

Genesis, Archaeology, and Belief in Divine Creation

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As a frequent instructor for introductory archaeology classes at the University of Missouri—Columbia (MU), the senior author has had the privilege of teaching over 1,000 undergraduate students about current archaeological views on the cultural and somatic evolution of anatomically modern *Homo sapiens*. MU contains robust intellectual diversity including students from many different faiths (MU has at least 32 recognized religious student organization, at least 2 atheist/nonbeliever organizations, and at least 55 places of worship catering to MU students representing religious systems as diverse as Bahai, Buddhism, Christianity, Hinduism, Islam, and Paganism). A reoccurring topic in these introductory classes consequently is the relationship between archaeological knowledge and students' religious faith, especially the relationship between the Darwinian evolutionary framework taught in class and the Judeo-Christian-Muslim creation narrative presented in Genesis. An informal canvas of colleagues teaching similar classes at other institutions indicates that they have similar experiences, but that they generally believe they lack the background to meaningfully discuss the topic with their students, especially given changing perspectives on the issue over the last decade. Given the increasing importance of evolutionary thought in archaeology and the continued importance of religion in American life (Newport 2012), the relationship between

evolution and faith will certainly become a more significant issue for archaeologists in general, but especially for those working with students and other members of the lay public. Our goal here is to provide a quick primer on the topic that will help familiarize archaeologists with the intellectual frameworks dictating the relationship between evolution and the dominant US religions, thereby providing a means of discussing the topic with interested parties including non-archaeologists. We further argue that it is important for archaeologists to seriously consider the issue, given our ethical obligations to use archaeological knowledge appropriately.

NONOVERLAPPING MAGISTERIA?

Taking the questions regarding the compatibility between human evolution and the Genesis creation story as seriously as his students do, the senior author introduced a one-hour, attendance optional discussion in which he addressed the topic in detail with interested students during a class session. Surprisingly, this attendance optional class period is among the most well attended lectures throughout the semester. Early versions of the discussion revolved around the perspective of non-overlapping magisteria, as advocated by Gould (1997, 1999) and reified through the National Academy of Sciences' stance that:

Scientists, like many others, are touched with awe at the order and complexity of nature. Indeed, many scientists are deeply religious. But science and religion occupy two separate realms of human experience. Demanding that they be

combined detracts from the glory of each. (Steering Committee on Science and Creationism 1999)

Within this perspective science and religion are viewed as addressing distinct, separate domains of intellectual thought. The magisterium (a domain governed by an agreed upon system of argumentation and tools for meaningful discourse) of science addresses empirical issues focused on the composition and working of the universe (including subdomains such as the development of life, animal behavior, and so forth). Religion deals with questions of ultimate meaning (Why are there humans? What is their role within the Universe?) and morality. These two areas of inquiry are distinct, requiring very different argumentative structures and tools for discourse, and therefore occupy fundamentally discrete magisteria. Knowledge in one need not be and in fact cannot be evaluated within the framework of the other.

Many students found this framework useful, but other students (and the senior author), found it unsatisfactory. Some students challenged the perspective using the work of Richard Dawkins (1986, 1998, 2006 and so forth) and other “New Atheists” (e.g., Dennett 2006; Harris 2005, 2006; Hitchens 2007; Stenger 2007) that explicitly argues that a scientific perspective employing an evolutionary framework to explain human development is fundamentally incompatible with the Judeo-Christian-Muslim view of creation and a monotheistic God (or any gods for that matter). Other students with deeply-held religious beliefs found it unsatisfactory because their faith was the center of their intellectual framework, and they were unwilling to compartmentalize it to a tangential role in other aspects of their intellectual world. These students agreed with Pope John Paul II’s 1996 statement to the Pontifical Academy of Sciences on Evolution that, “Truth cannot contradict Truth” and with Abraham Kuyper’s statement that, “There is not one square inch of the entire creation about which [God] does not cry out, ‘This is

Mine. This belongs to Me!” In their minds, a scientific understanding of the origins of humans and their faith must be wholly compatible, otherwise one or the other is wrong.

