

§ IX. EXCURSUS: CREATION AND EVOLUTION

Table of Contents

Interpretation of Genesis 1	2
Interpretation of Genesis 1	2
Hermeneutical Principles	3
Rival Interpretations	5
Literal Interpretation of Genesis 1	7
Summary of Literal Interpretation of Genesis 1	14
Gap Interpretation	19
Day-Gap and Day-Age Interpretation	25
Revelation-Day and Literary Framework Interpretation	30
Functional Creation Interpretation, Part 1	35
Functional Creation Interpretation, Part 2	39
Functional Creation Interpretation, Part 3	46
Functional Creation Interpretation, Part 4	51
Hebrew Myth Interpretation of Genesis 1	59
Summary and Implications of Different Interpretations	67
Summary and Implications	70
Compatibility of Biblical Theism with Evolutionary Biology	75
Concord with Evolutionary Biological Theories	75
Introduction	75
Compatibility of Biblical Theism with Evolutionary Biology	75
Random Mutations	78
Methodological Naturalism	88
Origin of Life	95
Origin of Life	95
Evolution of Biological Complexity	99
Evolution of Biological Complexity	99
Common Ancestry	105
Mechanisms of Biological Evolution	111
Theological Synthesis	121
Theological Synthesis	123
Putting It All Together	130

EXCURSUS: CREATION AND EVOLUTION

Lecture 1

Interpretation of Genesis 1

When we talk about the Doctrine of Creation, most people automatically think exclusively of the creation-evolution debate. I hope that our study of the Doctrine of Creation in this class has helped you to see how much richer and fuller the Doctrine of Creation is than just the controversy between creation and evolution. We've talked about things like *creatio ex nihilo*. We've talked about God's conservation of the world in being. We've talked about God's providence – both his ordinary providence in governing the world as well as his acts of extraordinary providence and miraculous intervention in the world. And we've talked about higher orders of creation like angels and demons. So the Doctrine of Creation is a rich theological doctrine that goes far beyond disputes between creation and evolution.

Interpretation of Genesis 1

Still, the question of how God created life and biological diversity on this planet is an important and very interesting aspect of the Doctrine of Creation. So what I want to do now is to take an excursus from our survey of the Doctrine of Creation to talk specifically about the creation of life and biological diversity. In order to do so, we want to turn to the principal text in the Bible that addresses the question of God's creation of life and biological diversity which is the first chapter of Genesis. After verse 1 in which God created the heavens and the earth (the universe) the author of Genesis goes on to describe how God creates this wonderful world as an environment for human beings to live in – how he transforms the earth into a habitable place for humanity. So what we want to take up first in our study is the interpretation of Genesis 1:2 to the end of the chapter, particularly in conversation with what modern science and the biological theory of evolution have to say about the origins of biological complexity. Let's begin our study by reading this text from the first chapter of Genesis:

The earth was without form and void, and darkness was upon the face of the deep; and the Spirit of God was moving over the face of the waters. And God said, "Let there be light"; and there was light. And God saw that the light was good; and God separated the light from the darkness. God called the light Day, and the darkness he called Night. And there was evening and there was morning, one day. And God said, "Let there be a firmament in the midst of the waters, and let it separate the waters from the waters." And God made the firmament and separated the waters which were under the firmament from the waters which were above the firmament. And it was so. And God called the firmament Heaven. And there was evening and there was morning, a second day. And God said, "Let the waters under the heavens be gathered together into one place, and let the dry land appear." And it was so. God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good. And God said, "Let the earth put forth vegetation, plants yielding seed, and fruit trees bearing

fruit in which is their seed, each according to its kind, upon the earth.” And it was so. The earth brought forth vegetation, plants yielding seed according to their own kinds, and trees bearing fruit in which is their seed, each according to its kind. And God saw that it was good. And there was evening and there was morning, a third day. And God said, “Let there be lights in the firmament of the heavens to separate the day from the night; and let them be for signs and for seasons and for days and years, and let them be lights in the firmament of the heavens to give light upon the earth.” And it was so.¹ And God made the two great lights, the greater light to rule the day, and the lesser light to rule the night; he made the stars also. And God set them in the firmament of the heavens to give light upon the earth, to rule over the day and over the night, and to separate the light from the darkness. And God saw that it was good. And there was evening and there was morning, a fourth day. And God said, “Let the waters bring forth swarms of living creatures, and let birds fly above the earth across the firmament of the heavens.” So God created the great sea monsters and every living creature that moves, with which the waters swarm, according to their kinds, and every winged bird according to its kind. And God saw that it was good. And God blessed them, saying, “Be fruitful and multiply and fill the waters in the seas, and let birds multiply on the earth.” And there was evening and there was morning, a fifth day. And God said, “Let the earth bring forth living creatures according to their kinds: cattle and creeping things and beasts of the earth according to their kinds.” And it was so. And God made the beasts of the earth according to their kinds and the cattle according to their kinds, and everything that creeps upon the ground according to its kind. And God saw that it was good. Then God said, “Let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth.” So God created man in his own image, in the image of God he created him; male and female he created them. And God blessed them, and God said to them, “Be fruitful and multiply, and fill the earth and subdue it; and have dominion over the fish of the sea and over the birds of the air and over every living thing that moves upon the earth.” And God said, “Behold, I have given you every plant yielding seed which is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food. And to every beast of the earth, and to every bird of the air, and to everything that creeps on the earth, everything that has the breath of life, I have given every green plant for food.” And it was so. And God saw everything that he had made, and behold, it was very good. And there was evening and there was morning, a sixth day.

Hermeneutical Principles

In order to interpret this passage correctly we have to follow certain fundamental hermeneutical principles. Hermeneutics is the science of interpretation. In interpreting a writing, you have to apply (or follow) certain hermeneutical principles in order to understand it correctly. First and most fundamentally, we must interpret a writing

¹ 5:06

according to the literary genre, or type, to which it belongs. Genre is the literary type to which a text belongs. It is absolutely critical to interpret texts according to their genre because it would be a catastrophic mistake to interpret a text literally if the genre of that text isn't of the sort that is intended to be taken literally. For example, when the psalmist says, "Let the trees of the wood clap their hands before the LORD"² he is obviously not trying to teach botany. Think how inappropriate it would be to read poetry, such as the Psalms, literally. That would be a disastrous misinterpretation of the text. Or, again, think how inappropriate it would be to interpret literally a book like the book of Revelation where the monsters and other figures that are described in Revelation are meant to be symbols of, say, nation-states or political alliances.³ When I first became a Christian I thought that the book of Revelation literally described sea monsters who were going to come up out of the ocean at the end times and take over the world! Seven headed beasts and so forth! But as you begin to understand the type of literature that the book of Revelation represents – namely, Jewish apocalyptic literature – then you realize that apocalyptic literature is highly symbolic and figurative and therefore it would be a mistake to take it literally. So, when we come to Genesis 1, considerations of literary genre will be important in deciding how to interpret it correctly.

Another hermeneutical principle that we should observe here is trying to determine how the original author and his audience would have understood the text. It is not enough to ask what it means to you today. You have to ask how the author would have understood this and how his audience would have understood the text. We should examine the text on its own basis and respect its integrity as a text. Many Christians unfortunately follow a hermeneutic which is sometimes called *concordism*. This is trying to interpret the text in light of modern science – trying to read modern science back into the original text rather than letting the text stand on its own two feet and speak to us. For example, I have heard Christians say that the Bible predicts television! That if you read the Bible you can find predictions in the Bible of television! What are they talking about? Well, they will point to passages in the Bible where it says that when Jesus Christ returns to earth – the second coming of Christ – every eye will see him.⁴ And they said this is impossible for people living on a globe like the earth – the sphere of the earth. Not everyone could see Christ when he returns. So, they must be watching it on television – this is a prediction in the Bible of modern television! Or, in the case of Genesis 1, there are examples of Christians today who will read modern Big Bang cosmology back into the text. For example, there is a text, I believe, in Isaiah where the prophet says that God stretched out the heavens.⁵ And this is supposed to be an anticipation of the expansion of space in the contemporary Standard Big Bang Cosmological Model. As time goes on, space stretches and space expands so that the universe is expanding and this is read back into the Bible so that when it says he stretched out the heavens this is supposed to be an anticipation of the stretching, or expansion, of space postulated in the Big Bang model. Well, I think it is fairly obvious that these are preposterous examples of reading the text, not on its own and not in the way the author or his audience would have understood it, but trying to read things back into the text to make it into concord with modern science – hence the name

² cf. Isaiah 55:12; Psalm 98:8

³ 10:00

⁴ Revelation 1:7

⁵ cf. Psalm 104:1-2; Isaiah 42:5, 44:24, 45:12, 51:13; Jeremiah 10:12, 51:15; Zechariah 12:1

concordism. This is really eisegesis, not exegesis. You want to take the meaning out of the text, not read the meaning back into the text and impose it on the text.

Obviously, I am not saying that we should not engage in the project of seeking a synthesis of science and the teaching of the biblical text. On the contrary, I am deeply committed to this project as you know. I think this project is vital for modern Christians if we are to have an informed and relevant theological worldview. Our theological worldview needs to be informed by, and in conversation with, the discoveries of modern science. But that is a later project. That is a secondary project. The first project is the task of interpreting the text itself. First you need to determine what the text is saying before you can try to relate it to the discoveries of modern science.⁶ So rather than trying to impose modern science onto the account in Genesis 1, or to read Genesis 1 in light of modern science, we want to read the account as it would have been understood by the original people for whom it was written and who read it.

Rival Interpretations

When we do that a number of different competing interpretations of the Genesis account emerge. What we will want to do next time is to begin to go through these various alternative interpretations of Genesis 1.

A very helpful website that you might want to consult on this question has been put up by the Presbyterian Church in America at www.pcahistory.org/creation/report.html or if you want a PDF file www.pcahistory.org/creation/report.pdf. This is a report by the Presbyterian Church in America on the question of the interpretation of the creation account in the first chapter of Genesis. It gives a very nice survey of the history of the interpretation of Genesis 1 as well as the various alternative interpretations that have been offered down through history of this chapter. Then it gives an assessment of each interpretation's strengths and weaknesses. So if you are interested in exploring more of the topic that we are going to be briefly surveying in this class, then I think you will find this to be a very helpful site if you'd like to read more.

DISCUSSION

Question: Who was the audience?

Answer: Well, it would be the ancient Hebrew people.

Followup: Aren't we the audience also? Isn't Genesis a revelation? Didn't God know that we'd be reading it?

Answer: Yes, obviously, that raises the issue of . . . the authorship here isn't just the original author who wrote it, be it Moses or whomever. God is in one sense the ultimate author. So you could say, "Couldn't God inspire in it things that only people would later understand who have, say, the benefit of modern science?" While that is possible, I think that we have to begin, at least, by asking ourselves what did the original human author intend and what did he want his audience to understand. How would they have taken it? That is certainly the place to begin before you begin to read things into the text in light of

⁶ 15:04

modern science. That latter kind of hermeneutic is very dangerous because it is all too easy to read things into the text that weren't intended by the original author whatsoever. You really lose all constraints if you lose the constraint of the original meaning of the text. I think we have got to start there at least with understanding this text.⁷

⁷ Total Running Time: 19:14 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 2

Literal Interpretation of Genesis 1

Last time we started a new section of the Doctrine of Creation dealing with the creation of life and biological complexity. We began to look at the key text in the Scripture concerning this – Genesis 1. I suggested that before we look at various alternative interpretations of Genesis 1, we need to keep in mind a couple of very important hermeneutical principles so as to not be led astray. One of these was that we always need to interpret a piece of literature according to the literary genre to which it belongs. Otherwise, we will be led into misunderstanding and misinterpretation if we interpret it according to standards belonging to another genre. Secondly, I suggested that we need to try to understand the original text in the way that the author intended it to be understood. We try to put ourselves within the author's horizon and the horizon of his original audience and ask, "How would that original author and his audience have understood this text?" rather than try to read modern science back into the text and interpret it in ways that would be quite foreign to the original author and his audience.

Literal Interpretation

There are many different interpretations of the opening chapter of Genesis. The first that we want to talk about is the Literal Interpretation. The most straightforward interpretation of Genesis 1 is what might be called the Literal Interpretation. Sometimes this is called the 24-Hour Day Interpretation. For example, my doctoral supervisor Wolfhart Pannenberg was fond of quoting from the German Old Testament scholar Gerhard von Rad that the account that we find in Genesis 1 was intended to be a scientific account – primitive though it might be. Nevertheless, it was intended to give a scientific account of the origin of the world and of life in the terms of the science of the ancient world. So, for example, von Rad writes,

This account of Creation is, of course, completely bound to the cosmological knowledge of its time. But it is a bad thing for the Christian expositor completely to disregard this latter as obsolete, as if the theologian has only to deal with the faith expressed in Genesis 1 and not with its view of nature. For there can be no doubt that the Creation story in the Priestly Document [that is to say, in Genesis 1] seeks to convey not merely theological, but also scientific, knowledge. It is characterized by the fact, which is difficult for us to understand, that here theological and scientific knowledge are in accord with no tension between them. The two sets of statements are not only parallel, but are interwoven in such a way that one cannot really say of any part of Genesis 1 that this particular statement is purely scientific (and therefore without importance for us) while that one is purely theological. In the scientific ideas of the time theology had found an instrument which suited it perfectly, and which it could make use of for the appropriate

unfolding of certain subjects – in this case the doctrine of Creation.⁸

That is from von Rad's *Old Testament Theology, Volume 1* and page 148.

Pannenberg thinks that this primitive science which is reflected in Genesis 1 has been obviously overtaken by modern science. So, it needs to be corrected. But he finds motivation in the biblical author's approach for theology trying to integrate theology with a scientific view of the world.⁹ We may not be committed any longer to the author's primitive and outmoded science of his day but nevertheless Pannenberg thinks that we should still follow the author's example in trying to integrate theology with the science of our day so that science and theology become conversation partners in a dialogue for getting at truth.

Similarly, so-called Young Earth Creationism takes the aim of Genesis 1 to communicate scientific information about creation. Young Earth Creationists agree, in essence, with von Rad's view of that. However, the difference between Young Earth Creationism and von Rad and Pannenberg is that they take the account to be accurate, not to be obsolete anymore. God created the world in six consecutive 24-hour days about ten to twenty thousand years ago. This interpretation takes the text in a *prima facie* way – that is to say, it takes it at face value. It takes the text literally in what it says, or at least as far as they can. Even Young Earth Creationists are not totally literalists. For example, some aspects of the narrative are not taken literally, such as the creation of the sun on the fourth day in Genesis 1. Very typically, Young Earthers will not embrace the view that there was plant life and life on earth prior to God's creation of the sun; rather, the creation of the sun on the fourth day is interpreted to mean something like the sun appeared on that day – that it came out from behind the thick cloud canopy that had been enveloping the earth.

So the question then is whether the text before us is of a type that the author intends the reader to take it literally. It is interesting to me that von Rad gives absolutely no evidence for this. He just asserts it. He just says that this is meant to be an account that is a primitive scientific account integrated with theology. But he doesn't give any evidence for thinking so.

Clearly, Genesis 1-3 are intended to be historical at some level. For example, Adam and Eve are presented as the first human couple – the origins of the human race. They are treated as historical individuals who actually lived. They are not just symbols of mankind. They are actual people who are connected to other people in Genesis like Abraham and his descendants by genealogies that link Adam and Eve to indisputably historical persons. So it is clear that Adam and Eve are not just symbolic figures in this narrative. The author does think of them as real historical persons who have descendants that eventually lead to Abraham and the people of Israel. Moreover, we must not miss the forest for the trees here either. Don't forget about the central figure of the passage in Genesis 1 – namely, God! God, himself! God is clearly not intended to be just a symbol or a mythological figure in this narrative. He is intended to be a real, personal agent who created the world and humanity and who goes on to call forth the nation of Israel to be his special people. So the central figure of this narrative is a literal personal individual who is

⁸ Gerhard von Rad, *Old Testament Theology, Volume 1* (Louisville, KY: Westminster John Knox Press, 2001), p. 148

⁹ 4:59

the creator of the world and the God of Israel. So, as I say, at some level at least these events are taken to be historical.

On the other hand, the Genesis narrative is also undoubtedly, I think, meant to be symbolic and metaphorical in certain respects. For example, the name “Adam” in Hebrew just means “man.” In the beginning, God created man. And “Eve” means the mother of all living.¹⁰ So Adam and Eve are not just historical individuals like Janice and Jim. This is man and the mother of all living human beings. They represent humanity before God. They are symbolic, I think, and metaphorical for humanity. In the creation story, as it continues in Genesis 2, we have clearly metaphorical or perhaps anthropomorphic descriptions of God. God is depicted in human terms. For example, God is depicted as walking in the garden and looking for Adam and Eve. Adam and Eve are hiding from God and God calls out “Where are you?” and he is looking for them in the garden. Or, again, when God creates man, it says that he fashions him out of the dust of the earth and breathes into his nostrils the breathe of life. Now, clearly, this isn’t intended to mean that God literally bent down and performed CPR on Adam through his nose. Rather, this is using literary and metaphorical devices for describing his creation of humanity. In fact, the whole narrative in Genesis 1 is an incredibly carefully crafted piece of Hebrew literature. It really is unique. There is nothing like this in Hebrew literature elsewhere. Scholars are generally agreed that it is not poetry (it is not a Hebrew poem) nor is it a hymn exactly (though it seems to have strophe or verses). But it is not just straight forward prose either. This chapter is a highly stylized piece of writing that is constructed with certain parallels running all through it. For example, “And God said” . . . “And God made” . . . “And it was so.” You find this structure repeated over and over again through the chapter. It is a very carefully stylistically constructed passage that exhibits an enormous amount of literary polish. Even the number of the Hebrew letters in the chapter is carefully chosen. The very number of the characters is significant in Genesis 1.¹¹ So this isn’t just a scientific report or a police report or a historical narrative of what happened. To think that is to have a very naïve view of the kind of literature that Genesis 1 is.

So most evangelical exegetes today (that is to say, most evangelical Scripture scholars) will say that these narratives are meant to be taken in some sort of figurative-historical sense. The underlying historical events actually happened, but nevertheless the narrative is told in poetic imagery and figurative speech that shouldn’t be pressed for literal precision.

If Genesis 1-3 is a kind of historical-figurative genre of writing; that is to say, it is covering historical events but it is using poetic or figurative language to describe them, then it would be making unwarranted demands upon this text to interpret it literally. In particular, I think, it would be unwarranted to press the Hebrew word “*yom*” – or “day” – to mean a literal 24-hour period of time. The fact is that *yom* exhibits the same sort of latitude that the English word “day” does. It can be used to describe a 24-hour period of time but it can be used more broadly as well. Like when we say “In Lincoln’s day, there were no automobiles yet.” Obviously there you are not referring to a 24-hour period.

¹⁰ 10:01

¹¹ TODO Provide a quick summary of what this letter count is and why its significant

Yom, in Hebrew, exhibits exactly that same sort of latitude.¹² Also, the very phrase that is used in Genesis 1 for the first day – “*yom ehad*,” or “Day One” – is also used elsewhere in Scripture in a non-literal sense. For example, this phrase is used in Zechariah 14:7 to refer to the “day of the Lord,” that is to say, God’s judgment upon Israel which is clearly not meant to be just a 24-hour period of time. So the language in Genesis 1 should not be pressed to indicate literal 24-hour days.

On behalf of those who do interpret it literally, I think one of the best proof texts for interpreting *yom* as literal in Genesis 1 actually isn’t in the book of Genesis. It is in the book of Exodus. If you look at Exodus 20:9-11, the author is reflecting back on the Genesis narrative. He is looking back on this seven day creation week and reflecting on it. In Exodus 20:9-11 he says this,¹³

Remember the sabbath day, to keep it holy. Six days you shall labor and do all your work, but the seventh day is a sabbath of the LORD your God; in it you shall not do any work, you or your son or your daughter, your male or your female servant or your cattle or your sojourner who stays with you. For in six days the LORD made the heavens and the earth, the sea and all that is in them, and rested on the seventh day; therefore the LORD blessed the sabbath day and made it holy.¹⁴

Here the passage says that in six days the Lord made the heavens and the earth, the sea and all that is in them; so, defenders of the literal interpretation will say that this shows that Genesis 1 is intended to refer to a literal week of six consecutive 24-hour days. But I think that this interpretation may be pressing the passage in Exodus a little too hard. What the Exodus passage is talking about clearly is the *pattern* that is set down in Genesis. Namely, the pattern of God’s laboring for six days creating the world and then resting on the seventh day. That pattern is the same that Israel should observe in its literal work week. Israel should work for six literal days and then rest on the seventh day. But that doesn’t mean to say that because the pattern is the same that therefore the periods of time, or the days, described in Genesis 1 are therefore exactly the same length as our ordinary calendar days. Look at how the Sabbath commandment is repeated in Exodus 31:12-17 and compare that to the passage we just read. It says,

The LORD spoke to Moses, saying, “But as for you, speak to the sons of Israel, saying, ‘You shall surely observe My sabbaths; for this is a sign between Me and you throughout your generations, that you may know that I am the LORD who sanctifies you. Therefore you are to observe the sabbath, for it is holy to you. Everyone who profanes it shall surely be put to death; for whoever does any work on it, that person shall be cut off from among his people. For six days work may be done, but on the seventh day there is a sabbath of complete rest, holy to the LORD; whoever does any work on the sabbath day shall surely be put to death. So the sons of Israel shall observe the sabbath, to celebrate the sabbath throughout their generations as a perpetual covenant.’ It is a sign between Me and the sons of Israel forever; for in six days the LORD made heaven and earth, but on the

¹² 14:57

¹³ Dr. Craig starts reading from verse 8

¹⁴ From *New American Standard Bible*

seventh day He ceased from labor, and was refreshed.”¹⁵

Notice that in this passage it refers to the seventh day as the day of God’s Sabbath rest.¹⁶ It says “on the seventh day He ceased from labor, and was refreshed.” But when you read Genesis 1, the seventh day is clearly not a 24-hour period of time. It, unlike the other days, does not come to an end with evening and morning. God is still in the day of his Sabbath rest. God is still in the period of no longer being active in creating new things. So if the seventh day, though it is referred to as a day and is the model for Israel’s literal Sabbath day, isn’t to be taken literally as we know then why should the other days also be taken literally as 24-hour periods of time? It seems to me that it is more plausible to think that what is being emphasized here is the pattern of six days of labor followed by one day of rest and there isn’t any sort of intention to say that the length of God’s days is exactly the same length as our 24-hour calendar days. We know that is not true on the seventh day in particular.

Sometimes those who defend the Literal Interpretation of six consecutive 24-hour days will point out that when an ordinal number is used with the word *yom* as in “second day,” “third day,” and “forth day” then it always refers to a literal 24-hour day. When you use an ordinal number like “second,” “third,” “forth,” and “fifth” with *yom* then it is always referring to a literal 24-hour day. However, I don’t find this to be a convincing argument at all.

First of all, there is no grammatical rule in Hebrew that says that *yom* followed by an ordinal number has to refer to a 24-hour period of time. Even if it were the case that no where else in Hebrew literature that we have extant do we find *yom* followed by an ordinal number not referring to a 24-hour day, that could just be an accident of the Hebrew literature that happens to have survived. There is no grammatical rule that would require *yom* followed by an ordinal number to refer to a 24-hour period of time. This fact, if it were true, could just be a reflection of the relatively rare sources for ancient Hebrew literature that we have today and doesn’t really make a valid grammatical point. It is just an accident of history and what literature we have today.

But, secondly, in any case the claim is simply false. It is false. We do have passages where *yom* is used with an ordinal number to refer to a non-literal day. One such passage would be Hosea 6:2. In Hosea 6:2, it says, “He will revive us after two days; He will raise us up on the third day, that we may live before Him.” Here the days are not meant to be 24-hour periods of time. It is talking about God’s judgment upon Israel – he has rent Israel, he has judged Israel – but on the third day he will raise us up. The third day is symbolic of the day of God’s deliverance and healing and restoration of Israel after it’s having been wounded and rent by the Lord’s judgment. So it is simply false that *yom* used with an ordinal number always refers to a 24-hour period of time. In Hosea 6:2, it is clearly not referring to a literal 24-hour period of time.

Thirdly, I think the claim here on the part of the Literal Interpretation is really missing the point entirely. The point is that a 24-hour day can be used as a literary metaphor for a longer period of time or something else.¹⁷ Even if *yom* means a 24-hour day, that doesn’t

¹⁵ From *New American Standard Bible*

¹⁶ 20:17

¹⁷ 25:00

even begin to address the question of whether a 24-hour day might not be used metaphorically. Let me give you an analogy to make this clear. Take the English word “arm.” The English word “arm” has multiple meanings. One meaning would be a limb or an appendage connected to your shoulder and terminating in your hand. That would be your “arm.” But an “arm” can also be used to indicate a weapon, as when somebody is carrying a concealed arm or somebody is described as an armed man. In that case, we don’t mean that he has got arms or that he is carrying an arm under his suit jacket. We mean he is carrying a weapon with him. These are both English meanings of the word “arm.” Very often, the Scripture will use the word “arm” in a metaphorical way.¹⁸ It will say something like this: “The arm of the Lord was with the people of Israel.” Clearly, when it is saying the “arm of the Lord,” it means “arm” in the sense of a limb, not a weapon. It means a literal appendage – “the arm of the Lord was with the nation of Israel.” So it is using the word to mean a limb. But that doesn’t mean that, therefore, God has literal limbs as the Mormons think. Rather, it is a metaphor when it is applied to God. When the Scripture speaks of the arm of the Lord, it means something like the power of the Lord. The arm of the Lord being with them means God was on their side – his power was with them and he was fighting for them, strengthening them and giving them his strength and might. So if somebody were to try to prove that the word “arm” always literally means “limb” that wouldn’t even address the question of whether or not a limb might be used as a metaphor for something else as it is in Scripture. Similarly, in the same way, even if in Hebrew literature *yom* always has the meaning “24-hour day” that doesn’t even begin to address the question of whether or not an author might use 24-hour days as metaphors or symbols for something other than a calendar day.

So I don’t think that these arguments in favor of the Literal Interpretation are compelling.

What I have been talking about so far is the support that might be given for the Literal Interpretation and some assessment of that. Next I will turn to a critique of this view.

DISCUSSION

Question: In what way – what words and phrases would they use – to convince you that they were trying to tell you that it was a 24-hour day?

Answer: That is a very good question. I haven’t given any arguments yet for why I think that this passage may well be non-literal. All I have argued so far is that the evidence in favor of the Literal Interpretation isn’t compelling. But one could still say, “I will take it at face value unless I am given some reason to think otherwise.” I haven’t done that yet. All I am saying here is that when you look at the support that is given for the Literal Interpretation, it is not incumbent upon us in light of that evidence. But it could be read that way, that is true. Whether or not we do read it that way will be dependent upon how you react to what follows next time when I look at a critique of this view. To answer your question more directly, I suppose what it would take would be if these elements that I am going to talk about that look like earmarks or indications of non-literality were absent from the narrative then I think the arguments for literality would be more convincing.¹⁹

¹⁸ cf. Isaiah 52:10, 53:1

¹⁹ 30:06

We will have to wait until I give the evidence on the other side.

Question: In Genesis 1:3, he says “let there be light.” In Genesis 1:14 he says “let there be lights.” This first light that they are talking about – what light is that? That is not the sun, it is not the moon.

Answer: That is part of the difficulty with the Literal Interpretation. If days are literally 24-hour days, how can they be that if there is no sun – if the sun isn’t created until the fourth day? That is why I said even those that espouse the Literal Interpretation typically back away at this point and say, “Well, the sun wasn’t literally created on the fourth day. That light that you are talking about in verse 3 was really the sun but it was eclipsed by the heavy cloud canopy and it was only on the fourth day that it became visible.” So this would be one of those indications, I think, that we are dealing with something that should not be pressed for literal precision or we get into this very difficult question that you’ve just asked. That question arises precisely as a result of interpreting it literally.

Followup: I wondered if it could have been the Shekinah Glory of God – the light of the world, Jesus Christ.

Answer: You could imagine that. Certainly the Scripture talks about God being glorious and I think the author of Genesis wouldn’t be unsympathetic to that. But then doesn’t that then evacuate all of the arguments the Literal Interpretationist is giving us for thinking *yom ehad*, and “second day,” and “third day” have to be literal 24-hour days? The Shekinah Glory isn’t going to give you 24-hour days.

Followup: I can’t imagine how long it takes to make something out of nothing. He’s God, so how long does it take him to do something from nothing.

Answer: Well, that wouldn’t take any time.

Followup: That’s right. OK, there will go. If it takes no time, he says let it be and poof there it is! And he says evening and morning.

Answer: *Creatio ex nihilo* doesn’t take time. But this narrative is one in which the creation of life and biological diversity is spread out over time and not created just instantly – boom – all in one instance.

What we have looked at so far is the Literal Interpretation. We’ve asked what evidence is there in favor of the Literal Interpretation. The best evidence, I think, would be the passage from Exodus but I don’t think that is compelling. So I don’t think the case has been made very strongly for a literal interpretation. Next time I am going to share some evidence on the other side which has already been hinted at in some respects as to why we might think that the author doesn’t intend us to take this as six consecutive literal 24-hour days.²⁰

²⁰ Total Running Time: 33:42 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 3

Summary of Literal Interpretation of Genesis 1

We have been thinking about the Literal Interpretation of Genesis chapter 1 and I suggested last time that the arguments on behalf of the Literal Interpretation of Genesis 1 are not compelling. We saw that, although the narrative does talk about historical persons – principally God himself as well as Adam and Eve, – nevertheless this is a highly literary masterpiece; a carefully crafted literary structure and not just a sort of chronicle of what happened. Therefore, most evangelical exegetes would say that while it has a historical basis, nevertheless, it is described in figurative or poetic language that should not be pressed for literality. We saw, in particular, that it would be unwarranted to think that the word “*yom*” or “day” has to refer to a literal day. For example, in Genesis 2:4 you have the word *yom* used in a clearly metaphorical way. In Genesis 2:4 (NASB), it says, “this is the account of the heavens and the earth when they were created, in the day that the LORD God made earth and heaven.” Now, in this passage, it refers to the entire creation week as “the day” in which the Lord made the heavens and the earth. So even in the very creation account itself we have the word *yom* used in a metaphorical sense to describe the entire creation week and not just a 24-hour period of time.

In any case, showing that the word *yom* means a 24-hour day really doesn’t even begin to address the question of whether or not a 24-hour day might be used as a metaphor for something else. And we looked at the example of the word “arm.” Even if in every Hebrew passage you can find in the Old Testament the word “arm” refers to a limb or an appendage rather than to a weapon that doesn’t mean that when the Scripture says “the arm of the Lord was with the people of Israel” that it means that God has literal appendages or has literal limbs. Rather, the word “arm” isn’t being used in the sense of a weapon; it is being used in the sense of a limb. It means limb, but the limb is used as a metaphor for God’s power and strength and might that accompanies Israel. So even if it were true that the word *yom* means 24-hour period of time, that doesn’t even begin to address the literary question of whether or not a 24-hour day might not be used as a literary metaphor for something else.

So I don’t find the arguments on behalf of the Literal Interpretation compelling. Let’s now turn to a critique of the Literal Interpretation. Here I want to argue that there are indications in the text itself that six consecutive 24-hour days are not intended by the author. I want to emphasize – I am saying this not on the basis of modern science. I am not falling victim to concordism – reading modern science back into the text. Rather, I am saying that on the basis of an exegesis of the text itself; there are some hints that the author didn’t intend for us to take this as six consecutive 24-hour days. What are these? I have already mentioned one of them – the fact that the phrase “it was evening and it was morning” is not mentioned with respect to the seventh day. That suggests that the seventh day is still continuing. God is still in the day of his Sabbath rest. It never ends – he is no longer in the activity of creating new things. God is still resting from the work of creation. So if this seventh day can be understood more flexibly, why not the other days as well? Moreover, notice that throughout the first chapter of Genesis, the evening is

mentioned before the morning – “it was evening and it was morning, a second day (a third day, and so forth).” This is rather odd.²¹ One of the problems that has bedeviled interpreters of Genesis 1 from the very earliest times is the fact that God doesn’t make the sun until the fourth day. It is on the fourth day that he made the sun and the moon. But if that is the case, then how can the days prior to that have been 24-hour periods of time, since there wasn’t any sun to create solar days? How can there be evening and morning if the earth wasn’t rotating around the sun? Even advocates of the Literal Interpretation usually begin to waffle at this point and start appealing to non-literal interpretations. For example, by saying that on the fourth day, this was the day in which the sun *appeared* in the sky from behind the thick cloud canopy that had covered it. But that is not what the text says. That is reading things into the text. By contrast, the way of reckoning days beginning in the evening and then ending in the morning reflects Israel’s later way of reckoning days. For the Jew, Sabbath and Passover would begin on the evening and then they would end before sunrise. So the days for Israel began in the evening and then they would end in the morning. That pattern is reflected in the narrative here in Genesis 1. So it seems to be, again, the pattern that is important which serves as the pattern for the work week in Israel and the day of Sabbath rest; not for the duration of each day.

Thirdly, I want you to notice something very peculiar when it comes to the third day. Take a look at Genesis 1:11-12. I think this is one of the most interesting features of this narrative. Genesis 1:11-12 says,

Then God said, “Let the earth sprout vegetation, plants yielding seed, and fruit trees on the earth bearing fruit after their kind with seed in them”; and it was so. The earth brought forth vegetation, plants yielding seed after their kind, and trees bearing fruit with seed in them, after their kind; and God saw that it was good.²²

Notice it doesn’t simply say here, “And God said, ‘Let there be fruit trees and vegetation.’ And it was so.” – a sort of miraculous *creatio ex nihilo*. No, what it says is “let *the earth* bring forth vegetation and fruit trees bearing seed after their kind and bearing fruit after their kind.” Then it says *the earth* brought these things forth. Now we all know how long it takes, for example, for an apple tree to grow up from a little shoot, become a sapling then grow into a big tree and blossom and put forth flowers and then put out apples finally. This, of course, was also known to the ancient people of Israel. They knew also about agriculture and how things grew. So if the author were thinking here of 24-hour periods of time, what he would have to be imagining would be something like time lapse photography where the little seed bursts out of the ground and then erupts into this tree, grows up and pops out blossoms all over and then bam! bam! bam! all the apples pop out on the tree. I just can’t persuade myself that this is what the author was thinking of – that he imagined this looking like a film being run on fast forward. So when he says that the earth brought forth vegetation bearing seed according to its kind and trees bearing fruit according to their kinds I think it is very plausible to think that the author didn’t imagine this happening in just 24 hours.

Finally, notice also the sixth day. This is the day that God creates Adam and Eve. Now when you read chapter 2 of Genesis, it makes it plausible that the author did not intend

²¹ 4:57

²² From *New American Standard Bible*

that sixth day to be just a 24-hour period of time because he goes on in chapter 2 to describe Adam's activity on this day prior to Eve's creation – naming all of the animals for example; hundreds and thousands of animals that must have been known to the ancient Israelites.²³ In order to get acquainted with their habits, to realize that none of them are fit for him as a mate, realize that he is alone and unique in creation and then having him fall asleep and Eve finally being created seems to envision a longer period of time.²⁴ When at last Eve is presented to Adam in Genesis 2:23, what does he say? "This at last is bone of my bones and flesh of my flesh." The word there "at last" is a word that connotes a period of time or a period of waiting. For example, it is the same word that is used in the story of Jacob with Leah and Rachel where Jacob finally, at last, is able to leave Laban after 14 years of working to win Leah and Rachel as his wives.²⁵ Also, when Jacob finally sees his son Joseph and is ready to depart this life and die, the same word is used "at last" he is ready.²⁶ So this phrase "at last" is used in Genesis elsewhere to indicate a long time of waiting. That, again, I think suggests that the author did not see what he said in Genesis 1 as being a description of a 24-hour period.

So, for these and other various reasons, I think that one can legitimately approach Genesis 1-3 with greater flexibility than what the Literal Interpretation would imply. If this is right, that would mean that the creation account is not meant to be transpiring in six consecutive 24-hour days. That is not to deny that the literal interpretation of Genesis is one legitimate interpretation. I think that is a perfectly feasible way of construing Genesis 1. But it is to say that we need not, as Christians, put ourselves in a box and say that this is the only legitimate interpretation for a Bible believing Christian. Young Earth Creationists who regard anybody who takes a non-literal view of these passages as somehow an unbiblical compromiser or, in other ways, betraying biblical orthodoxy are simply mistaken here and are overly narrow in their exegetical alternatives. There are good indications in the text itself, wholly apart from modern science, that suggests this text isn't meant to be taken literally.

Historically, it is interesting to note that many of the church fathers and the rabbis down through history did not take Genesis 1 to refer to literal 24-hour days. People like Augustine and Origen and Justin Martyr and others of the church fathers took these to be not 24-hour periods of time. There has always been, among the church fathers and among Jewish rabbis, a latitude of interpretation – a recognition of alternative interpretations. Some of the church fathers and rabbis did take this passage literally, but others took it

²³ 10:15

²⁴ Genesis 2:19-22

²⁵ The word is *happaam* and can be translated as "at last" (see Genesis 2:23 RSV) or "is now" (see Genesis 2:23 NASB) or "this time" (see Genesis 29:34, 35). The Scripture Dr. Craig mentions involving Jacob, Leah and Rachel is Genesis 29:19-35. The word *happaam* is used both in verse 34 and 35, but not in the context of Jacob "finally, at last" winning Leah and Rachel as wives. Rather, it is used by Leah both times. The first time Leah exhorts that finally, at last, Jacob will become attached to her for bearing him three sons (see verse 34, "Now *this time* my husband will become attached to me . . ."). The second usage here, in verse 35, is again by Leah when she says "*This time* I will praise the LORD . . ." in response to her bearing her fourth son, Judah.

²⁶ This is referring to Genesis 46:30. The word *happaam* is typically translated "now" as in "Israel said to Joseph, 'Now let me die, since I have seen your face and know that you are still alive.'" The context indicates that Joseph is saying something like "finally, at last, I can die now that I have seen my son Joseph and know that he is alive and well."

figuratively. It has never been a touchstone of orthodoxy to ask whether or not you believe that the world was created in six literal 24-hour days. So although the literal interpretation is a possibility for Christians today, I do not think that it is the only one. There are other interpretations that are legitimate as well.

DISCUSSION

Question: I love *yom*. I have studied *yom* for eight years. (*inaudible – he makes the comment that there are hundreds of citations of yom and they all refer to 24-hour days.*)

Answer: Well, that is not right. I dealt with that in the class. My counter example was Hosea 6:2.

Followup: Yes, and those are literal 24-hour days.

Answer: Why do you say that?

Followup: They point to the Messiah.

Answer: But apart from the Messiah though, why would you take Hosea 6:2 to be referring to 24-hour time periods?²⁷

Followup: Because it says in three days “you will be with the Lord.” It was three days between crucifixion and resurrection that Israel would be . . .

Answer: OK, you are interpreting it in light of the life of Christ.

Followup: Well, yeah!

Answer: But not in terms of Hosea and what that passage meant to the people to whom Hosea wrote. In the original context, Hosea was talking about the two days are of God’s judgment and wrath upon Israel and the third day is the day of deliverance and redemption. And those aren’t 24-hour days. Hosea 6:2 – I’ve done work myself on this – is not cited anywhere in the New Testament in reference to Christ. The only place you have the third day motif explicitly mentioned with regard to the Old Testament is the Jonah story as Jonas was in the belly of the whale for three days and three nights.

Followup: There are 38 “morning and evening” without *yom* that are all 24-hour days. There are 19 places with “morning and evening” with *yom* and are all 24-hour days. I think what you have to do is you have to look at not just the word *yom* but its context and the other words that are used around it.

Answer: That is a very good point. I want to absolutely affirm what you are saying. You cannot do simple dictionary word studies and exegete a passage. Context is everything. And I hope to have done that here; that is what I was trying to do.

Followup: The second point is what you really have to look at is – were there other words available in Hebrew that could have been used if God (who I believe is the author of this because Adam wasn’t around and Moses didn’t write Genesis) is the author? There are plenty of other words that could have been used to mean long periods of time or not ambiguous periods of time – there are plenty of words that could have been used but they

²⁷ 15:04

weren't used. *Yom* was used with a number with morning and evening.

