

Creation and Science

By Dihan Struwig

Introduction

After watching the debate between Bill Nye and Ken Ham on the question “is creation a viable model of origins?” that took place on February 4 2014 at the Creation Museum I was inspired to write some of my own views regarding the topic. As I was brought up in a Christian home, I was taught the creation tale as reported in the Bible, however as I grew older I was confronted with the evidence of evolution in the education system which disrupted my beliefs. This disruption caused such inner turmoil as I could not find satisfying information as to how to reconcile these two viewpoints. As the evidence of science was so compelling I pursued it as a career in the field of Chemical Engineering, however the inner turmoil resulted in a drug addiction during my engineering studies and I was unable to complete these studies. Seeking rehabilitation from the drug I turned to the Christian religion that I turned away from to pursue science. This in turn led to further studies in theology in order to make sense of the world and existence. This is only a brief account of events in order to provide clarity to the events that led to this essay.

The debate between science and religion is not a new occurrence and has been going on for some time now without reconciliation, and thus I do not aim to resolve the issue. However after an exploration of both fields I do believe that there are some issues that can be clarified. There are two aspects on which this debate revolves being creation and the flood narrative both from the Bible. Therefore I purpose to deal with these two issues separately.

Within the creationist viewpoint the book of Genesis is regarded as a typical historical narrative¹, with the account of Creation from Genesis 1 as a literal account of creation occurring in six 24hour days. However this approach has some fundamental flaws as an accurate interpretation of the book of Genesis. In order to understand the creation narratives of Genesis we would firstly require information on the context of the book. After we understand the context of the book we will be able to interpret the creation narratives.

The context of the book of Genesis

The book of Genesis as a whole can be divided into two sections being chapters 1 to 11 dealing with the ancient times, and chapters 12-50 describing the patriarchal period. The first section is difficult to date as the people mentioned cannot be identified historically, the patriarchal period can be dated however there are differences of opinions regarding exact dates. The stories that are found in Genesis consist of an oral tradition of Israel with some writings dating from the time of David (approximately 1000BC). The book of Genesis seems to have been finalized during the end of the Babylonian exile.

Regarding the first section of the book of Genesis does not give much information for historical accuracy; there are other historical sources that provide information on some of the events that occur in this section. The historical evidence that was found regarding Egypt and the Babylonian periods has provided us with some clarity regarding history.

¹ As mentioned by Ken Ham in the debate “Is creation a viable model of origins?”

In the debate between Ken Ham and Bill Nye, Bill posted a question to Ken where he asked how a book that has been translated various times can be trusted. This is relevant question when taking into consideration the time period of the events of Genesis. Therefore i would like to take textual criticism into consideration.

By looking at textual criticism under these various heading we will be able to determine how the text was influenced, the changes and error that occurred within the text, as well as the importance of textual criticism.

The Transmission of the Hebrew text of the Old Testament

When we begin to take a look at the transmission of the Hebrew text of the Old Testament there are a few factors that need to be taken into consideration. Before we begin to take a look at the transmission itself we need to be aware of some these influential factors that played a role during the period of transmission.

Firstly and probably the most important factor that we need to be aware of is that most of the text that is found in modern versions of the bible is based on 11th century A.D manuscripts. This is important because during the 11th century A.D most some of the text has already been in transmission for thousands of years. Due to this early transmission a margin for error has already been created, so when we look at the transmission of the text this existing margin of error needs to be taken into consideration.

When we then turn to the transmission process we will be focusing on textual criticism, concerned with transmission through copying and translation, rather than literary criticism, dealing with the linguistic form of the text. When dealing with textual criticism one needs to aware of the writers, their writing tools as well as their language in order to understand the transmission of the text. Therefore we will begin by looking at these mentioned factors before we continue to the various translations of the text in its early forms.

The writers, their materials and their language

During the post modern era in which we find ourselves writing is a profession in its own rights, similarly to the period of transmission of the text. In the early ages a large number of people were illiterate, thus only few would be able to read and write. Because of this we see a specific guild of people with the capabilities to read and write consisting of three groups of people listed below:

1. Official scribes and secretaries
2. Authors (story tellers, poets, preachers , philosophers)
3. Theologians.

These were the people that were responsible for the transmission and the translation of the text during the early ages. The material at the disposal of these writers makes their work extraordinary. Most of these early written works were carved in stone, painted, or scratched out on wood, clay and potsherds. However primitive these materials may seem writing evolved from these materials into the parchment rolls on which the early forms of the bible were written. These early parchment roll

were written in two columns consisting of 30 to 55 letters per line, written in either lamp soot, or a base of metal and acid.

Similarly to the evolution of the writing materials used by these early writers the language that was used also undergone an evolutionary phase. We will not look at the evolution of the language in depth but only consider those that are relevant to bible writing and translation, and briefly look at its development.