Seeking to improve his discussion, the senior author asked other archaeologists and physical anthropologists teaching introductory classes how they dealt with the topic, and found that they either gloss over it as briefly and superficially as possible (by far the most common strategy) or used Gould’s framework as a basis to argue that religious faith and evolution simply deal with separate issues. When challenged by the senior author however, those using nonoverlapping magisteria acknowledged that they are personally unsatisfied with this perspective for the same reasons troubling the senior author and his students. To strengthen his discussion, the senior author began to read more current discussions of the topic and to explore the issue with local clergy, especially David Cover who is a pastor at a local Presbyterian church. The following discussion summarizes our joint perspective on the issue, and, we hope, will provide a ready means of addressing the topic.

WHO CARES? WHY ARCHAEOLOGISTS AND BELIEVERS MUST CONSIDER THE RELATIONSHIP BETWEEN GENESIS AND EVOLUTION

The relationship between current archaeological views on human origins and the creation narrative underlying three of the world’s largest religions is a pressing issue that cannot simply be ignored, or worse yet left only to biologists to address. According to a 2012 Gallup poll around 78% of the US citizenry believe that humans were created by God (Newport 2012), and

the presence of local and state-wide efforts to include Intelligent Design or other explicitly religiously-inspired views of human origins in school textbooks demonstrates that a large plurality of the population feels passionately about the issue. Further, archaeological information has been used by biologists advocating “New Atheist” arguments against the very possibility of a deity (e.g., Kardong 2010). Archaeologists have a duty to present the strongest conclusions they can about our subject matter, even if those conclusions might be undesired/unwanted by the non-archaeological public (e.g., the topic of cannibalism in the prehistoric Southwest), although we should be mindful of the sensibilities of impacted parties/groups of people and remain tactful when presenting archaeological work (Alexander 2008a). If the archaeological record is incompatible with a properly understood account of creation as outlined in Genesis, then archaeologists have an ethical obligation to clearly and respectfully explain how, and provide relevant information to improve the citizens’ understanding of our archaeological past (Principles 4 and 6 of the Society for American Archaeology Principles of Archaeological Ethics). If, however, archaeological knowledge is compatible with a proper understanding of the Genesis creation story, then the same ethical considerations require us to clearly and respectfully explain that instead. Our ethical obligations consequently require archaeology as a profession to take seriously an issue of great interest to the American public, although individual archaeologists may not find the issue central to their work. Further, if there is no necessary contradiction between the two positions, the potential misuse of archaeological data could erode public support by creating the impression that archaeologists are “anti-religion.” Given archaeology’s reliance on public goodwill, the improper annexation of archaeology to serve some ideological or religious perspective is harmful to the discipline and could reduce our scholarly and social relevance. Arnold (1996) provides a stark example of the dangers associated

with the use of “archaeology as propaganda,” and serves as a cautionary tale stressing that archaeologists must be mindful of the potential misuse of archaeological data in the service of non-archaeological goals.

Further, archaeology as a discipline needs intellectual and ethnic plurality. Intellectual diversity has been and continues to be central to the growth of archaeological thought in that it provides the “essential tension” that Thomas Kuhn (1977) illustrates is crucial for scientific growth (Kelly 2001; VanPool and VanPool 2003). Most Americans believe that humans were created by God. As the senior author can attest from his personal experience teaching interested but uncommitted potential anthropology majors and graduate students, even the perception that archaeology is hostile to their religious beliefs impacts the pool of young professionals entering our field. If in fact archaeological knowledge is incompatible with the Genesis creation narrative, there is little that can be done, except to explain the basis of modern archaeological thought. If, however, the conflict is unnecessary, originating from incompatibilities that are only perceived, as opposed to inherent in either the biblical text or an evolutionary understanding of human origins, then the intellectual (and ethnic) diversity of archaeology is being unnecessarily reduced. Imagine the loss to archaeology if religiously-devote Hispanic and Native American Catholics, Black Southern Baptists, or White Methodists are consistently excluded from the profession of archaeology for no other reason than a misconception that they cannot simultaneously be religiously faithful and a successful archaeologist. This is not a hypothetical situation for the senior author who has dealt with this concern nearly every academic semester. Archaeology as a science will be greatly impoverished if we allow admittance to only a small class of ideologically uniform adherents.