Answer: Let me, in interest of time, just respond quickly to that. That, I think, has to come to grips with the point that I was making. To show that *yom* means 24-hour day doesn't even begin to address the literary question of whether or not a 24-hour day might be used metaphorically. Again, I'll use my illustration of "arm" – "arm" in Hebrew means a limb. It doesn't mean a weapon as it can in English. But that doesn't mean that the arm of the Lord did this or that that God literally has appendages. A 24-hour period of time – *yom* – can be a literary metaphor.²⁸

²⁸ Total Running Time: 18:14 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 4

Gap Interpretation

We have been talking in our section on Doctrine of Creation about various competing interpretations of the opening chapters of Genesis. We looked at the Literal Interpretation of Genesis which says that this is a quasi-scientific narrative of God's creation of the universe and of life in six consecutive 24-hour days. I argued on the basis of certain hints in the text itself that that interpretation is not incumbent upon the Bible believing Christian and, on the contrary, there are some very good reasons to think that the author of Genesis 1 was not intending us to understand him to be teaching six consecutive 24-hour creative days.

DISCUSSION

Question: As you might know, this is the one area out of your three year Sunday School curriculum that I still feel there is more biblical and scientific evidence for young earth but I am not dogmatic about that at all. Last lecture you were saying one of the big problems was that light was created before the sun, moon and stars and that you heard the explanation that the clouds just moved out of the way. I think that is a silly explanation for it. But I think if in Genesis 1:14 when it talks about lights, in the Hebrew that is light bearers. So I think it is important that the light was created before the light bearers. Throughout the Old Testament and the New Testament, God is seen in visions as light and then in Revelation it talks about the new earth that there will be no sun, moon and stars because God will provide the light. So I don't think that is a problem that the light was created before the sun, moon and stars. Also, it says that they were created as signs of the days and years so it seems days and years could have existed before the sun, moon and the stars because God already established what those were – a sign can only be of something that was already established beforehand. So I don't think there is a problem him having decided days and years before the sun, moon and the stars were there to help us mark it. My question is – would you agree that theistic evolution which typically does not believe in a literal Adam and Eve is not compatible with Christianity whereas old earth creationism that typically does believe in a literal Adam and Eve is compatible.

Answer: I want to hold off on that question until we get to that. I think that it is too early yet to ask that question. Let's hold off on the historicity of Adam and Eve. I did indicate already that I thought that the principal players in this drama are presented as historical characters – principally God Himself. He is clearly not a mythological symbol. He is an actual agent who creates the world. Then, as I said, Adam and Eve – though these are symbolic of humanity (the name Adam means "man") nevertheless they seem to be historical individuals in that they are connected by genealogies and descendents to indisputably historical persons like Abraham. So, I think that the interpreter, to be faithful to the text, has to deal with the fact that these principal characters are presented as historical individuals. Whether the theistic evolutionists can do that well or not – let's talk

about that later. With respect to the light, it wasn't so much that there is light before the sun and the moon but that these are 24-hour days. There is evening and morning which would imply the rotation of the earth on its axis as it orbits the sun. So if you do say there is light prior to the creation of the sun, then that would seem to suggest that these aren't 24-hour days after all; that, in fact, we are not talking 24-hour periods of time. So I think that the Young Earth Creationist who takes that route is going to have trouble defending his view that these are literal 24-hour days since that is set up by the sun.²⁹ With respect to what you said about them serving as signs – I made this same point myself back when we talked about the doctrine of *creatio ex nihilo* where I pointed out that the passage actually says “let” the lights “be for” the purpose of marking seasons and days and years and so forth. So it may actually presuppose that they already exist and weren't created on the fourth day. But then this again means that you are going to be interpreting the text in a way that is not just literal when it says “God made these things and it was evening and it was morning, the fourth day.” So I think that while that is a legitimate option that you are raising, I question how well and comfortably that fits with the literal 24-hour day interpretation.

Question: I was watching a show on the Discovery Channel one night and it was dealing with the earth and the creation and all this stuff. They were talking about how they followed the fossil record back and they hit a level – boom – and below that level there are no fossil records. They even came up with a term for it – they coined it the Cambrian Explosion. My question is this – is there anything in Scripture that could indicate that the 24-hour days were the days of creation but they were not consecutive days – that there was a period between them.

Answer: That forms a very good segue into the next interpretation we are going to talk about which is the Gap Interpretation and then the Day-Gap Interpretation which is going to put gaps of time in between the creative days. So hang on to that and I will address it in just a minute.

Question: I am a Young Earther and I am back to the perfection of the writing of Genesis 1. I don't think it indicates that it is poetry. I think it indicates the author. Last time we talked, we talked about the indication that when there is a number with day throughout the Bible, it tends to be a 24-hour day and we talked about Hosea.³⁰ I went back and looked at Hosea and I think the two day and three day are very short periods of time but it uses a poetry technique called a “chiasm.” It really indicates Hosea was poetry. It is very similar to Job – that from six calamities he will rescue you and from seven no harm will come. It is an N and an N+1 that they use called a chiasm that indicates it is poetry. It was for memorization purposes. So I still come back to, with the exception of that poetry, wherever you have a number and “day” I think it does indicate 24-hour days. The last thing is if God wanted to communicate to us that this was 24-hour days – “this is how I did it” – what other words would he use?

Answer: I don't think it is a matter of vocabulary. First, with regard to the structure – the chiasms that you mentioned; if you look at Genesis 1, it has all kinds of structures like this written through it. This is precisely what distinguishes this chapter as so carefully

²⁹ 5:10

³⁰ This is referring to Hosea 6:2.

crafted. Look at Bruce Waltke's commentary on Genesis³¹, for example, where he lays out a lot of the sorts of parallel structures that he sees in Genesis 1 that would be exactly indicative of the kinds of concerns that you would think are perhaps indicative of a more poetic kind of narrative. As to the ordinal number indicating always a 24-hour period of time, as I said when I dealt with this in class, that could simply be an accident of how much extant Hebrew literature that we have – that you don't have very many cases where someone says the second day or the fourth day and they are not talking about a literal 24-hour period of time.³² There is nothing grammatically in Hebrew that requires that when you have an ordinal number with "day" that it has to be 24-hour periods. In Hosea 6:2, as I said, you have an exception to that. So it could just be an accident of the extant literature that we have. And the final point that I want to reiterate again, I don't think this even begins to address the question of whether or not a 24-hour day couldn't be used as a metaphor. I am actually inclined to agree with you that the days in Genesis 1 are intended to be 24-hour days. But I don't think that that means that they are not metaphorical or that they have to be literal. I suspect that the use of the expression "it was evening and it was morning" is indicative that the author is using the notion of 24-hour days. And I'll say in response to the Day-Age Interpretation, for example, that it doesn't seem like he is thinking of ages rather than days. I am almost rather inclined to agree with you but I don't think that even starts to address the question – couldn't someone use a 24-hour day as a metaphor for something else rather than literal? To answer your last question – how might God do it? Well, he might provide a historical narrative that reads more like, say, the book of Chronicles or Kings where it clearly is just a sort of straight forward historical narrative rather than a theologically and literary stylized piece of writing like Genesis 1 is, as Waltke says. This is not just a science report or a historical report like you would have, say, in the book of Kings or something of that sort.

Question: The Old Testament beginning and the New Testament beginning may have some parallel where the light was created and then the governed bodies in the heavens. In the New Testament, the Word was there and then the embodiment of the Word. Also, talking about there are plants first and then the sun, moon and stars is almost like God created Adam and Eve and then there is a new beginning with Noah's family. It is almost like there is a beginning of his design and then the sun, moon and stars kick in and take over as a new beginning and the rhythm of natural law takes place. That is how I saw it.

Answer: So would that be in support of a non-literal interpretation?

Followup: I think it is 24-hour days.

Answer: Alright, because what you said didn't sound like you supported a literal interpretation. It sounded more to me that the author was making a theological point.

Followup: Even with chapter 5 talking about Adam being 130 years old and he bore a son. But when he was born, he was not an infant. So 130 years – does that add the years before he even existed? God is able to do anything and then catch up with whatever . . .

Answer: You are raising a really interesting point that is sometimes referred to as the Anthollos Theory which asks the question "did Adam have a belly button?" Because he

³¹ Bruce K. Waltke, *Genesis: A Commentary* (Grand Rapids, Mich.: Zondervan, 2001)

³² 10:16

was never born, right? He never had a placenta. If Adam had a navel, then that meant that God created him with the appearance of age – he looked like he was 30 years old when he was only 5 seconds year old for example. So, could it be that God has created the world with the appearance of age but not with actual age? That is this so-called Antholous Theory which appeals to God’s ability to create things that have the appearance of age. I am not going to say anything about that because that is not really a hermeneutical approach to Genesis 1. That is more of a theory of apparent age; that is, a modern attempt to explain how the universe could be very young even though it looks very old.

Gap Interpretation

Let’s go on to the Gap Interpretation. This is a view that was popularized by the old Scofield Reference Bible. It holds that there is a gap between verses 1 and 2 of Genesis chapter 1. “In the beginning God created the heavens and the earth” and then there is this huge gap of time before God begins to work upon the earth and produce life.³³ It holds that during this gap, that is when there was a kind of primordial world and all of the evidence of fossil life, extinct life forms and so forth were of an ancient world that existed prior to verse 2 which came under God’s judgment and was then destroyed. So what is described in verse 2 forward is God’s recreation in effect of the world after a long gap. This view would say that all of the evidence that we have – scientifically and historically – of ancient geological periods, prehistoric life and antiquity is from that pre-gap world that was destroyed by God prior to verse 2.

What might we say by way of assessment of this theory? I think that there could well be a gap of time between verses 1 and 2 in the first chapter. Verse 1 describes, as we’ve seen, God’s creation of the universe as a whole. The heavens and the earth is the way the Hebrew person would describe the universe as a whole. Then in verse 2, the focus radically narrows down to God’s activity upon the earth: “and the earth was without form and void.” It describes how God transforms the earth from a desolate, uninhabitable waste to a place that is fit for man to live in. So there could well be a gap between verse 1 (God’s creation of the world as a whole) and then his transformation of the earth into a habitable ecosystem for human life.

But the idea that there was a prior life world before this one is just utterly foreign to the text. The text is describing God’s initial creation of the biosphere and on each occasion it pronounces God’s work as being good. God saw that it was good. The idea that all of this is just a repeat of something that he has done before has absolutely no warrant in the text. Remember, all of this is supposed to be pre-flood. This is not flood geology. This is prior to Noah. It is saying that prior to verse 2 there was this prehistoric world of animals and geological epics and so forth – maybe even ancient civilizations – that was all destroyed by God. There is simply nothing in the text to support a view like that. In fact, I think that this Gap Interpretation seems to be an example of concordism at its very worst. Remember, concordism is the hermeneutic of trying to read modern science into the text – to try to read the text in accord with modern science rather than reading it as it would have been originally understood and written. It seems that under the pressure of the

³³ 15:24

scientific and historical evidence of prehistoric life and geological time, one reads into the text something that was not at all intended by the author. So I find this interpretation to be hermeneutically unsupportable.

DISCUSSION

*Question: [makes a comment regarding something that Dr. Craig isn't sure what is being referred to. The questioner then says it would be something contrary to creation ex nihilo.]*³⁴

Answer: That goes back to your interpretation of verse 1. In the section on *creatio ex nihilo*, we talked extensively about whether or not verse 1 is an absolute beginning. “In the beginning, God created.” Or is this a subordinate clause meaning “when God, in the beginning, created the earth was without form and void” and so forth. I argued extensively that, in fact, what you have in verse 1 is an absolute, and not a subordinate, clause. It is a main clause that does affirm that God has created everything, not out of preexisting matter or prior worlds but that this is the absolute beginning. The idea that there is something in between verse 1 and 2 that was destroyed by God seems to me to be just completely unsupportable from the text. I think it is the result of trying to read science back into it.

Question: So I take it you are not as much about using the book of nature to sort of add information to the biblical text? That is concordism – is that your interpretation?

Answer: OK, your question is what is concordism? Is using the book of nature to illuminate the biblical text concordism? I think that the project of looking to the book of nature, as you put it, to see how it accords with Scripture is the task of the systematic theologian, not the biblical theologian. The biblical theologian, I think, needs to look at the text and interpret it according to the genre of literature that it was, what we can determine about how the original author and his audience would have understood it and try to understand what the text meant for him and that audience. Then the question of “How does this fit into the book of nature?” and what science tells us about the universe we live in is a second project that will be part of systematic theology where you try to integrate the Bible with the discoveries of modern science and history and all the rest. So right now, we are focusing just on this hermeneutical project and we are going to talk about this other project later on about how to look at the book of nature and see if we can make sense of things in light of it and the teaching of the biblical text.

Followup: So the systematic theologian could then hold to these views, or give these interpretations . . .

Answer: Right, that is a good point. In other words, the systematic theologian could hold to these views but he would not claim that this is what the original author meant. He would say this is the way I am going to reconstruct how the universe came to exist but he wouldn't be making a hermeneutical claim that this is what the text is teaching. That is very different.

³⁴ 20:00

Followup: It would be like Isaiah 7's virgin, right? In a similar way, the virgin of Isaiah 7 . . . it seems like Matthew is being a bit concordist in his interpretation.

Answer: Well, there you have a question of how a New Testament author interpreted an Old Testament text. That is different than what we are talking about here where a systematic theologian reads the book of nature and tries to integrate that with the biblical text to product a biblical view of the world. In one sense, maybe I am being unfair to the proponents of the Gap Interpretation. Maybe this wasn't really offered as a hermeneutical interpretation of Genesis 1. Maybe it was what you just described – a theory about how to integrate Genesis 1 with modern science. That is a legitimate project so long as you are not offering it as a hermeneutical claim that this is what the original text said and meant and how it was understood. So if it is not meant to be an interpretive affair but the secondary project then my objections here that it is unsupported in the text would not be relevant. But my concern here is, first and foremost, how do we understand the meaning, or the right interpretation, of Genesis 1? I think this Gap Interpretation, frankly, is just preposterous. The idea that between verse 1 and 2 there was some prehistoric world that came under God's judgment and was destroyed – there is just nothing in the text to suggest that that is what the author thought.

Next time, we are going to take up the Day-Gap Interpretation which is a slightly different sort of gap theory that puts the gaps in between the creative days.³⁵

³⁵ Total Running Time: 25:10 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 5

Day-Gap and Day-Age Interpretation

We have been talking for the last several lessons about different interpretations of Genesis chapter 1. Last time we looked at the Gap Interpretation which says that between verse 1 and verse 2 of Genesis chapter 1 there is a great time gap during which there was a prehistoric world – a world of organisms and perhaps even civilizations that was judged by God and destroyed – and then Genesis 1:2 describes God's recreation of the world. I suggested that there is nothing in the text to suggest that verse 2 is merely a recreation. This interpretation seems to be an example of concordism at its very worst. Namely, under the pressure of the scientific evidence for geological time and prehistoric life, one reads into the text things that aren't really there.

Day-Gap Interpretation

Let's go on to the Day-Gap Interpretation. This is somewhat different. The Day-Gap Interpretation holds that what we have described in Genesis chapter 1 is six 24-hour but *non-consecutive* days. Six literal 24-hour days but they are not consecutive days; rather, there are long gaps of time in between God's creative acts. So, for example, on one day God miraculously creates the birds. Then there is this long period of time during which God allows, for example, the birds to propagate. They bear after their kinds. Then he intervenes again on another creative day and miraculously creates, for example, land animals. Then he allows them to propagate for a long period of time after their kinds until he intervenes again. So you have six 24-hour creative days but they are separated by great periods of time.

What might one say by way of assessment of this theory? Again, I think we have to say that there is nothing in the text that would suggest the Day-Gap Interpretation. There is nothing in the text that would indicate that there are gaps of time in between these six days. It seems to me that the clear motivation behind this interpretation is to try to reconcile the text with geological time and limited evolutionary development of life forms. You read gaps into the text in between the days so as to extend the past as far as geological evidence indicates it needs to be and then you can allow for limited evolution of the kinds during those gaps. Insofar as this view tends to be motivated by an attempt to reconcile Genesis 1 with the discoveries of modern science, I think that what we have here is an example of the hermeneutic of concordism once again which, I think, is eisegesis, not exegesis. It is reading into the text rather than out of the text.

Ironically, it needs to be said as well that it really doesn't do a very good job at reconciling the text with modern science in any case because modern science indicates that the animals, for example, were not created in just a 24-hour period of time. They were created over millions of years – even the so-called Cambrian Explosion wasn't something that happened in a 24-hour day but over vast periods of geological time. So the idea that all aquatic life, for example, was created in 24 hours and then there was this long period of non-creative development and then there was another 24-hour period

during which all terrestrial life was created just flies in the face of the fossil record. So insofar as this Day-Gap Interpretation is motivated by a desire to find concord with modern science, it really doesn't do a very good job frankly.³⁶

But that is beside the point, actually, for the hermeneutical project that we are engaged in at this stage. We are simply asking the hermeneutical question, "What does the text mean?" I think we have to say that the Day-Gap Interpretation doesn't really find any support *in* the text. It is a view that is read *into* the text.

DISCUSSION

Question: How does the Day-Gap Interpretation resolve day 4 – the creation of the sun?

Answer: It really wouldn't seem to do anything for that, would it? Because you would still have that being created in a 24-hour day. They would probably have to interpret that again in the way that some Young Earthers have, namely, the clearing of the cloud canopy or something else where the sun now appears. But, you are right; merely having gaps wouldn't help with that problem.

Question: How prevalent is this view? I never really heard it being purported.

Answer: I don't think that it is very prevalent though it has been proposed. We are just trying to survey the various options. This would be one. Actually, I heard, when I was in college, that it was suggested by some progressive creationists. It would be a way to try to get geological time and limited evolution – you could accommodate the evidence for micro-evolutionary change without denying 24-hour periods of time. But I can't really think of any modern advocates of this view today.

Day-Age Interpretation

Let's go to the Day-Age Interpretation which is one that has been more widely held. The Day-Age Interpretation is one that has been suggested by a number of church fathers and other commentators down through history. It holds that the days are not literal 24-hour periods of time but rather these days are, in fact, long periods of time of unspecified duration. Though they are called days, they are not actually days; they are long time periods – *ages*. So what you have in the text is actually the description of God's creation of life over six successive *ages* of indeterminate length.

As I pointed out, we do have in the text some suggestions that the days are not necessarily literal. You will recall what I had to say about God's creation of the vegetation and the fruit trees on the third day where God commands the earth to bring forth these plants. We probably would be imagining things if we thought the author thought this was like a film being run on fast-forward – that it all happened in a 24-hour period of time. So I think there is some indication in the text that these days are not necessarily literal. On the other hand, the idea that the text intends us to take these days as six consecutive ages, especially ages of equal duration, is again something that is being

³⁶ 4:55

read into the text rather than being read out of the text. I think there are indications in the text that the days may not be literal, but that doesn't mean that it is intended to describe six consecutive ages especially of equal duration.

In fact, again, insofar as those who propose the Day-Age Interpretation are motivated by modern science to embrace this view, it really still does not fit with what modern science says in many respects. For example, the evidence doesn't support the view that certain forms of life did not appear on the scene until the previous age was over. It is not as though you had to wait for one age to be complete before the animals or the plants in the next age came into existence. To give a specific example, according to the scientific evidence, terrestrial life appeared long before birds appeared on the scene. Yet, the text has birds being created during the third age prior to the creation of land animals in the fourth age. So you actually had birds before you had terrestrial life and that is completely contrary to the fossil record and the scientific evidence.³⁷ Some interpreters have tried to escape this difficulty by saying perhaps the ages are not really consecutive ages. Maybe they are overlapping so that, for example, you would have age 1 and then you would have age 2 which might begin midway through age 1 and then age 3 and then age 4 so that you could have animals appearing midway through the previous age even though they are described as being in the succeeding age (see Figure 1).

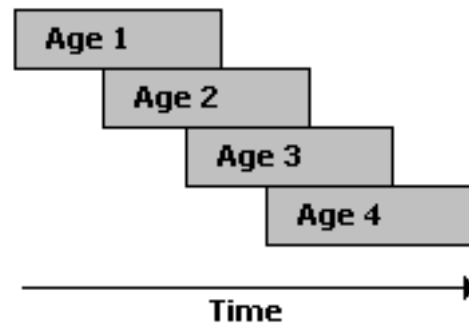


Figure 1 - Overlapping Day-Ages

But I think we have to say that this hypothesis is clearly a contrivance which is trying to save the accuracy of the text and bring it into line with modern scientific evidence. It would be hopeless to try to discern in the text itself any suggestion that these days, or ages, are not consecutive. Not one after another but somehow begin in the middle of each other and continue. It is clearly, again, trying to read modern science back into the text and to make the text conform to modern science.

So while I would say that the Day-Age Interpretation is certainly a possibility – it is a possibility that the author did want us to think of this as six consecutive ages – nevertheless, apart from the fact that the days aren't necessarily literal, there really isn't much support in the text for thinking that the days are meant to represent ages. So if there are other interpretations that take the days non-literally as well, we'll have to compare the Day-Age Interpretation with these other non-literal interpretations to try to discern which one is the most plausible interpretation of the text. But merely saying that the days aren't

³⁷ 10:02

literal doesn't itself imply that the author intended us to be thinking of six consecutive ages during which things were created on earth.

DISCUSSION

Question: I understand that when a verse reads “and there was evening and then morning” that this can mean there is a beginning of the age, or time, and there was an ending of the time. So that kind of shoots this steps idea or crossing over of ages [*he is referring to Figure 1*].

Answer: You mean when it says “there was evening then there was morning” that that would suggest this is the evening and so the morning of the next age would begin right after it. That would seem to be the natural interpretation. If I understand you correctly, when you have age 1 then it says “and it was evening and it was morning, one day” and then the next day starts. And then it was evening and it was morning and then that was the next day. So the ages look consecutive, don't they? I think clearly this idea [*referring to Figure 1 and the overlapping of the ages*], though clever, is really *ad hoc* or contrived. The natural language, I think, would be such as you have said.

Followup: So you are agreeing there are a beginning point and an end point to the verses?

Answer: Right, they look like consecutive ages. If these are ages, they would look consecutive to me and not this sort of staggered set of ages.

Question: The thought occurred to me that the Sabbath starts in the evening. Not the morning. So it goes from evening to morning, right? Is that why the Jewish faith took that position – because of what the Scripture says about evening and morning?

Answer: I would say it is rather the reverse. I think the reason that the Genesis narrative is written in terms of “it was evening and it was morning” is because this reflects the later Jewish ritual way of counting days where the day starts at 6pm in the evening with the setting of the sun and then it ends the next day at the setting of the sun. So the days don't run as we think of starting in the morning at dawn. It goes from dusk to dusk rather than from morning to morning as we do in our Western culture. The narrative reflects that practice.

Followup: You are saying that the Jewish people believe that the day starts at sundown?

Answer: Right.³⁸

Question: Wasn't Genesis 1 written before there were Jewish people?

Answer: Well, this is a question of authorship on which I am not taking any sort of stand. Traditionally, this is ascribed to Moses. The traditional authorship of the Pentateuch is ascribed to Moses. So in that sense it would be after Abraham and yes there would be Jewish people at this time.

Followup: I thought that the authorship of Genesis was not ascribed to Moses – that it was ascribed, again, back to the tablet – the Toledot – I was described as a series of

³⁸ 15:03

Toledots . . .

Answer: That is just the generations.

Followup: The generations, yes exactly. It is ascribed in the book itself – it says these were the days of Adam. They wrote these tablets, they have discovered these tablets in the Middle East, and each of these tablets wrote the generation and their account of what happened. That is why it looks like there is repetitiveness. Because you get one description of the generation and then the next author writes a little bit about it and it looks like there is repetitiveness.

Answer: When you look at the way New Testament authors quote the Old Testament Pentateuch (the first five books) they will often say, “As Moses said” or “When Moses is read.” They are thinking of this as being ascribed to Moses. But that isn’t inconsistent with saying Moses had sources and traditions, maybe oral traditions, upon which he relied on writing. So the date of the original Genesis account is not one that I am taking any sort of stand on in terms of when it was actually written. Liberal scholars would date it much later but to say it is Mosaic would be a conservative position that would put it very early rather than later in the history of Israel. But in either case, there would certainly be a Jewish people here that would tell this story.

Followup: I really think that Moses couldn’t have written this unless he had sources – unless he made it up. So he has got sources from this so the authors of the sources were clearly not Moses and it was clearly before there were Jewish people. That is why I question that.

Answer: I think this is a really, really important question that Old Testament scholars debate vociferously – the sources for Genesis. You would have to then try to discern which elements in the narrative represent the sources and which represent the editorial work of the final redactor or the editor and so forth. That is really a controverted question. There are source theories about Genesis which we are simply not getting into because we are asking “How do we interpret the text as we have it?” rather than try to discern these traditions that may have lain behind it which is very controverted and difficult.³⁹

³⁹ Total Running Time: 18:44 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 6

Revelation-Day and Literary Framework Interpretation

Revelation-Day Interpretation

We have been dealing with different interpretations of Genesis 1 and we looked at the Literal Interpretation, the Gap Interpretation, and Day-Age Interpretation and now we come to the so-called Revelation-Day Interpretation. The Revelation-Day Interpretation holds that the seven days spoken of in Genesis 1 are not days of *creation* but days of *revelation*. That is to say, these are seven consecutive days on which God revealed to Moses, or whoever the author of Genesis was, what God did in creating the world. So each day is a literal, consecutive day but they are not days of *creation*; these are days of *revelation* of God's creative activity rather than a description of the seven days of creation themselves. So Revelation-Day Interpretation substitutes seven consecutive days of revelation for seven consecutive days of creation.

What might we say by way of assessment of this theory? I have to say that this view strikes me as rather implausible. There is nothing in the text itself to suggest that we are dealing here with revelatory days – seven consecutive days of revelation. There is no such phrase as “then the word of the Lord came to me again, saying,” etc. Or “then the Lord spoke to me saying” such and such. There is simply nothing in the text that suggests that we are dealing with seven consecutive days of revelations to the author. On the contrary, the days are described as what God does on each successive day – the things that he creates on those successive days. Then at the end of each period of creation he pronounces it good and then comes the evening and the morning. So there is no suggestion here, I think, that what we are dealing with are days of revelation rather than days of God's creatorial activity. So I find this view to be one that is pretty implausible.

Literary Framework Interpretation

Let's go on to a more interesting view – the Literary Framework Interpretation. The Literary Framework Interpretation has been ably defended by the French New Testament scholar Henri Blocher. Henri Blocher wrote a book called *In the Beginning* in which he defends the Literary Framework View.⁴⁰ According to this view, the author of Genesis 1 is not interested in chronology. He is not attempting to relate one view after another in chronological fashion. Rather, the days serve as a sort of literary framework on which he can hang his account of creation. He wants to describe how God is the source of all life; God is the creator of all the world. He uses the framework of six days as a literary structure on which to hang his account. But he doesn't intend for this literary structure or framework to be interpreted in a chronological way.

Ever since the Middle Ages, biblical commentators have noticed that there seems to be a sort of parallelism between the first three days and the second three days in Genesis 1. Corresponding to the first day is day 4, corresponding to the second day is day 5 and

⁴⁰ Henri Blocher, *In the Beginning: The Opening Chapters of Genesis* (InterVarsity Press, 1984)

corresponding to the third day is day 6. Blocher also sees this structure as significant.⁴¹ He says that on the first three days, God creates the domain or the space for a certain life form or entity. Then on the correlated second three days he creates the occupants of the space or the domain. So, to give an example, on day 2 the text says that God separates the waters which are above the heavens from the waters which are below the heavens. Then on the fifth day he creates the sea creatures and the birds to inhabit the waters and to fly through the heavens where the water has been cleared away. Similarly, on day 3 God is said to create the dry land and the vegetation and the fruit trees. Then on day 6 he creates the land animals and man to occupy the dry land. Notice also that on the third and the sixth day, there is a double work of creation on both of those days. On day 3, there is the dry land and the vegetation – two acts of creation – and then on day 6 there are two acts of creation – the land animals and then human beings. So the idea is that on the first three days, God creates the habitats or the domains and then on the second three days he creates the inhabitants or the denizens of the domains. So the creation account is not intended to be chronological; rather, the creation week is a sort of thematic or literary framework on which to hang a non-chronological account.

I think that this is an extremely interesting view which is ably defended by Blocher and so it deserves serious consideration. I do have to confess, however, being somewhat skeptical about the alleged parallelism between the first three days and the second three days – days 1 through 3 and 4 through 6. A closer reading of the text shows that these days are not really parallel in an exact way. For example, on day 4 God creates the lights in the sky – the great light, the sun; the lesser light, the moon; and the stars. So he creates the heavenly luminaries on day 4. What corresponds to God's creating the lights in the firmament on day 4? Well, clearly, it is God's creation of the firmament on day 2. On day 2 he creates the firmament and then on day 4 he places the lights in the firmament. The separation of darkness and light on day 1 that takes place isn't really the creation of a place for the sun and the moon and the stars. That comes on day 2 when God creates the firmament – that is the place or the domain in which then on day 4 God places the sun and the moon and the stars. Similarly, on day 5, God creates the sea creatures. What corresponds to God's creating the sea creatures? Well, it is his creation of the seas on day 3. That is where the verbal linkage is. True, on day 2, he separated the waters above the heavens from the waters below the heavens but it is not until day 3 that the waters below the heavens are gathered into seas and are given the name "seas." Then on day 5 God creates the sea creatures to inhabit the domain of the seas. So, again, it is not really parallel to day 2 where he simply separates the waters above the heavens from the waters below the heavens.⁴² Finally, on day 3, notice that you have not simply the creation of the dry land – it is not simply barren – you also have the creation of the vegetation and the fruit trees which inhabit the dry land and grow on the dry land. So on day 3 God does not simply create a domain, or a space; he also creates some of the inhabitants or some of the things that live in that domain. I think it would be a real stretch of the imagination to think that the vegetation is meant to be a domain in which man and the animals are going to live and they are created on day 6.

So I have to say I am not really persuaded that this parallelism is actually there in the text

⁴¹ 5:01

⁴² 10:02

as opposed to a sort of construction that the interpreter is imposing on the text or reading into the text. I don't think that this parallelism is really there in the way described. It seems to be a construction or a manufacture of the interpreter – in this case, Blocher. Having said that, I don't think that the Literal Framework View is committed to saying that the framework should be understood in terms of domains and inhabitants of those domains. We will see this when we get to the view of Functional Creation which we will talk about next time. There is a parallelism also seen between the days but it is interpreted in a different way than domains and denizens of those domains. So I don't think the Literary Framework View stands or falls on this particular interpretation of the parallels but nevertheless it does seem to call into question Blocher's view.

Secondly, moreover, I am not convinced yet that the chronology in the narrative is not to be taken seriously. On the Literary Framework View, the chronology is meaningless. But surely the idea of numbering the consecutive days – second, third, fourth, fifth, sixth – with these ordinal numbers as the author does, and the progression from desolation in the beginning, the primordial seas, nothing alive to the appearance of the dry land then the vegetation then the animal life and finally culminating in man, and then on the seventh day God's resting finally from his work of creation; surely that suggests that chronology is part of this narrative. Blocher admits that this motif of creation in 6+1 days is a common motif in ancient creation myths such as Egyptian creation stories. So that raises the question – if this is a common motif in the ancient world, why think that here in Genesis 1 that this isn't meant to be taken seriously? Why think that this is just a literary device rather than genuine chronology? Notice that merely showing a parallelism doesn't show it to be non-chronological. You could still have parallelism between the days and have them chronologically ordered. So I have some skepticism about this view; nevertheless, I think this is a very substantive and interesting view that deserves further exploration.

DISCUSSION

Question: It is very interesting and I believe in the chronology but the context and the content – the first three days and the later three days – I think is in place if you see it as a boundary. When he created the light, the boundary is set between light and darkness. Then the second day is heaven and earth. The third day is land and sea. And then the content comes in in that boundary. The interesting thing is human beings are trying to remove all the boundaries. So the judgment comes in Noah's day when he removes the boundary between land and sea.

Answer: Wow, did you come up with this interpretation yourself?⁴³

Followup: Well, I am studying BSF⁴⁴ right now and as I answered those questions, all these ideas come in. So I just thought it is exciting to me.

Answer: Well, I must say I am impressed. I do think that the idea of setting boundaries between darkness and light, waters above and waters below, dry lands and seas is much

⁴³ 15:02

⁴⁴ BSF = Bible Study Fellowship. See <http://www.bsfinternational.org>

more plausible than Blocher's view. So I am impressed!

Question: Would that have been something Moses' original audience would have understood about the creation account. Would the Hebrews have understood it? How would that fit in with Moses' purpose in writing that story in the first place?

Answer: That is the key question, isn't it? Blocher thinks that they would. He thinks that these original readers would have understood or wouldn't have at least been misled by a literary, or thematic, arrangement in which God is doing something like creating domains and then inhabitants or perhaps boundaries and then content. Although, Blocher doesn't really come to grips much with the fact that this is a motif that is found in another ancient creation stories. I think he needs to look at that and show us that that is not chronological either. If he could show us that in these other creation myths, this is merely literary then that would provide a very powerful argument in favor of thinking that it is merely literary here. But if in these other myths it looks chronological then that would weigh against his view. I don't think, at least as I recall in reading his book, that he does much. He is aware of these things but he doesn't discuss them a whole lot. We will see when we get to Functional Creation and the Hebrew Myth Interpretation that, there, these authors are much more in dialogue with the creation stories of Israel's neighbors and we will see what clues they might provide for how original readers would have interpreted these.

Question: The Hebrew word for "firmament" is actually "hammered out sheet" – it is the same word that is used for the covering of the table with sheets of gold in the temple.

Answer: Yes. As we will see when we get to the Functional Creation, this becomes a very important argument in the hands of John Walton for his view of interpreting Genesis 1 not in terms of what he calls Material Creation but Functional Creation. He says if you interpreted this as literal, material creation then you are committed to what you said – namely, that there is some sort of a solid dome up there in the sky like a hammered out piece of metal. There is this solid dome up in the sky that separates the waters above from the waters below and occasionally it opens, the waters leak through, and it rains. Of course, no one with a modern scientific knowledge thinks that there is such a thing as this solid dome in the sky. The question there, I think, will be did these ancient Hebrews think so literally or could they use metaphors as well? Walton thinks not.

Question: Something I learned from Hugh Ross – biblical Hebrew only has three thousand words in it – it has a three thousand word vocabulary and that's it. I think that is something that has to be kept in mind when looking at the original words – they didn't have that much to choose from.

Answer: That is a good point. So are you saying this with respect to the solidity of the firmament?

Followup: Exactly. They could only describe the firmament using so many words. With only three thousand, you have to pick words that can have more than one meaning. It might not be quite as literal.

Answer: Yeah. OK, let's not focus on that at this point. I do want to make sure we understand the Literary Framework View and any critique or assessment I've offered on that.

Question: Do you believe that the ancient translations, such as the Targums or the

Septuagint, will give any value to this discussion?

Answer: That is a good question. I have to confess that in the work that I've read – commentaries and so forth – on Genesis 1, there doesn't seem to be much appeal to Targums in terms of understanding what they said.⁴⁵ I am not familiar with any literature of that nature. Targums were Jewish paraphrases or commentaries that could lend insight to how they understood various scriptures.

Followup: Because it was so much before modern science, one could see – is this literal or more figurative? Also, the ancient Greek of the Septuagint had an enormous vocabulary. It was based on the Greek of the ancient philosophers. Maybe it would help; maybe it wouldn't because it would just be literal when they translated.

Answer: Or it could be something that is used metaphorically. You are using a dome as a metaphor for something like a boundary. But, yes, as for the Septuagint, it would be interesting to see what Greek word they used for rendering "firmament." I don't know. As I say, that is not really pertinent to the Literary Interpretation View.⁴⁶

⁴⁵ 20:02

⁴⁶ Total Running Time: 21:17 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 7

Functional Creation Interpretation, Part 1

Functional Creation Interpretation

Let's go to our next interpretation of Genesis 1 that is on the table. This is called the Functional Creation Interpretation.

In his recent book, John Walton lays out this interpretation. The title of his book is *The Lost World of Genesis One*.⁴⁷ Walton claims that creation in the ancient Near East has been universally misunderstood. He says we, today, understand creation to be about how material things came into existence when in fact in the ancient world creation was really about specifying the functions that material things would carry out. Walton gives the example of a restaurant. When does a restaurant, he says, begin to exist? It is not just when the building is finished and the kitchen is installed and the chairs and tables set up. It is when the restaurant opens for business and begins to function as a restaurant. That is when the restaurant is really created. It is not enough just for the material building to be built for that to be a restaurant. It needs to be functioning in a certain way. When it begins to function in that way, that is the date at which you would say "this restaurant began to exist." Now, in case that example doesn't quite resonate with you, let me provide a different example of my own that I think would illustrate this difference. Imagine some South Sea islanders getting together and deciding that they are going to allow a certain kind of seashell to function as currency in their island society. These seashells will have a certain worth that could be used in exchange for merchandise and in doing commerce. So these seashells then become money. Now, the seashells already exist. Those material objects already exist. But they are not money until the islanders begin to invest them with that function. At that point, money is created. When the seashells begin to function as currency then that is when money is created in that society, even though the seashells have already been there. That would illustrate the difference between what Walton calls *material creation* and *functional creation*.

His claim is that in the ancient Near East creation was understood purely in terms of functional creation. So, he says Genesis 1 is not, in fact, about God's bringing the earth and the dry land and the vegetation and the animals and even man into existence. Rather, it is about God's declaring their functions in the created order relative to humanity. So, Walton believes that the seven days of Genesis 1 are literal, consecutive 24-hour days during which the universe is inaugurated as God's cosmic temple in which he will dwell. And the seventh day is the climax of this inauguration. When God comes to reside in his temple whose functions have been fully specified over the previous seven days and its functionaries installed. Walton claims that his interpretation of the text is a literal interpretation. It is not figurative or literary as Henri Blocher's was that we looked at last time in the Literary Framework Interpretation. It is a literal account. It is just that creation, Walton claims, doesn't mean what everybody today has taken it to mean.

⁴⁷ John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009)

Genesis 1 is to be literally interpreted, but it is wholly about functional creation, not the creation of material things.

Walton's view is a subtle view that requires you to understand his difference between material and functional creation.⁴⁸

DISCUSSION

Question: The person who has come up with this theory – is he espousing a pre-existing universe?

Answer: Yes! Yes he is as we will see. He is claiming Genesis 1 is not about creating vegetation and animals and plants and things like that. It is just specifying that they will serve these various functions.

Followup: So the universe has always existed?

Answer: Well, it is already there.

Question: In Genesis 1:1, it says “In the beginning, God . . .” You are in apologetics and you go about proving that God exists. But the Bible accepts the fact that God is. Is that in the same context of what you are speaking of with the creation? They are not out to prove something is – it is just stating that it is.

Answer: What he takes Genesis 1:1 to mean (“In the beginning God created the heavens and the earth”) is as kind of a summary of the whole chapter to follow. Here, I refer you back to your notes on *creatio ex nihilo* where we talked at length about the relationship between verses 1 and 2. Walton does not take verse 1 to be a statement of God's creating the universe in the beginning. He says this is just a summary; as it were a sort of title of the chapter. “In the beginning God created the heavens and the earth” – it is just a title for what follows. So he believes creation actually begins in verse 2. The story really begins in verse 2 with the primordial ocean and then God's saying let there be light and so forth.

Question: Does this involve God physically interacting with the world? Is that part of Walton's interpretation?

Answer: It would not seem so, any more than the Pacific South Sea islanders interact with the seashells in declaring that they are going to function as currency. There isn't any effect at all. They are just declared to function now as money.

Followup: So it actually would be compatible with the idea that the universe is a causally closed system under physics.

Answer: Yes.

By the way, Walton is not some raving liberal. He is a professor at Wheaton College, my *alma mater*.

Now, I am going to spend what is admittedly a disproportionate amount of time on this

⁴⁸ 5:00

view. The reason is twofold. One is that I just read Walton's book and am so very worked up about it! And the other reason is that this book has become very influential in the whole creation-evolution discussion today. It is endorsed by Francis Collins and several other scholars on the back cover of the book and therefore I think is playing an influential role in the faith and science dialogue today.

What can we say by way of assessment? The first point I want to make is a terminological clarification. Walton draws a firm dichotomy between what he calls material ontology and functional ontology. *Material creation* and *function creation*. Unfortunately, I think this terminology is both inaccurate and misleading. I think we can see this by comparing Walton's terminology with Aristotle's analysis of causation. Aristotle said that when we consider causes, these causes can be of several different types. For example, there is the *efficient cause* of some effect. The efficient cause for Aristotle is what brings the effect into being. It produces the effect in existence. So, for example, Michelangelo is the efficient cause of the statue David. Michelangelo sculpted the David – he is the efficient cause of that statue. Causes could also, though, be *material causes* on Aristotle's view. A material cause is the matter of which the effect is made. It is the stuff out of which it is made. So, for example, while Michelangelo is the efficient cause of David, the material cause is the block of marble that was quarried nearby and which he then shaped and sculpted into the statue. Thirdly, there is what Aristotle called a *formal cause*. This would be the pattern or the information content of the effect. The statue David has a certain pattern or structure or information content that determines its shape.⁴⁹ Finally, there is the *final cause*. This would be the end for which something is made, or the goal or the purpose for which something is made. Michelangelo presumably had some sort of aesthetic purpose in mind for making the David. That would be the final cause.

