Stump (Downers Grove, IL: IVP Academic, 2016), 187–94.
- <sup>38</sup>The Canons of the Council of Orange (circa AD 529): Creeds and Confessions of the Church, <https://www.apuritansmind.com/creeds-and-confessions/the-canons-of-the-council-of-orange-circa-529-ad/>.
- <sup>39</sup>Article II of the Augsburg Confession, in a new translation of *The Book of Concord*, ed. Robert Kolb and Timothy J. Wengert (Minneapolis, MN: Fortress, 2000), 36–38.
- <sup>40</sup>Hill, *A Worldview Approach to Science and Scripture*, 12.
- <sup>41</sup>Clouser, "Reading Genesis."
- <sup>42</sup>Dick Fischer, *The Origins Solution: An Answer in the Creation-Evolution Debate* (Lima, OH: Fairway Press, 1996), 229–49.
- <sup>43</sup>Hill, *A Worldview Approach to Science and Scripture*, 162.

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