By the same token, believers accepting the Genesis creation account should be concerned about the compatibility of their perspective and archaeological information. St. Augustine (AD 354–430), one of the great Latin Fathers of the Catholic Church of the Fourth and Fifth Centuries and a tremendously influential Christian thinker, illustrates the importance of perceived conflicts between knowledge of the natural world and the Genesis creation story. Disbelief in the creation story was one of the central issues preventing him from accepting Christian teaching for much of his life, with his faith only coming after he was able to reconcile his empirical and conceptual understanding of the natural world and what he considered a proper understanding of the religious text (Augustine 1943; see also Augustine 1982, Young 1988). Augustine notes that such issues should not be trivial to believers when he states,

Usually, even a non-Christian knows something about the earth, the heavens, and the other elements of this world...Now, it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn. The shame is not so much that an ignorant individual is derided, but that people outside the household of the faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we toil, the writers of our Scripture are criticized and rejected as unlearned men....Reckless and incompetent expounders of Holy Scripture bring untold trouble and sorrow on their wiser brethren when they are caught in one of their mischievous false opinions and are taken to task by these who

are not bound by the authority of our sacred books. For then, to defend their utterly foolish and obviously untrue statements, they will try to call upon Holy Scripture for proof and even recite from memory many passages which they think support their position, although they understand neither what they say nor the things about which they make assertion.

(Augustine 1982: 42–43)

Augustine wrote this statement explicitly about the first three chapters of Genesis, although he clearly intends it to be a general statement about the whole of Scripture. His warning remains relevant to believers in the Judeo-Christian-Muslim perspective today, though. Michael O'Brien (2008:194), one of the world's leading Evolutionary Archaeologists, notes that while he is a practicing Catholic who *believes* in God, he *knows* "two and two make four, just as I know that evolution provides a powerful means of explaining the natural world." The evidence for an evolutionary understanding of human development is overwhelming, and insisting that people abandon a logically coherent and empirically supported framework in order to accept the Judeo-Christian-Muslim perspective of God drive a great many from religious belief. Wilcox (2014:140) states, "Theology may reject the theories of science, but it cannot reject the data of the creation and remain honest before its Creator." Believers should be deeply interested in the nature of creation, including the ever-growing archaeological evidence of human evolutionary development. Again, the crucial issue is whether the perceived conflict between Genesis and an archaeological understanding of human evolution is inherent and unavoidable.

TRADITIONAL RELIGIOUS VIEWS OF GENESIS

We have been referring to the Judeo-Christian-Muslim view of Genesis as if it was uniform, but in truth it isn't. With a few exceptions, Jewish scholars do not now and historically never have held that the Genesis creation story is a literal representation of the creation of the Universe over a span of a week with humans being created on the sixth day (Tigay 1987/1988). Jewish views of scripture do not require a literal interpretation of the scripture, including Genesis (Feit 2006; Rothschild 1971). This is especially the case for the Creation narrative given that the language in Genesis is written in a Hebrew poetic form that indicates it emphasizes metaphor and conceptual meaning over literal meaning, and there are alternate versions of creation elsewhere in the scripture (Tigay 1987/1988). As a result, Katz (1992:126) observes, "...no systematic attempt has been made over the centuries to define an orthodox cosmology to which every Jew must subscribe, beyond the affirmation that the world was brought into being 'somehow' by God."

Likewise, prominent pre-Reformation Christian scholars such as St. Origen (AD 184–253), the previously mentioned St. Augustine, and St. Thomas Aquinas (AD 1225–1274) all held to a metaphorical, figurative interpretation of the creation narrative. In their view, Genesis provides the sequence of creation and illustrates God's relationship with humans, but it should not be read as specifying that creation occurred over a single week (Aquinas in *Summa Theologiae* [AD 1274]; Origen in *The Fundamental Doctrines* [AD 225] and *Against Celsus* [AD 248]). This view continues to be the official position of the Catholic Church reflected in the papal encyclical *Humani generis* of Pope Pius XII (1950), which held that scripture and