Now, let's talk about Walton's functional creation. Where would functional creation fit in to Aristotle's scheme? If Aristotle were talking with Walton, what would he take functional creation to involve? Well, I think it is very evident that it would be final causality. Functional creation specifies the end – the purpose, or the *telos* – for which something is created. So Walton will say that functional creation is teleological in nature. He explicitly identifies functional creation with specifying the teleology – the end for which something exists or is made. The purpose it serves. That would be final causation. That would be functional creation – final causality. Where in Aristotle's scheme would material creation be? What would correspond to material creation? Well, it wouldn't be material cause, would it? The material cause is the stuff out of which something is made and when God creates material objects, he is not the stuff out of which they are made, right? He is not their material cause. God is the efficient cause of material objects. So when Walton talks about material creation, what he really means is God's efficient causation bringing these material objects into existence or bringing them into being. That is what an efficient cause does – it brings its effect into existence.

Why then does Walton call efficient causality material creation? That seems to be confusing. Why call it material creation? Well, I think the reason is because he has an inaccurate understanding of what it is for a material object to exist. He says, "What does

⁴⁹ 10:02

it mean for something [say a chair] to exist?” He answers, in our culture, “. . . a chair exists because it is material.”⁵⁰ Now that is obviously wrong. If you were to grind up a chair into bits the same material would still exist but it would not longer be a chair. For a chair to exist, the material has to be arranged in a certain way as a unified object that has certain specific properties. This is very important because the efficient cause of a chair does not have to be the cause of the material out of which the chair is made. When a carpenter makes a chair, for example, he is the efficient cause of the chair but the lumber – the wood – is the material cause of the chair. The question we are interested in with regard to Genesis 1 is whether Genesis 1 is describing God as the efficient cause of the effects that he produces or is it describing him merely as specifying the final causes for objects which are already there.

I think that Walton’s terminology is not only inaccurate but it is also misleading. Walton in his book notes that in some cases the objects which God is said to create in the Old Testament – for example, darkness or disaster or north and south (these are all things said to be created by God) – are not material objects, Walton points out. Therefore he says these passages cannot be talking about material creation, or efficient causation. But I think he has obviously been misled by his flawed terminology. When God, for example, creates disaster, he is clearly the efficient cause of the disaster even though disaster is not a material object and therefore has no material cause. Walton is confused by his own terminology to think that because disaster doesn’t have a material cause, therefore, it can’t be an example of material creation.⁵¹ You see how his terminology has misled him. It is an example of efficient causation even though things like disaster, darkness and north and south aren’t material objects. They are still instances of efficient causation.

Finally – here is my last point – I think Aristotle’s analysis can serve to warn us against erecting false dichotomies. It doesn’t have to be either-or, it can be both-and. All four kinds of causation can be involved in a specific instance of creation. Just because a text speaks of God as specifying the final cause for which something exists – specifying its function – doesn’t exclude that he is the efficient cause as well. We should not think of this as either-or. It could be both-and. So what that means is that if Walton is going to show us that Genesis 1 is concerned exclusively with functional creation, he has got to prove that material creation or efficient causation is excluded. It is not enough for him to show that functional creation is involved. He has got to show that efficient causation, or so-called material creation, is excluded – that it doesn’t even come into the picture at all.

So this terminological clarification I think is really critical and as we look next time at Walton’s theory of creation we are going to need to be asking, “Does Genesis 1 think of God as the efficient cause of the objects that he creates?” Is it what Walton calls material causation (misleadingly) or is Genesis 1 simply about God’s specifying the final causes or functions that things serve? That will be the subject that we will take up next time.⁵²

⁵⁰ John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009), p. 23.

⁵¹ 15:01

⁵² Total Running Time: 17:13 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 8

Functional Creation Interpretation, Part 2

We have been talking about different interpretations of Genesis 1. Last time we began the Functional Creation Interpretation of John Walton.⁵³ You will remember this interpretation says that Genesis 1 is not a narrative of what Walton calls God's material creation of things in the world – that is to say bringing these things into existence where they didn't exist before. Rather, he argues it is a matter of what he calls functional creation. His claim is that creation in the Ancient Near East in general and in Genesis 1 in particular is functional creation – simply specifying the various functions that things will fulfill in an orderly system that God has in mind.

Last time we began our assessment of this view by pointing out some terminological problems with Walton's view of material and functional creation. I did this by comparing it to Aristotle's analysis of causation in terms of:

- Efficient causation, which is the cause that brings into being its effect – the productive cause of some thing.
- Material causation, which is the stuff out of which some thing is made.
- Formal causation, which is a sort of pattern or information content of the effect.
- Final causation, which is the end or the goal or purpose for which some thing is created.

I pointed out that when Walton talks about material creation, although you might at first think this is material causation, it is not. It really is talking about what Aristotle called efficient causation – producing the effect in being or bringing something into existence. Whereas functional creation would be specifying the final causes of things – the ends for which they exist. Walton's terminology, I argued, can be confusing, misleading and inaccurate because you might think in order for something to be the object of God's material causation that God has to create that thing *ex nihilo* – he has to create the matter out of which something is made and that is not the case. In efficient causation, there may well be a material cause as well. When a carpenter creates a chair, for example, the lumber – the wood – is the material cause but the carpenter is the efficient cause. And there is also a final cause – the chair is made for someone to sit on, for example. And it has a formal cause – certain information that is embodied in that chair. So I am not saying that Aristotle and his analysis is correct and that Walton is somehow to be measured by his approximation to Aristotle. No, I am simply saying that Aristotle gives us a more subtle and nuanced analysis of causation and it is helpful to see exactly what kind of causation Walton is talking about when he says functional creation. That is clearly final causation – the end or the purpose for which something is created. When he talks about material creation, he is really talking about efficient causation.

⁵³ John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009)

So what Walton has to show is that Genesis 1 is concerned exclusively with functional creation – or final causation – and that it has nothing to do with God’s efficient causation of the dry land, the vegetation, the fruit trees, the animals, the sea creatures and man; that it is purely and exclusively final causation. Otherwise it could be both material creation and functional creation. Walton wants to maintain that that is not the case. It is not a both/and, it is exclusively functional creation.

DISCUSSION

Question: Walton would say that Genesis just doesn’t address the material causation. Is that right? It only addresses the functional?

Answer: Yes, that is right.⁵⁴

Question: Does Walton believe that matter is eternal?

Answer: No. He believes, as a Christian, that God created the world *ex nihilo*.⁵⁵ He is an evangelical Christian. But, he does not believe it on the basis of Genesis 1. So he would believe that on other grounds, but he doesn’t think that Genesis 1 teaches *creatio ex nihilo*. It would be consistent with Genesis 1 to say that matter is eternal in the past.

Having made that terminological clarification, I want to move on to a discussion of ancient Near Eastern cosmology. Walton claims that when we look at the Ancient Near Eastern creation myths, we find that “people in the ancient world believed that something existed not by virtue of its material properties, but by virtue of its having a function in an ordered system.”⁵⁶ Does the evidence bear out this claim? I think that the answer is clearly “no.”

Walton points out, “Nearly all the creation accounts of the ancient world start their story with no operational system in place. Egyptian texts talk about a singularity” – not in the modern scientific sense, but he says in the sense, “– nothing having yet been separated out. All is inert and undifferentiated.”⁵⁷ Creation in these ancient Near Eastern myths often begins with the primeval waters out of which the dry land or the gods emerge. You will remember that when we talked about *creatio ex nihilo*, we said that the typical pattern of these ancient creation myths was “when ____ was not yet, then God (or the gods) ____” and you fill in the blanks. A good example of this is a text that Walton himself furnishes on the founding of the city of Eridu. Here is what this ancient creation myth says,

No holy house, no house of the gods, had been built in a pure place; no reed had come forth, no tree had been created; no brick had been laid, no brickmold had

⁵⁴ 4:59

⁵⁵ Walton says, “If we conclude that Genesis 1 is not an account of material origins, we are not thereby suggesting that God is not responsible for material origins. I firmly believe that God *is* fully responsible for material origins, and that, in fact, material origins do involve at some point creation out of nothing.” (Walton, *The Lost World of Genesis One*, p. 44.)

⁵⁶ *Ibid.*, p. 26.

⁵⁷ *Ibid.*, p. 31.

been created; no house had been built, no city had been created; no city had been built, no settlement had been founded; Nippur had not been built, Ekur had not been created; Uruk had not been built, Eanna had not been created; the depths had not been built, Eridu had not been created; no holy house, no house of the gods, no dwelling for them had been created. All the world was sea, the spring in the midst of the sea was only a channel, then was Eridu built, Esagila was created.⁵⁸

Here you see this typical form of these ancient Near Eastern myths – when “blank” was not yet, then “something-or-other” was created. We find this typical pattern in Genesis 2:5-7 where Genesis says, “when no plant of the field was yet in the earth and no herb of the field had yet sprung up . . . then the LORD God formed man . . .” Genesis 2:5-7 has that typical form of these ancient creation myths.

The descriptions of the primordial world in pagan myths were not descriptions of a world of material objects in which the animals and the plants and the buildings and the people existed but they lacked a function. Rather, they are descriptions of a state in which distinct material objects of any sort do not exist at all. As Walton says, it is an undifferentiated inert state from which distinct things had not been separated out.⁵⁹ Therefore, the creation of an orderly system of functioning objects most certainly did involve the material creation of those objects – not just the specification of functions for material objects that were already present. So when Walton’s concludes “consequently, to create something (cause it to exist) in the ancient world means to give it a function, not material properties”⁶⁰ he is drawing a false dichotomy which is foreign to these ancient texts.

When it comes, then, to Genesis 1, in order for this text to feature only functional creation, you must imagine that the dry land, the vegetation, the trees, the sea creatures, the birds, all the animals, and even man were all there right from the beginning but they weren’t functioning in an ordered system. It seems to me that such an interpretation is implausible not to say ridiculous. It would require us to regard as literally false all of the statements about the darkness, the primeval ocean, the emergence of the dry land and separation of the seas, the earth bringing forth vegetation and fruit trees, the waters bringing forth sea creatures, the earth bringing forth animals and God making man.

Notice that Walton cannot say, “Well, these things cannot exist apart from an orderly functioning system.” Because the minute you say that, then you admit that functional creation involves material creation as well and that is the traditional interpretation of Genesis 1 – that God both brings these things into existence and he specifies their functions in an orderly system.

Just how bizarre Walton’s interpretation is becomes evident from his statement that the material creation of the biosphere could have gone on for eons prior to Genesis 1:1 then he thinks at some time in the relatively recent past there came a literal period of seven consecutive 24-hour days during which God specified the functions of the various things

⁵⁸ Ibid., pp. 78-79.

⁵⁹ 9:58

⁶⁰ Ibid., p. 35.

existing at that time.⁶¹ Walton claims that he is giving a literal interpretation of Genesis 1.⁶² But this is the farthest thing from a literal interpretation of the text that you can have. It would imply that all of the descriptions of the world that are given at the beginning of and during that relatively recent week are all literally false. If you ask, “What would an eyewitness have observed during that week?” Walton either begs off answering the question or he says the answer is that the world before those seven days would have lacked only 1) humanity in God’s image and 2) God’s presence in his cosmic temple.⁶³ In other words, everything would have looked exactly the same except that the people who existed then would not have been functioning as God’s vice regents here on earth and God had not yet specified the function of the cosmos to serve as his cosmic temple. An eyewitness during that week would not have observed, and in fact did not observe, any change whatsoever in the world.

DISCUSSION

Question: I think it is interesting that the Tolidoth theory of who wrote Genesis says that the first chapter was written by God up to chapter 2 verse 4 because the Tolidoth statement is this is the account of the heavens and that declares the author of that first part of Genesis 1 and the first part of Genesis 2. So the first written by Adam is Genesis 2:5 and that is similar to the format of the ancient Near Eastern myths.⁶⁴

Answer: Yes, that is correct and you will remember when we talked about *creatio ex nihilo* we talked about how Genesis 1:1 is so different from the ancient creation myths in that it breaks that pattern. It has this absolute statement “in the beginning, God created the heavens and the earth.” So I will refer you back to the notes when we discussed that.

Question: Did you say that John Walton does deny that Adam is the progenitor of the human race?

Answer: I don’t know Walton’s work apart from this book, *The Lost World of Genesis One*. So I am only interacting with his views as expressed in this book and in this book, he doesn’t say anything to suggest that. I don’t know what his views are in general.⁶⁵

⁶¹ Walton says that prior to day one, “The material phase nonetheless could have been under development for long eras . . .” He also claims, “Prior to day one, God’s spirit was active over the nonfunctional cosmos; God was involved but had not yet taken up his residence. The establishment of the functional cosmic temple is effectuated by God taking up his residence on day seven.” (Walton, *The Lost World of Genesis One*, pp. 98, 85.)

⁶² Walton says, “I believe that this *is* a literal reading. . . . I believe that the reading that I have offered is the most literal reading possible at this point.” (Walton, *The Lost World of Genesis One*, p. 170.)

⁶³ Walton says, “The main elements lacking in the ‘before’ picture are therefore humanity in God’s image and God’s presence in his cosmic temple. Without those two ingredients the cosmos would be considered nonfunctional and therefore nonexistent.” (Walton, *The Lost World of Genesis One*, p. 97.)

⁶⁴ 15:06

⁶⁵ In his book, Walton does appear to affirm a historical Adam and Eve when he says, “Whatever evolutionary processes led to the development of animal life, primates and even prehuman hominids, my theological convictions lead me to posit substantive discontinuity between that process and the creation of the historical Adam and Eve.” (Walton, *The Lost World of Genesis One*, p. 139.)

So if we are to adopt a reading of the text which is so at odds with its surface interpretation, or its *prima facie* descriptions of the world, it seems to me that we would need to have very powerful evidence for adopting such an interpretation. The question is then what evidence does Walton give in favor of this interpretation of Genesis 1 apart from the evidence of ancient Near Eastern cosmology in general?

That brings us to the next area – the discussion of the world *bara* as functional creation. *Bara* is the Hebrew word for “create.” Walton’s first argument for his view is that the Hebrew word *bara*, for create, concerns functional creation only. In the book, he provides a chart which lists the approximately fifty passages in the Old Testament where *bara* is used. The objects of the verb *bara* in the Old Testament include things like the heavens and the earth, sea creatures, human beings, the starry host, a cloud of smoke, Israel, the ends of the earth, north and south, a pure heart, disaster and so forth. Incredibly, from this list, Walton concludes “This list shows that grammatical objects of the verb are not easily identified in material terms, and even when they are, it is questionable that the context is objectifying them.”⁶⁶ Now when I looked at this list, I thought precisely the opposite was true! Most of these objects are easily identified as material objects. A cloud of smoke, the stars, human beings, sea creatures – these are clearly material objects. Now, true, some of them are not material objects; for example, a pure heart – “create in me a pure heart, O God.” This is not a material object – not the anatomical heart that is in your body. Or the nation of Israel. Or north and south. They are not material objects. But those are the exceptions in the list. In particular, the three objects of *bara* in Genesis 1 – the heavens and the earth, man, and the sea creatures (especially the sea creatures!) – seem to be clear cases of the creation of material objects, not just specifying functions.

But, leave that point aside. Walton’s more fundamental mistake is that he fallaciously infers that because the objects of *bara* are not material objects therefore *bara* does not concern material creation. Here I think we see how Walton’s misleading terminology comes home to roost.⁶⁷ What is material creation? It is not material causation, it is efficient causation. What Walton is talking about is efficient causation. While he would be right that the creation of immaterial entities, like a pure heart or north and south or disaster, is not a case of material causation, nevertheless, they are certainly a case of efficient causation. It is God who is said to be the cause of disaster or who creates in you a pure heart. In virtually all of these cases in the list, the object of *bara* is an object of which God is the efficient cause. God is the efficient cause of the object that he is said to create whether that is a material object or something immaterial.

Walton finds confirmation of his interpretation of *bara* being purely functional in the fact that *bara* is never used in conjunction with a material cause of the object. He takes this to support the idea that only functional creation is involved. But that conclusion just doesn’t follow. From the absence of a material cause, all you can infer is that material causation is not always involved. God could create something *ex nihilo* when he brings something into being but it doesn’t mean that efficient causation is not involved. Indeed, in functional creation as Walton understands it, the object already exists; it is just given a new function. But none of the objects of *bara* in the Old Testament that he lists, with the

⁶⁶ Ibid., p. 43.

⁶⁷ 19:55

possible exception of the nation of Israel, is a case of an existing thing that is simply given a new function. What I mean there is the people could already exist as material objects but God would create the nation of Israel by, say, calling these people and constituting them as a national state or political entity. That would not involve the efficient creation of the people. But in every other case in the list, it is clearly a case of efficient causation and therefore material creation.

Walton says that the reason the functional interpretation of Genesis 1 is “never considered” by other scholars (which I think is itself a telling admission) is because they have been misled by cultural influences of our material culture.⁶⁸ Well, I think that is going too far. Such a claim would impugn the scholarly credibility of other scholars of the ancient Near East – Egyptologists and other students of ancient Near Eastern cultures. I suspect that the reason that no one has ever interpreted Genesis 1 this way is because it is just such an obvious misreading of the text that other scholars haven’t adopted it.

DISCUSSION

Question: I read Walton slightly differently and I would like to get your comments on it. Basically, what I understood him as saying is just that the people in the ancient Near East asked different questions than we did. Like when we say God created the universe, we think of stuff. If somebody asks “Who made it have its purpose for what it does?” we would answer “of course, it is God.” That is just assumed. In the ancient Near East they did just the opposite. “Who purposed it?” “God.” “Well, who made the stuff?” “Duh! God.” So when he is talking about functional creation, they would not have asked the material question. So the Genesis account, as I am reading him, could work either with a Young Earth view or an Old Earth view. The material could have been created at that moment simply because they are asking different questions.

Answer: See, what I am trying to say is that because of his misleading terminology, using material creation to talk about what is really efficient causation, it has nothing to do with the creation of the material. When a carpenter makes a chair, he is the efficient cause of the chair. The chair doesn’t exist until he makes it. But he doesn’t make it out of nothing. He makes it out of lumber.⁶⁹ So it is really misleading to think that the question is “Who made the material out of which this stuff exists?” That is not the issue. The issue is, in these ancient Near Eastern myths and in Genesis 1, did these ancient people think that this was just specifying the functions of things or did they think that God was actually bringing these things into being. Walton is very clear. He will not allow a both/and interpretation. He says it is not both/and. He is quite happy to say that all of this stuff existed prior to Genesis 1:1; that the sun was shining, the dinosaurs were flourishing, and things were going on. But then, relatively recently, God went through this seven day

⁶⁸ Walton says, “This is not a view that has been rejected by other scholars; it is simply one they have never considered because their material ontology was a blind presupposition for which no alternative was ever considered. . . . Most interpreters have generally thought that Genesis 1 contains an account of material origins because that was the only sort of origins that our material culture was interested in. It wasn’t that scholars examined all the possible levels at which origins could be discussed; they presupposed the material aspect.” (Walton, *The Lost World of Genesis One*, p. 44.)

⁶⁹ 25:01

period of saying what the function is of everything. He is definitely trying to exclude efficient causation from being contemplated in Genesis 1 and think of it as purely functional. If he is going to maintain that, he has got to show that not just final causation is involved, he has got to show that efficient causation is not involved.

Question: What does Walton say if there was no function to material prior to God giving it function in Genesis, what did they do if there was no function? Did you just have roaming animals? If the sun had no function, I don't think you can have that. It doesn't make sense.

Answer: Exactly. I think you are right. I think this is a deep incoherence in his interpretation. When you look at these ancient myths, it is not as though you could have these animals and plants and human beings running about without any function. That would be crazy. It seems to me that material creation and functional creation go hand-in-hand. It is hand-in-glove. It is both/and, it is not either/or. Yet, he has to try to say that Genesis 1 is not both/and, it is purely functional. As I say, he actually says that the material creation of these things may have preceded Genesis 1:1.

Followup: But they had no function?

Answer: Yeah! Right! The function start getting specified in verse 2 which is, I think, incoherent. I think he would recognize that that would be a misreading of these ancient creation stories. In these Egyptian myths, it is very clear they do have these primeval waters and it is not as though there were people and animals and things going about but they were just functionless in an undifferentiated state. What happens is God creates things and gives them functions at the same time. It is as Aristotle saw – it is a both/and.

Next time we will look at Walton's argument that creation in Genesis 1 in fact begins only in verse 2 and consists in specifying the functions for the things that God creates.⁷⁰

⁷⁰ Total Running Time: 28:52 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 9

Functional Creation Interpretation, Part 3

We have been talking about the proper interpretation of Genesis 1 and in particular John Walton's Functional Creation Interpretation.⁷¹ Last time we looked at the word *bara* which is used in the Old Testament as the word for "create" and I argued that *bara* is a species of efficient causation, not functional creation.

Now we want to come to Walton's interpretation of the chapter and his claim that in Genesis 1 creation does not begin at verse 1; rather, creation begins at verse 2 with the primordial waters and the Spirit of God hovering over the waters. On his view, verse 1 is just a summary statement of the entire creation week. It is not an initial act of creation that takes place prior to verse 2. Creation proper doesn't actually begin until verse 2 with the waters already in place. So creation, he says, in Genesis 1 at least, doesn't involve bringing matter into being but it just involves establishing functions.

I think it is important to remind ourselves just how radical Walton's interpretation is. We might think that on his view creation begins with the primordial waters already in place and then over the next seven days God introduces order and function into this world by making the dry land appear and separating it from the seas, bringing into being sea creatures and birds, having vegetation and fruit trees sprout from the earth, bringing land animals into being and so forth. But as I interpret him, that would be a misunderstanding. These things would all be examples of material creation, even if they don't involve bringing something into existence out of nothing (*ex nihilo*) just as a carpenter's assembling a chair would be an example of material creation or efficient causation. If this account is to be exclusively functional as Walton claims it is then all of the plants and the animals and even man have to be there right from verse 2. He simply then establishes their functions over the next seven days. So Walton affirms on page 169 of his book that prior to the seven days of Genesis 1 the dinosaurs and the hominids were alive and well waiting only to be given their respective functions.

Having said that, I have been thinking about the suggestion someone mentioned last lecture that perhaps there is another way of interpreting what Walton wants to say – that he is not denying that there is material creation of these things over the seven days but what he is saying is that the narrative is just focused on functional creation and that is the exclusive focus of the chapter. So we might think, for example, of an Aristotelian author of Genesis 1 who does believe both in efficient causation as well as final causation and we might imagine that this Aristotelian author writes an account like Genesis 1 only thinking about final causation – only focusing on the final causes or the functions that God sets up – but he doesn't mean to deny that material creation is also going on. He just is ignoring it in the narrative. The problem with that interpretation, I think, first is that it would contradict what Walton says about what an eyewitness would have observed

⁷¹ John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009)

during those relatively recent seven days.⁷² He says that the dinosaurs were there, the hominids were there, the sun was shining and everything would have appeared just the way it does now except that God would not have yet taken up residence in his cosmic temple and man would not yet have been said to be in God's image. So I don't think this is Walton's view.⁷³

But still we could imagine a view like this. We could say, "What if this is an account that is just focusing on the functions of things?" It doesn't mean to deny the material creation of these things during that time but it is just leaving it out of account.⁷⁴ I think the points that I have already made would still be applicable; namely, this isn't what ancient creation stories are about. Ancient creation stories are about the material creation of things. They begin with this undifferentiated state, like the primordial waters, and then it describes how things came to be – how they came into existence. In Genesis 1, you have the dry land, you have the sea creatures and the birds coming to be, you have the vegetation being brought forth from the earth and then the animals populating the land. This isn't just specifying functions; it is talking about how these things came into existence. To say this is only focused on functions would make the vast majority of the descriptions of what happened during that week literally false in Genesis 1.

Moreover, the point that I made last week would still hold – *bara* does not indicate functional creation. As we saw, when you look at the fifty or so instances of *bara* in the Old Testament, it is talking about efficient causation – about God producing things in being. Whether these are material things or immaterial things (like a pure heart or disaster), nevertheless, God is said to be the efficient cause.

It seems to me that the evidence supports that this account, even if it talks about functions, is nevertheless an account of how these things come to be. That is to say, God is the efficient cause and not simply the one who specifies the final causes of these things.

Even if we agree with Walton that creation proper begins only with verse 2, I don't think there is anything in the text to suggest that this is just functional creation – that the things aren't coming into existence. But is Walton right in thinking that verse 1 is just a summary title for the chapter rather than an initial act of creation? I don't think he is correct about this. Here I would simply refer you back to the lessons that we had on creation out of nothing earlier in this section.⁷⁵ Walton does not, at least in this book, interact with the arguments that we shared from Claus Westermann⁷⁶ which showed that verse 1 is not simply a subordinate clause but is a statement of creation out of nothing. If

⁷² "The material phase nonetheless could have been under development for long eras and could in that case correspond with the descriptions of the prehistoric ages as science has uncovered them for us. There would be no reason to think that the sun had not been shining, plants had not been growing, or animals had not been present." (Walton, *The Lost World of Genesis One*, p. 98.)

⁷³ In the FAQs section of his book, Walton writes, "Q: Why can't Genesis 1 be both functional and material? A: Theoretically it could be both." But he continues, "But assuming that we simply must have a material account if we are going to say anything meaningful is cultural imperialism. . . . In my judgment, there is little in the text that commends it as a material account and much that speaks against it." So he basically says Genesis 1 could theoretically be both but he doesn't interpret it as such. (Walton, *The Lost World of Genesis One*, p. 171.)

⁷⁴ 5:09

⁷⁵ See "Doctrine of Creation (Part 1)"

⁷⁶ See Claus Westermann, *Genesis 1-11*, trans. John Scullion (Minneapolis: Augsburg, 1984)

Westermann is correct then I think Genesis 1:1 does begin the account of creation with an initial act of God bringing the universe into being. Then the whole Functional Creation Interpretation just collapses because it hinges on thinking that verse 1 is not the initial act of creation.

DISCUSSION

Question: Is it possible that Walton is arguing about the priority – whether it is the function that is underlying the material creation versus where the material creation drives the function? Is that the priority?

Answer: I am sure he would say that functions are the priority; that these things are created with a view toward this end. I don't think we would need to disagree with that. But, as I say, just to repeat myself, it seems to me that the account, though having these functions in mind (the reasons God created them) nevertheless is about God acting as the efficient cause to bring these things into being. That subverts the Functional Creation Interpretation.

Followup: We all know that God's Word caused creation, so God's Word defines the function and the function kind of brings about material?

Answer: No, I am not saying the function brings about these things. Think again about the difference between an efficient cause and a final cause. The final cause – the end for which something is created; the goal or purpose – that doesn't bring the thing into existence. You need an efficient cause to bring the thing into existence. So don't think that the functions or the final causes are what is responsible for bringing these things into being. There, God is clearly the efficient cause. He is the one who brings these things about.⁷⁷

Followup: So are you saying that between verse 1 and verse 2 God spoke water into existence except it is not recorded?

Answer: Yes.

Followup: OK. Could it be that verse 1 is setting a limit in human understanding since it is written for human beings? In the beginning, God created his ultimate purpose (humans) then he kind of put in a limit – whatever happened before the first day we are not to know.

Answer: Well, I would refer you again back to the previous lessons where we talked about this. I argued there that the expression “the heavens and the earth” in Hebrew is an expression for the totality of everything. It means the universe. You have this absolute beginning at which God creates – *bara* – he brings the universe into existence. So it seems to me that verse 1 is most plausibly taken to be an initial act of creation which represents an absolute beginning. There wasn't anything before it.

Question: Just a quick comment from a paper I did on Genesis 1:1 – the term “heaven and earth,” when it is used at least in the Pentateuch, is used as a single referent – not as

⁷⁷ 10:03

two separate referents. “Heaven and earth” is a single package.

Answer: OK. Good. Yes, there isn’t any word in Hebrew for the universe. So this would be an idiom that would encapsulate the whole.

Let me go on to Walton’s next point in arguing for his view which is that days 1-3 establish functions. He argues that days 1-3 serve to establish the basis for time measurement, weather, and food. I don’t think we need to dispute that things are created for these purposes. But that obviously doesn’t imply that the material creation of the dry land, the firmament, and the vegetation is not also affirmed. Walton has a particularly difficult time with the firmament which God creates. He thinks that the ancient Israelites believed that there literally existed a solid dome in the sky – the firmament – which held up the waters which are above the earth. So he says if we take Genesis 1 as an account of material creation, then it implies the existence of something “that we are inclined to dismiss as not part of the material cosmos as we understand it.”⁷⁸ There is no firmament in other words. He says we can “escape from the problem” by interpreting the text purely functionally.⁷⁹ It doesn’t really mean that God created the firmament in the sense of bringing this thing into existence.⁸⁰ Here I think Walton has very clearly allowed modern science to intrude into his hermeneutics. The issue isn’t whether the firmament is part of the material cosmos as *we* understand it. The issue is whether or not the firmament was part of the material cosmos as *the ancient Israelites* understood it. Trying to justify a functional interpretation by appealing to the non-existence of the firmament in modern science is an example of concordism, which you will remember is allowing modern science to enter into and guide your exegesis. This is a view that Walton himself rejects.⁸¹ I find it tremendously ironic that Walton, after inveighing against concordism earlier in the book, should find himself guilty of this very hermeneutical fallacy himself in saying that because the firmament doesn’t exist according to modern science therefore we should think that this narrative is not about material creation but functional creation. Again, that just doesn’t follow because the ancient Israelites, if they believed it was part of the universe, would not have had any trouble narrating an account of the creation of the firmament.

Let me go on to his next point which is that days 4-6 establish functionaries; that is to say, the agents who carry out these functions.⁸² Days 1-3 establish the functions and then days 4-6 establish the functionaries. Notice that Walton’s view differs from Blocher’s Literary Framework View.⁸³ In Blocher’s view, days 4-6 is the creation of the inhabitants

⁷⁸ Ibid., p. 60.

⁷⁹ Walton says, “We may find some escape from the problem, however, as we continue to think about creation as ultimately concerned with the functional rather than the material.” (Walton, *The Lost World of Genesis One*, p. 57.)

⁸⁰ Walton says, “If this is not an account of material origins, then Genesis 1 is affirming nothing about the material world. Whether or not there actually are cosmic waters being held back by a solid dome does not matter.” (Walton, *The Lost World of Genesis One*, p. 57.)

⁸¹ For the reasons why Walton rejects concordism, see *The Lost World of Genesis One*, pp. 16-18.

⁸² 15:09

⁸³ This was discussed in “Doctrine of Creation (Part 32).” See also Henri Blocher, *In the Beginning: The Opening Chapters of Genesis* (InterVarsity Press, 1984)

of the domains created in days 1-3. But on Walton's view, days 1-3 establishes functions and then days 4-6 is the establishment of the functionaries that will carry out those functions. I think this is an interesting suggestion that I think is more plausible than Blocher's view. In particular, the sun and the moon do seem to be established as functionaries for time measurement. I think this is where Walton's interpretation of functional creation is its most persuasive – it is with the establishment of the sun and the moon to carry out the functions of time measurement (marking days and years and seasons and so forth). But, of course, that doesn't do anything to rule out the material creation of the entities on days 4-6 as well as the establishment of these entities as functionaries. So just saying that it establishes functionaries doesn't go any distance toward showing that their material creation is not involved in those days.

Let me make one last point. That is Walton's claim that the narrative involves divine rest in a temple – the universe is God's cosmic temple in which he comes to reside on the seventh day. Walton argues that in the ancient Near East, gods resided in temples. That is where gods were thought to live – in the temples. So he thinks that God's resting on the seventh day, indicates that God comes to reside in the cosmos as his cosmic temple. The seven days leading up to this are a reflection of the seven days of dedication that preceded the inauguration of Solomon's temple. Just as Solomon's temple had this seven day period of dedication, so we have this seven days of specifying functions and functionaries before God comes to reside in his temple. I think the problem with this suggestion is that there is just no evidence in the text that the author thinks of the world as God's temple or of God's resting on the seventh day as his coming to reside in the temple. Walton's interpretation presupposes that God hasn't done any creative work on days 2-6 and therefore he doesn't need to rest on the seventh day! He hasn't created anything so there is no need for a Sabbath rest. Therefore, he reinterprets God's rest as merely God's residing in his temple. Reinterpreting God's resting from creation as God's residing in his temple presupposes the truth of the Functional Creation Interpretation. So this can't serve as evidence for the Functional Creation Interpretation. That would be question begging. This view presupposes the truth of the Functional Creation Interpretation and we haven't seen any good evidence for that at all. If God is involved in creative work during days 1-6 then there would be a rationale for his ceasing his creative work and resting on the seventh day. There is simply nothing about a temple here. As for the seven day figure, I think this is much more plausibly connected with other ancient creation stories "in seven days." The seven day motif is common in other ancient creation stories rather than try to connect it with Solomon's temple – that is a much more distant analogy or parallel than other creation stories over seven days.⁸⁴ So I don't find this claim about Genesis 1 being the story of God coming to reside in the universe as his cosmic temple to be a plausible interpretation either.⁸⁵

⁸⁴ Dr Craig corrects the preceding point in the next lecture – seven days aren't common in ancient *creation* stories. But it is a very common motif throughout the ancient world used in many different ways.

⁸⁵ Total Running Time: 20:17 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 10

Functional Creation Interpretation, Part 4

We have been looking at the Functional Interpretation of Genesis 1 according to which Genesis 1 is a description, not of the material creation of the biosphere, but simply God's assigning functions to various things in the world so that the world or the cosmos becomes his temple in which he takes residence finally on the seventh day.⁸⁶

I have argued against the plausibility of a purely functional interpretation of Genesis 1 and of the idea that God's Sabbath rest is meant to be simply a residing of God in his cosmic temple.

I do need to make one correction, though, to something I said last time. I believe last time I said that the seven days in Genesis 1 should not be interpreted as a reflection of the seven days of dedication of Solomon's temple because this was a motif that was common in ancient creation myths. In fact, I misstated that. The seven day motif is not common in ancient creation myths, but it is a very common motif throughout the ancient world used in many different ways so it would be a mistake to point to the seven days of dedication of Solomon's Temple *in particular* as the source of this seven day motif. This point was made well by Miller and Soden whose view we are going to consider next. This is what they write, "There is no known record of any other society framing creation in seven days." – though seven days might be involved, for example, in the creation of man or other aspects of the creation story. They continue,

There is no known record of any other society framing creation in seven days, so the use of it in Genesis 1 does not appear to be directly dependent on Israel's ancient Near Eastern mind-set. The use of a seven-day period of time, however, commonly appears in ancient Near Eastern mythology, legend, and cultic practice. For example, it occurs to describe an appropriate approach to the gods; it provides a framework for a divinely ordained and successful mission; to find a royal wife to bear a son; it describes a seven day waiting period in which the anticipated event occurs on the seventh day. The number seven was also frequently used for many other things in ancient texts and even in the Hebrew Old Testament and was not always intended to be a literal number. Instead, it carried symbolic significance being generally understood to express the ideas of completion, perfection or fulfillment.⁸⁷

So given the widespread use of this seven day motif in the ancient Near East, I think it would be a mistake to simply assume that it refers to this seven day period of temple dedication preceding Solomon's inaugurating the temple. In fact, quite the contrary, that seven day waiting period would itself be a reflection of the very widespread and symbolic

⁸⁶ See John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009)

⁸⁷ Johnny V. Miller, John M. Soden, *In the Beginning... We Misunderstood: Interpreting Genesis 1 in Its Original Context*, (Grand Rapids, MI: Kregel Publications, 2012), pp. 155-56.

use of the number seven throughout the ancient Near East.

In summary, I find the Functional Interpretation of Genesis 1 to be quite implausible. It seems to me that the account in Genesis 1 is most naturally taken to involve what Walton calls both material creation and functional creation - both creating the entities described as well as assigning their functions.

We want to wrap up our discussion of the Functional Interpretation by seeing Walton's response to this suggestion. He raises the question "Couldn't it be both material creation and functional creation?" He gives four reasons for rejecting that view. I think, however, these four reasons can be answered very quickly in light of what we've already seen.

First reason he says is that days 1, 3, and 7 have no statement of creation of any material component. By way of response I would say this, of course, isn't surprising for day 7. That is God's day of rest on which he ceases from creation. But on day 1, light is created.⁸⁸ So that certainly involves material creation. On day 3, vegetation and fruit trees are created. So it seems to me simply false to say that material creation isn't involved on days 1 and 3.

Number two, he says day 2 has a potentially material component, namely the firmament, but he says, "If this were a legitimate material account, then we would be obliged to find something solid up there."⁸⁹ There would have to be this solid dome up there and there isn't. Well, by way of response, I would say again this is concordism as we saw. If the ancient Israelites thought that the firmament was solid then they would have no problem relating an account of its material creation. It seems to me that this second reason is not a very good reason for interpreting it purely functionally. He is letting scientific concordism guide his exegesis which he himself admits is illegitimate.

His third reason is that days 4 and 6 deal explicitly with material components only on a functional level. By way of response, I would say that might be the case for the sun, moon, and stars where their functions are specified for marking days and months and seasons and years. But it is clearly false with regard to the animals. The text says, "Let the earth bring forth living creatures." It is also probably false with respect to man. The text says, "Let us make man in our image". Since man wasn't included among the animals - he wasn't already there - therefore the making of man would imply the material creation of something new. So it seems to me again false that days 4 and 6 deal with these material components only functionally. It does envision, I think, their coming into existence.

Finally, his fourth reason is that on day 5, functions are mentioned and the word *bara* ("to create") is used. By way of response, we've seen that *bara* involves efficient causation - producing the effect in being. The material origins of birds and sea creatures on day 5 are clearly in view. So it is just simply false that this is purely functional. On day 5, the birds and the sea creatures are created by God.

So I don't think any of these reasons are at all persuasive to suggest that the account in Genesis 1 should not be read as both material creation and functional creation as well.

⁸⁸ 5:00

⁸⁹ Walton, *The Lost World of Genesis One*, p. 94.

There is a good deal more I would love to say about Walton's book but I have taxed your patience already I suspect. I think that this is sufficient to show that the Functional Interpretation is not a very plausible option for the interpretation of the opening chapter of Genesis.

DISCUSSION

Question: I have a question in general about this. You have spent a lot of time on this and I think you have done a good job of picking apart the theory, but I wonder why? Is this because this is something that is starting to catch on at an academic or popular level?

Answer: There are two reasons that I shared right at the very beginning. One is because I have just read Walton's book and so it is very fresh in my mind and I got all worked up about it! If, maybe in two years time, I would cover this section, maybe I wouldn't spend so much time on it, but the freshness of it in my mind is one reason, frankly. But in addition to that, this interpretation is one to which a certain segment of evangelical theology appeals in order to reconcile science and religion.⁹⁰ Perhaps you have heard of Francis Collins – the head of the Human Genome Project who is a theistic evolutionist, or as he prefers, creative evolution. His BioLogos Foundation⁹¹ is attempting to provide an alternative to Young Earth Creationism. They get a lot of funding from the Templeton Foundation which wants to promote the dialogue between science and religion. The book carries an endorsement on its rear cover from Francis Collins. I think that this interpretation is one that is increasingly influential in the evangelical community as a way of reconciling science and religion. If the meaning of Genesis 1 is purely functional, then there can't be any conflict with science because it is not about how these things came into existence. It is just about God saying, "This will be for that purpose and this will be for that purpose." As Walton says, the dinosaurs and everything else could have been flourishing and existing long before Genesis 1:1 began. So I do think this is a very important interpretation in that sense as well as the next one that we are going to talk about which is also now very much in the mix of this discussion.

Question: I have read some of the writings of Francis Collins, Karl Giberson and others who seem to have no problem at all with scientific concordism.