evolution are not inherently in conflict, and Pope John Paul II's address to the Pontifical Academy of Sciences (1996), which explicitly identifies evolution as a well-supported scientific framework with multiple lines of support. Pope John Paul II further states evolution is compatible with Catholic theology so long as it does not deny the divine origin of the soul (see also Horn and Wiedenhofer 2008; International Theological Commission 2004; Pope Francis 2014; Żyrciński 2006). However, Protestant Christian scholars such as John Calvin (AD 1509–1564) began to espouse a more literal interpretation of the Genesis creation story, perhaps in part because the story's poetic structure in Hebrew was not as obvious in the English and other translations the scholars used (Poe 2014). This trend culminated in Bishop James Ussher's famous pronouncement in 1650 that the world was created in 4004 BC (Brice 1982).

Protestant scholars who reject a rigidly literal interpretation do so on the same grounds as Jewish scholars (the poetic structure of the Hebrew script and other linguistic indications of a metaphorical intent) (Poe 2014). They also cite additional scriptural evidence including the lack of an explicit ending of the Seventh Day in Genesis 2:1–3 and New Testament statements that indicate the Seventh Day is still ongoing (e.g., Hebrews 4:4–11; John 5), which has been interpreted as indicating that the 7th day is an uncompleted epoch of creation, as opposed to a literal 24-hour period. Still, the literal interpretation continues to be common, but not universal, among Protestant Christian scholars, and arguably receives the greatest attention in media discussions (e.g., the 2014 debate between Bill Nye, a science educator, and Ken Ham, the Chief Executive Officer of the Young Earth creationist organization *Answers in Genesis*).

Like the Protestant Christians, Islamic religious scholars (and scientists) are divided on the proper interpretation of the Genesis account, although a majority supports a literal interpretation (BouJaoude et al. 2011; Edis 2003; Edis and BouJaoude 2014). Islamist

governments such as that in Turkey mandate its teaching largely in the place of evolutionary accounts, viewing the two as directly incompatible (Edis 2003; Peker et al. 2010), and a commitment to the literal interpretation of the Genesis account is present among Muslim in Western countries as well (Asghar 2013).

FOUR DOMINANT PERSPECTIVES ON THE RELATIONSHIP BETWEEN THE GENESIS CREATION NARRATIVE AND EVOLUTION

Building on the traditional religious viewpoints of the Judeo-Christian-Muslim perspective, four general positions have developed, each with its own set of adherents. There is variation within the perspectives, but each is unified by a consistent position on two issues—the proper interpretation of Genesis and the role of evolution in the development of humans. Briefly, Evolutionary Atheism rejects the Genesis creation narrative (and the existence of God) while accepting an evolutionary account of human development, Literal Creationism accepts Genesis as a (more-or-less) literal account of creation while rejecting an evolutionary account of human development, Intelligent Design accepts Genesis as a figurative account of creation but rejects a full evolutionary account of human development, and Theistic Evolution accepts Genesis as a figurative account of creation while also accepting a full evolutionary account of human development. Again, if archaeological knowledge is inconsistent with any of these perspectives, we are ethically required to (respectfully) identify where such problems lie when asked to do so. On the other hand, if inconsistencies are not present, archaeologists should likewise

(respectfully) indicate this is the case. We provide a more detailed exploration of each perspective below.

Evolutionary Atheism

Evolutionary Atheism is most strongly associated with Richard Dawkins (2006), Daniel Dennett (2006), and the other “New Atheists.” The perspective holds to a strong materialist philosophy that denies the possibility of any non-physical/metaphysical phenomena including God and human spirits (see Campbell 2006 for a definition of materialism, and Plantinga 2011 and Stenger 2007 for discussions and examples of a materialist perspective as it relates to perceived conflicts between science and religion). In terms of archaeological analysis, the relevant claims of the Evolutionary Atheists are that: 1) evolution fully accounts for the origins of humanity (and therefore there is no need for God), and 2) religion is antirational (that is, it is continued belief in something proven not to be real).¹ Archaeological analysis certainly supports the first claim, in that we have developed a detailed understanding of the somatic and cultural development of anatomically modern humans and our close ancestors (e.g., Fagan and Durrani 2013; Lockwood 2014). There are still significant questions to be answered about this process

¹ Many evolutionary atheists add the additional charge that great harm has been caused by religious belief, and therefore religion should be abandoned on humanitarian grounds (e.g., Dawkins 2006; Hitchens 2007; Harris 2006). This issue is tangential to the present discussion, but for completeness, we note that there are times when the archaeological record reflects conflict and human suffering arguably resulting from religion (e.g., human sacrifice around the world [Acevedo and Thompson 2013]) but there are other instances in which religion apparently decreased conflict and otherwise provided beneficial effects (e.g., the Salado and Kachina religions that apparently decreased social and physical conflict in the prehistoric Southwest [Crown 1994; Kohler et al. 2014; VanPool and Savage 2010]) (see Bently 2008 for additional discussion of this issue).

and many more discoveries will be made, but the archaeological record provides clear, unambiguous support to the application of modern Neo-Darwinian evolutionary perspectives to the development of humans over the 6 million years since we last shared a common ancestor with other extant primates. As many authors note, however, this conclusion does not require the complete rejection of the monotheistic God (Giberson and Collins 2011; McGrath 2007; O'Brien 2008). It merely requires that one specify that evolution is the means by which God created humans. Further, it is empirically false that Judaism, Christianity, and Islam are inherently antirational from an archaeological perspective, in that nothing in the archaeological record (or within any scientific perspective) precludes the presence and action of a monotheistic God. As Francis Collins (2006:165), the director of the Human Genome Project, notes, "If God is outside nature, then science can neither prove nor disprove His existence" (see also Plantinga 2011). Archaeology can help us understand human development and human behavior, but it has not (and most likely cannot) answer questions regarding the existence and form of human spirits and other aspects of the Judeo-Christian-Muslim metaphysical framework. Thus, while the archaeological record is certainly consistent with atheistic evolution, it is not reasonable to conclude that archaeology demonstrates the lack of a monotheistic God or otherwise demonstrates the validity of a materialist philosophical perspective.

Literal Creationism

Literal Creationism, perhaps most famously advocated by the Institute for Creationist Research, holds to a literal interpretation of Genesis in which humans were made fully formed *ex nihilo* by God, although some accept the possibility of the Earth being created over a period

longer than six 24-hour days.² Evolution is completely rejected as significant to either the development of non-human species or the creation of humans, although many accept that small genetic changes can occur within species (Carter 2014). This perspective has been challenged on many scientific and religious grounds, including scriptural inconsistencies (Fitch 2012; Miller 2007). More relevant here, though, is that it is incompatible with our current understanding of the archaeological record. In addition to evidence of the somatic evolution of anatomically modern *Homo sapiens*, archaeological evidence indicates a long period of human existence that exceeds the time frame allowable for the literal interpretation of the Genesis account of human origins reflected in Bishop Ussher's 4004 BC date. Archaeological and archaeogenetic research indicates the existence of anatomically modern humans for more than 150,000 years and the spread of humans to areas as remote as Australia by at least 30,000 years ago (Ben-Dor et al. 2011; Bowler et al. 2003; Fu et al. 2013; Rito et al. 2013; Steward and Stringer 2012). By the proposed time of the creation of humans, archaeological evidence indicates humans had already domesticated crops and complex societies were forming in China, Japan, India, and the Near East (Bellwood 2005; Tattersall 2008; Trigger 2003). Further, archaeogenetic and other archaeological evidence is providing an increasing amount of evidence of direct interbreeding of anatomically modern humans and pre-modern *Homo sapiens* such as neandertals (Villa and Roebroeks 2014; Wilcox 2014). All of this evidence is inconsistent with creationist beliefs as they are typically presented (e.g., Carter 2014; Sarfati 2011). Bringing a creationist framework

² Please note that we use the term creationist here in a rather specific manner to refer to perspectives that hold the creation of humans *ex nihilo* as opposed to more generally to refer to perspectives that hold that God is in some way responsible for the creation of humans.

into accord with archaeological data would further require such modification to the creationist perspective that it could no longer legitimately be considered creationist as that term is used here.