Answer: I don't think that is right. Let's define again what we are meaning by concordism. I don't like the word but it has become standard terminology today in these sorts of discussions and so one uses it simply because you want to make sure you are all talking on the same page. Concordism does not mean that science and the Bible are in concord with each other – that there is a harmony between science and the Bible. I think we all hope that that is true – that there is concord between science and religion! But when these scholars talk about concordism, this is descriptive of a certain hermeneutical approach to the text which says you use modern science to guide you as you read the text and you try to interpret the text in light of modern science. I think the most obvious example of this kind of hermeneutic would be Hugh Ross. Hugh Ross reads the text in light of modern Big Bang Cosmology and evolutionary theory. For example, when the

⁹⁰ 9:54

⁹¹ <http://biologos.org>

Scripture says that God stretched out the heavens, Ross interprets that to mean that this is the expansion of space that is predicted in the standard Big Bang model. The metaphor of stretching out the heavens is meant to be literally the expansion of space. He will read other elements of the scientific picture back into the text. What people like Walton and Blocher and many others are protesting is that that is not a legitimate hermeneutical approach to the text. The proper way to approach a text is to try to discern what the original author meant when he said it and how the original audience to whom it was written would have understood it. That is the correct way to get at the text. Otherwise, you run the risk of importing all kinds of things into the text. Indeed, each successive generation would import its science back into the text and the text would constantly be changing in its meaning as each successive generation tries to read its modern science into the text. Instead, you should let the text stand on its own and try to understand it within its original horizons so to speak – how would its author and its audience have understood it. I think that is correct. I think that that is the right hermeneutical approach. So, in that sense, Francis Collins and Karl Giberson are not concordists. Quite the opposite, they would say we shouldn't try to read the text in light of modern science.

Followup: Thank you for that. That clarifies a great deal.

Question: I always get confused when we talk about what the original author meant and what the original audience would have interpreted this when we talk about revelation in the Bible.⁹² I would like to distinguish forensic science (this is what probably happened in the past that we cannot replicate over and over again) from science that can be a theory that can be proven and replicated. I think there is a different standard between those two. So what I keep coming back to is this – isn't the Bible written for us today? God's intent, when he directed the writing of the Bible, was to be a communication to us today.

Answer: Well, certainly. But not just to us today. It is written for all persons of all times and cultures. In order to interpret it properly, you would need to try to understand especially the original literary genre in which it was written. For example, if you approached the book of Revelation as a book of history, then you think that in the future there is going to be giant seven headed sea monsters crawling up out of the ocean and sort of like Godzilla attacks New York. It is going to look like that in the future. But if you understand Jewish apocalyptic literature, you understand that these are symbols. In apocalyptic literature, you have all of this symbolic representation of political entities and so forth. It isn't to be taken as though it were a kind of grade-B horror movie with all of these monsters and so forth. Similarly, when you read poetry in the Old Testament like the Psalms, you need to interpret them according to the proper literary genre. On the other hand, if you are reading the book of Acts, that would be historical writing. There you would want to understand it as such. Though again, importantly, you would need to see how do ancient historians write because there are significant differences between ancient history and modern history. For example, ancient historians didn't always emphasize the chronology of events. They felt free to group the events thematically and so move them around and not necessarily narrate them just in chronological succession. So I think it is important to remember that although the Bible is written for every generation and is inspired by God, it is written through the instrumentality of human

⁹² 15:08

beings who reflect their time and culture and thought forms. So in order to interpret them correctly, we need to put ourselves back in their shoes and ask how would a 1st century Jew have read, say, the book of Revelation or the book of Genesis. So the Bible is for every generation, that is right. But we need, nevertheless, to exercise care in how we interpret it.

Question: I wonder why we have to map that with Aristotle's framework. Can we not map it with material creation, functional creation and purpose behind the creation? The seventh day is God entering into rest and in Hebrews chapter 4 it says very clearly that God promised us to enter into rest. So, purposefully, we are to enter into rest with God.

Answer: Function is really what Walton means by purpose. The function of a hammer is to pound nails. The function of a knife is to cut. So when he talks about functional creation, he means specifying the purpose. With respect to material creation, the only reason I appeal to Aristotle there was for a clarification of terminology.⁹³ That is all. Just the terminology I found confusing because when you think of the words "material creation" that sounds like the creation of material things. So when Walton sees how the word *bara* is used sometimes in the Old Testament, it is talking about the creation of things that are not material objects like "create in me a pure heart, O God." It is not asking him to make some organ inside of your body. Or when it says, "God creates disaster" or "God creates north and south." These are not material entities. So Walton thinks, "A-Ha! This isn't material creation. This is functional creation." Well, that is because he has misunderstood what material creation really is. It means efficient causation. When God creates a chair, he brings the chair into being. When he creates disaster, he brings disaster into being. When he creates a pure heart, he is the efficient cause of your having a pure heart. So I was simply eager to clarify the terminology because I think, because of the misleading terminology, he is led to a misinterpretation or a misunderstanding of the word *bara* as not involving efficient causation. It seems to me very evidently that it is efficient causation – God brings into being heavens and earth, the sea creatures on day 5, man on day 6. So that was the reason I appealed to Aristotle's terminology – simply because I thought it could bring some clarity. But I like your point about God's resting on the seventh day. Certainly, the remainder of the Old Testament and the New Testament interpret God's resting on the seventh day as his ceasing from creative activity. That is why Israel rests on the Sabbath. They don't do any work on the Sabbath day. The seventh day isn't the day in which God comes to reside in his cosmic temple, it is the day on which he ceases from his creative work and that establishes the basis for Israel's Sabbath practices, too.

[A follow-up comment goes off on a tangent which Dr. Craig says is not concerned with what is currently being discussed]

Hebrew Creation Myth Interpretation

Let's go on to the next interpretation which I am going to call the Hebrew Creation Myth Interpretation. Miller and Soden in their new book, *In the Beginning... We Misunderstood* (2012), lay out this interpretation of Genesis 1. Though they do not use that title for it,

⁹³ 20:05

they don't really give a name of their view, but this is what my characterization of their view is. Just as there are pagan creation myths in ancient Egypt and Mesopotamia, so this is an example of a Hebrew creation myth.⁹⁴ They would say Genesis 1:1-2:3 is not to be taken literally. They would rehearse the evidence against a literal interpretation of the text that we have already been through when we talked about the Literal Interpretation. They present those same considerations that lead them to think that this text is not to be taken literally. Rather, they say that the key to correctly interpreting Genesis 1 is to compare it to Egyptian creation myths. They also examine Mesopotamian and Canaanite myths, but they find that these bear very few resemblances to the text of Genesis 1 and therefore are not really profitably consulted. There are few points of similarity between Mesopotamian and Canaanite creation myths and the story in Genesis 1. But, they observe, Israel was in Egypt in bondage for four hundred years and during that time the Israelites had come to worship the Egyptian deities. Moses had to wean them off of these Egyptian deities and announce to them who the true God was – Yahweh, he was the real God. Even after they left Egypt in the Exodus, many of them were still keeping Egyptian gods and worshipping them. Egyptian religion had made deep inroads into the nation of Israel. They believe that when we compare Genesis 1 to Egyptian creation myths, very significant similarities, as well as significant differences, emerge. The differences will help us to see how Israel sought to reject or correct these pagan myths that they had received while in Egypt. The similarities will show the connections with Egypt, but the stark differences will show the way in which Israel attempted to correct these pagan creation stories.

Miller and Soden point out that it is unfortunately very difficult to reconstruct just what the ancient Egyptian creation myth was. We have no single text as we do of Genesis 1 which lays out the Egyptian view of creation. Rather, the Egyptian view of creation has to be cobbled together from all sorts of different texts over a couple thousand years in order to try to sort out a coherent view. They write,

There is no single Egyptian account known to date that describes the complete Egyptian perspective on creation. Instead, we have to put together a mosaic of bits and pieces recorded in various documents. These documents represent a mixture of times and theologies (covering more than two millennia), many of them in tension with one another, a situation that did not seem to bother the Egyptians. . . . For the most part, Egyptian creation documents consist of brief statements and allusions, scattered among many inscriptions (Pyramid Texts, Coffin Texts, the Book of the Dead, and other inscriptions).⁹⁵

So we don't have a single, coherent Egyptian creation myth. Rather, this is a reconstruction that scholars have made based upon a diversity of brief snippets and inscriptions over thousands of years. But on pages 78-80, they attempt to summarize the outlines of the Egyptian creation myth.⁹⁶ I will read this passage to you:

Before the beginning of creation, there was only an infinite, dark, watery, chaotic sea. There was nothing above the sea or below the sea – the sea was all there was.

⁹⁴ 24:58

⁹⁵ Miller and Soden, *In the Beginning*, pp. 78, 82.

⁹⁶ 29:37

Immersed in the sea, Atum (or Re or Amun or Ptah), the creator god and source of everything brought himself into existence by separating himself from the waters. Egyptian cosmologies that view Amun as the creator, or even as one of the four initial qualities of the precreation matter (watery, unlimited, dark, imperceptible) from creation emerges, would then also understand the wind to be present in the water, because Amun was also the god of wind. Since Atum, Amun, and Re are all connected with the sun, light was then in existence, even though the sun itself had not yet risen. While several means of creation are used interchangeable in the Egyptian accounts (including sneezing or spitting and masturbation), in many accounts Atum (or one of the other gods noted above) spoke the universe into existence. This new creation (or the “universe” as conceived by the Egyptians) began with the separation of the waters to create the atmosphere (a bubble of air, known as the god Shu, in the midst of this endless mass of water). Atum’s command separated the surface of the waters in the sky from the earth. The waters receded and the first mound of earth appeared. The sun, already in the waters before the separation of the atmosphere, rose for the first time as the main event of creation. And so the basic universe was formed – a bubble of light, air, earth, and sky in the continuing infinity of dark, motionless water. The universe was actually composed of thousands of gods (all of which were part of Atum) in the Egyptian understanding, because “all the elements and forces that a human being might encounter in this world are not impersonal matter and energy but forms and wills of living beings – beings that surpass the merely human scale, and are therefore gods.” Into this universe, Atum commanded the creation of plants and animal life, Re formed man as his image, or Khnum fashioned man on a potter’s wheel with the breath of the god giving life to the image. In some accounts, man springs from the tears of the eye of Atum (the sun). After speaking into existence the “universe” and its millions of gods with their towns, shrines, and offerings, Ptah rested with everything in order. In Egyptian theology, all of creation was done in a single day, which was called “the first occasion.”⁹⁷

I think you can probably see from that account certain similarities as well as enormous differences between the Egyptian creation myth and the account found in Genesis 1. There are points of similarity – one thinks of, for example, the primeval waters, the darkness over the deep and then the spirit of God or the wind moving over the surface of the water. But there are significant differences as well. What Miller and Soden maintain is that the goal of the author of Genesis is not to correct so much the physical descriptions found in these Egyptian creation stories as in correcting their theology of creation. For example, you’ll notice how the author of Genesis completely demythologizes the natural world. He gets rid of all of these gods and goddesses and instead has this single creator God who is the source of everything and is not himself self-created or comes out of the water but is sovereign and transcendent. So what the goal of the narrative is is not to correct the physical description so much as to correct the theology. This is what they write,

in most cases, the biblical writer uses common motifs to demonstrate the stark differences in the Hebrew presentation of God. In other words, the considerable

⁹⁷ Ibid., pp. 78-80.

differences show that Genesis is not copying but recasting the events of creation in order to argue strongly for a different theology.⁹⁸

Next time, I will describe for you that theology as Miller and Soden understand it and show the ways in which the theology of creation in Hebrew understanding differs from the theology of creation in these Egyptian creation myths.⁹⁹

⁹⁸ Ibid., p. 98.

⁹⁹ Total Running Time: 35:16 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 11

Hebrew Myth Interpretation of Genesis 1

We have been talking about the Hebrew Myth Interpretation of Genesis 1. I shared with you that this is a view that has recently been defended by Miller and Soden in their book *In the Beginning ... We Misunderstood*.¹⁰⁰ You may be wondering who these authors are. Well, they are professors at Columbia Bible College and at Lancaster Bible College, both with doctorates from Dallas Theological Seminary. So they have conservative *bona fides* which are impeccable.

We saw last time that they think that Israel, having been in bondage in Egypt for some four hundred years and indeed worshipping Egyptian deities, developed their own creation story in reaction to these Egyptian creation myths. The important thing about a creation story was not its literal truth – its scientific truth – but rather the theological truths that it embodies. In the Hebrew creation story we see both similarities to the Egyptian creation myths but also very sharp and striking differences whereby the people of Israel reject the polytheistic pagan myths and substitute for it, as it were, a Hebrew monotheistic myth of the creator God of Israel.

Having shared with you last time a brief summary of the Egyptian creation story insofar as that story can be reconstructed from diverse texts spanning a couple of millennia, let me give you their summary of what they think is the Hebrew creation theology which is then opposed to the creation theology of Egypt. This is found on pages 176-177 of their book and I will simply read this summary:

On day 1, God separates light from darkness and puts day and night into motion. This is the necessary starting point for all that is to follow, bringing light and order to the infinite disordered mass of water. He shows himself to be the source and controller of day and night. Light is not divine (sun or moon), and darkness is not a threat. Out of the chaos of the watery mass, God first produces order, teaching that darkness is not to be feared and light is not to be revered. God himself is the creator of light, both spiritual and physical. . . . On day 2, God orders the firmament into place to hold back the threatening waters above and below. He is the one who keeps the world in place and prepares the stage where mankind will act out the history of God's kingdom. God holds back the waters and then releases them according to his will. On day 3, God orders the waters into one place and commands dry land to appear. On the land he calls into being living plants, which will nourish mankind. He founds the earth upon the waters, establishing his authority over both land and water. He provides food for the creatures he will soon create. The stage is fully set. All that was formerly *tohu* (desolate) is now arranged and in order. Everything wet and everything dry belongs to God. He can do with it what he wants. On day 4, God begins to

¹⁰⁰ Johnny V. Miller, John M. Soden, *In the Beginning... We Misunderstood: Interpreting Genesis 1 in Its Original Context*, (Grand Rapids, MI: Kregel Publications, 2012).

decorate the cosmos, putting the heavenly lights into place. The lights, deliberately left unnamed, serve as impersonal markers of time. They are not deified as controllers of history as in other cultures. They do not control the affairs of mankind or the movements of history because only God can do that. On day 5, God orders into life the living creatures that fill the heretofore empty sky and waters. Every niche of creation has its purpose and its inhabitants.¹⁰¹ None of it just happened. What is more, none rivals God's power or authority. Even the great sea creatures – the feared “monsters” – are simply creatures under the authority of God. On day 6, God fills the last empty niche of his creation – earth. First, he makes the animals, “all creatures great and small.” Then he fashions the unique creature, made in the image of God himself – mankind. This is the climax of the creative process: human beings made in God's image to serve as his regents on the earth. All creatures made before humans are under humanity's delegated authority. All that was *bohu* (empty) now teems with life. On day 7, the divine workweek is complete, never to be repeated. God has finished ordering and filling his cosmos, and he has put on the earth one to look after his interests and to bring him proper worship and glory. It is time for God to put away his workman's garb, don his royal robes, and take his throne to rest. And it is time for this new creation to join him in that repose and to enjoy the marvels and beauty of creation in a family relationship with the Creator. It is an endless day [that is, the seventh day], with the offer of unlimited fellowship to all who desire it.¹⁰²

So that would be the theological content of this Hebrew creation myth as they understand it. They agree with Blocher's view¹⁰³ that the days are not meant to be chronologically ordered. You will remember that according to Blocher the first three days create the sphere or the realm for something and then the second three days create the inhabitants of that realm – the animals, the sea creatures, the birds, and finally man himself. So they don't think that these seven days are meant to represent necessarily a chronological order. Rather, this is a literary device of creating spheres, or places, and then filling them with various creatures. They also agree with Walton's view¹⁰⁴ (which we discussed last time) that creation actually begins with verse 2 of Genesis 1, not with verse 1. Verse 1 is just a summary title; creation actually begins in verse 2 with the primeval waters in place.

DISCUSSION

Question: How do they know that this is the Egyptian's version? What is the possibility that the Hebrews brought this version into Egypt?

Answer: They don't address that question but I think that they would stand within the consensus of Old Testament scholarship that the Hebrew creation narrative is not as old.

¹⁰¹ 5:03

¹⁰² Ibid., pp. 176-77.

¹⁰³ See Henri Blocher, *In the Beginning: The Opening Chapters of Genesis* (InterVarsity Press, 1984)

¹⁰⁴ See John H. Walton, *The Lost World of Genesis One*, (Downers Grove, IL: InterVarsity Press, 2009)

Of course, you could say it is based upon prior oral traditions that were passed down for endless generations. They don't address that. They simply look at the parallels and then, as I said, they surmise that because Israel was in Egypt and they were worshipping Egyptians gods that Genesis 1 comes later and is written as a kind of reaction to this earlier religion that had been drummed into them. The traditional view of the authorship of the Pentateuch is that it is Moses who wrote it. If that is the case, then this would reflect something later than those stories that they heard in Egypt.

Question: So the first six days are not chronological and so then God asks mankind to enter into the seventh day with him. So before you are in the seventh day resting in heaven with God, you are still in one of those other days, like the sixth day?¹⁰⁵

Answer: I don't see how that follows. They are not denying that God did this work of creation and that he is no longer doing it. He is in the seventh day right now. He is no longer in this creative mode. But they don't think that the sequence in which he did this creation is necessarily the same sequence that is narrated over the seven days.

Followup: I understand what you are saying but I'm trying to ask where that puts mankind before they are born again and in rest with Christ?

Answer: Oh, they don't even address that sort of theological question. That does not come into view.

What might we say by way of assessment of this view? I think it is important, first, to say something about the nature of myth. What are myths? Myths are sacred narratives that serve to ground a culture and its institutions. By telling the story, a culture will show its origin and its foundation particularly of its significant cultural practices. This is important because the word "myth" in popular culture is not used in this way. When people throw around the word "myth" they often mean something like fiction or even a lie, not a sort of foundational narrative for a culture. So it is important to understand that when one talks about creation myths, one isn't using this word in a popular sense of a false story or a fabrication. Rather, it is a sacred narrative that seeks to found a culture and its institution in some sort of creation account.

Genesis 1 clearly does serve this function, I think. It clearly does serve this mythical role. It is a creation story which grounds everything in God and his power and also serves especially to ground Israel's Sabbath practice. Clearly, the practice of keeping the Sabbath, which is so central to Israel's identity, is founded – or based in – this creation story of the six days of God's work and then the seventh day of his rest. Genesis 1 clearly does serve a sort of mythic function in grounding Israel and the world and especially its Sabbatarian practices.

But, as Miller and Soden also note, Genesis 1 is also sharply demythologizing in many ways. When you compare it to the pagan myths of Israel's neighbors, what is striking is the absence of any sorts of gods and goddesses of warring monsters or forces that stand opposed to God that God must wrestle with and overcome. In particular, there are no astral deities in Genesis 1. As they note, the sun and the moon are just the big light and

¹⁰⁵ 9:57

the little light – they are just lights in the sky that God made. The stars are not gods. These are just creatures that are under the control of God. Also, this is especially evident if we adopt the view that verse 1 does teach *creatio ex nihilo*, as I’ve argued. I’ve already given a critique of the view that creation doesn’t begin with verse 1 so I am not going to repeat that here but insofar as Miller and Soden reject the view that creation begins in verse 1, I think they fail to understand properly the function of the narrative in grounding everything in God’s absolute power and authority. He is the one who brings the world into being out of nothing in verse 1 so that there aren’t any opposing forces to God which he must overcome and vanquish in order to create the world. So Genesis 1 is very much a demythologizing creation narrative as well as serving a kind of mythical function.

Now with respect to Miller and Soden’s attempt to see Genesis 1 as significantly shaped by Egyptian creation myths, I have to say that I am still rather skeptical about the attempt to see this creation account in Genesis 1 as significantly shaped by Egyptian creation myths.¹⁰⁶ One of the difficulties in assessing this is simply that we don’t have a coherent creation myth in Egypt. You will remember this is cobbled together from a diversity of texts and snippets and inscriptions over a couple of millennia so it is very difficult to speak about a coherent creation myth in Egypt at all.

But my skepticism goes deeper than that. I am not an Old Testament scholar, but in New Testament studies one has encountered this same sort of attempt to explain New Testament motifs by finding parallels in either pagan mythology or in Jewish Old Testament texts. This has led to a widespread rejection of this technique in historical Jesus studies. Parallels can be found for almost anything. If you look hard enough, you can find parallels to a story in other stories to which there is no genetic relationship whatsoever. For example, in historical Jesus studies, I know that many scholars have noted the significant similarities between the empty tomb story of Jesus and the story of Daniel in the lion’s den.¹⁰⁷ Or the story of Joshua and the five kings sealed in the cave with stones.¹⁰⁸ Or even Jacob’s removing the heavy stone off of the well in order to water the animals.¹⁰⁹ And yet, this empty tomb story cannot be derived from all of these, even though you could find parallels to it like the heavy stone, the cave, and things of that sort. So we have to beware of what’s been called “parallel-o-mania” on the part of certain scholars because it is easy to cherry pick stories in order to pull out similarities without there being any kind of genetic relationship between them.

I find it very significant that, like these so-called mythicists who try to explain the historical Jesus based upon parallels to ancient myths, Miller and Soden also fail to cite the original sources that they claim contain these parallels. You will find that people who say that certain Christian motifs or beliefs are derived from mythology almost never cite the original sources. They never cite the original myths. Why? Because when you read them in the context you can see that, although they may pick out a parallel or point here or there, the whole thing is so utterly different and so utterly dissimilar that the parallels become trifling and insignificant. So this isn’t really a work of significant scholarship I think we have to say. As interesting as it is, we need to have them lay out for us the

¹⁰⁶ 15:13

¹⁰⁷ cf. Daniel 6:16-23

¹⁰⁸ cf. Joshua 10:16-18

¹⁰⁹ cf. Genesis 29:10

Egyptian texts – to actually cite them – and then show us the parallels if we are to believe that these parallels are significant indications of a genetic relationship between Genesis 1 and the Egyptian stories.

Indeed, the parallels that they do claim really aren't that impressive when you look at them. The best parallel, I think, – the one that is clearest and most striking – would be the presence of the primeval ocean at the beginning. Both in the Egyptian myths and in Genesis 1 you have creation out of a sort of primeval dark watery mass. That seems to be a significant similarity. But this motif is common in mythical stories – the idea of a primeval ocean or waters out of which the world emerges, even stories that have no genetic connection at all with Israel. So while that is an interesting parallel, it is hard to assess how important it is. Miller and Soden make a great deal out of the fact that in these Egyptian myths, light existed before the sun. They say this is a parallel to this otherwise very puzzling feature of the Genesis account where you have light already on day 1 but the sun isn't created until day 4.¹¹⁰ They claim that this reflects these Egyptian creation myths. But, again, unfortunately, they don't cite the Egyptian texts for us to examine. It appears to be simply an inference that they make. That is to say, because the sun god emerges out of the waters before the sun is created, they infer that there must have been light before the existence of the sun. But that is an inference. That isn't clear at all unless they cite us the text that actually says "there was light before the sun was created" rather than just saying there was a deity who was the sun god and then the sun came later. So, as I say, it is difficult to assess how significant these parallels really are.

The critical question, I think though, in assessing their interpretation is how were these ancient creation myths understood? How did ancient people look at these creation stories? During the 19th century, literary scholars tended to regard these ancient creation myths as a kind of proto-science; that is to say, a sort of crude pre-scientific attempt to explain how the world and the things in it came about. Accounts that are now rendered obsolete in light of modern science. So the 19th century had a rather unsympathetic view toward these ancient creation myths. They were regarded as basically obsolete and crude science. But during the 20th century, scholars of mythology do not see them as a kind of crude proto-science. Rather, they tend to be seen as symbolic or figurative accounts of the creation of the world or of various things in it. So they weren't intended to be taken literally. These were symbolic accounts. These were figurative or metaphorical accounts that shouldn't be understood as pre-scientific attempts to explain the way the world is.

How do Miller and Soden understand these ancient creation myths, including the creation story in Genesis 1? Are they saying that these ancient myths were believed by people literally and that Genesis uses this obsolete worldview of the ancients while correcting their theology? Is that what Genesis 1 is doing? Genesis 1 is using the language of this obsolete, literally interpreted, proto-scientific account of the world and then revising its theology – is that what Genesis 1 is about? Or are Miller and Soden saying that the ancient people didn't really believe these myths literally, but they took them figuratively and Genesis similarly presents a figurative story of creation in order to teach a new theology? So, the question is – how did the ancients regard these creation myths? Did they take them literally or figuratively? Miller and Soden don't speak with a single voice

¹¹⁰ 20:01

on this question so it is unclear to me exactly what their view is. On page 155, they state the following – listen carefully to this quotation:

If the original author intended the account to be understood figuratively or symbolically, then we would be in error to ascribe a literal meaning to it. If the original author used his audience's incorrect descriptions in order to make theological points, we would be wrong to expect his writing to correct their vocabulary or perceptions.¹¹¹

These two back-to-back sentences are self-contradictory!¹¹² The first sentence expresses the view that these myths were taken symbolically or figuratively. But the second sentence expresses the view that the ancient people took these myths to be accurate descriptions of the world even though they were inaccurate and the Genesis narrative picks up and uses these inaccurate descriptions of the world simply to correct the theology. Those are the two opposite points of view that we are trying to discuss and yet here they seem to be affirming both of them in juxtaposed sentences. But which one is it? Were these narratives understood symbolically and figuratively or were they understood literally and Israel or Moses simply uses these incorrect, inaccurate descriptions of the world in order to make theological points?

On the one hand, Miller and Soden seem to say that the ancients really believed that the world is as these myths portray it. Throughout the book, they provide artist renderings of the world as it is described in these ancient creation myths. For example, on page 44 is supposedly a picture of the cosmos as it was conceived in the Old Testament. These pictures are quite fantastic and bizarre paintings of the way the world was supposedly conceived by the ancient Israelites. They comment,

Almost everyone agrees that many figures of speech and many commonly accepted observations are used to describe God's creation. For instance, the Bible says that the earth is established on a foundation and that it has pillars (Pss. 104:5; 75:3). This reflects the way the writer or readers conceived of the world; they seemed to think of the land as a disk, not as a globe. The mountains were at the edges of the disk, holding up the sky. . . . It would have made sense to them that this disk, with the waters lapping at its edges, was held up by pillars, set on a solid foundation.¹¹³

So they have in this artist painting a picture of the world as a sort of disk floating on the sea supported by these pillars that the ancient Israelite's supposedly thought were underneath the land holding it up on its foundations.

Again, in another place, they say,

There was a literal truth behind what we perceive as figurative or observational speech; in fact, the ancient people may have understood such statements as literal reality because of their observations. On the other hand, they may have realized that it was not exactly accurate but was a commonly accepted way of speaking of

¹¹¹ Miller and Soden, *In the Beginning... We Misunderstood*, p. 155.

¹¹² 25:17

¹¹³ *Ibid.*, pp. 43-44.

the world.¹¹⁴

So they were sort of quasi-literal. Again, in another place, they say,

As we process what we have just observed about Genesis 1 and the ancient Near Eastern creation accounts, we see that God does correct wrong theology, but his instruction does not depend upon accurate scientific observations and descriptions of the material world. This reality fits well with the concept of progressive revelation – the idea that God slowly revealed himself within the cultural framework his people knew.¹¹⁵

On this view, God took this obsolete scientific view of the world and simply adopted it as a means of teaching them correct theology but didn't bother to revise this obsolete worldview.¹¹⁶ Again they write,

If God had tried to correct Israel's observation and perception of the material world, would it have made sense to the people in their historical context? . . . In other words, God corrected their spiritual worldview, not their physical picture of the world, by teaching them who Yahweh their God was (Exod. 6:6-7). He began with the way they thought and talked about creation, in order to teach them what they could not otherwise recognize or understand.¹¹⁷

Again, God simply adopts the inaccurate language of the ancient world in order to teach them these theological truths without endorsing that inaccurate picture of the world.¹¹⁸

Finally, they considered the objection by some hypothetical person, "If you claim that Genesis 1 uses erroneous ancient views to challenge Israel's belief in God, don't you undermine the doctrine of inspiration and inerrancy?"¹¹⁹ This is a hypothetical objector saying, "You are claiming that Genesis 1 uses erroneous ancient views in order to challenge their belief in God." They respond, "This question about inspiration and inerrancy incorrectly assumes that using the inaccurate views of people . . . is the same as affirming those views."¹²⁰

I am not here assessing the adequacy of that reply but just trying to understand their view. It seems to me that what they are saying here is that people really believed these ancient myths described the way the world is. They actually thought that it was like a disk resting on pillars and the firmament was a hard dome that sat on top of the mountains and God,

¹¹⁴ Ibid., p. 45.

¹¹⁵ Ibid., p. [TODO: where is this??].

¹¹⁶ As an example, Miller and Soden say later in the book: "For example, if Genesis 1 intends to begin with the common ancient Near Eastern viewpoint – particularly the Egyptian view – of the precreation watery dark chaos, then the narrative does not accord with any modern science. If Genesis leaves intact the ancient conclusion of endless waters above the sky and below the earth, without correcting that inference from observation with the reality of a space that is billions of light-years of emptiness, then it is not concerned to present a correct version of what science might later validate. It simply does not speak to the scientific questions of today or any day. Instead, Genesis presents theological truth: Yahweh is Creator, transcendent and absolute sovereign over all. He is not part of creation but completely separate from it." (Ibid., pp. 150-51.)

¹¹⁷ Ibid., p. 151.

¹¹⁸ 30:30

¹¹⁹ Ibid., p. 153.

¹²⁰ Ibid.

as it were, condescends to use this inaccurate view of the world to teach them important theological truths. That would be a view of the narrative that would see it as trying to communicate literal proto-scientific truths about the world.

As I say, many of the statements of the book suggest that this is the view that Miller and Soden are embracing. However, as we will see next time, there are other paragraphs in the book which I'll also quote in which they seem to be affirming precisely the opposite view that these narratives were not understood literally but simply figuratively or symbolically and therefore were not inaccurate because they weren't trying to represent the world as it is.¹²¹

¹²¹ Total Running Time: 32:51 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 12

Summary and Implications of Different Interpretations

Today we come to the end of our consideration of various interpretations of Genesis chapter 1. We have been looking most recently at what I call the Hebrew (or Jewish) Myth Interpretation of Genesis 1 as propounded by Johnny Miller and John Soden in their book *In the Beginning ... We Misunderstood*.¹²² You will remember that I explained that there is a fundamental ambiguity in this interpretation as they present it. It is not clear if they think that these ancient myths were understood literally by the people who believed in them so that what God did in Genesis 1 was to adopt a sort of obsolete, outmoded worldview, not as a way of endorsing that worldview, but simply as using it as a vehicle to communicate important theological truths about the nature of God and the nature of the world around us. Is that what is happening in Genesis 1? Or is it, on the other hand, that these ancient peoples, in propounding these myths about the creation of the world and its inhabitants, didn't really take them literally and so it would be unfair to indict them as having a primitive, scientifically obsolete view of the world? Rather, these were figurative stories meant to be taken symbolically to represent metaphysical and spiritual realities. In that case, Genesis 1 is not adopting some sort of outmoded and obsolete scientific worldview to communicate theological truths; rather it is itself a figurative story or account of the world's origins that has, at its center, the teaching of certain theological truths about God which we summarized in our previous lesson.

As I say, Miller and Soden are not clear as to which interpretation they endorse. Last week, we looked at a number of passages from the book that suggests that they adopt the first interpretation – that these ancient peoples actually believed these myths literally and that Genesis adopts this way of speaking without necessarily endorsing it. For my part, I am very dubious that these ancient peoples actually believed these myths literally. I don't think that they thought the world was really as these myths describe it. For example, consider the Egyptian myths about the creation of the world out of the primeval ocean. According to Miller and Soden,

For Egypt, the creation event was reenacted in their experience every day. The time between evening and morning was a struggle as the sun battled darkness and chaos, but ultimately “the sun-god emerge[d] every morning from the primeval ocean Nun and by his daily journey ensure[d] order in the cosmos.”¹²³

Now, are we to seriously think that these ancient Egyptians actually believed that when they went to sleep at night, they and everything else returned to the primeval ocean and that when they woke up in the morning it was all created anew? I cannot think that that is what these ancient Egyptians really believed. Surely, some of them at least must have on occasion stayed up all night to see what really happened. Certainly soldiers on watch at the palace would have known that the palace and the Pharaoh and they themselves didn't

¹²² Johnny V. Miller, John M. Soden, *In the Beginning... We Misunderstood: Interpreting Genesis 1 in Its Original Context*, (Grand Rapids, MI: Kregel Publications, 2012).

¹²³ *Ibid.*, p. 107.

all return to the primeval ocean every night and reemerge. Rather, I think it is clear this is just a symbolic account or a figurative account of creation and they didn't think that this was reenacted in a literal way every single night when they went to bed.

Similarly, with respect to Israel, I don't think ancient Israelis took these stories and metaphors necessarily literally. For example, consider the Psalm quoted by Miller and Soden about how God has established the earth on the pillars of the earth.¹²⁴ Surely, ancient Israelites did not think that the world was literally resting on pillars.¹²⁵ Miller and Soden say, "the ancient people may have understood such statements as literal reality because of their observations."¹²⁶ But that is obviously wrong. No one had observed the so-called pillars of the earth. No where had anyone gone and seen that the earth was sitting on literal pillars. This seems very evidently, to me at least, a metaphor for the way in which the world has been founded and established by God. But certainly no one had observed such things. Or, again, what about the firmament? The Israelites had been to the top of Mount Carmel or Mount Hermon and they must have seen that there wasn't a sort of solid canopy or dome which was resting on the top of Mount Carmel when you went up there. They would have seen that the sky continued to be an expanse above them in which clouds sailed along and birds flew. There is no reason at all to think that they believed that the mountains were supporting this solid dome that was resting on top of them. In fact, I am persuaded that if you had showed an ancient Israelite one of these artistic drawings in Miller and Soden's book of what the world supposedly looked like according to these ancient descriptions in the Old Testament and said to an ancient Israelite "What is this?" I don't think he would have recognized that at all as being a picture of the way the universe is or a recognizable picture of the world. This is to ascribe to them a very wooden, literalistic interpretation that is surely implausible. So I am just very skeptical. I would like to see some solid evidence that would suggest that ancient peoples in general and ancient Israelites in particular interpreted these mythological stories in a literal way rather than in a figurative way.

On the other hand, there are passages in Miller and Soden's book where they do seem to endorse the figurative or the symbolic interpretation. They do not think, it seems, that the ancients construed these myths literally. For example, on pages 48-49 they say the following:

We believe that understanding Genesis 1 in its original language and setting leads us to conclude that it is a broadly figurative presentation of literal truths . . . the text itself leads us to a more figurative approach.¹²⁷

Again, later in the book, on page 148 they write:

We have already suggested that a number of exegetical details allow for and even point to a broadly figurative approach to Genesis 1 rather than a "literal" chronological approach.¹²⁸

They say this primarily with respect to the seven days of creation; that these are not

¹²⁴ "When the earth and all its people quake, it is I who hold its pillars firm" (Psalm 75:3).

¹²⁵ 5:06

¹²⁶ Ibid., p. 45.

¹²⁷ Ibid., pp. 48-49.

¹²⁸ Ibid., p. 148.

chronologically ordered. But I think that their point could be more generally applied to the story as a whole, that it is figurative in nature. Again, they state:

Neither cosmogony (how the universe came to be) nor cosmology (how one understands the universe, including the relationship of the gods) in the ancient world was understood in scientific or historical terms but as symbolic, metaphysical explanations or as a means to “articulate the incomprehensible and the marvelous, while attempting to express such phenomena in a rational manner.”¹²⁹

They go on to say,

We are not saying that Genesis 1 is untrue. We are suggesting that by borrowing the events of Egyptian cosmogony and placing them in a seven-day framework, the author was emphasizing the theological significance for the nation of Israel. He was not making a statement about what he considered to be (or what God considered to be) a historical timeline, particularly one based on the precision our modern minds require. With its context in ancient Egypt, Israel would not have required or expected a strict (modern) historical correlation. The seven days of creation clearly devastate the theology of the Egyptian “first time” or single day of creation that is reenacted every day.¹³⁰

On this view, Genesis 1 is not adopting a proto-scientific, outmoded, scientifically inaccurate cosmogony.¹³¹ Rather, it is, like the ancient Egyptian myths themselves, a sort of figurative or symbolic account of creation that is designed to communicate theological truths that are sharply contradictory to the pagan Egyptian myths with which Israel was familiar. You will recall again what those theological truths were from the previous lesson about God being the sole and sovereign creator of all things in the universe and everything else is simply a creature created by God. They are not deities themselves and therefore not to be worshipped or served nor do they control our destiny.

So this puts a very different perspective, I think, on the Miller and Soden Hebrew Myth Interpretation. It is not entirely clear to me which one of these interpretations they really endorse. I think it is probably the latter. I think that interpretation is a good deal more plausible than the first interpretation which seems to be a kind of 19th century approach to mythology where you read it in a very wooden manner as a proto-scientific attempt to describe the world rather than as a figurative or symbolic attempt to explain the nature of the universe and of God.

DISCUSSION

Question: I have to wonder, given how Miller and Soden created their Egyptian creation account by going through and picking details from a couple thousand years worth of material, how much they cherry-picked their data to get an Egyptian creation story with superficial similarities and if another scholar would come up with a very different

¹²⁹ Ibid., p. 16.

¹³⁰ Ibid., p. 156.

¹³¹ 10:33

creation account?

Answer: Yeah, that is a concern I have as well. I can't answer the question because I am not an Egyptologist. As I say, they don't quote the original sources in the book so that we can make these sorts of comparisons. It does lead you to the suspicion that the data could well be cherry picked. And we have seen how that kind of methodology can be abused in historical Jesus studies and it could be abused here as well. So I do think we need more evidence, basically. I am not closing the door on it but I think we need some more evidence if we are to be convinced.

Question: We don't believe that the Egyptians actually believed the myths and somehow are we imputing that the fact that the Egyptian story of creation was a myth that somehow the Israeli story of the creation is a myth or to be taken non-literally?

Answer: That would be their interpretation. Yes. They would say the creation account in Genesis 1 belongs to the same genre of literature as these other ancient creation myths. Remember I emphasized that to say something is a myth doesn't mean in this context it is a lie or a falsehood or a fiction. It is a narrative that attempts to provide a kind of ultimate explanation of one's own society and culture and so forth, such as the Sabbath that you have in Genesis 1. So in that sense I think that Genesis 1 does have a kind of mythic function. What they would say is that when you read it against the background of these Egyptian myths, they are so similar in different ways (and I just said that that needs to be demonstrated further) that this suggests that they should be interpreted similarly. That is the view.

Followup: I think the underlying premise that they have is that the Egyptian myths and other ancient creation myths were written before Genesis because their hypothesis was that we didn't have writings before 1000 BC. I think that is false.¹³² If the Genesis account were written before these then that would explain a lot of this.

Answer: Here I think we have to have a more nuanced position if you are going to defend that. Because these texts that are in our Old Testament are written in Hebrew. So we can get a pretty good idea of the origins of the Hebrew language and the type of Hebrew that is used that would provide a date earlier than which this text couldn't have originated. But what you could say is that this Hebrew text embodies traditions and so forth that were handed down, perhaps not even in Hebrew, but then were eventually written up and thereby provide a kind of common source that would lie behind both and maybe more of these stories. I think you could say that. The question would be whether or not that is a defensible position. I am not qualified to say.

[The next question is simply a long comment from a person espousing her own theory of Genesis from God's perspective.]

Summary and Implications

Now we come to summary and implications. I think that you can see from this survey of various biblical interpretations of Genesis 1 that there is quite a wide range of interpretations of Genesis 1 that have been defended by Bible believing evangelical

¹³² 15:00

scholars. It is not the case that we are boxed into just one interpretation that is valid and sound for anyone who is a Bible believing Christian. There is quite a wide range of interpretations of Genesis 1. You might say, “Well, then which of these interpretations is the best, if any? Which would you endorse?” Here I have to give my candid view – I don’t know! I have been studying and reading on this subject for a long time and I am still uncertain as to what is the best view. So I don’t have a sort of hard and fast opinion on this. But I think that is alright. I think that the Christian can be open-minded with respect to various interpretations of biblical passages and doesn’t need to pigeon hole everybody into just one acceptable interpretation. I hope that as a result of this survey it has given you an appreciation for the rich diversity of views that Bible believing scholars have taken on this passage. I hope you have enjoyed going through some of these interpretations as much as I have. It has been good for me to review these and to read some of the more recent books like Miller and Soden’s in doing so. I hope you found this stimulating as well. But as far as being able to give a definitive judgment on these interpretations, I am not there yet. So, I simply have to remain open about it.

DISCUSSION

Question: When you are in discussions with non-believers or agnostics, this is one of the things that they often point to as to the validity of God and religion. When you are in those discussions, how do you take that on?¹³³

Answer: Thank you so much for raising this question because you are absolutely correct. As a result of the influence of people like Richard Dawkins and certain other evolutionary biologists, I think one of the main reasons for unbelief, even atheism on the part of many people today, is because they are convinced that Genesis 1 teaches that the world was created in six consecutive 24-hour days about ten to twenty thousand years ago and that a Bible believing Christian has to accept that and therefore has to reject what modern science says about the age of the universe, the age of the earth, and the origin of biological complexity. I hope that this survey that we have just gone through shows how completely wrong headed that sort of objection is. What I do in dealing with unbelievers when this is raised is just share with them some of these alternative perspectives and interpretations and point out that there are Bible believing Christians who hold to all of these. I don’t need to propound any particular one – I don’t even need to deny that the literal interpretation is correct. All you have to do is to show that you can be a Bible believing Christian without being thereby committed to the world being 6,000 years old and created in six 24-hour days. And this just completely pulls the rug out from under this objection. I think this is really, really important material in that sense in that it pulls the rug out from under what is, I think, perhaps the main reason for atheism or agnosticism on the part of popular culture today.

Followup: It certainly is an answer but I don’t know that, in my dealings with some of my son’s friends when we start talking about this, they would just kind of shrug this off and say “tell me something definitive.” How can you, as a Christian, believe that on the backdrop of all the geologic evidence that there was some sort of finite limited creation

¹³³ 19:59

story?

Answer: If you are listening to what I just said, if somebody says to me “How can you as a Christian believe that the world was created in six literal 24-hour days about 10,000 years ago” I would say to them, “I don’t believe that and you don’t have to believe that in order to be a Christian.” I remember when I was speaking at the University of Northern Ireland once and a student after my talk came up to speak with me and he said to me, “My friends have been sharing with me about Christ. In order to become a Christian, do I have to believe that the world was created in six 24-hour days?” And I said, “No, you don’t have to believe that to be a Christian.” And this kid threw up his hands in the air and said “Halleluiah! That has been the one thing that has been keeping me from giving my life to Christ.” So just explaining to him that there is a range of options was all he needed to hear. If your son’s friends are open-minded rather than just using this as an excuse for unbelief, they should be satisfied in knowing that as a Christian you don’t have to be committed to these views that they find objectionable. If you hold to Miller and Soden’s view, or you hold to a Gap Theory view, or a Day Gap View, there is no problem. So, say, what’s the problem and ask them to explain what it is. I think just being aware of these options is very powerful apologetics.

Question: It seems to me that we focus on this part in apologetics on these questions and these objections that they have but isn’t their objection really as to whether they are materialists or whether they can believe in supernaturalism? Because it seems you move one step up the food chain and really many, many times it is their total denial in supernaturalism in general which would negate all of these various theories whether it was six literal days or six thousand or six million.¹³⁴

Answer: Well, we spent, as you know, months in this class talking about cosmological arguments for God’s existence, fine-tuning arguments, moral arguments, and ontological arguments. So this is set against the backdrop of a robust natural theology for the existence of a beginningless, timeless, spaceless, uncaused, immaterial, intelligent, enormously powerful, maximally great personal creator of the universe who is the source of objective moral value and worth. So, remember, don’t forget our natural theology. But I do say, in all candor, at least in my talking with high school kids and college students, a lot of times it is not as deep or sophisticated as what you just said. It is just that they think that if you are a Christian, you have got to believe that the world was created 6,000 years ago in six consecutive 24-hour days and they can’t believe that. Even good willed kids, like my friend in Northern Ireland, they just can’t believe that. For them, it is like committing intellectual suicide in light of what they’ve been taught in high school, biology, and earth science and so forth. It really is a lot less sophisticated, I think, than the kind of anti-supernaturalism that you are expressing. Now, if it is that, then obviously, you have got to go deeper than what I just said.

Followup: What if, hypothetically, based upon not having accepted that as the explanation for creation, say “I am a Christian now because I don’t have to believe that” and over time science or experimentation/observation seems to prove maybe it really was six days? Is that going to negate their Christian witness?

¹³⁴ 24:57

Answer: That is an interesting question. I don't think so. Because remember I think that the literal interpretation is one option that could be right. I think there are reasons to think it is not right but these aren't definitive. So, I am honestly – and I mean this in all sincerity brothers and sisters! – I am really open to a range of alternative views. So it wouldn't be of any concern to me if science were turned upside down and suddenly demonstrated the world was 6,000 years old. I would be delighted; it wouldn't bother me a bit. I really am open to a diversity of views here. As I will say next time, I think therefore we can let go of this issue theologically and let science tell us whether or not the world is 6,000 years old or 13.7 billion years old.

Question: I wanted to make a comment. What we are dealing with is secular fundamentalism. They only see their things one way also.

Answer: If I understand you, what you are saying is that the secularist only sees Christianity as having one view – a view that they regard as absurd. That is right. This objection has sprung from ignorance. They haven't ever read books on this subject. They've never studied Genesis 1. It is pure pop culture that is based on ignorance. So if you can come to them with a more informed and charitable range of options and say, "Gee, you don't need to be committed to that in order to believe in Christ" I hope that if the person is a sincere seeker they will welcome that news and therefore be more open to Christ.

Question: One of the concerns about this whole topic is this: you say science can tell us and should be able to inform us about these questions because theologically we are safe regardless of what the answer might be. But is that true with Adam? Because it seems to me that Adam is a historical figure. Even in Luke, Jesus' genealogy goes right back to Adam and it traces through all of these historical figures. Can you speak to the theological implications there and why that might be a concern?

Answer: Yes, here you are raising a very good question about the historicity of Adam and Eve. Are they to be regarded as purely symbolic figures the way some people claim or are they actually historical persons that really lived? When we get to the section on Doctrine of Man in this class we will take up this subject again – what does anthropology teach about human origins and what does theological anthropology teach.¹³⁵ We will discuss that question in more detail. I think that the New Testament, as well as the Old Testament, does seem to commit us to an historical Adam and Eve. So we are going to have to deal with how that is defensible in light of modern anthropology. So hang on to that question until later.

Question: I am just thinking about the witnessing to the non-believer and it seems to me from what I hear is, whether you take what is written as literally or as symbolism, it is really in the mind of the believer. The big thought is that the world was created in the seven days but then the idea is that it is pointing to the fact that God is the creator. The important thing that you believe is that God is the creator of everything – not how many days it was created in.

Answer: I certainly agree with you and that is the point that Walton and Miller and Soden and Blocher and others are all making. That does seem to me to be central and to be

¹³⁵ 30:03

foundational. What we have here in Genesis is a monotheistic account of creation that attributes everything to God. And that is especially true, as we've argued, in verse 1 where creation properly begins – not verse 2. Verse 1 says everything in the beginning was made by God. So I think theologically you are right. But I do want to issue a corrective or an admonition with respect to what you said right at the beginning. It is not just in the mind of the individual believer whether he takes this symbolically or literally. That leads immediately to subjectivism and relativism. What does the text mean to you and then each person shares his subjective perspective and all holds are off – it leads immediately to a sort of subjectivist view. Rather, what we are asking here is “How did the author intend this text to be interpreted and how would its original audience have understood it when they heard it?” Those are objective questions that literary scholars struggle with and explore and debate. These are not just a matter of sitting in a Bible study and asking “what does this verse mean to you?” which can be very subjective and relativistic. We have been struggling here to answer an objective question but I think that your theological point about what is fundamental and foundational here is certainly correct. It is not the seven days; it is God as the creator of all.¹³⁶

¹³⁶ Total Running Time: 33:19 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 13

Compatibility of Biblical Theism with Evolutionary Biology

Concord with Evolutionary Biological Theories

We have been talking now for several lectures about various interpretations of Genesis 1. Now we come to a second major section of this excursus that we are undertaking on Doctrine of Creation and the origin and development of biological complexity by looking at the concord of the biblical doctrine with evolutionary biological theories.

Introduction

By way of introduction, we want to look at the scientific evidence that is pertinent to the origin of life and the evolution of biological complexity. As we do so, it is very important to remember that our concern here is not to present some sort of design argument for the existence of God or indeed a design argument for any sort of intelligent designer. We are not doing *natural theology* here. We did that when we surveyed arguments for the existence of God. Rather, here we are doing *systematic theology*. We are not doing natural theology, we are doing systematic theology. We are asking, “Given the truth of divine revelation in the Bible, how is the scientific evidence concerning the origin and evolution of biological complexity to be integrated with our theology?” As thinking Christians we want to have a world and life view that integrates what modern science tells us about the world with our theology. So the project here is essentially integrative: how shall we understand the world in terms of what our theology teaches and in terms of what modern science teaches? How are these to be made consonant with each other? So our concern here is not with any kind of an argument for the existence of God but rather with laying out a Christian perspective on these scientific theories.

Compatibility of Biblical Theism with Evolutionary Biology

Let's go to the subject of the compatibility of biblical theism with evolutionary biology. From what I have already said, I think it is evident that once you move away from the literal, consecutive seven-day interpretation of Genesis 1, Genesis 1 doesn't really say anything about how God created life on earth. The Genesis account doesn't say anything, really, when you read it about the mechanisms, if any, that God used in creating biological complexity. In fact, in two places in the narrative, the account says that God declared “let the *earth* bring forth” vegetation or terrestrial animals¹³⁷ which suggests that they may indeed have natural causes which God may have used in bringing these things forth. He didn't just say “let there be” vegetation and land animals but he said “let the earth” bring these things forth. So there may be natural mechanisms that God used in bringing about biological complexity. So it seems to me that, unless you adopt the literal

¹³⁷ cf. Genesis 1:11, 24

interpretation of Genesis 1, there is no incompatibility between Genesis 1 and scientific theories about the origin and evolution of life.

Some Christians would disagree with this because they would say that according to the standard theory of evolution today – what is typically called Neo-Darwinism – the mutations that drive evolution forward are random and therefore they cannot be occurring for a purpose or be designed to occur.¹³⁸ On the standard Neo-Darwinian theory of evolution, random mutations occur in organisms which bring about variations and then natural selection will weed out those variations that are not conducive to reproduction and survival so that those variations which are helpful to the survival of the animal in which they occur will be preserved and the deleterious ones will be eliminated. Thus, evolution is explained by means of these mechanisms of random mutation and natural selection operating on the variations brought about by random mutations. It is a very clever theory, I think, when you think about it. It is a very clever way of explaining how evolutionary change could take place over time. Some people will say that this theory is inherently incompatible with biblical theism because the mutations are said to be *random* and therefore they cannot be directed by God or occurring for a purpose. That will be the issue that I am going to address next time. We don't have time to address that now but I have set the table.

DISCUSSION

Question: Would this include the evolution of humans from non-humans?

Answer: Right. I don't think that you have in Genesis, in the story of the creation of man, again, a sort of literal account. It is a very metaphorical account. I don't think anybody thinks that God literally bent down and did CPR through Adam's nose when it says "he breathed into his nostrils the breath of life."¹³⁹ This is a figurative account. So when it says that Adam is created out of the dust of the earth, if this is a figurative narrative, that could well describe pre-human hominid forms – the material stuff out of which these are made. So, unless you take this in a very literal way, I don't think it is clear that even human evolution would be incompatible with biblical theism.

Followup: You would suggest Eve as well? The whole story of the rib – that God caused Adam to fall asleep and he took one of his ribs, closed him up and created Eve out of it¹⁴⁰ – what is that? Is that just pure mythology?

Answer: Right, the creation of Eve from Adam's rib would be another example, I think, that seems to be clearly figurative. I don't think that we are to imagine that Adam fell asleep and that God did surgery on Adam and took out one of his ribs and turned that into a human being. This seems to be figurative language.

Followup: I believe that. But, OK, I'll disagree with you on that. I just don't think it's compatible with inerrancy, that's all.

Answer: That depends on how literally you are going to take the account and that goes

¹³⁸ 5:00

¹³⁹ cf. Genesis 2:7

¹⁴⁰ Genesis 2:21-22

back to the first part of the class, right? Not this part. Now we are asking “How do you make sense of the concord between evolutionary theory and Genesis 1?”

Question: [off-mic] But that is in Genesis 2, not Genesis 1.

Answer: All right, Genesis 2 – between Genesis and modern science. That will be a question of how literal you take the account. But that is the question we already discussed and put behind us. If you take a literal interpretation of these accounts then clearly they are incompatible with a modern evolutionary approach. But what I’ve argued is that there are good reasons to think these are not to be interpreted literally and the very example you give of the creation of man and woman is surely one of the best examples of something that seems very figurative. Since God doesn’t have a body he can’t blow into Adam’s nose and make him come alive. It is a very anthropomorphic sort of account that seems figurative. But that is in the past now. What we want to look at now is whether or not modern science says things that would be incompatible with a biblical account not taken literally.

We will entertain these questions next time and we will then be exploring what modern science has to tell us about these mechanisms of mutation and natural selection and their ability to produce biological complexity.¹⁴¹

¹⁴¹ Total Running Time: 10:24 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 14

Random Mutations

In our lesson, we have been looking at the creation-evolution debate. We spent many lectures looking at Genesis 1 where our primary goal was to understand what the original author of Genesis meant by this passage. We surveyed a number of different interpretations and offered criticisms of each one of them. In the end, I remained undecided. I did not take a position as to which one I thought was the best. I still have an open mind and am still exploring these. But we did see there is a range of options available today to the Bible believing Christian. We do not need to be put into a box and think that there is just one interpretation of Scripture with regard to origins that is incumbent upon the faithful, Bible believing Christian.

Now we have turned to a discussion of the concord of biblical teaching with evolutionary biology. By way of introduction, I said that, except for the Literal Interpretation of Genesis 1 (that is to say, six consecutive 24-hour day creationism), Genesis 1 is compatible with evolutionary biological theories. That is not to say that those theories are true. It is just to say that you could be a Bible believing Christian and also believe in the theory of biological evolution that is accepted today. Indeed, once you move away from the Literal Interpretation, it is striking that Genesis doesn't say how God created the life on earth. Indeed, in two places it says God declared "let the earth bring forth" vegetation and fruit trees or terrestrial animals suggesting that there may have been indeed natural causes involved in bringing these things forth.¹⁴² So I don't think this conclusion at this point should be at all controversial. We've already surveyed those interpretations and we saw that some of them were motivated by trying to find an interpretation that was compatible with evolutionary theory. Remember we called that *concordism* where someone tries to read the narrative in light of modern science with the goal of trying to show the concord between modern science and this biblical passage. So it is hardly surprising that many of these non-literalistic interpretations would be compatible with contemporary evolutionary theory. That is what they were designed for in some cases. We criticized them for that because we think we need the narrative to be read in light of its own author and audience rather than have modern science imposed on it.

DISCUSSION

Question: Please make that distinction when you talk about evolution – the difference between how evolution is defined, macro, micro and those definitions. When you use the word "evolution," what do you mean by that?

Answer: I will say more about that in a minute but what I am speaking of here would be standard neo-Darwinian evolutionary theory. Clearly, if you take the literal view that the world was created in six 24-hour days then those two are incompatible. I am not, again,

¹⁴² cf. Genesis 1:11,24

saying anything about the truth of that theory. I am just saying that if you don't have the Literal Interpretation – if you adopt for example Blocher's Literary Framework view¹⁴³, or Miller and Soden's Hebrew Myth View¹⁴⁴ – then clearly those are not incompatible with evolutionary theory. That is what those authors were thinking when they came up with those interpretations. But we will define the theory more closely as we proceed.

Question: One basic inconsistency, even if you hold to long-earth days or you jettison the six literal days, is you have problems with kindness of pairs and reproductive pairs and irreducible complexity in systems.¹⁴⁵

Answer: OK, now I think you are getting into the truth of evolutionary theory. We will speak to that but all I am talking about here is compatibility. I am just saying that if a person, say, believes Henri Blocher's Literary Framework view, is that compatible with being a Darwinist about biology? Well, it seems to me that it is because on Blocher's view, this isn't intended to be a chronological account; it is just a literary framework and it doesn't tell you how the things were actually brought into being. That is not to say that evolutionary theory is true; it is just to say that an evolutionary theory wouldn't disprove Blocher's view. You could hold both if you want to.

Question: Last time we talked about Adam and Eve and they are clearly defined in Genesis. How are Adam and Eve and their story and the Garden of Eden and all of that compatible with evolution?

Answer: Right, this question I think deserves more discussion later on because some of the contemporary theistic evolutionists have argued that the biological theory of evolution is incompatible with an original human pair Adam and Eve. Yet, the Scriptures seem to think of Adam and Eve as literal historical individuals. They are connected by the genealogies with other persons who are indisputably historical and there is no suggestion that there is some kind of a break there. However figurative or metaphorical the creation of Adam and Eve might be in Genesis, they do seem to be historical persons. So one would need to deal with this objection that evolutionary theory is incompatible with a historical Adam and Eve. I need to look into that some more because it is not clear to me that if a person thinks that Adam and Eve were created through the process of evolution (say, God caused mutations that caused a hominid form to evolve to a brain capacity and a physical capacity that could now be the seat of a human soul and then God imparted to that body a human soul that then becomes a genuine human being) then it is not clear to me why there couldn't be an original Adam and Eve of that sort. This is essentially the Catholic view.¹⁴⁶ Even though our human bodies are a result of biological evolution, you

¹⁴³ See Henri Blocher, *In the Beginning: The Opening Chapters of Genesis* (InterVarsity Press, 1984)

¹⁴⁴ See Johnny V. Miller, John M. Soden, *In the Beginning... We Misunderstood: Interpreting Genesis 1 in Its Original Context*, (Grand Rapids, MI: Kregel Publications, 2012)

¹⁴⁵ 5:14

¹⁴⁶ "... the Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions . . . take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter – [but] the Catholic faith obliges us to hold that souls are immediately created by God" (Pope Pius XII, "Encyclical Humani Generis", #36, given on August 1950. See http://www.vatican.va/holy_father/pius_xii/encyclicals/documents/hf_p-xii_enc_12081950_humani-generis_en.html accessed January 21, 2013).

do not have a real human being until there is a soul united with the body and that is a special creation of God that occurs at a specific time in the past and that therefore you have a historical Adam and Eve. It is not clear to me why these theistic evolutionists think that that is impossible. I think their arguments are targeting someone who thinks that there was an original Adam and Eve that were special creations *ex nihilo* by God. I think they are saying that is incompatible with the genetic evidence. But I don't see how that would be contrary to what the Catholic view is, for example. So that needs to be explored further.

Random Mutations

Some Christians would disagree with what I've said about the compatibility of evolutionary theory with the biblical account. I am a little surprised that nobody raised this objection but I will now raise it myself. Because, according to the standard theory of evolution, the mutations which serve to drive the evolutionary process forward are *random* and because they are random, the argument is, therefore they cannot be designed. Given that the mutations that drive evolution are randomly occurring, this is incompatible with saying that evolution occurs for a purpose or is designed by God or occurs for some sort of an end.

But this allegation, I think, involves a fundamental and very important misunderstanding of what evolutionary biologists mean by the word "random." When biologists say that the mutations that are responsible for evolutionary change occur *randomly* they do not mean "by chance" or "purposelessly."¹⁴⁷ If they did mean that then evolutionary theory would be enormously presumptuous because science is just not in a position to say with any sort of justification that the mutations that occur in the history of life occur for no purpose or are "undesigned" or that there is no divinely intended direction or goal of the evolutionary process. How could anybody say, on the basis of scientific evidence, that the whole scheme was not setup by a provident God to arrive eventually at *homo sapiens* on the planet Earth? How could a scientist know that God hasn't intervened periodically in the process of evolution to cause mutations that were crucial to important evolutionary transitions? For example, the transition from reptiles to birds – how could the evolutionary biologist know that that mutation wasn't caused by God with a view toward advancing the process?

In fact, if you have a God with divine middle knowledge (and remember when we talked about omniscience, middle knowledge is God's knowledge of what *would* happen contingently under any circumstances) then in order to set up the evolutionary process with human beings as the goal, he wouldn't even be required to supernaturally intervene along the way because God could have known "if I were to set up these initial conditions governed by these laws of nature, then *homo sapiens* would evolve as a result given these conditions and laws by random mutation and natural selection." And so God put into place just those laws and just those initial conditions. I hope that it is obvious that science is in no position whatsoever to say justifiably that the evolutionary process was not under the providential direction of a God endowed with middle knowledge. It wouldn't even

¹⁴⁷ 10:09

require miraculous interventions.

I think if evolutionary biologists were using the word “random” to mean “undesigned” or “purposeless” then evolutionary biology would not be science, it would be philosophy. Because it is scientifically impossible to say that this process is “undesigned” or purposeless. But the evolutionary biologist is not, in fact, using the word “random” in that sense. This fact is ignored both by creationist critics of theistic evolution and also by secular apologists for naturalistic evolution. But it became very clear to me in my preparations for my debate with the very eminent evolutionary biologist Francisco Ayala on the viability of intelligent design in biology.¹⁴⁸ According to Ayala, when evolutionary biologists say that the mutations are random, they do not mean occurring by chance. What they mean, rather, is that they occur irrespective of their benefit to the host organism. The sense in which the mutations are random is that they occur irrespective of their benefit to the organism in which they take place. In other words, the mutations don’t take place in such a way that they are for the benefit of the organism in which they take place – some of them are good but most of them are deleterious (most of them are disastrous) for the organism in which they take place. So the mutations are random simply in the sense that they occur irrespective of their usefulness to the organism.

Now, this is incredibly significant. I hope you see the gravity of this. The scientist, despite the impression given to the contrary by people on both sides of this debate, is not making the presumptuous philosophical claim that biological mutations occur by chance and that, therefore, the evolutionary process is undirected or purposeless.¹⁴⁹ Rather, all he means is that the mutations don’t occur with the benefit of their host organism in mind, so to speak. If you take “random” to mean simply irrespective of their benefit to the host organism then randomness isn’t incompatible with purpose or design or direction. Alvin Plantinga has made precisely this same point in his newest book *Where the Conflict Really Lies*.¹⁵⁰ Plantinga believes that there is not even a superficial conflict between evolutionary biology and theism. He chastises scientists who have recklessly asserted that, according to evolutionary biology, the evolutionary process is undirected or purposeless. Certainly such claims are legion. But he says such claims are not properly part of the biological theory itself. Rather they are what he calls a philosophical add-on, an extra scientific assertion reflecting the personal philosophy of the scientist.¹⁵¹ In support of this, Plantinga quotes the very prominent evolutionary biologist Ernst Mayr who wrote, “When it is said that a mutation or variation is random, the statement simply means that there is no correlation between the production of new genotypes and the adaptational needs of an organism in a given environment.”¹⁵² In other words, this is

¹⁴⁸ For a video of this debate, see <http://www.reasonablefaith.org/media/craig-vs-ayala-indiana-university> (accessed July 23, 2013).

¹⁴⁹ 15:10

¹⁵⁰ Alvin Plantinga, *Where the Conflict Really Lies: Science, Religion, & Naturalism*, (New York: Oxford University Press, 2011)

¹⁵¹ “There is no real conflict between theistic religion and the scientific theory of evolution. What there is, instead, is conflict between theistic religion and a philosophical gloss or add-on to the scientific doctrine of evolution: the claim that evolution is *undirected*, unguided, unorchestrated by God (or anyone else).” (Plantinga, *Where the Conflict Really Lies*, p. xii.)

¹⁵² Ernst Mayr, *Towards a new Philosophy of Biology: Observations of an Evolutionist* (Cambridge: Harvard University Press, 1988), p. 98. as quoted in Plantinga, *Where the Conflict Really Lies*, p. 11.

exactly the same definition of “random” that Ayala gave; namely, that the mutations occur irrespective of the needs of the host organism and whether they are of benefit to that organism.

This definition of random is wholly compatible with God’s causing mutations to occur with a purpose or a certain end in view. For example, suppose that God in his providence causes a mutation to occur in a certain animal not for the benefit of that animal but to produce easy prey for its predators because he wants them to flourish. Well, in that case, the mutation is random – it doesn’t occur for the benefit of the host organism – but it is not purposeless, undirected, or by chance. God caused it to produce a maladapted organism that would produce easy prey for its predators. Or even think of this. Suppose God, in his middle knowledge, caused an adaptation because he knew that it would produce a fossil which I would eventually discover and be, thereby, inspired to go into the career of paleontology which God had called and wanted me to go into. Clearly, in such a case, the mutation would be both purposeful and yet, in this technical sense, random.

So, unless you adopt a literal interpretation of Genesis 1, which I’ve said I don’t think we are obligated to do, there is just no conflict between the Bible and standard evolutionary biology. What that means is that the Christian is open to follow the evidence where it leads. The Christian can be open-minded about this and follow the evidence where it leads. In this respect, the Christian has a tremendous advantage over the atheist. As Alvin Plantinga points out, for the atheist, evolution is the only game in town! So, no matter what the evidence, no matter how improbable the odds, he has got to believe it because that is all there is. So the atheist can’t be open-minded to follow the evidence where it leads. The naturalistic biologist Richard Lewontin has said the following.¹⁵³ Listen carefully to this quotation from Lewontin, he is a naturalist: “We take the side of science in spite of the patent absurdity of some of its constructs, in spite of the tolerance of the scientific community for unsubstantiated just-so stories.” What is a just-so story? The term comes from Rudyard Kipling who would tell fairy tales and then he would conclude these fairy tales by saying “and it happened just so.” Evolutionary biologists have shown themselves to be extremely creative and imaginative in inventing what are called just-so stories to explain how some biological adaptation came about even though there is no evidence whatsoever that that is how it actually happened. What Lewontin says is,

We take the side of science in spite of the patent absurdity of some of its constructs, in spite of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are forced by our *a priori* adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated.¹⁵⁴

¹⁵³ 19:49

¹⁵⁴ Richard Lewontin, “Billions and billions of demons,” *The New York Review of Books*, January 9, 1997 (a review of Carl Sagan's *The Demon-Haunted World: Science as a Candle in the Dark*). Available

So what Lewontin is saying is that it is because of their materialistic, physicalistic, naturalistic presuppositions that they are led to their evolutionary constructs no matter what the evidence says. In this respect, the Christian is not so restricted. The Christian can be genuinely open-minded unlike the naturalist like Lewontin and therefore can follow the evidence where it leads.

DISCUSSION

Question: It seems like this is sort of a new definition for the word “random.” It is not the normal definition that we would normally think of day in and day out. Maybe I have been influenced by the secular thought, but my hunch would be that if you polled, say, the top 25 evolutionary biologists in the country that most of them would not subscribe to that and maybe Ayala is just sort of philosophically enlightened. Are you saying that a majority of evolutionary biologists would subscribe to this definition of “random?”

Answer: I think that if you press them on this issue, that they would quickly give up these philosophical, sloppy claims about randomness meaning by chance or undirected and they would embrace the definitions that both Ernst Mayr and Ayala give. These are two of the most esteemed evolutionary biologists in the 20th century. It is striking that they both independently explained that this is what we mean when we say “random.” I know from experience how scientists, especially in popular level books and in television programs, make sloppy statements that are not scientifically correct. So I suspect there is a big disconnect between what goes on in the public consumption of science and what these fellows would actually say in a scientific meeting or in a peer-reviewed journal when pressed for strict scientific precision. Otherwise, the theory becomes philosophy. It would become impossible for the scientist to prove that the mutations are random in the sense that they occur for no purpose or that they are undirected. That would make it philosophy. I think that these scientists have more sense than that when they are doing careful work and indeed the definitions of Mayr and Ayala seem to suggest that.

Followup: If biological evolution were purely random or undirected then that is incompatible with Christian theology or philosophy right?¹⁵⁵

Answer: Yes.

Followup: Because we do believe that God directs things.

Answer: Right. We believe that God has created things for a purpose. The providence of God superintends the world. Therefore, to say that these things occur purposelessly or without any *telos*, or goal, in mind I think would be incompatible with Christian thinking.

Question: If evolution is correct like you are saying, there were people or animals which preceded Adam and Eve. So death would be in the world prior to Adam and Eve. But in the Bible it says Adam and Eve, had they not eaten the apple, it is implied that they would live on forever.

Answer: OK. Here we are getting into other issues. The question is whether or not the death that is spoke of in Genesis 2 and Romans 5 is biological death.¹⁵⁶ I don't see any reason to think that that is the case. Adam and Eve don't drop over dead after they eat the fruit of the tree but they are expelled from the Garden lest they eat of the Tree of Life and live forever. In Romans 5, I feel as certain of almost anything that Paul is talking there about spiritual death. That spiritual death came into the world through Adam. But I don't think there is any suggestion that Adam couldn't have had these sorts of pre-human predecessors that were mortal. So I don't think that the biblically faithful Christian is forced to say that there was no death in the world prior to the fall. I don't want to repeat all of the different interpretations that we went through of Genesis 1 but just emphasize again that, among Bible believing Christians who teach at our most conservative Bible colleges and seminaries, there is a wide-range of opinions about how to interpret these passages that are not all 24-hour, six day creationists.

Question: You mentioned earlier about the possibility that evolution could have been a process by which God formed certain pre-human hominid forms and then instilled the image of God on them. I was going to lend support to that. In his book, *The Problem of Pain*, C. S. Lewis makes that very same point in the chapter on the fall of man.¹⁵⁷ He said that one possibility is that God used the evolutionary process to create the kind of being that he wanted and then instilled the image of God upon him and he said this is perfectly consistent with Christian theology and is not something that somehow refutes what we believe.

Answer: I think it is especially easy for someone who is a dualist of soul and body. If you think that human beings are not fully human unless they are a soul and a body then it is very easy to see how the body could resemble other primates and have similar DNA and things of that sort but it is not human until God places in it a soul that is distinctively, as you say, in God's image and therefore fully human.

Question: If the Christian doctrine of creation can be satisfied by God sprinkling random mutations into nature and that results in the current level of biological complexity, does that undermine the design argument?

Answer: First, let me say by way of repetition, right now we are not doing apologetics. We are not trying to craft a design argument. We are doing systematic theology here. We are asking, "How should the Christian theologian view the question of origins in light of the Bible and the scientific evidence?" So even if you were right, that isn't germane to what we are saying now. But would this undermine a design argument? I don't think it necessarily would and here I am thinking of guys like William Dembski and others who

¹⁵⁶ cf. Genesis 2:17; Romans 5:12-14, 17

¹⁵⁷ "For long centuries God perfected the animal form which was to become the vehicle of humanity and the image of Himself. He gave it hands whose thumb could be applied to each of the fingers, and jaws and teeth and throat capable of articulation, and a brain sufficiently complex to execute all the material motions whereby rational thought is incarnated. The creature may have existed for ages in this state before it became man . . . Then, in the fullness of time, God caused to descend upon this organism, both on its psychology and physiology, a new kind of consciousness which could say "I" and "me", which could look upon itself as an object, which knew God, which could make judgements of truth, beauty, and goodness, and which was so far above time that it could perceive time flowing past. This new consciousness ruled and illuminated the whole organism . . ." C. S. Lewis, Chapter 5 "The Fall of Man", *The Problem of Pain*, 1940.

are quite willing to embrace the doctrine of common descent – that all forms of life today are descended from a primordial ancestor – and yet they will argue strenuously that this very process requires intelligent design.¹⁵⁸ Often they will say even if there are no miraculous interventions you can still run a design inference. If you look at the work of people like William Dembski, Michael Behe, and others in the intelligent design movement, they are pretty emphatic that they are not arguing for creationism. Now, some of them are creationists and some of them do think that God has miraculously and supernaturally intervened to sprinkle these special mutations, as you say, around but many of them don't think that and yet still think you can have a good design argument.

Question: I am no expert on the process of mutation but my understanding is you either have radiation damage or some kind of miscopying event where one of your codes changes from an A to a T or whatever – you get wrong information – and I think scientists feel like that process really is by chance. So I am puzzled that any biologist would give up on claiming that they do mean that it is by chance.

Answer: Well, I have quoted them – some of them most eminent. If they are making these more radical claims then I think they are doing philosophy and not science and they need to be called on the carpet for it.

Question: I don't mean to be argumentative or certainly disrespectful . . .

Answer: OK, that was quite a preamble! *[laughter]*

Followup: In my humble opinion, I do think that you and Dr. Plantinga are simply cherry picking a definition here that suits your particular argument. If you look at statements for example that have been made by these two individuals under other circumstances they have said exactly the opposite – that this process is by chance.

Answer: Let me say this in response to that. There are certain other statements by Ayala where he says “I don't think that these mutations were caused by God with the view of bringing about these things.” But the reason he says that (if you read his work which I have) is not because they are random; it is because of the problem of evil. When he looks at the world, particularly the insect world which is so grotesque with its macabre sorts of creatures eating each other (he gives the example of the praying mantis where the female, after copulating with the male, eats off the head of the male), he says how could a loving and good God have designed these kinds of creatures that are so gross and macabre? He says this must be the result of chance. So he sees Darwin as enabling the theist to escape the problem of natural evil.¹⁵⁹ So it is a quite different motivation in that case. So you would need to look at these statements more carefully to see the context. But I would just reiterate what I said earlier. I know there is legion the statement saying it is by chance, but I suspect these are the sort of sloppy, popularistic stuff that is intended for the press and the popular audience that they would back away from pretty quickly if they were pressed by their colleagues for scientific precision.

Question: One objection that I hear a lot from atheists about the compatibility of evolution and Christianity is that we Christians believe God is perfect so why would he

¹⁵⁸ 30:08

¹⁵⁹ See Francisco Ayala, *Darwin's Gift to Science and Religion*, (Washington, DC: Joseph Henry Press, 2007).

use this supposedly elaborate and wasteful, so they say, process of evolution to create people? Why would a perfect God do something inefficient like that?

Answer: These sorts of questions are philosophical questions, right? These are extra scientific questions. The question of the week on ReasonableFaith.org website is about this very subject.¹⁶⁰ There is a person from Germany who writes in and says “an all perfect being would choose the best way to create and the best way to create would not be through evolution.” So he uses this very argument.¹⁶¹ But insofar as the anti-theist is appealing to the wastefulness or the inefficiency of evolution, there I think the response of Thomas Morris, the Christian philosopher, is spot on target.¹⁶² He says efficiency is a value only for a creature who has either limited time or limited resources or both and therefore needs to marshal his resources and use his time in the most efficient way. But for an infinite being like God who has unlimited resources and unlimited time, efficiency is simply not a value. It is not important. So I don’t think the argument from efficiency has much weight. I think it construes of God as a sort of finite engineer whose main goal is to produce this most efficiently functioning process and I don’t think we should think of God in the pattern of an engineer much less one of finite time and resources.

Question: On a scientific note, Lee Spetner writes in his book *Not By Chance*¹⁶³ that changes in biological beings occur because of the environment unzipping, in effect, a prepackaged genetic package. The changes don’t occur with just small incremental changes in the DNA – there is already packaged DNA like in the case of the feathered moth when there was dirt in the atmosphere and that the one version of the moth became more predominant than the other. The feathered moth didn’t evolve, devolve or revolve.

Answer: The proportions of light and dark moths in the population changed. What you are talking about here is dealing more with the truth or the evidence for evolution. We will look at that later. All I have wanted to talk about up to now is simply the question of compatibility, not the question of the truth of evolutionary theory. What I am asking is, “If evolutionary theory were proven to be true or if you think it is true does that mean you have to abandon biblical theism?” My claim would be only if you are a literal, six day creationist. Otherwise, there isn’t any incompatibility.

Next time we will look at the question of methodological naturalism – to what extent the

¹⁶⁰ See Q&A #301 “An Evolutionary Argument against (Christian) Theism” at <http://www.reasonablefaith.org/an-evolutionary-argument-against-christian-theism> (accessed July 23, 2013).

¹⁶¹ 34:59

¹⁶² “. . . what reason do we have to hold that efficiency is a great-making property at all ? . . . What is the property of being efficient, anyway? An efficient person is a person who husband his energy and time, achieving his goals with as little energy and time as possible. Efficiency is a good property to have if one has limited power or limited time, or both. But apart from such limitations, it is not clear at all that efficiency is the sort of property it is better to have than to lack. On the Anselmian conception of God, he is both omnipotent and eternal, suffering limitations with respect to neither power nor time. So it looks as if there is no good reason to think that efficiency is the sort of property an Anselmian being would have to exemplify” Thomas V. Morris, *The Logic of God Incarnate*, (Ithaca, NY: Cornell University Press, 1986), p. 78.

¹⁶³ Lee M. Spetner, *Not by Chance!: Shattering the Modern Theory of Evolution*, (New York: Judaica Press, 1998)

scientist needs to be committed to naturalism as a methodological assumption.¹⁶⁴

¹⁶⁴ Total Running Time: 37:57 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 15

Methodological Naturalism

Last time we talked about the compatibility of evolutionary theory with Christian theism. I argued that, in fact, evolutionary theorists, when you press them for what the theory technically holds, does not hold that life or biological complexity on this planet originated by chance. Rather, randomness in the theory simply means that the mutations occur without a view toward the benefit of the organism in which they occur. So the theory is entirely compatible with God having a purpose or a direction or even causal influence upon the evolutionary process.

Methodological Naturalism

This raises a related question. Many scientists and philosophers would argue that science, by its very nature, is committed to a sort of *methodological naturalism*. Not a metaphysical naturalism, according to which supernatural entities do not exist, but simply a methodological form of naturalism. That is to say, science seeks only natural causes of the phenomena in the world. It is part of the methodology of science to simply look for natural causes of the phenomena that it investigates. Therefore, supernatural explanations of phenomena would simply be methodologically excluded from the pool of live explanatory options. So, if we had a body of empirical data to be explained, the natural scientist will assemble a pool of live explanatory options to choose from and methodologically he would include in this pool of live explanatory options only hypotheses that are appealing to purely natural causes. That is not to say that there are not non-natural or supernatural entities that exist that might provide other sorts of explanations but simply that methodologically these don't enter into the project of science. The project of science is to find the best natural explanation of the phenomena that it seeks to explain. So these supernaturalistic hypotheses wouldn't even come into consideration – they are not even in the pool of live explanatory options. This would hold for the Christian scientist as well. The Christian scientist must be methodologically restricted to naturalistic explanations.

What is striking about methodological naturalism is that it is a *philosophical*, and not a scientific, viewpoint. This is not an issue to which scientific evidence is relevant. Rather, it is about the philosophy of science. It is about the limits of science and the nature of the project of science and what science is restricted to. So this is not something that is susceptible to scientific proof or disproof. It is a philosophical question about the nature of science as such. As a philosophical question, it is extremely difficult to justify methodological naturalism. As William Dembski has pointed out, adopting methodological naturalism would prevent your inferring design of the universe even if every atom in the universe were inscribed with the label “Made by God” on it, which would seem preposterous. More seriously, suppose that life and biological complexity really were the result of creative miraculous interventions at various points in the past? Suppose we really do live in a universe like that – where God has miraculously intervened in the evolutionary process to bring about life forms that would not have

otherwise evolved.¹⁶⁵ It would be a tragedy, don't you think, if we were prevented from discovering the truth about reality simply because of a methodological constraint that we have adopted. This would be, I think, a tragedy not only personally but scientifically as well. We would be prevented from really knowing the truth about how life and biological complexity came about simply because of this methodological constraint that we've adopted. Methodology is supposed to be an aide to helping you discover the truth about reality, not to be a hindrance keeping you from discovering the truth about reality.

But, let's leave that point aside. The more important point that I want to make is that we are not now, in this context, concerned with what a scientist as a scientist might infer is the best explanation of biological complexity. That is not the question that we are raising in this class – what a scientist as a scientist is at liberty to infer about the best explanation of biological complexity. Rather, our question that we are exploring is, “How, from a theological point of view, should we integrate what the Bible teaches with what the best scientific evidence indicates?” We are not trying to justify an inference to design. Rather, we are taking a theological standpoint – beginning with what the Bible teaches – and we are trying to integrate our theology with the empirical evidence. So even if it is true that the scientist can only work within the constraints of methodological naturalism, that doesn't affect in any way the systematic theologian. The systematic theologian is quite at liberty to adopt non-naturalistic views of the world if those help to integrate theology and science in a more harmonious way.

It seems to me that the systematic theologian who approaches this question could admit freely that, say, the neo-Darwinian theory of evolution is in fact the best naturalistic hypothesis for explaining biological complexity. He could say that of the naturalistic options available, the neo-Darwinian theory is by far the best naturalistic theory we've got. If, as a result of methodological naturalism, we are constrained to looking only at naturalistic hypotheses then, until recently at least, it does seem that the neo-Darwinian theory of biological evolution which explains evolutionary development in terms of random mutation and natural selection is in fact the best naturalistic theory. Indeed, really, as we've said before, it is the only game in town pretty much. The rival naturalistic hypotheses cannot equal the explanatory power, the explanatory scope, and the plausibility of the neo-Darwinian hypothesis. So, one could agree that the best naturalistic account is the neo-Darwinian theory. No matter how improbable it seems relative to the evidence, no matter how enormously far its explanatory mechanisms need to be extrapolated beyond the testable evidence, and no matter the lack of evidence for many of its key tenets, nevertheless, it is still the best naturalistic explanation compared to its rivals because there isn't any other naturalistic explanation that comes close to the standard theory in terms of its explanatory virtues.