Intelligent Design

The term intelligent design was first outlined in its current form by Johnson (1991) to differentiate this perspective from creationism as outlined above (see also Behe 1996; Meyer 2013; Pennock 2003; Ross 2005). Intelligent design explicitly rejects the materialist philosophical position of authors such as Dawkins (Johnson 2000), but it does not outright reject evolution as much as considers it incomplete. Intelligent Design, as it is generally understood, rests on the premise of “irreducible complexity,” the idea that evolution cannot account for the complexity of biological systems including the cell, physiological components of organisms such as organs, or the interworking of such biological features. Instead, a “creator” was necessary to create the basis of life and the complex biological systems upon which evolution operates (Behe 1996; Meyer 2009).

Intelligent design has been criticized on various grounds, including the argument that “irreducible” complexity isn’t truly irreducible, but only appears to be so after the entire system has developed (Petto and Godfrey 2007). For example, Dawkins (1996) provides a detailed sequence based on descent with modification for the development of the eye from simple, light-sensitive cells to complex structures such as the human eye without relying on irreducible transformations of the structure. From the perspective of archaeology, there is no clear support for intelligent design. The changes we see in the somatic evolution of the genus *Homo* and the artifacts and features from the Lower Paleolithic to modern times do not require assumptions of irreducible transformations and an associated need for divine intervention. Instead the

development is exactly what we would expect given a Neo-Darwinian framework. This could be interpreted as evidence against Intelligent Design, but the most common examples for irreducible complexity are not based on archaeological data at all (e.g., Behe's [1996] discussion of bacterial flagellum; Meyer's [2013] discussion of the Cambrian Explosion) and their evaluation will necessarily be completed by scientists in other fields. The bottom-line is that archaeology does not disprove Intelligent Design, but it doesn't provide any support for it either.

Theistic Evolution

Theistic evolution holds that evolution is the means by which the Creator created humans (Alexander 2008b; Collins 2006; Giberson and Collins 2011; Ruse 2004). Within this perspective, Genesis is interpreted figuratively as a statement of the relationship between God the Creator and humans, perhaps laying out the sequence of creation but not the time period or specific physical mechanisms of creation (Franklin 2014; Poe 2014). It fully accepts Darwinian evolution as the mechanism for the development of life, including humans, but holds that the monotheistic deity of the Judeo-Christian-Muslim tradition created both the raw material of the Universe and the system of evolution in order to bring about humans and all other life forms. It explicitly rejects arguments such as irreducible complexity, instead holding that God created a coherent system of biological development that did not require further intervention to produce humans (Collins 2006; Lamourex 2008). This perspective thus fully agrees with the applicability of evolution to understand the somatic development of humans, including the acceptance of shared ancestry among humans and other great apes, but rejects the materialist perspective underlying the New Atheism (e.g., Venema 2010; Wilcox 2014). In the place of materialism, theistic evolution postulates the presence of a Creator that lead to both the physical and spiritual

creation of humans (Collins 2006; Franklin 2014). Archaeological knowledge is compatible with this perspective, just as it is with the atheistic evolution previously discussed. While archaeologists can study the development of humans and their cultures, we are unable to prove or disprove whether God created the process of evolution or the human soul. These issues are beyond our empirical ability to address.

CONCLUSIONS

Archaeology should be, and in fact must be, a scientific enterprise that improves our knowledge of humans, but it ought not be a cudgel used to delegitimize any group's culture or faith without sound support and a careful consideration of the evidence. Our consideration here indicates that current archaeological knowledge is consistent with three of the four general perspectives addressing the relationship between the Genesis creation account and evolution, including two general perspectives that accept the Judeo-Christian-Muslim view of a monotheistic, creator God. Arguments for the compatibility of evolution and religion certainly aren't new (Roberts 2010). Archaeology will necessarily continue to play a role in conversations about the origins of humans, and by extension, their relationship to the monotheistic God in which most Americans believe. However, belief or disbelief in God ought not serve as an impediment to participation in and consumption of archaeological knowledge. Furthermore, archaeology as a profession ought to take its responsibility in this continuing discussion seriously.

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