Phillip Johnson¹⁶⁶, for example, has often said that he would have no objection at all to evolutionary theorists saying that neo-Darwinian evolutionary theory is the best naturalistic explanation we have of biological complexity.¹⁶⁷ He has no objection to a claim like that at all – that of the pool of live explanatory naturalistic options, the neo-

¹⁶⁵ 5:13

¹⁶⁶ Phillip E. Johnson is best known as one of the founders of the intelligent design movement and is a staunch opponent of Darwinism.

¹⁶⁷ 10:11

Darwinian theory is the best. But, what Johnson objects to is saying that the neo-Darwinian evolutionary theory is the best explanation period. When you consider the non-naturalistic explanations, Johnson would contend that, if you were to include them in the pool of live explanatory options, then it would no longer be obvious that the best explanatory option is the neo-Darwinian theory. He would say then some of these supernaturalistic hypotheses may well be better.

What we are going to do in this class is we are going to approach this question from a theological point of view. We are going to ask, given the biblical data and the scientific evidence, how should we best understand the origin of life and the origin of biological complexity? As we approach these questions I want to emphasize that I am not a professional biologist. Rather, I am a theologian with a layman's interest in these scientific questions. So I do not speak with expertise on these biological questions, but like you have a layman's interest in them and want to do the best job I can of synthesizing my theology with what the best scientific evidence today indicates.

DISCUSSION

Question: Basically, you are talking about evidences and you have used that term of evidence but is it not also possible that there can be a bias in the collection of evidence and the presentation of evidence? We, as philosophers looking at this, have sort of an assumption that the evidence that is being accepted is true evidence properly presented. I am not saying it is not – what percentages we don't know – but that caveat should be understood from the very beginning that not all evidence is really true evidence. It is biased by the collector.

Answer: I think that is a fair comment and it is true that sometimes people who are scientific mavericks get excluded from the mainstream discussion because they disagree and they look at anomalous data that doesn't fit. But I must say in all honesty, I think one of the wonderful things about science is its self-correcting nature. It is true that these kinds of things happen but what you find, I think, is over a generation or so the anomalies surface and come back and subsequent scientists come to see the biases and the prejudices that blinded earlier thinkers and that evidence has to be freshly dealt with again. So these anomalies I don't think can be suppressed forever. Science really does have a wonderful kind of self-correcting feature to it that makes it hard for the evidence to be perpetually twisted and distorted in such a way that it can't be seen correctly. But certainly those who are going against, say, a mainstream view will need to exhibit courage and tenacity in demanding that their data be looked at and that the scientific paradigm, the mainstream view, look honestly at this anomalous data that they are presenting. I think that is right.

Question: I would be curious how you would respond to one of the most common defenses of scientific naturalism, which is that it seems to work. You will often here people comment that physics and chemistry has been so successful in describing the world around us that scientific naturalism must be the right way to go because it has been

successful.¹⁶⁸

Answer: This is exactly the defense that Alex Rosenberg, whom I am going to be debating at Purdue¹⁶⁹, takes in justification of what he calls *scientism*, or as you put it, scientific naturalism.¹⁷⁰ What I want to say about this is that this term covers a diversity of viewpoints that need to be carefully distinguished if we are not to be misled. First, there is what we can call *epistemological naturalism*. What is that? Well, epistemological naturalism says that we should only believe what can be scientifically proven; science is our only source of knowledge and truth. That is epistemological naturalism. *Metaphysical naturalism*, on the other hand, is the view that only physical things exist. There are no supernatural realities like spirits, souls, God, and so forth. So we have epistemological naturalism which says science is the only source of knowledge and truth and metaphysical naturalism which says that only physical things exist and there are no supernatural entities.

With regard to epistemological naturalism, the justification would be the success of natural science in giving us truth about the world. It has been enormously successful in telling us what the physical world is like. What I would say to that is that that goes no distance whatsoever in showing that science is the only source of knowledge and truth. What it does is show that natural science is the best way of discovering truth about the physical world. It is what will give us knowledge of the physical world. But to say that, therefore, there are no ethical truths, there are no aesthetic truths, there are no mathematical or logical truths, and there are no metaphysical truths (like that the past has existed longer than 5 minutes or that the external world is real) would be, I think, an overly restricted theory of truth and knowledge. We can know things even though they can't be scientifically proven. And, indeed, this kind of epistemological naturalism would actually undermine science itself because science is, itself, permeated by assumptions that cannot be scientifically proven. So if you adopt this view, it would in fact undermine the very project of science.

What I think we want to say is that the incredible, amazing track record of empirical science simply shows that science is the best tool for knowledge and truth about the physical universe but it doesn't imply that there are other types of truth. The philosopher Ed Feser gives a wonderful analogy.¹⁷¹ He says imagine you have a metal detector which is so calibrated that it will detect anything metal – it is so infallible that it is the best metal detector you could find. He asks, “Would that prove that there are no non-metallic objects? That the only things that exists are metallic things?” Well, obviously not. And that is exactly the same error that the epistemological naturalist is making. Because his metal detector, so to speak, is so good and so efficient at discovering empirical physical truth he concludes there is no other kind of truth and that there is no other source of

¹⁶⁸ Another example of this can be seen in Q&A #205 “Is Scientism Self-Refuting” on [reasonablefaith.org](http://www.reasonablefaith.org) – see <http://www.reasonablefaith.org/is-scientism-self-refuting> – where Dr. Craig addresses the same question/objection.

¹⁶⁹ For a video of this debate, see <http://www.reasonablefaith.org/media/craig-vs-rosenberg-purdue-university> (accessed July 31, 2013).

¹⁷⁰ 15:16

¹⁷¹ Dr. Feser uses this analogy as part of his refutation to Alex Rosenberg's scientism as defended in Rosenberg's book *The Atheist's Guide to Reality*. See Dr. Feser's blog post at <http://edwardfeser.blogspot.com/2011/11/reading-rosenberg-part-ii.html> (accessed January 28, 2013)

knowledge. That is as silly as the person who thinks the metal detector would show there are no non-metallic objects. That would be epistemological naturalism.

I would also say that epistemological naturalism is self-defeating because the statement “science is the only source of knowledge” is something that cannot be scientifically proven. That is a philosophical statement. If you only believe what science could prove then you would not believe that statement. Therefore epistemological naturalism is really self-refuting.

What I want to say in addition to that is, with respect to *metaphysical naturalism*, even if you were an epistemological naturalist, that doesn’t imply metaphysical naturalism because I think you can have arguments that appeal to modern science for positing non-physical realities.¹⁷² A paradigm example of this was the Harvard philosopher W. V. O. Quine who was the most famous epistemological naturalist of the 20th century. Quine said we should only believe what the natural sciences discover and teach us. Nevertheless, Quine showed himself remarkably and commendably open to the existence of non-physical, immaterial entities. He said if you could show him the indirect explanatory benefit of soul, of a creator, he said he would joyfully accord to them scientific status along with quarks and black holes.¹⁷³ As you know, many of the arguments that I use for God’s existence, like the arguments for the origin of the universe and the fine-tuning of the universe, precisely follow Quine’s prescription. They try to show the explanatory benefit of theism with regard to scientifically established facts like the origin and fine-tuning of the universe. In fact, Quine himself actually did believe in the existence of non-physical, immaterial entities. In particular, he thought that modern science requires us to believe in the existence of mathematical objects like sets and that these must also be part of our view of what actually exists. So Quine himself was not a metaphysical naturalist in that sense. He believed that in addition to physical entities, there are these non-physical, mathematical entities like sets. So that is how I would respond to the person who attempts to show on the basis on scientism that belief in God is not reasonable.

Question: We touched on this but aren’t both of these forms of naturalism contradictory? If you are totally a naturalist, any form of knowledge you say you compile from the natural world is illusory – you have no guarantee that what happened years ago or today will happen in the next 30 seconds.

Answer: Yeah, I agree with you. As I said, I think epistemological naturalism is self-defeating in the way I explained. But I also think metaphysical naturalism is ultimately self-defeating because I think Rosenberg is right that in a world of only physical entities there would not be what philosophers call *intentional states*. What does that mean you ask? Well, intentional states are states that have intentionality or the property of being *about* something or *of* something. It signifies the object directedness of our thoughts. I can think *about* my summer vacation. Or I can think *of* my wife. So my conscious states, my thoughts, have this sort of intentionality to them. They have this object directedness. They are *about* something. They are thoughts *of* something. Now, think about this. No

¹⁷² 20:15

¹⁷³ “If I saw indirect explanatory benefit in positing sensibilia, possibilia, spirits, a Creator, I would joyfully accord them scientific status too, on a par with such avowedly scientific posits as quarks and black holes.” W. V. O. Quine, “Naturalism; or, Living within One’s Means,” *Dialectica* 49 (1995): p. 252.

physical object has intentionality. A chair isn't *about* something. A stone isn't *about* something. A glob of tissue like the brain sitting in your skull isn't *about* something. Intentionality is a feature of consciousness, of mental states. So in a world in which only physical objects exist, there would not be any intentional states – there wouldn't be any thoughts about anything. In that respect, I think Rosenberg is right. But then it just seems to follow clearly that metaphysical naturalism is false because I can think about metaphysical naturalism! Right? I have thoughts about metaphysical naturalism – whether it is true or false. So the very fact that I can think *about* this theory shows that the theory is false! Because, on the theory, there would be no intentional states. So I think you are absolutely right. Both of these ultimately reduce to self refutation and absurdity.

Question: That intentionality is with a “t” as opposed to an “s,” right?¹⁷⁴

Answer: Yes, that is right - with a “t.”¹⁷⁵

Followup: I was wondering if metaphysical naturalists have tried to reduce aboutness to a physical state of affairs.

Answer: I think some would say that aboutness can be explained simply in terms of behavior or function. That, to have a thought about something is to behave in a certain way – a kind of behaviorist view. But that is obviously, I think, incorrect. When I think about something it has nothing to do with my behavior; it is the object directness of my thoughts.

Followup: So there is pretty good support that it is irreducible? Intentionality even among many philosophers of the mind is pretty much irreducible?

Answer: Obviously, there are proponents of every view. I mean, look at Rosenberg. He thinks you don't exist. Everything is controverted. But I would say that the view that intentional states are not something that is characteristic of a physical object is pretty solid and that, therefore, they require some sort of mental states. And the question would be whether or not the naturalist can make room for mental states in his view. Rosenberg thinks not and therefore he says they are illusory.

Followup: I sense supervenience is different than reducibility, right?

Answer: Right.

. . . I didn't expect to be talking about these things today but it is just as well, they have been on my mind. If I have a mind; I think I do. *[laughter]*

Question: Would you say methodological naturalism denies agent causation altogether?

Answer: I would prefer to say that *metaphysical* naturalism would deny agent causation because there isn't any intentionality if there are just brain states and there are no mental states. You said methodological naturalism – I don't think that that has to deny these other things. It could admit that there are these non-natural entities and theories and truths about them but I, as a scientist, just can't consider them. So you have to understand how weak methodological naturalism is. I think a great many Christian scientists would accept

¹⁷⁴ 25:03

¹⁷⁵ This question is just asking for clarification that the concept being discussed is “intentionality” not “intensionality.”

it. They would say, and I've heard them say, when I go into the laboratory and put on my white coat, I have to only consider what would naturally explain what is going on in this lab experiment. The project of science is just to find natural causes. It doesn't mean there aren't any non-natural causes but I, as a scientist, just am not looking for them. So methodological naturalism, I think, is very, very weak and would be completely consistent with saying there are agents who have causal effects upon things but you would not be able to appeal to them in your physical theory. You would just be able to talk about the brain.

Followup: That seems to be a problem because if you just say I can't really talk about agents – while there might be agents, I can only recognize in my data event causation – isn't the scientist acting as an agent to bring a set of circumstances about in which an experiment is conducted and therefore really undermining the project all together?

Answer: Well, now, except think about it. The methodological naturalist isn't offering a theory about what he, himself, is doing. So you might be right that it would imply the reality of agents but he is not denying that and he is not offering a theory about that. So the neurobiologist or the neurosurgeon can offer theories about the brain and why these neurons fire and so forth even if that requires a self-conscious agent to carry out those physical biological experiments. I don't think that that is self-defeating. That would just be to say that this neuroscientist is adopting a very limited project just like the man with the metal detector is looking for metallic objects and he is not looking for wooden or plastic objects.

To recap, I am not persuaded that the scientist needs to be committed to methodological naturalism. As I say, it could lead to very odd situations where we would be prevented from knowing the truth about the world simply because of our methodology which seems perverse. But, in any case, that is not our project in this class. What we want to do is look at things from a theological standpoint and ask how can we, as Christian theologians, best integrate our theology and the best evidence of contemporary science concerning the origin of life and biological complexity. With that said, what we will do next time is to open the question of the origin of life. How did life come about on this planet and how is this best understood from a Christian point of view? That will be the question that we will begin to explore next time.¹⁷⁶

¹⁷⁶ Total Running Time: 30:50 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 16

Origin of Life

We've been talking about the Doctrine of Creation and particularly the creation/evolution controversy. Last time I argued that even if the natural scientist has to work within the constraints of methodological naturalism, no such constraint governs the work of the systematic theologian. Therefore, the systematic theologian is free to pursue theological hypotheses as well as naturalistic ones in trying to understand the origin of life and of biological complexity. As Christians, we want to have a theology, or worldview, that takes account of and integrates both the biblical data and the scientific evidence in the most plausible worldview possible. And there is no reason that we should be constrained by naturalism in crafting such a worldview.

Origin of Life

We want to turn now to the subject of the origin of life. What does the scientific evidence indicate about how life originated on this planet? Earlier in discussing the fine-tuning of the universe, we saw that in order for life to exist anywhere in the universe there has to be these exquisitely finely tuned constants and quantities present in the Big Bang as initial conditions. These initial conditions are required for the existence and evolution of life anywhere in the cosmos. In the absence of the fine-tuning of these initial conditions, there would not even be galaxies, there wouldn't be stars, there wouldn't be planets where life could evolve and exist! But, even given those exquisitely fine-tuned initial conditions, that is no guarantee that life *is* going to evolve somewhere in the cosmos. Those conditions are necessary for life to originate but they are not sufficient. These are necessary but not sufficient conditions for the existence and evolution of life. In order for life to originate somewhere in the universe, other conditions have to be in place and these also turn out to be astronomically improbable.

If you are like me, you were probably taught in high school or in grade school that the way that life originated on earth is through chemical interactions in the so-called "primordial soup." Chance chemical reactions in the early oceans, perhaps fueled by lightning strikes, originated living organisms. Back in the 1950s, a graduate student named Stanley Miller was able to synthesize amino acids in the laboratory by passing electric sparks through a methane gas in one of his experimental apparatuses in the laboratory. He was able to obtain amino acids by electrical charges passed through the methane gas. Now, amino acids aren't alive but proteins are made out of amino acids and proteins are found in living things and so the hope was that somehow the origin of life might be explained on the basis of these chemical reactions. You might be saying to yourself that that seems like a pretty big extrapolation – he was able to get amino acids, amino acids make up proteins, proteins are found in living things, therefore living things can be explained through chemical evolution. I would agree with you – I think that is a pretty big extrapolation and is really something that goes so far beyond the evidence as to be a *non sequitur*. But, nevertheless, that is what most of us were taught, right? In the primordial soup that covered the earth, in the warm oceans or else perhaps in pools that

were isolated, through lightning strikes and chemical reactions, somehow primitive life was birthed and formed.¹⁷⁷

What you may not know is that all of these old chemical origin of life scenarios have broken down and are now widely rejected by the scientific community. This point was documented very well in a book several years ago called *The Mystery of Life's Origin* by Charles Thaxton, Walter Bradley, and Roger Olson.¹⁷⁸ They point out that there probably never even was such a thing as the primordial soup because the natural processes of destruction and dilution that would go on in the oceans would have prevented the chemical reactions that supposedly led to life. You see, Miller's experiments were performed in a highly controlled laboratory environment in a little glass enclosed artificial environment where the natural processes of destruction and dilution could be screened out and so would not come into effect. But of course in the primordial oceans of the earth, these kinds of destructive processes would not be screened out and they would have prevented the chemical reactions that would supposedly have led to the formation of life.

Thaxton, Bradley, and Olson also point out that thermodynamics poses an insuperable problem for these chemical origin of life scenarios because there just isn't any way to harness the raw energy of lightning or the sun in order to drive chemical evolution forward. There just isn't any mechanism that would take this raw energy and transform it and harness it in such a way as to forward chemical evolution toward life. Moreover, they point out that there is no way in nature to preserve any of the products of chemical evolution for the supposed next step in the process. A scientist like Stanley Miller can artificially isolate the products of the first chemical development – he can isolate those little amino acids that have been formed in his flask and then subject them to a second step. But in the primordial seas there wasn't any way of collecting and isolating and preserving any of the products of chemical evolution for the supposed next step. So the same processes that formed these substances in the first place would almost immediately destroy them again.

Finally, the last point that they make is that it was originally believed that literally *billions* of years were available for life to originate through these chemical processes. Given billions of years there would be in the oceans billions and billions of chances for life to originate in the primordial soup. The problem is that we now have fossil evidence of life that goes back as far as 3.8 billion years. Life has already existed on this planet from 3.8 billion years ago. Now, when you think that the age of the earth is somewhere around 5 to 6 billion years old, then that means that the window of opportunity between the time that the earth cooled down enough and the seas formed and the appearance of the first life is being progressively closed. This window of opportunity for life to originate is getting narrower and narrower. You have to have the earth cool down, form the oceans, and then you have this increasingly narrowing window of opportunity before we already have life on earth.¹⁷⁹ In fact, Thaxton, Bradley, and Olsen estimate that this window of opportunity

¹⁷⁷ 5:20

¹⁷⁸ Charles B. Thaxton, Walter L. Bradley, Roger L. Olson, *The Mystery of Life's Origin: Reassessing Current Theories* (Dallas, Texas: Lewis and Stanley, 1984). You can download a free PDF version of this book at <http://themysteryoflifesorign.org/> (accessed February 10, 2013).

¹⁷⁹ 10:01

is probably only about 25 million years in duration during which life had to originate by chemical evolution. That is far too short a time for these naturalistic scenarios to occur by chance. There would need to be some sort of miraculous intervention in order for life to originate in so relatively short a time.

So, for all of these reasons and more, these old chemical origin of life scenarios have broken down. Instead today there is a plethora of alternative speculative theories with no consensus on the horizon. I am not going to survey these, but if you are interested in seeing a very, very nice survey, take a look at the Wikipedia article on origin of life¹⁸⁰ and it will describe many of these different speculative scenarios about how life originated on this planet, none of which has shown to be tenable. Steve Meyer, in his recent book *Signature in the Cell*,¹⁸¹ says that the odds of getting even a single, functioning protein molecule by chance (remember, that is not even alive! We are not talking here about a cell, he's talking about a single functioning protein molecule) the odds of this are about one chance out of 10^{164} . This is just an inconceivable number. He says that is a trillion, trillion, trillion, trillion, trillion, trillion, trillion times smaller than the odds of finding a single specified particle among all the possible particles in the universe. So take all of the particles in the universe and you go pick out one – what are the odds you are going to get just that one? Well, they are 10^{84} higher than the odds for a single protein molecule. This is on page 212 of *Signature in the Cell* in case you are interested.¹⁸² He goes on to say,

Protein function depends upon hundreds of specifically sequenced amino acids, and the odds of a single functional protein arising by chance are prohibitively low, given the probabilistic resources of the entire universe.¹⁸³

So given not just the probabilistic resources of earth's primordial oceans, but the probabilistic resources of the entire universe, the odds of getting a single functional protein molecule are prohibitively small. Therefore, some theorists today are wondering whether we will ever really be able to discover the answer to how life on this planet originated. In an article in *Cell Biology International*, Trevors and Abel say "New approaches to investigating the origin of the genetic code are required. The constraints of historical science are such that the origin of life may never be understood."¹⁸⁴ We may

¹⁸⁰ See http://en.wikipedia.org/wiki/Origin_of_life (accessed February 10, 2013).

¹⁸¹ Stephen C. Meyer, *Signature in the Cell: DNA and the Evidence for Intelligent Design*, (New York: HarperCollins, 2009).

¹⁸² "Making that calculation (multiplying the separate probabilities by adding their exponents $10^{45+45+74}$) gives a dramatic answer. The odds of getting even one functional protein of modest length (150 amino acids) by chance from a prebiotic soup is no better than 1 chance in 10^{164} consider that there are only 10^{80} protons, neutrons, and electrons in the observable universe. Thus, if the odds of finding a functional protein by chance on the first attempt had been 1 in 10^{80} , we could have said that's like finding a marked particle – proton, neutron, or electron (a much smaller needle) – among all the particles in the universe (a much larger haystack). Unfortunately, the problem is much worse than that. With odds standing at 1 chance in 10^{164} of finding a functional protein . . . the probability is 84 orders of magnitude (or powers of ten) smaller than the probability of finding the marked particle in the whole universe. Another way to say that is the probability of finding a functional protein by chance alone is a trillion, trillion, trillion, trillion, trillion, trillion, trillion times smaller than the odds of finding a single specified particle among all the particles in the universe." (Meyer, *Signature in the Cell*, p. 212.)

¹⁸³ Ibid., p. 273.

¹⁸⁴ J. T. Trevors, D. L. Abel, "Chance and necessity do not explain the origin of life," *Cell Biology International*, (Volume 28, Issue 11, November 2004), pp. 729-739. A copy of the article can be accessed at

never know the answer.

The origin of life on earth thus remains inexplicable as current science stands today. Francis Crick, who was the co-discoverer of DNA, once said that the origin of life on the earth is “almost a miracle.”¹⁸⁵ In fact, Crick was driven to the position that the origin of life on earth is so improbable that it probably didn’t originate here. He thinks that it was probably seeded from some other planet elsewhere in the universe where life originated and then life came here already formed. So life didn’t evolve on this planet through chemical evolution; it came full-formed from some other planet elsewhere in the universe.¹⁸⁶ But, of course, that just pushes the question back a notch and leaves you wondering where *that* extraterrestrial life came from! Of course, that is an unfalsifiable hypothesis – we have no way of verifying or falsifying that.

As I said earlier, the Bible doesn’t say how life originated. It just says “God said let the land bring forth vegetation” and “Let the waters swarm with fish and other life.”¹⁸⁷ The Bible isn’t a science book. It doesn’t tell us what means God used to create life or if he used any means at all rather than miraculous intervention. But I think we can certainly say safely that the origin of life on this planet is consistent with, in Francis Crick’s words, “a miracle.” That is to say, it is an event which was supernaturally brought about by God. Minimally we can say that the science and the Bible are not in contradiction on this issue. Indeed, if anything, I think that science is clearer that the origin of life is due to some sort of supernatural designer or miraculous intervention than the Bible is. So, on the basis of modern science, one might well conclude that the origin of life requires some sort of supernatural designing intelligence and creator.

Next time we will begin to look at the origin of biological complexity. How did that simple, unicellular first organism evolve into the complex, rich diversity of life forms that we see today?¹⁸⁸

<http://www.cellbiolint.org/cbi/028/0729/0280729.pdf> (accessed February 10, 2013).

¹⁸⁵ “An honest man, armed with all the knowledge available to us now, could only state that, in some sense, the origin of life appears at the moment to be almost a miracle, so many are the conditions which would have had to have been satisfied to get it going.” Francis Crick, *Life Itself: Its Origin and Nature*, (Simon & Schuster, 1981), p. 88.

¹⁸⁶ 14:57

¹⁸⁷ cf. Genesis 1:24 and Genesis 1:20

¹⁸⁸ Total Running Time: 17:09 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 17

Evolution of Biological Complexity

We were talking last time about the chances of amino acids coming together to form a single functioning protein molecule. I said that Steve Meyer in his book *Signature in the Cell* estimated this to be on the odds of one chance out of 10^{64} power – an absurdly small number even to get, not a living cell, but just a single functioning protein molecule. Well, the fellow that transcribes the Defenders podcasts looked up the reference and he said, “Bill, you got the figure wrong – you left something out. The actual figure is one out of 10^{164} !” So I was only off by one hundred orders of magnitude! But this emphasizes just all the more how incredibly improbable the origin of life is on the basis of chance alone.

Evolution of Biological Complexity

Last time we talked about how life came to originate and I said that there would be nothing scientifically untoward in accepting Francis Crick’s statement that the origin of life on this planet was a miracle – that is to say, actually represented an intervention by God in the natural order of things to bring about biological life. But of course the existence of life alone is only the start of the process. What we now want to ask about is the evolution of biological complexity. We live in a fantastically complex biosphere of animals, plants, and other organisms and what we want to ask is how we, as Christians, ought to regard the evolution of biological complexity on our planet.

Distinguishing the Different Senses of “Evolution”

Part of the difficulty in assessing the contemporary evolutionary theory is that the word “evolution” is a sort of accordion word. That is to say, its meaning can be expanded or contracted depending on the context and so can mean different things in different contexts.

In his book *Darwin’s Gift to Science and Religion*,¹⁸⁹ the very prominent evolutionary biologist Francisco Ayala distinguishes three aspects of the contemporary evolutionary paradigm. The first is what he calls “evolution.” What is evolution according to this first definition? He says it is the process of change and diversification of living things over time; or, basically the idea that living organisms descended from previously living organisms with modifications – descent with modification. This is what biologists mean, Ayala says, when they say that evolution is a fact. He says when biologists say evolution is a fact they are simply referring to the process of change and diversification of living things over time. What are we to make of this? This definition of evolution is so broad as to be innocuous. Of course living things change and diversify over time. If this is all that biologists mean when they say that evolution is a fact then nobody would care to dispute them. Even the most conservative Young Earth Creationist will affirm evolution in this sense – that things change and diversify over time. But I think that Ayala probably means

¹⁸⁹ Francisco J. Ayala, *Darwin’s Gift to Science and Religion*, (Washington D.C.: Joseph Henry Press, 2007)

to imply more by this definition of evolution than simply the change and diversification of living things over time. I think that he probably takes it to imply what we can call the “Thesis of Common Ancestry,” or abbreviating it TCA.¹⁹⁰ This would be the view that all living things are descended from a single primordial ancestor. So any organisms, other than the very first, are descended from earlier organisms with changes. This is a far more significant claim. It would imply that there exists a sort of evolutionary tree of life, as it were, describing how things come to be and diversify. And this single evolutionary tree of life goes back to some single primordial ancestor. So the Thesis of Common Ancestry would deny that there is a multiplicity of such trees with a multiplicity of primordial ancestors. The Thesis of Common Ancestry would say there is simply a single evolutionary tree of life and that all living things are descended from some primordial ancestor. This thesis, I think, would demand significantly more evidence than the innocuous claim that things change and diversify over time.

The second part of the contemporary evolutionary paradigm that Ayala identifies is what he calls “evolutionary history.” This is the reconstruction of the universal tree of life showing how the various lineages branched off from each other over time. Notice that this second claim, evolutionary history, presupposes the Thesis of Common Ancestry. It presupposes that there *is* a universal tree of life rather than multiple evolutionary trees. Ayala explains that evolution in this second sense is a matter of great uncertainty. He says,

Unfortunately, there is a lot, lot, lot to be discovered still. To reconstruct evolutionary history, we have to know how the mechanisms operate in detail, and we have only the vaguest idea of how they operate at the genetic level, how genetic change relates to development and to function. . . . I am implying that what would be discovered would be not only details, but some major principles.¹⁹¹

Because he believes in the Thesis of Common Ancestry, Ayala accepts that there is a universal evolutionary tree but he recognizes that scientists have not been able to reconstruct it. One of the reasons that he gives for our inability to reconstruct evolutionary history is because of our failure to understand evolution in the third sense – namely, the mechanisms that drive evolutionary change. Let’s turn to that third aspect of the contemporary evolutionary paradigm which is the mechanisms of evolutionary change.

According to Professor Ayala, neither descent with modification (#1) nor evolutionary history (the Thesis of Common Ancestry) represents Charles Darwin’s unique contribution to evolutionary theory. Contrary to popular impression, evolutionary theories of life and the Thesis of Common Ancestry were widely proposed prior to Darwin and they were well known prior to Darwin’s theory. Rather, Darwin’s contribution, he says, lay in suggesting some explanatory mechanism for the evolutionary process; namely, natural selection operating on the random variations in living things. It is this mechanism that Darwin proposed to explain the adaptedness of organisms to their environment without the necessity of a designing intelligence. Ayala writes,

¹⁹⁰ 5:00

¹⁹¹ As quoted by Larry A. Witham, *Where Darwin Meets the Bible: Creationists and Evolutionists in America*, (New York, NY: Oxford University Press, 2002), p. 90.

It was Darwin's greatest accomplishment to show that the complex organization and functionality of living beings can be explained as the result of a natural process – natural selection – without any need to resort to a Creator or other external agents.¹⁹²

With the development of modern genetics, genetic mutations have come to supplement Darwin's proposed mechanism of natural selection by providing a means of achieving variation among living things.¹⁹³ Through mutations in living organisms variety arises on which natural selection can then operate. So, we could call this third point "Neo-Darwinism." Neo-Darwinism will be the proposal that the mechanisms driving evolutionary development are natural selection and genetic mutation. Despite his profound admiration for Charles Darwin, it is evident from what I already said that Ayala thinks that we have only the vaguest understanding of the mechanisms driving evolutionary change. He writes,

The mechanisms accounting for these changes are still undergoing investigation¹⁹⁴ . . . The evolution of organisms is universally accepted by biological scientists, while the mechanisms of evolution are still actively investigated and are the subject of debate among scientists.¹⁹⁵

I think you can therefore see how misleading it is when popular writers will assert that evolution is a proven fact which is universally accepted among biologists. That is true only in sense #1 – descent with modification or at most the Thesis of Common Ancestry. But evolution in the second and third senses of the word is not an accepted fact. According to Ayala,

The second and third issues – seeking to ascertain evolutionary history and to explain how and why evolution takes place – are matters of active scientific investigation. Some conclusions are well established. . . . Many matters are less certain, others are conjectural, and still others . . . remain largely unknown.¹⁹⁶

So when we assess the contemporary evolutionary paradigm and ask whether or not it is true, I think we need to keep clearly in mind which aspect of that paradigm we are discussing. Otherwise, you can easily mislead people by switching the meanings of the word "evolution" in which case you are simply equivocating rather than talking about the same thing. When we assess this evolutionary paradigm, let's make sure that we are clear on what aspect of that paradigm we are discussing. Otherwise, we are bound to lead to confusion and misunderstanding.

DISCUSSION

Question: I just wanted to ask if progress was inherent in this type of evolution.

¹⁹² Ayala, *Darwin's Gift*, p. 47.

¹⁹³ 10:36

¹⁹⁴ Francisco J. Ayala, "The Evolution of Life: An Overview," in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, ed. Russell, Stoeger, and Ayala (Notre Dame, IN: University of Notre Dame Press, 1999), p. 22.

¹⁹⁵ *Ibid.*, p. 21.

¹⁹⁶ Ayala, *Darwin's Gift*, pp. 141-42.

Answer: No. Think of that first definition. The first definition simply says change and diversification. That wouldn't necessarily imply progress. It wouldn't necessarily imply increasing complexity. You could have a kind of devolution. In fact, when you think about it, you do see that in some animals. For example, salamanders that live in caves that have now lost sight and are blind because that isn't needed in order to survive in such an environment. So I don't think that progress is inherent in this. Though, again, this is where, in popular culture, evolution will often be taken to involve inherently the idea that things are getting better and better all the time rather than simply changing all the time. I think there you are introducing values – you are making value judgments – about different states and that requires something more than just the evolutionary process. You have to have some sort of transcendent basis of judgment and evaluation.¹⁹⁷

Followup: Is “adaptability” a better word then?

Answer: It seems to me that adaptability would relate more closely to natural selection under the mechanisms. Organisms which undergo mutations that make them less adaptable to their environment will tend to be selected out. They will tend not to survive as well whereas a mutation that helps an organism to adapt better to its conditions would tend to be selected positively for survival.

Question: We sometimes hear microevolution and macroevolution and within species and evolving species. How does that relate to what you are talking about?

Answer: How does the terminology of macro and micro evolution relate? I've used that terminology myself in the past to describe limited evolutionary change such as you see, for example, in breeding roses or in breeding dogs. You see this kind of diversification and change taking place within limits. I've contrasted that with evolution as a sort of grand scenario describing evolutionary history. My understanding, however, is that is actually a misuse of terms and that we should not do that. Microevolution refers to evolution within species and anything above species evolution would be macroevolution. So while I think you need a sort of term to differentiate those two, apparently macro and micro isn't the right terminology. But I think we can talk about things like the Thesis of Common Ancestry as indicating what we mean by, say, macroevolutionary change or something like it.

Question: I want to go back to step one. Is that accepted? Do we accept that because things like alike that they descended from each other. Is there any proof at all that there is a tree of life that one descended from another? I am reminded of Berra's Blunder where he said that corvettes were descended from other vehicles. A common designer would have given similarity but not descent.

Answer: OK, you are getting a little ahead of ourselves. We will talk about the Thesis of Common Ancestry momentarily. You are referring to a very famous case by a fellow named Berra (not Yogi, but somebody else!) and among intelligent design or creationist circles Berra's Blunder refers to this attempt on the part of this theorist to defend evolution by pointing to something like the evolution of the Ford Mustang over the years.¹⁹⁸ Remember how the Mustang, when it started off, was this tiny little car and then

¹⁹⁷ 15:13

¹⁹⁸ See Tim M. Berra, *Evolution and the Myth of Creationism: A Basic Guide to the Facts in the*

it got fancier and fancier over the years and he said this illustrates evolution. But clearly that doesn't illustrate evolution at all! These later models didn't evolve out of these earlier models; they were just built on similar design plans and the later automotive designers, rather than design the new model of the Mustang from the ground up, they would use a similar design model. So there was no common ancestry at all – on the contrary, what the illustration of the evolution of the Ford Mustang showed was quite the opposite; namely, that you could have similarity without ancestry. Having said that, however, certainly, I think we do have evidence within limited spheres of this kind of change and diversification that goes on over time. I mentioned, for example, the success that breeders have in breeding hybrid roses or dogs of different sorts or horses. So, the idea that organisms change and diversify over time, I think, is something that is widely accepted and that we can actually observe and bring about. Whether or not, though as I say, this means that the Thesis of Common Ancestry is true is a much more sweeping thesis that would require considerably more evidence than that. We will talk about that later.

Followup: So that is back to the micro and macro – we see lots and lots of evidence of modification within a kind but we don't see horses turning into chimpanzees. We just don't see it.¹⁹⁹

Answer: Yes you are asking the same question about micro versus macro. What we will want to ask about is how sweeping is this sort of descent with modification and especially is it universal such as the Thesis of Common Ancestry holds. So those are the issues that we will want to talk about. And we will do so later.

Question: Regarding the evidence of descent with modification or similarities across species, there are things called homologous genes. When you map out a genome of these nucleic acid sequences, you can find similarities – not just similarities but sweeping sequences of being identical. Once you find those genes, if you knock out a gene in, say, a rat and then you reinsert genetic material (what we call wild type genetic material that is not modified) from a human or a dog into that rat, you can actually rescue the affect of the knock out of that gene. So there is evidence that there is conservation of genetic sequences across things as diverse as a bird and a rat.

Answer: OK. We will talk about this in greater detail when we get to the Thesis of Common Ancestry but I think you have put your finger on what would be the most powerful evidence in favor of the Thesis of Common Ancestry and that is going to be the genetic evidence which is extremely interesting and would be the primary, I think, evidential grounds for affirming something like common ancestry. We will talk about that later.

Question: I might be getting a little ahead, but are you going to tie this at all to the fall?

Answer: I wasn't. You are asking whether I am going to tie this into the fall of man and I take it this includes things like the historical Adam. I wasn't going to. I was going to try to assess these theses and ask how we, as Christians, might have a sort of synoptic

Evolution Debate, (Stanford, CA: Stanford University Press, 1990), pp. 117-19. Note: Berra uses the Corvette, not Mustang, for his analogy.

¹⁹⁹ 20:29

worldview that would take account of the findings of modern science but also take seriously the Bible. But I wasn't going to say anything about the fall though this has certainly become a very hot topic lately.

Question: I am not sure if you've dealt with this before but are you going to speak at all about genetic bottlenecks? I know that there is research as far as when you go back you can trace when it looks like you had a lot of people and all of a sudden it looks like some kind of catastrophe happened and it bottlenecked into a certain small group and then expanded again.

Answer: This is related to the earlier question about the historical Adam because there have been claims recently that are being much discussed among Christian geneticists and other biologists as to whether or not the genetic evidence for human evolution is consistent with an original human pair or whether or not, as you put it, the population goes back to a bottleneck that gets no fewer than say a couple thousand people and then it broadens out again in which case the human population was never less than a few thousand at that bottleneck several tens of thousands of years ago. This is something that is currently being hotly debated. I did not intend to address that in this class.²⁰⁰

[Q&A: someone mentions a representative from Reasons to Believe is coming to Johnson Ferry church.]

Let's look in more detail at these different aspects of the contemporary evolutionary paradigm. Since the second aspect – namely, evolutionary history – is simply the outworking of points #1 and #3, I am not going to address it specifically. I'd rather focus on theses #1 and #3 – in particular, the question of the Thesis of Common Ancestry and then the adequacies of the mechanisms of natural selection and random mutation. Next time we will take up the Thesis of Common Ancestry.²⁰¹

²⁰⁰ 24:57

²⁰¹ Total Running Time: 26:53 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 18

Common Ancestry

We have been talking about how to integrate our biblical understanding of creation and the world with the contemporary scientific evolutionary paradigm. You will remember last time we saw that there are three major features of the contemporary evolutionary paradigm. First is descent with modification – living organisms are descended from earlier organisms with modifications. Second would be a reconstruction of the evolutionary tree showing how all living organisms are related to each other as branches off of branches off of branches until one comes back to a single primordial ancestor. Finally, we have the explanatory mechanisms of random mutation and natural selection as the explanation for evolutionary development. What we want to look at now in more detail is the thesis of common ancestry – that all living organisms are descended from some primordial ancestor. We will leave aside for now that third point – the question of the mechanisms. Here we want to simply look at that first point – is it the case that the evidence supports the idea that all organisms share a common descent?

Common Ancestry

Here it seems to me, as I tried to look at it as objectively as I can, that the evidence seems to be mixed. The strongest evidence in favor of the thesis of common ancestry derives from the genetic similarity of virtually all living things. Almost all living organisms share the same genetic code or DNA. In fact, it is striking how similar organisms are in their DNA to one another. Moreover, the genetic similarity between organisms corresponds to their positions on the evolutionary tree of life. Organisms which are on the same branch of the tree are much more similar to each other genetically than to organisms on a different branch of the tree. For example, a bat and a whale are much more similar genetically than a bat and a lizard or a bat and a sponge.

The special creationist could respond to this by saying that God simply used the same design plan over and over again in creating biological life forms. The genetic similarity of diverse organisms doesn't imply that one evolved from the other. To give an analogy: Ford and General Motors use the same sort of design plan to manufacture their automobiles but that doesn't imply that a Chevrolet has evolved from a Ford. They simply have a similar design plan. Perhaps one could say that God repeatedly used the same basic design plan; namely, the same sort of genetic structure for the different unrelated organisms that he created. There was no reason to reinvent the wheel each time he created new organisms.

This is a possibility, I think. But it might seem more plausible to say that the genetic similarity of all living things is due to their being related to one another. For example, in a recent article by the population geneticist Dennis Venema of Trinity Western University²⁰², he specifies three genetic phenomena which are difficult for the special

²⁰² Dennis R. Venema, "Genesis and the Genome: Genomics Evidence for Human-Ape Common Ancestry and Ancestral Hominid Population Sizes", *Perspectives on Science and Christian Faith*, Volume

creationist to account for. Let me share with you these three phenomena that he pinpoints.

First, he says, the deep genetic similarity between organisms is far in excess of what is required in order for DNA to produce similar amino acids and proteins which would govern the types of organisms that are produced.²⁰³ The genetic code permits 64 different combinations of its elements. You can combine the different elements of the genetic code into 64 different combinations. But these different combinations produce only 20 amino acids. So there is a kind of redundancy here – the same amino acid can be produced by several different combinations of the genetic code. You’ve got 64 different combinations but only 20 amino acids that result. So the same amino acid can be produced by different combinations of the elements of the code. So in order for two organisms to share similar amino acid segments, and so to be genetically similar, they don’t have to have that deep structural similarity on the level of the genetic code. And yet, time and again we find that organisms which are thought to be related share not only similar amino acid sequences but deeper similarity of genetic code combinations. This deeper unnecessary similarity would be explicable if the organisms share a common descent and hence a common genetic code. But it would seem to be unmotivated if each one were a special creation.

The second phenomenon that Venema points to is the organization of the genes of related organisms²⁰⁴ suggests a common ancestry. The organization of their genes, he thinks, supports common ancestry. Two species which are thought to have recently diverged from a common ancestor have not only many of the same genes but they also have the same ordering, or sequence, of those genes. This similarity of ordering is not necessary in order for the organisms to have similar body plans and functions. They can have the same genes and hence similar body plans and functions but they don’t need to have the same ordering. And yet, they do! Special creation seems to leave this similarity unmotivated whereas common ancestry would make it intelligible. They share their ordering of their genes because they are descended from one another.

Finally, the third phenomenon is the presence of shared so-called pseudogenes in related organisms suggests common descent. A pseudogene is a defunct gene sequence that has been inactivated through mutation. It was once a functioning gene sequence but a mutation occurred which inactivated it so it is now defunct. Organisms which are thought to be closely related are found to have the same non-functioning pseudogenes even in the same order even though these defunct genes do nothing in either organism. Such similarity would make sense given common ancestry but it is hard to explain why God would reproduce in one organism the broken parts of another organism. To borrow the automotive analogy once more, it is hard to see why the designer would reproduce in one automotive model a non-functioning handle found in another model.

These arguments are far from compelling and they fall far short of demonstrating anything so sweeping as the thesis of common ancestry – that all living organisms are descended from a single primordial ancestor. Still, I think they do make special creation look rather *ad hoc*, or contrived, in light of the evidence. So the genetic evidence is, I

62 Number 3, September 2010, pp. 166-78. An online copy of this article can be found at: <http://www.asa3.org/ASA/PSCF/2010/PSCF9-10Venema.pdf> (accessed August 20, 2013).

²⁰³ 5:23

²⁰⁴ Venema uses the term “synteny” to label this phenomenon. He says, “Synteny is a technical term for conservation of gene order along chromosomes between relatives.” (Ibid. p. 167.)

think, one of the best evidences in support of the thesis of common ancestry.²⁰⁵

DISCUSSION

Question: In Denton's book, *Evolution: A Theory in Crisis* ²⁰⁶(he is in this field as well as a medical doctor as well as a microbiologist by training) he makes the point that as you go up and down the complexity within a family that the gene spacing stays the same even for organisms that are wildly different in morphology and gestation period and mutation rate so this speaks against this being accidental rather than a special creation because the sequencing doesn't change.

Answer: Isn't that the same as the second point that Venema was making that I cited? The ordering of these genes seems to suggest common ancestry.

Followup: Maybe on one hand, but on the other hand you would expect that as the gestation periods were different and the morphology was different and the mutation rates are so vastly different that you would see some movement, contraction or whatever, from the original organism. So it is the flip side in opposition to this. It is a two-edged sword because why does this not then change if these organisms are so vastly different in those areas.

Answer: OK, that is in Michael Denton's book *Evolution: A Theory in Crisis*, right?

Followup: Yes. I am pulling this from my head because it has been a long time since I read it.

Answer: Yes, same here.

Question: I find the use of the genes to be no different than the discussion of morphology similarities. We've gone down into the genes and said "If I were the designer, I wouldn't have done that, so therefore God would not have done that." I think the explanations here are, "Well, look, it has some defunct thing that we really don't know what it is doing and it is in both of those things so if God were a perfect designer he wouldn't have done that because if I were designing it I wouldn't have done that." That is baloney.

Answer: I think you are making a good point. The criticism here seems to be predicated on the view that there isn't any motivation for a designer or creator to have done that. Then that means that you are speculating about motivations and what would motivate a designer to do that. When you get into that, that does seem to be very conjectural, doesn't it? Speculating about what possible motivations the designer could have, for example, for having the same genetic code combinations to produce these different amino acids. I think that you are making a good point.

Question: One thing that really bothers me – in Francis Collins' book, he argues that mice and humans evolved from the same ancestry because there is this pseudogene in mice and humans that looks like it would be functioning but half way and at some point it was just cut off and it is in the junk DNA region and therefore it is evidence for common

²⁰⁵ 10:03

²⁰⁶ Michael Denton, *Evolution: A Theory in Crisis* (Chevy Chase, MD: Adler & Adler, Publishers, Inc., 1986).

ancestry.²⁰⁷ Well, I suppose if you agree with him that it literally is half a gene that was cut off (which seems to be all speculation) and is literally in the junk region that won't eventually turn out to be functioning DNA, maybe that is evidence but I would deny that it literally is a junk region.

Answer: Yes, and Venema makes this point – don't equate pseudogenes with junk DNA. Apparently, these aren't exactly the same things. Granted the hope of the special creationist might be that there might be some functions found for these pseudogenes in these higher organisms.

Followup: I'm just saying that when the evidence is stated this way, there is a lot of loading the conclusion already into the presentation of the evidence. There just seems to be a lot of circularity here.²⁰⁸

Let me go onto the next point. I have suggested that the genetic evidence is probably the best evidence in favor of the thesis of common ancestry. On the other hand, the fossil evidence stands in opposition to the doctrine of common ancestry.

When Darwin proposed his theory, one of its major weaknesses was that there are no organisms today which stand midway between other organisms as the transitional forms between them. We don't see transitional forms between the animals that are living today. They are rather like the leaves on the outer canopy of a tree and we don't see the twigs and the branches that would lead to these leaves – we just see the leaves on the canopy. Darwin answered this objection by saying that these transitional animals all existed in the past and would eventually be discovered. However, paleontologists have unearthed a good deal of fossil remains of extinct animals since Darwin first published *On the Origin of Species*, and by and large they have not found these anticipated transitional forms. Instead, what they have found are just more distinct animals and plants which have died off – as it were, simply more leaves on the canopy of the tree but which are now extinct. The common branches and twigs linking them by and large have not been found.

There are, indeed, certain transitional forms like the Archaeopteryx which is a bird that exhibits certain reptilian features such as claws on his wings and teeth in his beak. But it is important to understand that when evolutionary biologists or paleontologists talk about transitional forms they are using this word in a peculiar way just as we saw the way the word “random” was used not to mean chance. Transitional form doesn't mean “an intermediate form between some earlier form and a later form observed today.” That is not what a transitional form means. A transitional form is simply an organism that exhibits features of different types of organisms. For example, the Archaeopteryx is called a transitional form because it exhibits avian features (of birds) and reptilian features. So in that sense it is transitional. But, in fact, it is not really transitional in the sense of being an intermediate form. Here we have a PowerPoint Slide illustrating bird evolution. [see Figure 2 below.]

²⁰⁷ Francis S. Collins, *The Language of God: A Scientist Presents Evidence for Belief* (New York: Free Press, 2006) pp. 135-37.

²⁰⁸ 15:02

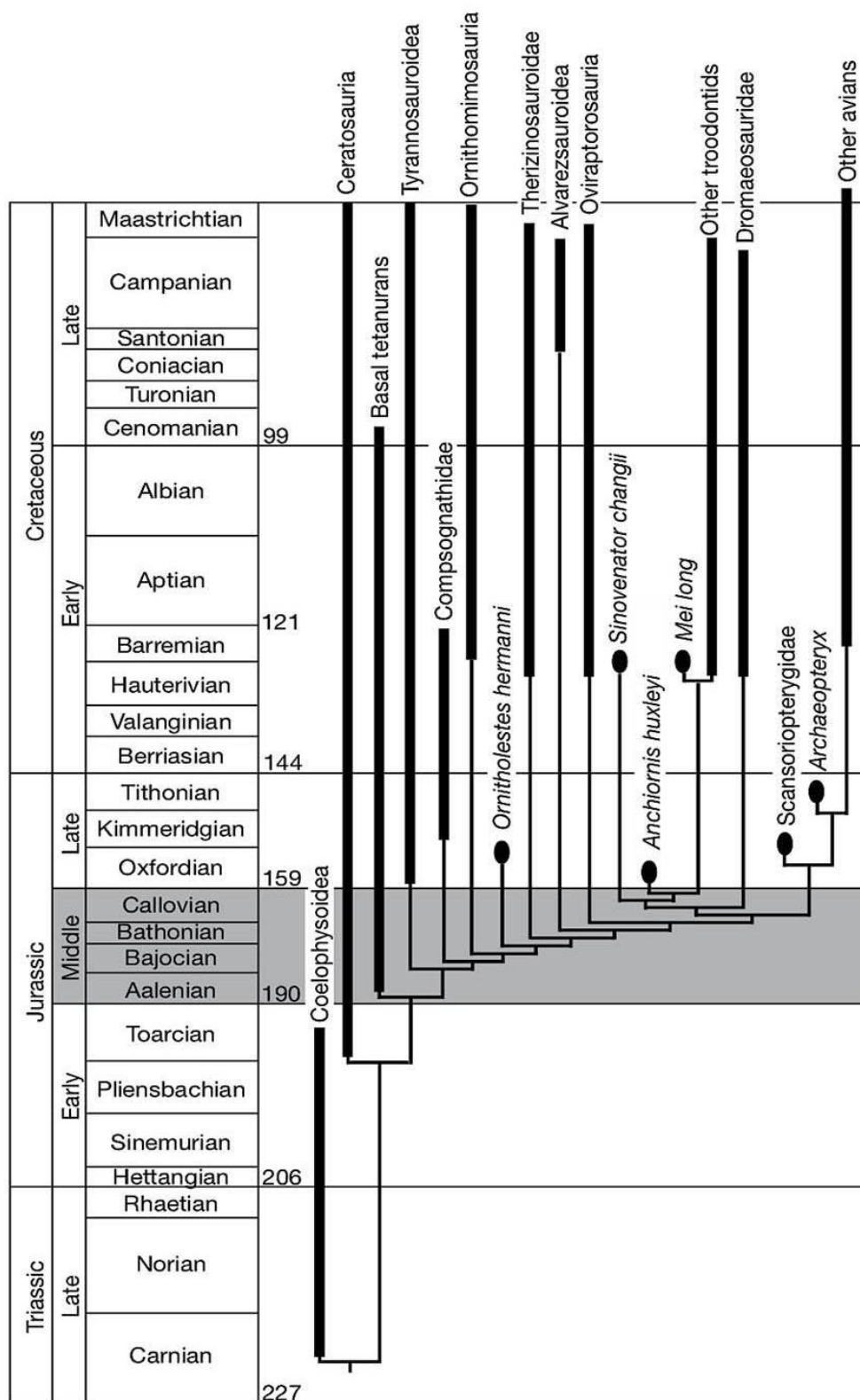


Figure 2 - Bird Evolution

What you will see there is that Archaeopteryx in fact doesn't evolve into modern birds! It just goes extinct. It is not a transition from reptiles to modern birds. Modern birds originate on a quite separate branch of the tree. Moreover, the feathered dinosaurs – the troodontids – also don't evolve into modern birds. These feathered dinosaurs were not on their way, apparently, to becoming birds. They were just reptiles that evolved feathers and they eventually went extinct. So neither Archaeopteryx nor the feathered dinosaurs are intermediate forms to modern birds. You see, you don't really know where modern birds came from on the chart. So they are transitional simply in the sense that they exhibit features of other types of life. The Archaeopteryx has both reptilian and avian features. Similarly, the troodontids are dinosaurs (reptiles) but they have feathers. And the claim is, therefore, that they have a common ancestor which we still haven't found. So, they are transitional in one sense but they are not transitional in the sense of being intermediates on the way to these modern life forms.

Moreover, if the thesis of common ancestry were correct, we are not talking about there being a few transitional forms like Archaeopteryx. Rather, as Michael Denton says in his book, there should be literally millions and millions of these transitional forms in the fossil record.²⁰⁹ Think, for example, of all of the intermediate forms that would have to exist in order for a bat and a whale to have descended from a common ancestor. And yet, they are not there. Moreover, a bat and a whale are actually rather closely related on the evolutionary tree of life in that bats and whales are both mammals. They are both vertebrates. Think how many transitional forms would have to exist for a bat and a sponge to be descended from the same ancestor. So this problem can't just be dismissed by saying we haven't dug deep enough. The transitional forms haven't been found because they don't seem to be there. This absence would be consistent with versions of the thesis of common ancestry that appeal to leaps in the evolutionary development so you wouldn't find the transitional forms but it would tell against versions that are gradualist in their development.

So it seems to me that the data concerning common ancestry are mixed. I think the genetic evidence does lend support to the thesis of common ancestry but the fossil evidence tends to go against it. So our final verdict will attempt to ask how we can put this evidence together in such a way as to best explain the evidence.²¹⁰

²⁰⁹ 20:03

²¹⁰ Total Running Time: 22:05 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 19

Mechanisms of Biological Evolution

In our lessons, we have been thinking about the contemporary evolutionary paradigm. We saw that one aspect of that paradigm is the affirmation of the thesis of common descent. Last time I said that, in my assessment, it seemed to me that the evidence concerning the thesis of common descent was mixed. While the genetic evidence seemed to support the idea of common descent, nevertheless, the fossil evidence seemed to still run against it.

DISCUSSION

Question: I might have missed it, but . . . this whole genetic discussion seemed to me like the best argument for a common designer . . . Everything you look at in the world, you can generally tell (if it has any importance to it at all) the designer. Once you know a designer's work, you can generally see characteristics of that designer's work in a long strain of devices or designs. For example, an architect might have a habit of putting this little space or this particular feature in every house or building he designs. That seems to me like what all the evidence that you've given supports – a single designer.

Answer: I see. OK. As I said last time, one possible way of responding to this genetic similarity among all living things is that this shows, as you say, a trait in the designer to design things a certain way. I do think, though, in all honesty that that response is less persuasive when it comes to what I shared about these pseudogenes which are broken genes that have mutated in such a way as to become inoperative and no longer have their original function. And these get reproduced in organisms that are thought to have descended from earlier ones. And, as I said, it would be hard to see why, for example, an automotive designer would reproduce, say, a broken jack from one model of a car that won't in fact jack the car up so that you can change the tire. Why would you reproduce that broken jack in another model? When it comes to something like that, then it does seem to be (at least to my mind) indicative that this could be the result of some sort of a genetic relationship between the two – that the one is descended from the earlier one and so these broken features get repeated. So while I think that is a possible response to the genetic similarity that we noted, it seems to me less persuasive with respect to these pseudogenes.

Question: It seems like we've come a long way in genetics but it seems still that we've got a long way to go. And to say that we know what a gene does and doesn't do necessarily seems premature. Just the whole realm of coding and communication and all of that, it just seems like there could be multiple levels of that within the DNA structure. So to say absolutely that this is a broken gene may be presumptuous.

Answer: I hear you. That is a good point. Certainly, the discovery that junk DNA really has a function might be a lesson that would say we should be cautious about this. Then there are these master genes that simply switch others on and off that were discovered

that previously were thought to be nonfunctional.²¹¹ So that could be grounds for caution. I think you are right.

Question: . . . I think we have to agree that the limitation of our knowledge says that similarity does not prove descent. We can't say, "Ah-ha! There it is! They are similar, therefore, it proves descent." I think the argument on the other side is at least as powerful or more so that the only similarity is the similar designer. It is the same designer.

Answer: OK. That is basically similar to the earlier point.

Question: Isn't there more to genetics, though, than just the similarity of the genes such as the addition of genetic information that would be necessary in order for one species to develop into another. Also, as far as genetics is concerned, shouldn't the naturalist be able to prove that mutations are a force for positive change within the organism whereas it seems to the layman that most mutations are harmful.

Answer: All right, now, let me say a couple of things in response. This isn't a debate between naturalists and theists. I don't think we want to frame it that way. We are looking at this from a theistic perspective and we are asking "How did God bring about biological complexity?" Did he use prior organisms as ancestors for ones that later developed or are organisms created afresh, *de novo*²¹². So this isn't a debate here between naturalism and theism, I think. But the other thing that I wanted to say is that I think the points that you are making about the deleterious effect of most mutations is really relevant to the third point that I want to talk about next – the explanatory mechanisms behind evolutionary change. You are suggesting that these mechanisms are not explanatorily adequate because of what you mentioned – the overriding, debilitating effect of mutations. I think that your point is really addressing what we are going to talk about rather than the thesis of common ancestry which would just be that things that we observe today are descended from prior living organisms.

Question: Following up on the pseudogenes, when Fuz Rana was here²¹³ I asked him about the pseudogenes. His comment was, yes, it certainly looks like common descent but you do have to keep in mind this is an inference and it is based on some assumptions. One assumption is that these genes really don't have a function and maybe they do (echoing what someone said earlier). The other thing he pointed out, which was kind of interesting to me, was if you look at some of these pseudogenes, they have the same mutation that breaks them. That makes it look like it comes from a common ancestor and that broken chain gets inherited. Fuz was suggesting that maybe in some of these pseudogenes they have certain hotspots that make them more susceptible to mutations and it may just be a coincidence that two different species have the same mutation and that maybe that wouldn't be so unlikely.

Answer: Wow. OK. Well, that would be a bold claim to write it off to just coincidence.

²¹¹ 5:03

²¹² "*De novo*" is Latin for "anew" or "from the beginning." In the field of genetics, "*de novo*" can refer to a genetic mutation that neither parent possessed nor transmitted to the child organism.

²¹³ Dr. Fazale "Fuz" Rana is a member of the organization "Reasons To Believe" (<http://www.reasons.org>) and was recently at Dr. Craig's church to present his ideas on creationism and evolution. This questioner is referring to this visit by Dr. Rana.

Scientific Extrapolation

What is the evidence then for Darwinism which, you will remember, we defined as the claim, or the thesis, that natural selection operating on random mutations accounts for grand evolutionary change? Before we look at the evidence specifically, I think it is worth emphasizing how extraordinary an extrapolation Darwinism involves. Many of us probably think that if random mutation and natural selection could explain, say, the evolution of the horse from a small multi-toed animal up to the beautiful animal with the single hoof that we see today that that would really be powerful evidence for the efficacy of these Darwinian mechanisms.²¹⁴ But in fact evolution within a single kind like this is nothing compared to the vast range of life. Well, you might think that if we could show that random mutation and natural selection could explain, say, how a bat and a whale could evolve from a common ancestor, that would certainly show the power of these evolutionary mechanisms. Well, I want to invite you to think again. Here I want to show our first PowerPoint slide [see *Figure 3*]:

²¹⁴ 10:20

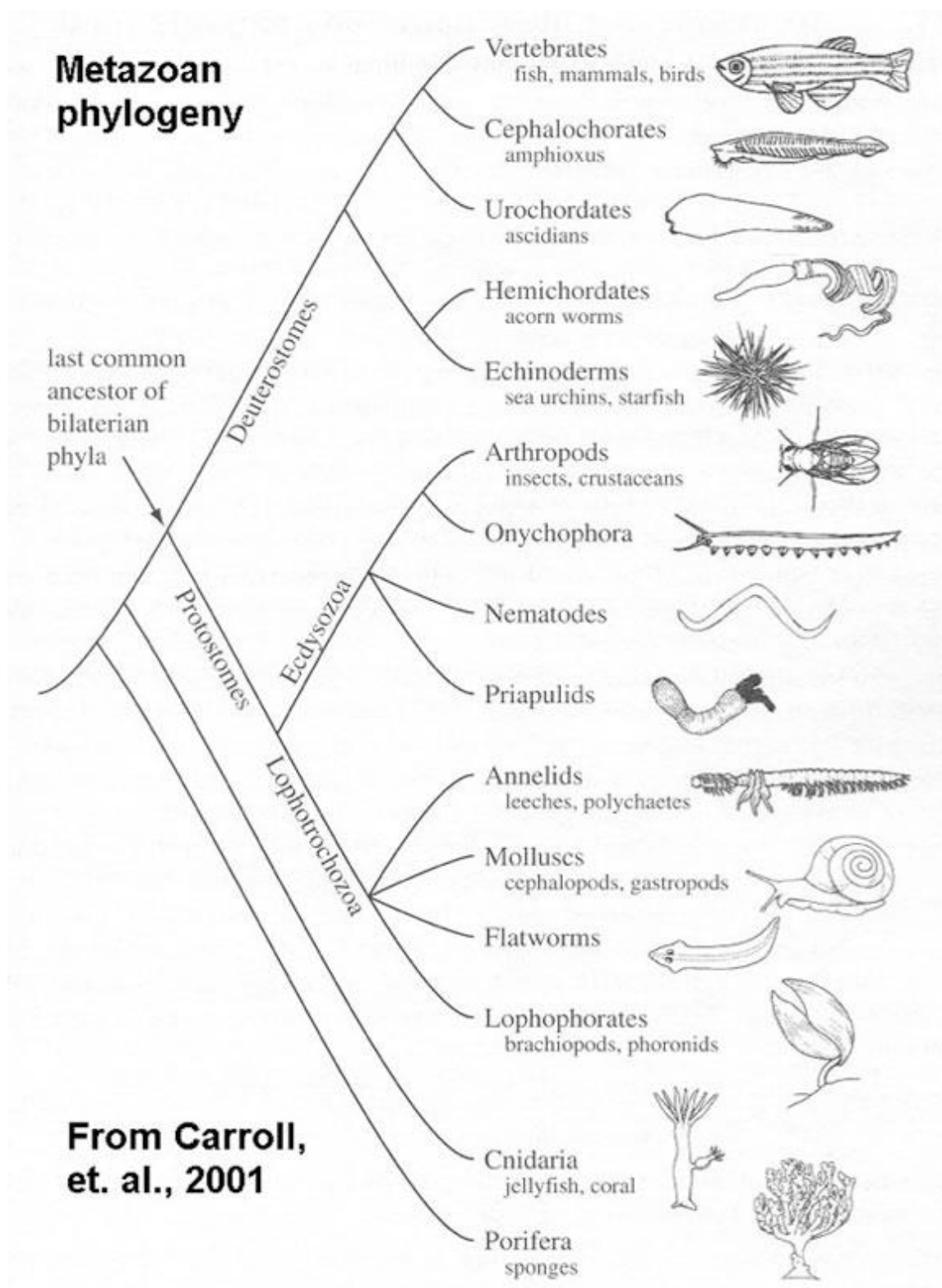
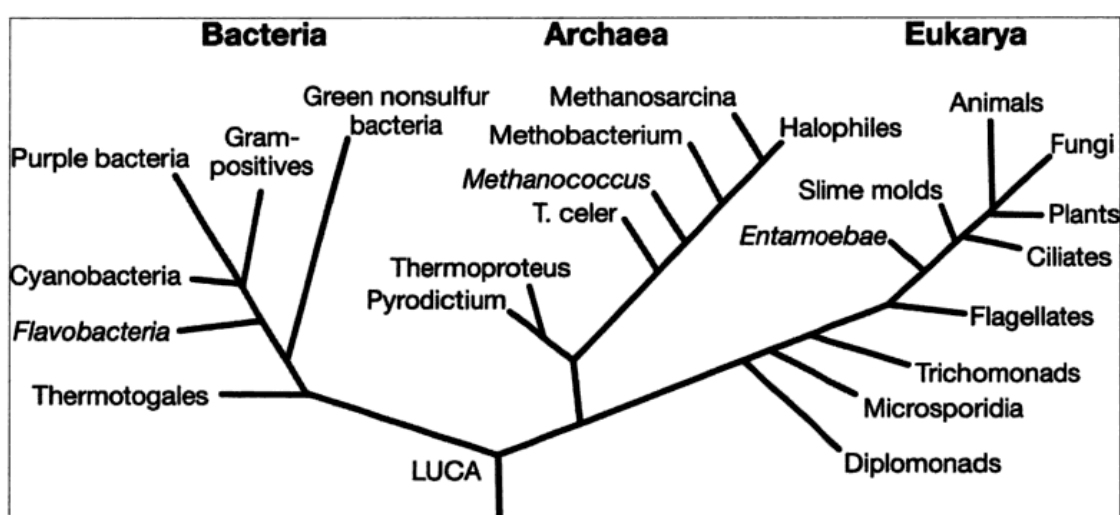


Figure 3 - Metazoan Phylogeny

On this slide you see the various phyla, or major groups, of the animal kingdom. Now, notice that top group and that a bat and a whale are both mammals. That is just one of the subcategories under the Chordates. So along with reptiles and birds you have these mammals which belong to this single phylum of the Chordates. So even the evolution of a bat and a whale from a common ancestor is an utter triviality compared to the vast range of the animal kingdom. This would do nothing to explain, for example, how a bat and a sea urchin (which you see belongs to another phylum) could evolve from a common ancestor, not to speak of a bat and a sponge (which is yet a more distant phylum). So the extrapolation of these explanatory mechanisms from our limited experience to the sort of grand evolutionary story is an extrapolation of gargantuan proportions. If this extrapolation takes your breathe away, then take a look at the next slide [see Figure 4]:



Modified from Carl R. Woese, Web site, University of Illinois at Urbana-Champaign, Department of Microbiology

Figure 4 - Universal Tree of Life²¹⁵

The whole previous slide that we just looked at showing the different phyla of the animal kingdom – all of that, is contained on the little twig of that right hand branch under Eukarya where it says “Animals.” Animals! I love the modesty of that label – the whole of the animal kingdom – all of those phyla that we previously saw, all of that diversity – is contained on that little twig called “Animals.” Notice slightly to the right of that twig is another twig labeled “Plants.” Plants! The whole of the plant kingdom is contained on that little twig. And these are just two twigs on the branch of the Eukaryotes which are animals that have cells with a nucleus in them. There are still two other domains of the Bacteria and the Archaea to be accounted for. The extrapolation of the efficacy of these Darwinian mechanisms from experiments on peppered moths and finch beaks and fruit flies to the production and evolution of every living thing is a breathtaking extrapolation

²¹⁵ This “universal tree of life” diagram is from Francisco J. Ayala, *Darwin and Intelligent Design*, (Minneapolis, MN: Fortress Press, 2006), p. 42. The root of the tree labeled “LUCA” stands for the “Last Universal Common Ancestor.”

of gargantuan, brobdingnagian, proportions.

And we know that in science such extrapolations often fail. To give an illustration from a field I am familiar with: after Albert Einstein developed his Special Theory of Relativity in which he tried to eliminate absolute, uniform motion in favor of simply relative motion, he attempted to enunciate a general principle of relativity that would also relativize absolute rotation and acceleration so that all motion – not simply uniform motion, but even rotational and accelerated motion – would also be relativized to reference frames. But, in fact, this extrapolation failed. He was unable to successfully enunciate a general principle of relativity that would eliminate absolute rotation and acceleration.²¹⁶ Instead what he discovered was a radical new theory of gravity which was his greatest achievement. The General Theory of Relativity is not really a relativistic theory in the sense of eliminating absolute acceleration and rotation. It is a gravitational theory that enunciates a new theory of gravity to replace Newton's theory. So, in fact, although Einstein had limited success in the Special Theory in eliminating absolute uniform motion, it turned out that that principle could not be extrapolated so as to relativize all motion. Similarly, we are compelled to ask, I think, in the case of these mechanisms of random mutation and natural selection, "What is the evidence for this extraordinary extrapolation from the limited development that we see through mutation and natural selection to the grand evolutionary scenario?"

Mechanisms of Biological Evolution

Typical of the evidence that is offered on behalf of these Darwinian mechanisms are things like the experience of breeders in breeding new kinds of roses, for example, or horses. The experiments with the peppered moths in England in which the light and dark moths varied in their proportion of the moth population based upon the amount of industrial pollution that darkened the trees in England. And then the development on the part of bacteria to drugs – the mutations that cause bacteria to become drug resistant so that we have to develop new drugs to fight these because they have mutated in such a way as to become resistant to the drugs that we have.

Let me say a word about each of these. Francisco Ayala whom I have quoted before – a prominent evolutionary biologist – appeals to the experience of breeders in producing new varieties of dogs and roses, for example, as evidence for the efficacy of these mechanisms of random mutation and natural selection. But I think you can see clearly that such experience does nothing to justify the extrapolation of these mechanisms to the production of the grand evolutionary story of life. In fact, quite the contrary – the experience of breeders tends to show the limits of these mechanisms in that the breeders bump up against limits beyond which they cannot produce desired variety. For example, despite decades of effort, breeders have never been able to get chickens to lay more than one egg per day. So breeding actually shows the limits of what natural selection and random mutation can accomplish.

Ayala also appeals to the famous peppered moth experiments. But all that happened in that case was that the proportion of light colored moths in the population decreased and the proportion of dark colored moths increased. But the light colored moths never

²¹⁶ 15:03

evolved into dark colored moths. So taken as evidence of the power of natural selection and random mutation to produce grand evolutionary change – honestly, to call such evidence paltry would be to pay it an undue compliment.

Ayala also appeals to the finch beaks of different sizes that Darwin observed in his visit to the Galapagos Islands. But again, like the peppered moths, nothing here ever actually evolved. It is just that the proportion of finches with the large beaks increased during the drought or the dry season – they were better able to survive – and the proportion with the small beaks decreased because they were less able to survive in the dry climate. But once the rains came again then the normal beak proportions in the finch population returned as the population increased.

Ayala also mentions the speciation that occurs in fruit flies in Hawaii.²¹⁷ This is a very interesting case. The Hawaiian Islands are extremely isolated and so they tend to be sealed off from outside influences. That is why there are no indigenous mammals, for example, in Hawaii. And yet, some five hundred species of fruit flies exist in the Hawaiian Islands. One fourth of all of the fruit fly species that exist in the entire world – there are about 2,000 in the entire world – exist in this tiny area on the Hawaiian Islands. This evidence points to their common ancestry and evolution – as they have mutated and evolved into a diversity of species. I think we can agree that this evidence in all plausibility points to their common ancestry and evolution and agree that this is well within the limits of what these Darwinian mechanisms can achieve. But, again, it hardly goes to justify the enormous extrapolation of the power of these mechanisms to yield the grand evolutionary scenario. All we have here is just speciation of fruit flies in the islands.

Finally, Ayala appeals to the ability of organisms to develop drug resistance and resistance to poisons through random mutation and selection. He points out how an unacceptably improbable double mutation – where a mutation would need to occur simultaneously at two places in the genetic structure – can happen one step at a time. So while it is unacceptably improbable to say that you can have a double mutation simultaneously, nevertheless, it can be achieved stepwise to produce cumulative change, such as producing drug resistant bacteria. Then he extrapolates this process to explain macroevolutionary change. But of course the question that we are asking here is, “Can the mechanisms be successfully extrapolated in that way?” In his most recent book, *The Edge of Evolution*²¹⁸, Michael Behe argues that the very evidence of organisms’ development of drug resistance is a powerful indication of the limits of what random mutation and natural selection can achieve with regard to evolutionary change. For example, Behe explains that malaria and the human immune system have been waging war against each other for over ten thousand years. Since the advent of modern science, human beings have been developing anti-malarial drugs to try to destroy the malarial organism. Unfortunately for us, the malarial population is huge. The average person infected with malaria has over one trillion malaria cells in his body. Therefore, malaria mutates extremely rapidly. As a result, it has been able to develop resistance to every drug that we’ve thrown at it. Simple, single point mutations are enough to make malaria

²¹⁷ 20:02

²¹⁸ Michael J. Behe, *The Edge of Evolution: The Search for the Limits of Darwinism*, (New York, NY: Free Press, 2007).

drug resistant. For example, Behe says a mutation in one amino acid at point 108 in the human genome suffices to render malaria drug resistant to pyrimethamine.²¹⁹ On the other side, there is enormous selective pressure on the human immune system to develop some sort of defense against malaria, but it hasn't done so. The human immune system has not been able to evolve a defense against malaria. Instead, what has happened, says Behe, is that a mutation has occurred in the human respiratory system, not in the immune system. There has been a mutation in our respiratory system which makes some people immune to malaria – namely, sickle cell hemoglobin.²²⁰ Unfortunately, the downside is that this also produces sickle cell anemia which is eventually deadly.

This is where the story gets really interesting. Despite its incredible mutation rate that has enabled malaria to overcome every drug that we've hurled at it, malaria has never, in all of those thousands of years and trillions of mutations, been able to overcome sickle hemoglobin. Molecular biology explains why. Resistance to a drug can result from a simple, single point mutation. But overcoming sickle hemoglobin would require either multiple, simultaneous mutations or else a sequence of mutations occurring blindly which are just too improbable to occur. As a result, sickle hemoglobin has never been overcome by malaria. The mutations required are simply too improbable.

HIV supplies another case study. The HIV virus mutates ten thousand times faster than malaria, if you can imagine. In the last fifty years alone, the AIDS virus has mutated as much as all the cells that have ever existed upon earth. Can you imagine? It has tried out every possible combination of up to six point simultaneous mutations and it has become resistant to every drug that we've developed. But Behe says, "Yet through all of that, there have been no significant basic biochemical changes in the virus at all. . . . on a functional biochemical level the virus has been a complete stick-in-the-mud."²²¹ Behe concludes, "The studies of malaria and HIV provide by far the best direct evidence of what evolution can do."²²² He says,

. . . here we have genetic studies over thousands upon thousands of generations, of trillions upon trillions of organisms, and little of biochemical significance to show for it. . . . Our experience with HIV gives good reason to think that Darwinism doesn't do much – even with billions of years and all the cells in the world at its disposal.²²³

Finally, recent studies on the bacterium *E. coli* have yielded similar results. Richard Lenski and his colleagues recently released their data on studies of *E. coli* in which they did research on 40,000 generations of *E. coli* grown in the laboratory. They discovered that while there were a couple score of beneficial mutations (and this speaks to an earlier question) that occurred in these *E. coli* bacteria; nevertheless, these mutations were degradative, or degenerative, in nature. That is to say they involved the loss of genetic information or the loss of protein function. They were beneficial, but they resulted in the loss of genetic information. So there is no indication that these bacteria were on their way toward building new complex systems. Lenski's work lines up very well with the results

²¹⁹ Ibid., p. 75.

²²⁰ 25:05

²²¹ Ibid., p. 139.

²²² Ibid., p. 140.

²²³ Ibid., pp. 140, 154-55.

of malarial and HIV findings. In huge numbers of tries, one sees minor changes, mostly degradative, but no new complex systems evolve.

Now, malaria, HIV, and *E. coli* represent three fundamentally different forms of life. The malarial organism is a eukaryote; that is to say, it is an organism having a nucleus.²²⁴ HIV is a virus. *E. coli* is a bacterium – it is a prokaryote, they don't have a nucleus. So we have here three fundamentally different forms of life, a eukaryote, a virus and a prokaryote. And in each case the evidence for the efficacy of the Darwinian mechanisms is the same – it just doesn't do very much. I quote from Michael Behe's online blog:

Instead of imagining what the power of random mutation and selection might do, we can look at examples of what it has done. And when we do look at the best, clearest examples, the results are, to say the least, quite modest. Time and again we see that random mutations are incoherent and much more likely to degrade a genome than to add to it — and these are the positively-selected, “beneficial” random mutations.²²⁵

He says, “There is no evidence that Darwinian processes can take the multiple, coherent steps needed to build new molecular machinery . . . that fills the cell.”²²⁶ Thus the argument from the ability of organisms to develop drug resistance seems to completely backfire. Far from providing evidence of the power of the Darwinian mechanisms to produce grand evolutionary change, the experience of scientists with drug resistance in bacteria and viruses and malaria reveals the severe limits of those mechanisms.

So, again I ask: where is the evidence for the extraordinary extrapolation that Darwinism involves? Behe says that the evidence for common descent seems compelling. He affirms the thesis of common descent that we looked at. “. . . the evidence for common descent seems compelling. . . . [but] except at life's periphery, the evidence for a pivotal role for random mutations is terrible.”²²⁷ If Behe is wrong about this then I simply want to know – what is the evidence? I am genuinely open to it but what is it? What is the evidence that would justify this grand evolutionary extrapolation?

I have to say when I, as an objective observer, look at the evidence it seems to me that we haven't been shown yet any good reason to think that these Darwinian mechanisms are sufficient to explain the extraordinary diversity of life that we see on this planet during the amount of time that is available.

In their book, *The Anthropic Cosmological Principle*, the physicists John Barrow and Frank Tipler list ten steps in the course of human evolution such as the development of photosynthesis, the development of an endoskeleton and so forth.²²⁸ Ten steps in the course of human evolution, each of which is so improbable that before it would occur the sun would cease to be a main sequence star and would incinerate the earth. Included in these steps are things like the development of a DNA-based genetic code, the evolution

²²⁴ 30:03

²²⁵ Michael Behe, “Response to Kenneth R. Miller”, July 11, 2007 blog post at <http://behe.uncommondescent.com/2007/07/response-to-kenneth-r-miller/> (accessed April 16, 2013).

²²⁶ Behe, *The Edge of Evolution*, p. 162.

²²⁷ *Ibid.*, pp. 3-4.

²²⁸ John Barrow, Frank Tipler, *The Anthropic Cosmological Principle*, (Oxford: Clarendon Press, 1986), pp. 561-65.

of aerobic respiration, the evolution of glucose fermentation to pyruvic acid, the development of an endoskeleton, and so on and so forth. Ten steps in the course of human evolution, each of which is so improbable that before it would occur, the sun would have gone through the entire course of its stellar evolution and incinerated the earth. As a result, they report that “there has developed a general consensus among evolutionists that the evolution of intelligent life, comparable in information processing ability to that of *homo sapiens* is so improbable that it is unlikely to have occurred on any other planet in the entire visible universe.”²²⁹ So according to Barrow and Tipler, the consensus of the evolutionary biologists themselves is that the evolution of intelligent life is so improbable it is unlikely to have taken place anywhere else in the entire visible universe. But then that raises the obvious question – why think that it has evolved on this planet by these Darwinian mechanisms?²³⁰ Indeed, doesn’t the evidence suggest just the opposite? In fact, Tipler himself now believes that the process of evolution must have been guided by some kind of intelligence.

So how do we put this together? Well, I am rather skeptical of these mechanisms of the Darwinian theory of biological evolution. I think the whole story hasn’t been told here yet. So even if the thesis of common ancestry is true, these mechanisms that have thus far been suggested seem to be inadequate to explain the biological complexity that we have today. There is something more going on here than just random mutation and natural selection.²³¹

²²⁹ Ibid., p. 133.

²³⁰ 35:07

²³¹ Total Running Time: 36:16 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 20

Theological Synthesis

For the last several months, we have been on an excursus exploring the relationship between creation and evolution. The last time I argued that the explanatory mechanisms that are offered for Darwinism seem to me to be inadequate to explain the grand evolutionary story of life. The mechanisms of genetic mutation and natural selection have not been demonstrated to have the sort of power to produce grand evolutionary change that the theory envisions. Therefore, I tend to be skeptical about the neo-Darwinian theory with respect to the mechanisms. I suspect that there is more at work here and that the full story of the origin of biological complexity has not been told.

DISCUSSION

Question: In the mechanisms of Darwinism, we see all around us adaptation all of the time. The general population says, “Yes, we see the peppered moth” and all of that. When the environment changes, certain aspects of those animals are advantaged and therefore it appears that they adapt. But all of that is not adding information. The information was already there. I have never heard anyone say in evolution that information was added. It is very apparent that the information in DNA was already there, the animals have lots of DNA from which to adapt and the adaptation is loss of information, not added information.

Answer: Thanks for that comment. Not being an information theorist myself, I have nothing significant to add to that. The question I suppose would be whether or not mutations could produce additional information that isn’t there originally.

Followup: (off-mic) There is not one mutation that has been identified that added information. That is what I heard.

Answer: All right.

Question: Where I think Darwinism is weak is when you talk about when life first appeared you also need to have the first replicator – the ability to reproduce. Also, the Cambrian Explosion is something I don’t think you have mentioned but it is difficult to explain through Darwinism.

Answer: We have separately treated the question of the origin of life and the evolution of biological complexity. The point you were making about the mystery of the first replicator as you put it – the origin of life itself – is something which remains utterly unexplained by contemporary biology or chemistry. There just isn’t any viable origin of life theory on offer today. There have been many suggestions but none of them have been able to explain this. In fact, we saw the sort of more than astronomical improbability of this happening by chance. Now, the Cambrian Explosion would seem to me to be relevant to the thesis of common ancestry. I did not raise it when we talked about that. In the

Cambrian rocks, you have all of the contemporary phyla, or major groups, of animals, appear. In fact, and this kind of goes to the earlier point in a way, not only do all of the extant phyla appear in the Cambrian fossils, but there were additional phyla that have now gone extinct. So it is not as though over the course of time additional phyla have evolved – additional groups of animals. If anything, there has been a winnowing.²³² All of the phyla of the animal kingdom appear in the Cambrian and then there has been a winnowing as some of these have gone extinct. In the pre-Cambrian rocks, there are very few fossils. There is nothing, by way of anticipation, of things like the trilobites which are incredibly complicated animals. Someone once said that if you were to find a rabbit, say, in the Cambrian that would be a disproof of evolution. But an animal like a trilobite is of comparable complexity and yet it just appears in the Cambrian. The answer that is often given is that the animals that existed in the pre-Cambrian were soft-bodied and therefore didn't leave many fossils. But a good many people would find that answer to be implausible. Things like trilobites and these other sorts of animals must have had some sort of ancestors if they weren't special creations. They couldn't all just spring immediately from soft bodied creatures. So the so-called Cambrian Explosion would be a challenge to the thesis of common ancestry that all living organisms descended from some original primordial ancestor. What the creationist might say is more plausible would be that God has created a multiplicity of origins of life and that then these evolved so that you would have a kind of forest of trees rather than a single sort of evolutionary tree. You are right, that would be relevant I think not so much to Darwinism as it would be to the thesis of common ancestry which I have distinguished from Darwinism.

Question: I just wanted to make a quick comment regarding the soft bodied creatures. Some of the creatures within the Cambrian Explosion are themselves soft bodied. One example would be sponge embryos which are sort of the ultimate soft bodied creature and yet it is just slightly below the Cambrian era. So if there were all these soft bodied creatures before the Cambrian, why is it somehow we preserve all these sponge embryos but we don't seem to preserve all the other soft bodied creatures.

Answer: Right, they do leave fossils, don't they?

Followup: They do.

Answer: OK!

Question: I was hoping to clarify your point that you made about bacterial mutations. It was pretty complex and it sounded really interesting but I just wanted to make sure that we all understood what you were getting at. My understanding was you were saying that even though there are millions of mutations in bacteria, we never see a transition that leaps to different bacteria. Was I completely wrong?

Answer: I think that is a little bit too strong a statement. I don't think we would need to expect to see that sort of radical change in our lifetime. Rather, the point that Michael Behe was making was when you look at the malarial organism – it is not a bacterium, it is a little single-celled organism – and you look at the rates at which it reproduces, if natural selection and random mutation were able to achieve significant advance you would think the malarial organism would have overcome sickle cell hemoglobin in the human body

²³² 5:10

which is itself a mutation in the respiratory system, not in the human immune system. The human immune system has not been able to counteract malaria and malaria hasn't been able to overcome sickle hemoglobin. Why? Well, Behe says it is because you would either have to have multiple mutations occur at the same time or a sequence of mutations occurring in succession, both of which are just so fantastically improbable that it wouldn't happen. He then compares that with the HIV virus which multiplies even more quickly than malaria and he says that the HIV virus over the last 50 years has replicated more than all of the cells in the history of life on this planet. They have tried out every combination of up to six point mutations and yet he says there have been no significant biochemical changes or advances in the virus. So it is not that the virus hasn't changed into something else but there hasn't been any kind of significant biochemical evolution at all. Similarly with regard to the Lenski experiments on bacteria which is yet a third type of organism that also replicates very rapidly. What Lenski found was that even though there were tens of thousands of generations of these, there were only about, I think, 20 or so score (as I recall) beneficial mutations and all of those involved the loss of genetic information – a degradation of the genome.²³³ So his argument is that against those like Ayala who claim that the ability of viruses and bacteria to develop drug resistance through mutation is not a good argument that genetic mutation and natural selection can explain grand evolutionary change. It only shows the ability to have limited evolution through simple mutations that render these organisms drug resistant but to extrapolate that evidence to the sort of grand evolutionary scenario that would say that a bat and a sponge evolved by these same mechanisms from some primordial ancestor is an extrapolation for which there is no evidence at all. That was the point that I think Behe was trying to make.

Theological Synthesis

Now we come, finally, after so many months, to drawing some conclusions. I call this on my outline *Theological Synthesis*. Here I have two sub-points.

Scientific Considerations

Sub-point 1 under Theological Synthesis is *scientific considerations*. How might one integrate the scientific evidence that we've examined with the Genesis narrative? It seems to me that so-called *progressive creationism* would provide a nice model that would fit both the scientific evidence as well as the biblical data. Progressive creationism suggests that God intervenes periodically to bring about miraculously new forms of life and then allows evolutionary change to take place with respect to those life forms. As for grand evolutionary change, this would not take place by the mechanisms of genetic mutation and natural selection if undirected by God. Rather, we would need miraculous creationist acts of God to intervene in the process of biological evolution to bring about grand evolutionary change. So we would have a kind of progressive creationism whereby God creates biological complexity over time.

How would such a view comport with the evidence for the thesis of common ancestry? I think that this doctrine could either affirm the thesis of common ancestry or it could deny

²³³ 10:20

it. It would depend upon whether or not you think that these acts of intervention on God's part would be acts of creating something *ex nihilo* – just out of nothing, brand new. For example, there would be a pond with nothing on it and then suddenly some ducks would appear out of nothing on the surface of the pond, miraculously created by God. I have to confess that, to me, that smacks a little bit of magic to be attractive. I noticed that when God creates in the Genesis narrative, he uses nature. He says, "Let the earth bring forth vegetation and fruit trees" and "Let the earth bring forth the terrestrial animals."²³⁴ When he creates man, he creates man out of the dust of the earth.²³⁵ God uses means. So, it may well be the case that God uses preexisting life forms as the stuff on which he acts by intervention. For example, suppose God wanted to create birds. Well, to create birds God could bring about a systemic macromutation so that a bird would hatch out of a reptile egg; or else he could produce a sequence of mutations in very rapid succession to bring about a bird from a reptile.²³⁶ Something of that sort would never occur by the normal mechanisms of random mutation and natural selection. It would be too fantastically improbable for such "hopeful monsters"²³⁷, as they are called, to appear by accident. But God could produce a kind of system-wide macromutation in an organism that would cause grand evolutionary change to take place over time as a result. That would explain the evidence for a common genetic code in all living things as well as the traces of genetic ancestry in things that we talked about when we looked at the thesis of common ancestry. But, it would equally explain why we don't find intermediate forms in the fossil record. Because you have these progressive creationist interventions, grand evolutionary change would not leave any fossil traces of intermediate forms. Rather, what we would expect to find would be discontinuity in the fossil record.

So some sort of a progressive creationist view, I think, would explain the evidence quite well. It would allow you to affirm or deny if you wish the thesis of common ancestry and it would supplement the mechanisms of genetic mutation and natural selection with divine intervention. I find some sort of progressive creationism to be an attractive view.

Again, I want to reiterate that on these issues I am like many of you a scientific layperson. I am someone who has an interest in these subjects, I want to learn and to study them further, and explore them more deeply. So these opinions are held tentatively and lightly and are subject to revision.

DISCUSSION

Question: How does this differ from Stephen Gould's Punctuated Equilibrium?

Answer: Well, he has no divine interventions but it would be similar in the sense that one wouldn't expect to find the intermediate forms, right? On his view, these intermediate

²³⁴ cf. Genesis 1:11, 24

²³⁵ Genesis 2:7

²³⁶ 15:22

²³⁷ Richard Goldschmidt originally coined the term "hopeful monster" in his 1940 book *The Material Basis for Evolution*. Goldschmidt argued that large evolutionary changes were caused by macromutations; that is, rather than gradual mutations occurring over generations, macroevolutionary changes were caused by a single-step, complex mutation acting on a developing embryo. His "hopeful monster" ideas were controversial in his day and, to many, still are today.

forms would be lost because they would occur in very small populations so there would be leaps in the fossil record. But on this view there would similarly be leaps in the fossil record as a result of these interventions on God's part. So I think it would explain the paleontological evidence just as well as his theory would but obviously his is a naturalistic account and so still has to rely upon these same mechanisms of random mutation and natural selection.

Question: Would you admit then that your theory with universal common descent might actually require more divine intervention than say direct creation apart of universal common descent. For example, we have the trilobite – if we have to evolve that supernaturally from a single celled creature as opposed to creating it directly, you need a bunch of these directed mutations and therefore more supernatural intervention.

Answer: I actually think that is right. I think that the progressive creationist might be more interventionist in virtue of thinking that all the way along this process God may have been doing things of this sort.

Followup: For example, someone like Behe's model which is that sort of universal common descent but directed mutations by God – I think that is what you are suggesting here – as opposed to Hugh Ross' model which has the direct creation of forms like the trilobite without ancestry.

Answer: Right. Let's differentiate this from Behe's view and also from the view of people like Francis Collins and so forth. The view that they will often call "theistic evolution" is now, today, being called "evolutionary creationism." I take it that the difference between progressive creationism and evolutionary creationism is that evolutionary creationism doesn't think that there are any interventions. It doesn't postulate miraculous divine input into the causal process or the sequence of secondary causes.²³⁸ The explanatory mechanisms that operate in the standard theory were simply the ones chosen by God to bring about biological complexity. So progressive creationism is not the same thing as theistic evolution which I take to be more Behe's view. I don't think that Behe believes that there are these progressive miraculous interventions. He will sometimes say that maybe evolution was front loaded (that's the way he likes to put it); that it was all put in at the beginning and then it just unfolds as time progresses.

Followup: I would differ based on the book *The Edge of Evolution*. In that book Behe does say, "I believe in adding a mechanism to natural selection and the undirected mutation which I would call direct mutation." That, at certain points in history, God directly created a whole bunch of mutations in certain life forms which could not possibly have been produced by natural processes.²³⁹

Answer: OK, that would represent a change from his earlier view. I didn't remember

²³⁸ 20:12

²³⁹ "If random mutation is inadequate, then (since common descent with modification strongly appears to be true) of course the answer must be *nonrandom* mutation. . . . I conclude . . . the elegant, coherent, functional systems upon which life depends are the result of deliberate intelligent design. . . . although some religious thinkers envision active, continuing intervention in nature, intelligent design is quite compatible with the view that the universe operates by unbroken natural law, with the design of life perhaps packed into its initial set-up." Michael J. Behe, *The Edge of Evolution: The Search for the Limits of Darwinism*, (New York, NY: Free Press, 2007), pp. 165-66.

seeing that in *The Edge of Evolution*. But in any case, that would be more progressive creationism.

Question: When I was in seventh grade science class, I learned the truth of evolution and I abandoned all my faith completely because it explained everything there was to explain. I learned about the Nebraska Man, and the Piltdown Man, and Haeckel's embryos and all of these things that were truths of science. And then as time goes on, I learned that those weren't truths of science and even scientists learned that what they believed back fifty years is not what they believe today. At what point do you say what we know today is truth? Or, are you doubting that at some point fifty years from now what we believe to be truth today is not truth and that the Bible is true?

Answer: I think you are raising a very good question. I don't think anybody today would deny, for example, Harvey's theory that blood circulates which was a scientific discovery. So there does come a point at which something is so firmly established scientifically that it is unlikely to be overthrown. But in a case like this, that is why I want to look at the evidence and simply invite the evolutionary biologist to say what the evidence is for the efficacy of these explanatory mechanisms to produce grand evolutionary change. If he is not able to give us anything more than what we've already seen, then I think that the theory is ripe for being overthrown. We can't have a great deal of certainty in it. So, it is going to be on a case by case basis. I don't think there is a sort of rule of thumb but there does come a point at which something is so firmly scientifically established by a diversity of fields and many types of confirmatory evidence that however the future of science might progress, it is unlikely that that would be overturned.

Question: What were you saying about *The Edge of Evolution*? Does Behe say something like junk DNA is really functional to front end load the process?

Answer: When I heard Behe initially when I first met him in Cambridge, he was saying when pressed on what his theory of intelligent design would be that maybe this information was all front loaded into the cell at the beginning and then simply unfolds over time and junk DNA, though he didn't mention it, might be an example of that. It turns out that it is not really junk after all but it plays an important role in the genome. So, at least at that time, his view was that you didn't need to have these kinds of interventions along the way; it could have been as he put it front loaded.

Theological Considerations

All right, those are the scientific considerations relevant to crafting a theory that would integrate the Biblical material with the scientific evidence. But now I want to address secondly some *theological considerations*. So sub-point 2 is theological considerations.

I have found that theological considerations are, in the minds of many people (both Christian and non-Christian alike), just as important or even more important than scientific considerations in assessing a progressive creationist model such as I have suggested.²⁴⁰ There is today a sort of unholy alliance between Young Earth Creationists and naturalistic evolutionary biologists aimed at invalidating any sort of account that

²⁴⁰ 25:04

would try to integrate God and evolutionary biology. Creationists and naturalists alike agree that theism and evolutionary biology are incompatible. Creationists conclude that evolutionary theory is therefore false whereas naturalists conclude that therefore theism is false.

So, what are the arguments that convince both of them that a progressive creationist account cannot be true? Well, it turns out that these are basically version of the philosophical problem of evil. Not the problem of moral evil, but rather the problem of natural evil. Two aspects of evolution are thought to be incompatible with God's existence: first, the *flaws in nature* and then secondly *nature's cruelty*. Let's talk about both of these.

First, let me say a word about design flaws in nature. Here, the evolutionary biologist or detractor of design will point out that the designs, so-called, in nature are imperfect and flawed in various ways. For example, the panda's thumb is not really something designed to be a thumb but it is a sort of finger or digit that has evolved to work something like a thumb. Or in the human eye – because of the optic nerve penetrating the retina, human beings have a blind spot in our visual field where we cannot see because of the hole in the retina created by the optic nerve. There are all sorts of these design flaws that are typically pointed out by naturalistic evolutionary theorists.

Well, I think there are various ways in which the Christian theologian might respond to these. First, he might challenge the assumption that these alleged flaws aren't really flaws at all. Take for example this common claim that the placement of the optic nerve in the human eye is flawed. Might God in fact have a good biological reason for so designing the eye? Well, as it turns out, yes indeed. As Michael Denton, the New Zealand microbiologist explains, the difference in the placement of the optic nerve in the human eye in comparison with the cephalopod eye, which is a camera eye in squids. It is very similar to the human eye but which doesn't have the visual blind spot because the optic nerve doesn't go through the retina. The difference in the placement of the optic nerve in the human eye compared with the cephalopod eye is because of the need for a greater supply of oxygen in warm blooded animals. So it actually turns out that this alleged flaw is not a flaw at all. It is something that is a benefit to warm blooded animals like ourselves. Over and over again scientists have found that what they had first thought were flaws in nature's design turn out with greater understanding not to have been flaws at all.

But, let's suppose that there are flaws that seem to be the result of natural selection. Fine! That is not a problem for the progressive creationist. Even though the special creationist will usually hold that the different kinds in Genesis were specially created by God, say, on the order of the family or the order biologically, they grant that evolution took over from there. So, for example, they might say that God created the common ancestor of the Ursidae, or the bear, family. And from that primordial ancestor of bears the different species of bear have evolved. There are today eight different species of bear. It is hardly surprising that one of these species would have evolved the so-called panda's thumb which is sometimes touted as a design flaw.²⁴¹ It hardly needs to be said that theologians don't need to embrace special creationism but if they accept the thesis of common

²⁴¹ 30:00

ancestry then they wouldn't be at all surprised that organisms would bare the design imprint of their ancestors.

So I don't think that this argument from design flaws is a very serious theological objection at all. Many of these so-called flaws turn out not to be flaws and, even if they are flaws, they are not a problem for the progressive creationist or even for the special creationist who imagines evolution taking place within certain kinds.

What then might we say about the second problem – about animal behaviors that strike us as cruel? Once again, even creationists who embrace evolution within broad kinds which permits organisms to change won't be surprised at this. For example, pathogenic or disease producing bacteria were once free living organisms which evolved to become pathogenic parasites. Again, it wasn't as though God created these parasites initially; they were free living independent organisms which then evolved into these pathogenic bacteria. Genome sequencing has revealed this to be a sort of devolution which is the result of a massive loss of genes – the loss of genetic information has produced these pathogenic bacteria. So having limited evolution could produce all sorts of activities and structures within nature that might strike us as cruel.

Now, of course, this appeal to limited evolution within various kinds won't ameliorate the general problem of animal suffering. But here I think that something more needs to be said by way of the nature of animal suffering. In his book *Nature Red in Tooth and Claw*²⁴², Michael Murray distinguishes three levels of pain awareness in the animal world. Level 3, which is the lowest level, is simply information bearing neural states which are produced by noxious stimuli which results in aversive behavior. So this would simply be neural activities that result in aversive behavior – you poke an amoeba with a needle and it recoils. But the amoeba doesn't have any experience of pain, it just responds to noxious stimuli. At a higher level, level 2, is a pain awareness that occurs in sentient animals. So horses and dogs and cats have an experience of pain. This would be a kind of first order subjective experience of pain that sentient animals would have. But then at the highest level would be a kind of higher order awareness that one is oneself experiencing level 2 – a self-awareness of experiencing level 2 pain.

What Murray points out is that although animals like spiders and insects and so forth exhibit the third level or lowest level of pain awareness or reaction to stimuli, there is no reason to attribute any kind of level 2 pain awareness to these sorts of organisms. This level of pain awareness doesn't arrive until one gets to the level of the vertebrates in the animal kingdom. But even though vertebrates and higher animals experience level 2 pain there is no evidence that they experience level 3 – that self-awareness of being oneself in pain – because animals aren't self-conscious beings. As the German philosopher Immanuel Kant nicely put it, they cannot put “I think that” in front of their conscious states as we can. An animal does not say “I think that this is my bowl of food” or “I think that I will do this or that.” Animals are not selves and therefore do not have this kind of self-awareness in level 3.²⁴³

So the person who is against a progressive creationist model would have to show that

²⁴² Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering* (Oxford: Oxford University Press, 2008).

²⁴³ 35:02

animals are self-conscious in order to attribute this third level pain awareness to them. But there just isn't any clear biological evidence for this – that animals do have this kind of self-consciousness. Biologically, self-awareness seems to be connected in some way with the prefrontal cortex of the brain which is either missing or underdeveloped in all other animals except for the humanoid primates – the higher primates like gorillas and chimpanzees and so forth. Therefore, even though animals may experience pain, they are not aware of being themselves in pain. God in his mercy has apparently saved animals the awareness that they are themselves in pain.

Now this is a tremendous comfort to those of us who are pet owners because it means that even though your dog or cat, say, may be in pain, he or she isn't really aware that he or she is himself or herself in pain. Therefore, your dog or your cat doesn't suffer in the same way that you do when you experience pain because you have this first level self-awareness of being in a state of pain which an animal lacks.

This has tremendous implications for the problem of animal suffering, I think, as you can already see. We will talk about those implications when we come together next time. Then we will draw this entire discussion to a close.²⁴⁴

²⁴⁴ Total Running Time: 37:04 (Copyright © 2013 William Lane Craig)

EXCURSUS: CREATION AND EVOLUTION

Lecture 21

Putting It All Together

Putting It All Together

In this lesson we bring to a close our excursus on creation and evolution that we have been in for many lessons now. Last time I suggested a possible model of integration of the biblical teaching about the origin of life and biological complexity and what the scientific evidence today tells us. I referred to this as a *progressive creationist* view – that God, over time, intervenes miraculously in ways to push forward the evolutionary process that would not have happened in the absence of such divine interventions. I argued that this seems to fit with the scientific evidence that we have today.

Finally, I turned to theological objections to such a progressive creationist outlook. You will remember we considered two objections to this model. First was the objection based upon so-called design flaws in nature. I suggested that these are really not all that problematic. The Christian theologian could respond first by arguing that some of these alleged flaws are not really flaws at all – the placement of the optic nerve in the human eye for example is not really a flaw but necessary for the supply of oxygen that warm-blooded animals need. Or we could argue alternatively that these imperfect designs as one might put it are not things directly designed by God but that these are the spinoffs of the evolutionary process. Even the special creationist doesn't think that God has created every organism *ex nihilo* but that, for example, God created a primordial bear, say, and then that bear type has evolved into several different species one of which is a panda and that has evolved a thumb for stripping the leaves of bamboo – the so-called panda's thumb. So I don't think these design flaws are really a very significant theological objection to a progressive creationist view.

But then we turned to the problem of the cruelties of nature. Nature is, as they say, red in tooth and claw. The whole evolutionary process is built upon animal predation – animals eat each other, they kill each other in order to survive. Indeed, *we* are predators – we human beings are carnivores! The whole evolutionary process is built upon this history of predation and death and suffering and many have argued that this is incompatible with the existence of an all-powerful and all-loving God. So this is a version of the problem of evil. This is a version of the problem of evil that appeals to natural, rather than moral, evil. Those who believe in evolution would see this as an argument against the existence of God. On the other hand, certain special creationists would see this argument as a good argument not to believe in evolution because it is incompatible with an all-powerful and all-loving God. But both of them share that assumption that there is some sort of incompatibility here. Again, I argued that much of the animal behavior that strikes us as cruel could be the result of natural selection operating on random mutation. I gave the example of pathogenic, or disease producing, bacteria which become parasites. These were actually, originally apparently, independent organisms which, through mutation and the loss of genetic information, became these terrible parasitic creatures. So one could appeal to natural selection operating on random mutation to explain some of the cruel

behaviors that are exhibited by various animals.

But this won't alleviate the general problem of animal suffering, of course. As I say, the whole evolutionary process is built upon the reality of animal predation – that some animals are predators and survive by killing and eating others. So we still need to then talk about why God might have permitted a world that is filled with animal suffering.²⁴⁵ This requires us to say something about the nature of animal suffering. Last time I began by appealing to Michael Murray's excellent book *Nature Red in Tooth and Claw* published by Oxford University Press²⁴⁶ in which Michael Murray distinguishes a pain hierarchy of three different levels.

On the lowest level would be simply information bearing neural states within neural systems or nervous systems. These are produced by noxious stimuli and result in aversive behavior. The example I gave was poking an amoeba with a needle would cause it to recoil; or, with certain other primitive organisms, they will exhibit aversive behavior when receiving noxious stimuli of their neural systems. But there isn't any sentience here. There is no experience of pain. There is no consciousness in such animals. These would be things like spiders and insects. Many of the cruel behaviors that anti-theists often appeal to in pressing the natural problem of evil will be the behavior of insects and other low level creatures. But really, in effect, these are just like little machines. They are like little robots – they have no sort of sentience or experience of pain. They don't suffer when they experience these neural states.

The second level of pain awareness would be a first order subjective experience of pain. When you get to the level of the vertebrates then you do have sentience, you have consciousness. So you have a subjective experience of pain. So when a zebra is attacked by a lion and torn to pieces, it experiences this second level of pain because it has sentient behavior. But even though certain animals experience pain (they have this first order subjective awareness of pain) there is no evidence that animals – other than human beings – have level one, which is a second order awareness that one is oneself experiencing level two. That is subtle and requires you to think about it. You can have a level two experience but animals don't have, for all we know, this top level second order awareness that they are themselves in a state of experiencing level two. This is a point that philosophers have long recognized. As I said, Immanuel Kant made the point that animals other than human beings cannot prefix their conscious states with the words "I think that" because they have no first person awareness or perspective.

So even though animals may experience pain they are not apparently (or at least we have no evidence) that they are themselves aware that they are in a state of pain. To give an analogy of this, Michael Murray appeals to an incredible phenomenon called "blindsight." There are certain people who are, for all practical purposes, blind. They have no visual experience of anything. And yet, they can actually see. A blindsighted person would catch a ball if you threw it to him because he sees it and he would catch it. If you were to invite him to come across the room, he wouldn't run into the chairs and tables, he would walk around them because he actually does see them. But he has no

²⁴⁵ 5:06

²⁴⁶ Michael Murray, *Nature Red in Tooth and Claw: Theism and the Problem of Animal Suffering* (Oxford: Oxford University Press, 2008).

visual experience of seeing them. Even though he is in a kind of first order visual experience – in this first order sense, he sees things – he doesn't have this second order awareness that he can see them. He's blind for all practical purposes! So as Michael Murray points out, it would be a pointless endeavor to spend an afternoon at the art gallery with a blindsighted person, taking him through the museum to see the paintings.²⁴⁷ Yes, he could see the paintings but he would have no visual experience of the paintings. That is very similar to what we are talking about here. An animal can have a first order subjective experience of pain without having this second order awareness that he is, himself, experiencing this first order pain.

As I said last time, this is a great comfort to those of us who are pet owners. I remember so well when a few years ago our beloved cats Puff and Muff, whom we have had for some 14 years, died. It was so awful to see Muff vomiting blood and obviously in a horrible state of discomfort. We shed a lot of tears in putting Muff and Puff to sleep at the vet. Yet, it is a comfort to know that even though Muff was suffering, she wasn't aware that she was suffering. She didn't have this first order awareness "I am in this state of pain; I am suffering." So what this means is that animals, for all we know, don't have the same kind of experience of suffering that we human beings do. God has created us in such a way that we experience this terrible suffering because we are aware that we are going through it but this would mean that animals don't experience suffering in the same way that we do.

That, I think, has tremendous implications for this argument against progressive creationism based upon nature's so-called cruelties and animal suffering. Those that propound this argument seem to be guilty of the fallacy of *anthropopathism* from the Greek word "*anthropos*" meaning man or human and "*pathos*" meaning suffering. When we ascribe to animals the kind of pain experience and awareness that we have, we are guilty of anthropopathism – we are ascribing to them human emotions and feelings. This is, I think, almost second nature to us. Part of this is the result of our long cultural experience with Disney films like *Bambi*, for example, where we think of the little animals and creatures in the forest as being like Bambi – they are really human agents with animal bodies but they are self-conscious people. I remember seeing one sign protesting over animal rights and it said "Animals are people, too!" That is guilty of this fallacy of anthropopathism. Moreover, we human beings seem to have an inveterate tendency to ascribe agency and self-consciousness to even inanimate objects. We talk to our computers, we yell at our car when it doesn't work right, we talk to our houseplants on occasion. I remember even Richard Dawkins reflecting once on how he found himself cursing at his bicycle when it wouldn't function. You say "That stupid thing – what is the matter with this idiotic mechanism!" as though it had some sort of agency that could be blamed for the way it is operating. When we do this we are guilty of anthropopathism and I think this is just, as I say, almost second nature to us as human beings. I saw a video clip responding to Michael Murray's book on YouTube in which this was exemplified. In order to refute Murray, part of what they did was show films of a whale which had helped to rescue a fellow from the water. Because the whale exhibited this sort of kind behavior and helped this human being out they were willing to attribute first person consciousness and agency to the whale. That is, again, simply fallacious. Exhibiting that kind of

²⁴⁷ 10:01

behavior is not evidence of a first person perspective “I think that.”

That diminishes or mitigates the problem of animal suffering, I think, but having said all that, the question still remains: why did God choose to create a world featuring an evolutionary prelude to the appearance of human beings on the scene?²⁴⁸ Why would he choose to create a world in which there is this evolutionary process of death and predation and so forth leading up to the appearance of man on the scene? Well, maybe a world with evolution is a richer and more wonderful world of creatures than a different kind of world. I mean, seriously, aren't you glad that God created the dinosaurs? I am! Ever since I was a boy, I have been delighted and enthralled with these bizarre, wonderful, colorful, fascinating creatures of the age of the dinosaurs and of the Ice Age. I am glad that God has created a world with these sorts of animals in it. Why shouldn't God similarly delight in all creatures great and small that he has made? Maybe such a world is more wonderful and rich than a world in which they didn't exist.

Ultimately, however, I suspect that the answer to this question is going to have to do more fundamentally with God's wider plan for humanity. With regard to his desire to create an ecosystem where autonomous human agents can flourish and make an uncoerced decision to embrace or reject God's offer of saving grace. Let me repeat that – it has to do more fundamentally with God's wider plan for humanity with his desire to create an ecosystem where autonomous human agents can flourish and make uncoerced decisions to embrace or reject God's offer of saving grace. God has not created a world in which his existence is so evident and obvious that we are not at liberty to reject him and ignore him. He has created us at a sort of arms distance, as it were, that affords scope for human autonomy and development and growth and ultimately receiving or rejecting his saving grace.

Any viable ecosystem is going to involve animal predation and death for the health of the ecosystem as a whole. I saw this beautifully illustrated a few years in a PBS special that described how the Canadian government was reintroducing wolves into the Canadian wilderness for the sake of the caribou on which they preyed. Now if that sounds paradoxical, the situation that the Canadian government found itself confronted with was that in the absence of these predators there was nothing to pick off the diseased and the aged caribou so that the population was exploding and as a result the herds were overgrazing and so they were dying of starvation. So for the good of the caribou themselves they had to reintroduce these natural predators into that ecosystem and that would result in healthier caribou and the herds would flourish as a result paradoxically.

As proponents of the so-called Gaia Hypothesis have taught us, it is not sufficient to consider just the individual isolated organism unconnected with its environment. Rather, you have to consider the whole. According to the Gaia Hypothesis, the whole earth – the entire ecosystem of the earth – is a sort of living organism which is balanced internally with predators and herbivores, elimination systems, other systems that then put the CO₂ back into the atmosphere. The whole thing is a kind of balanced ecosystem as a whole that functions well like a living organism. The earth itself is like a living thing. Without wanting to invest this with religious significance in any way, I think it illustrates the point I'm trying to make; namely, you can't consider a single organism in isolation from the

²⁴⁸ 15:06

ecosystem in which it lives.²⁴⁹ It may well be that for the good of the entire ecosystem there has to be animal predation and death.

Of course, God's ultimate purpose on this planet is bringing men and women freely into his Kingdom. The Kingdom of God is the key to human history. The evolutionary history of the earth is ecological scene setting for the advent of human beings and the working out of God's purposes among them. Through this evolutionary prelude to the appearance of man, God sets the stage as it were for the human drama that will then unfold. The primeval forests of these prehistoric ecosystems laid down the deposits for the fossil fuels that have made modern civilization and human advancement possible. We would not have civilization in the absence of these deposits of coal and oil and natural gas. So, should God have just created the earth with the illusion of age? Coal fields that never had forests which laid them down? Illusory ages of things? Well, why think that that would have better achieved God's purposes for humanity? How do you know that God's purposes for the human race are not better fulfilled or achieved by having a genuine ecological history of the earth rather than an illusory history or by creating a world with no apparent history at all? How do we know how many people or what percentage of the human race would have come to know God and his salvation in a world with such an illusory past or with no appearance of age at all? What would best serve to advance the Kingdom of God on this planet is the overriding consideration with respect to what God permits or disallows on this planet. But, we are largely ignorant of what that entails. We are in no position at all to speculate about such matters. We have no way of speculating about how successful the Kingdom of God would have been established in a world involving an illusory past versus the world in which we live. We are just not in a position to speculate about this but then that means we are in no position to speculate as to whether evolution was not a viable way for God to create life on this planet.

So I think that the problem of natural evil in the end fails. It would involve a burden of proof which is simply too heavy for the non-theist or the anti-progressive creationist to shoulder.

DISCUSSION

Question: So what you are saying is that if evolution were true it would actually enhance God's position?

Answer: Now, by God's position you mean achieving his goals?

Followup: Yeah, it would enhance the probability of the existence of God. But it is only the inherent problem with the mechanism due to irreducible complexity. Therefore, if they could resolve that it would better reconcile a long creative past with a true history and probably provide insight into God's plan.

Answer: I am not sure I understood the question but what I would say is that I think that it is not at all improbable – not in the least improbable – that only in a world that is suffused with natural evil, including animal suffering, would the optimum ratio of people come to know God and find eternal life. I think it is not at all implausible that in a world

in which there was no natural suffering, no natural evil, that people would be forgetful of God and say “Who needs him?” It might actually result in more people being lost and not coming to salvation. So I don’t find it at all implausible that natural evil, as you say, might not actually be part of the means by which God achieves his purposes.

Followup: And God would have given us true libertarian freedom?

Answer: Yeah, I am talking about a world in which we have libertarian freedom. That is why I mentioned *autonomous* human agents.²⁵⁰

Question: Just on the comment of anthropopathism, it is not just Disney. Tolkien made trees live and C. S. Lewis does it throughout *The Chronicles of Narnia*. So we can’t just pick on Disney. I have another question about the pain hierarchy. This is the impression I had from last week – and this is a little bit of a detour but I want to get your feedback on what I was thinking. This type of pain hierarchy – I’ve heard this type of argument made but more from people who are pro-abortion where they are trying to put human beings into these categories. So the question would be – how should we approach that topic of pain with regard to the value of human life? Even later in life in cases like Alzheimer’s, do those people have that first level or do they degenerate? Do they start losing that?

Answer: This is an excellent point in illustration. It may well be the case that a fetus has this first order subjective experience of pain. If the abortionist goes in there and burns it alive with chemicals or cuts it to pieces or sucks it out that it could have a first order experience of pain. But it may not yet have developed to have this first order experience of pain that “I am” in this experience of pain. So, as you say, someone might try to exploit that by saying that therefore it is all right to abort these things. But the problem there, it seems to me, is that person is reasoning ethically on the basis that right or wrong is determined by pain. That is a naturalistic assumption which we as theists ought to reject. Otherwise, you could go into a hospital and kill somebody in a coma because they wouldn’t feel it – they wouldn’t have any pain. Or if someone were anesthetized, you could do things to him that wouldn’t be unethical because he doesn’t feel any pain. So I think this business to appealing to pain is the naturalist’s desperate attempt to find some objective foundation for ethics in the absence of God. But what we as theists have are divine commandments that “You shall not murder” and therefore you shall not take an innocent human life made in the image of God. Therefore if a developing fetus is a human being he or she has the right to life and we should not kill him or her. So I see a quite different basis for ethics than pain awareness. Now this also relates to the so-called issue of animal rights. This would also imply, I think, that we should not think of abuse of animals or exploitation of animals in animal agriculture or in these farms where people have these mass factories and mistreat these animals. We shouldn’t think of that as being ethical simply because these animals don’t have a first order awareness that they are in pain. Rather, I don’t see that ethical treatment of animals is rooted in the moral rights of animals at all. Animals are not agents and therefore they don’t have moral prohibitions or obligations to fulfill. They are not moral agents so they don’t have, I don’t think, moral rights. Rather, the ethical treatment of animals is based on our responsibility to them as mandated by God. God has given us a creation mandate to steward the earth and to care for it and therefore it is immoral when we violate that creation mandate by abusing his

²⁵⁰ 25:05

wonderful creatures in this world. That would include forests and trees. It is not that trees have moral rights. A tree isn't a moral agent, it doesn't have any rights. But we, as human beings, do have a God-given moral responsibility to care for the earth and that would mean don't pollute the seas and don't chop down the rain forests wantonly.²⁵¹ So I would see similarly ethical treatment of animals as something that isn't rooted in pain awareness or even in the animals themselves; it is rooted in us, human beings who have been given by God a creation mandate to steward the earth. And I see that as a much more secure foundation for the ethical treatment of animals than these naturalistic attempts to try to interpret animals as somehow being first order pain agents. Good question!

Question: (inaudible)

Answer: I'll repeat the question. He asks, "Could it be that the cruelties of nature and animal predation are related to the Fall and the consequences of the Fall for the creation from which some day the creation will be liberated and perhaps restored to an original pristine state?"

Murray in his book *Nature Red in Tooth and Claw* also discusses that alternative.²⁵² He discusses a number of alternatives for how to deal with the problem of animal suffering. I think that that alternative is open to the Young Earth Creationist who thinks that God created a world in six literal consecutive days and then it fell and there were these disastrous consequences for nature. But that isn't open to me because I am not a Young Earth Creationist. It seems to me that the universe is around 13.8 billion years old or so and that life has been on this planet for some three and a half billion years and human beings are a relatively recent creation on the planet. So it seems to me that there were certainly animal predation and death and suffering prior to the human fall. It is noteworthy I think that when you read Genesis 3 about the Fall, there is nothing in there to suggest that animal death and predation is the result of the Fall. The curses upon the man and the woman involve labor and wresting his living from the earth with difficulty and sweat, and pain in child bearing but there is nothing to suggest there that animal death is the result of the Fall. And in Romans 5 when Paul is talking about how death came into the world through Adam and so death spread to all men because all men sin²⁵³, there again he is clearly talking about human beings. I don't see any reason to think that Adam could not have swatted a mosquito on his arm prior to the Fall, say. So biblically speaking I don't think that there is any reason to think that animal predation and suffering are the result of the Fall, but that is an alternative that is open, at least, to the young earther that wouldn't be open to me.

Question: From the standpoint of prophecy, there are numerous Old Testament passages, most of them in Isaiah, talking about a future golden age in which the Jewish Messiah will rule over the earth on the throne of David. In Revelation, we are told that it will last a thousand years; in the Old Testament there is no mention of a thousand years. One of the characteristics of this is the apparent reversal of the so-called curse on nature – namely that the child can play next to the hole of the cobra and the lion can lie down with the

²⁵¹ 30:08

²⁵² See Murray, *Nature Red in Tooth and Claw*, Chapter 3 "Animal Suffering and the Fall"

²⁵³ cf. Romans 5:12-14

lamb.²⁵⁴ Now, you could take from that that animal predation will be removed in which case God sees that as a kindler, gentler earth and if that is the case, would that not lend a little bit of credence to the argument that perhaps predation was not present until the Fall? If he sees that as a kindler and gentler earth now, why did he not see it as a kindler and gentler earth before that?

Answer: Right. That could be an argument that could be used to support that view. Or, one could say that once people have made a decision for or against God that, in the new heavens and the new earth which operate according to different laws of nature and no longer are there decisions being made for and against God, that there is a new kind of system of nature that won't involve this and maybe won't involve that same scope for human autonomy that I mentioned. On the contrary, we are going to have the vision of God and see what he is like. So it may well be that animal predation and suffering will be removed in the new heavens and the new earth. I think that that is entirely possible.²⁵⁵ I must say, however, I am cautious about that, as attractive as I find that prospect. Because, as you said, the Jews anticipated this sort of messianic reign and it is probable that they didn't anticipate that this meant the end of animal suffering or predation. Probably, I think, when they talk about the lion will lie down with the lamb, that this is symbolic of the peace that the messianic reign will bring. Nations will be at peace with one another and this is a symbolic way of saying that the reign of Messiah will be a reign of peace among the nations and that this wasn't intended to be more than a symbolic expression of that.

Followup: I suppose it gets back, as most prophetic discussions ultimately do, to your system of hermeneutics. In other words, is that allegory or was that intended to be taken literally. I tend to be a so-called grammatical-historian in my hermeneutics so I would tend to take that literally.

Answer: OK, I don't think that the historical-grammatical method is inconsistent with saying that the Bible uses metaphor.

Followup: Oh, it most certainly does [the Bible uses metaphor]. It is just a question that some people will say this is a metaphor and others don't. Where do you draw the line? The Bible is replete with symbols, types, and metaphors.

Answer: OK.

Question: This is not really a question but just a comment. This could be an opportunity in discussion with an atheist if they have fallen into the trap on the one hand attempting to say that there are no objective moral values and at the same time they want to bring up animal suffering. That would be an opportunity to point out a contradiction there.

Answer: Very good! That is right. The person who presses the problem of natural evil is assuming there is something objectively wrong about these behaviors or with nature. How can the naturalist say that? On naturalism, whatever is, is right in nature. You can't say that the crocodile does something wrong when it grabs the wildebeest and pulls it into the river and eats it. That is just natural. So it is difficult, I think, for the naturalist to provide any kind of objective basis on the ground of which he could say that this is

²⁵⁴ cf. Isaiah 11:6-8

²⁵⁵ 35:06

wrong. Perhaps the best he could do would be to say, “I don’t believe in objective moral values, but you do, Christian, and therefore you have got some kind of internal incoherence in your view. You affirm that God is all-good and all-loving and therefore there are objective right and wrong and yet you say he also does this. Therefore, you have got some inconsistency.” But then it becomes very difficult for the atheist to show that God can’t have a morally sufficient reason for allowing this to occur – to have this sort of evolutionary prelude to the advent of human beings.

Question: I just wanted to respond to the question regarding rabbinical interpretations of Isaiah – the wolf lying down with the lamb. It is mixed. Just as Christian interpretations have a wide range; rabbinical interpretations have itself a wide range. I know Maimonides, probably the most famous of commentators, said, yeah, it is metaphor. He does not believe that nature is going to change its course in the world to come.²⁵⁶

Answer: OK, thank you; interesting.

Well, that brings to a close our excursus on creation and evolution. It has been a long time but I think a study well worth having in view of the importance of these issues in contemporary culture.

Next time we will turn to a new locus and begin to look at that.²⁵⁷

²⁵⁶ “Let no one think that in the days of the Messiah any of the laws of nature will be set aside, or any innovation be introduced into creation. The world will follow its normal course. The words of Isaiah: ‘And the wolf shall dwell with the lamb, the leopard shall lie down with the kid,’ (Is. 11:6) are to be understood figuratively, meaning that Israel will live securely among the wicked of the heathens . . .”, Maimonides, *Mishneh Torah*, Book 14 “Sefer Shoftim”, Hilchot “Melachim uMilchamot”, Chapter 12.

²⁵⁷ Total Running Time: 39:19 (Copyright © 2013 William Lane Craig)