The development of an alphabet began with pictographic images, such as the hieroglyphics of the Egyptians and the Sumerian cuneiform script. These pictographic images later developed into acrophonic system, basing images on sound. It is this acrophonic system that later developed into an alphabetical system, such as the Canaanite-Hebrew. The Canaanite-Hebrew later gave way to the Aramaic and by the 6th century B.C the Aramaic script dominated the early world. It was not until the 3rd century B.C. that the Aramaic script developed into what is known as the Jewish-Aramaic script.

At this point in time it clear that the text has undergone some dramatic changes and evolutionary processes during the early ages. It is due to these evolutionary processes that error in transmission may have occurred. Now that we are aware of these developmental processes in which the writers were subject to we can proceed to focus our attention to the possible errors that may have occurred.

Textual corruption during the transmission process

During the evolutionary or developmental processes that are mention above, error during the transmission process is inevitable. In order to determine the original text, might be almost impossible, but through understanding the errors that might have occurred we can get as close as possible to the original text. To better understand these errors we turn our attention to some of the main causes of textual corruption.

A) *changes that expand the text*

When we look at changes that expand the text we there is a simple principle that applies and this principle is: *Lectio brevior prueferenda est*, meaning that the shorter reading is to be preferred. In order to illustrate the importance or relevance of this principle we will look at some changes that expand the text.

Simple expansion

With simple expansion these are the main types of expansion:

- intrusive words (providing clarity or emphasis)
- intrusive clichés (these are frequently repeated phrases)
- dittography or "double writing" (unintentionally repeated part of text)
- glossing (any explanatory information added by the scribe)
- explicitation (expansion that gives expression to something that is only implied)
- conflation (a combination of readings)

As we can see from the example mentioned above these are errors that seem harmless, but actually corrupts the text. In order to maintain the most original copy of text these are errors that we need to aware. These errors already exist in the and therefore we need to aware of them in order to be able to eliminate them.

B) Changes that shorten the text

The changes that shorten the text are not as many as those that expand the text, and due to the nature of these errors they are also much harder to identify. Apart from the nature of these errors, the principle that applied to the expansion of the text also makes these errors harder to identify. With errors that shorten the text these are the main types of errors:

- Haplography or "single writing" (the repeated sequence only copied once)
- Parablepsis or "oversight" (element of the text is overlooked during copying)

When looking at the two examples that are given above, it is easy to see why these errors are so hard to identify. They are so hard to identify because they seem to invisible, they can only be identified through comparing various trusted sources.

C) Changes that do not impact the length of the text

These changes may also be hard to identify because these changes do not impact the length of the text. However most of these errors alter the meaning of the text and therefore it is important to be aware of these errors on order to eliminate them. The main types of errors that do not impact the length of the text are:

- Graphic confusion (letter that look similar are mistook)
- Misdivision (words are divided in the wrong place)
- Transposition or metathesis (this is the exchange of the position of the consonant within a word)
- Modernization (archaic features often removed or replaced with modern versions)
- Prosaizing (poetry often given elements that converts it to prose)
- Interpretive errors (misinterpretation of the original text)

As with all the other errors that we have looked at thus far these errors can only be identified when reliable sources are compared. However when looking at the examples that are mention above, one can easily determine the impact these errors have on the meaning of the text.

D) Deliberate changes

These changes or errors mostly does not impact the meaning of the text in a negative, in contrast they may even clarify the text. However when we are aiming to establish the most original writing through textual criticism, these changes need to eliminated. The main types of deliberate changes are

- Change of a few letter to disguise the meaning
- Euphemistic insertions (insertion of a word to avoid dishonor to God)

- Euphemistic substitutions (theologically unacceptable terms are replaced)

Several of these errors can be identified when we compare the Masoretic version of the text to the later Septuagint. To conclude this part of the paper, we have looked at some errors that impact the length and the meaning of the text. We have also mentioned that errors can be eliminated in order to establish the most original text. In order to eliminate these errors and changes to establish the most original text, we need to compare reliable sources. In order to identify reliable source, various texts need to be compared therefore we will now turn our attention to establishment of the canon.

Establishing the canon

Due to the immense variety of text that was available during the period of transmission, and with the existing errors a need arose for a standardizing of the text. Although there might not have existed a single text that was regarded the authorized text, the dream was achieved around 100 A.D.

A great deal in the process of standardization can be ascribed to the Massoretes, who were the spiritual descendants of the "writers" of earlier times. This group of people consisted of two groups known as the Massoretes of the west and the Massoretes of the east. Although the work of these two groups differ in the manner that they did not use the same abbreviations, their contributions are still clear. We will not discuss these contributions in detail and will only make mention of them. These contributions can be listed as follows:

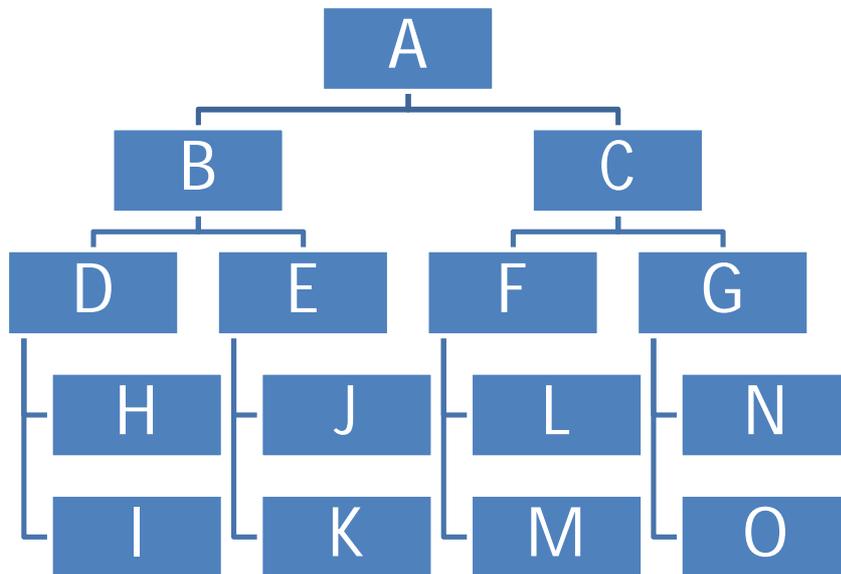
1. marginal notes (pronunciation, deleted words, proposed readings)
2. indications (large letters, small letters, floating letters)
3. inverted nun
4. dots (marking words of uncertainty)
5. corrections
6. final letters

Due to these contributions that were made by the Massoretes they were able to ensure that the text could accurately be copied and prevented the knowledge of pronunciation from being lost.

This standardized version provided by the Masoretes was a great contribution, and is still used today. However when practicing textual criticism we need to be aware that there are various other texts. These other texts include:

- The Qumran Bible
- The Isaiah scroll
- The Habakkuk commentary
- The Samuel text
- The Jeremiah text

Therefore in order to establish the most original text these various texts need to be compared and textual criticism needs to be applied. In order to illustrate consider the following diagram:



In this diagram A will represent the original version of the text, and the rest of the diagram resembles various translations or copies made from the original text. If a certain text is only found in one of the bottom manuscripts (H, I, J, etc.) it would be excluded. Further if E, F and G agree and a certain text can only be found in D it would therefore also be excluded. As we can eliminate various manuscripts through comparison, various manuscripts can be included in the canon based on the elements that agree. The more various manuscript agree the more it likely that they are copied from the same source. Through textual criticism various text are compared and include or eliminated.

Following this developmental process of the transmission of the text we are able to be more accurate when commencing in textual criticism. These insight help us to understand texts, such as the Dead Sea scrolls (Qumran scrolls), and even gain more insight into the transmission process from these texts. We will now proceed to discussing some of the influences or witnesses to the text from a variety of sources.

Aramaic and Greek witness to the Old Testament

The Aramaic influence

Before we can look at the Aramaic translation of the Old Testament text we firstly need to consider the background of the language itself. The Aramaic language became widely used in the period when the Persians took over power from the Babylonians. This language was used to make administrative correspondence possible. This language was later replaced by Greek which we will discuss later on.

The Aramaic language became widely used and it was not long before people could no longer under the Hebrew Scriptures as read to them at the synagogues. This custom developed were the liturgist read the Hebrew text and it was then translated into Aramaic by a translator. Similarly to the

development of the Hebrew text the oral tradition was put in writing and a new translation of the text arose. Although a new more understandable version of the text was available it was not allowed to use the Aramaic text without the Hebrew text being present in the congregation. Listed below is useful information that can be found in these Aramaic versions of the text:

1. ancient reading
2. a understanding of the Hebrew text within synagogues
3. with official and unofficial targums, controlled could exercised in interpretation
4. allow modern interpreters to understand the developmental process

We will not look at the variety of official and official targums that we are aware of as this is a specified field, however we will regard the nature of targum renderings. Listed below are some of the alterations that were made in order to clarify the meaning of the text:

1. to make expressions more precise
2. figurative language interpreted in literal sense
3. ineffective rhetorical questions
4. softening of hyperbolic statements
5. use of different words when the same word is repeated in Hebrew text
- 6.

Furthermore although targum studies does not yet acknowledge targums as text its own right, these text can provide us with useful insight into exegesis of the Old Testament. These texts may even help us to interpret New Testament pronouncements on Old Testament passages, and therefore we need to pay attention to these early versions of the text.

The Greek influence

We have gained tremendous insight thus far looking at the Aramaic influence on the

Hebrew text, but as previously mentioned the Aramaic language gave way to the Greek language. It was during the Hellenistic period that the Greek language became the language of choice. It was the Jews in Egypt that experiences the pressure of Hellenistic era the most due to library situated in Alexandria. This provided for an urgent need for a Greek translation of the text that was used in synagogues. It was the Greek speaking Jews of Alexandria that translated the law and was completed by the 3rd century B.C. Further we also need to consider the Origen's Hexapla that originated approximately 500 year after the law.

Firstly we will focus our attention on the Origen's Hexapla that not only contained the Hebrew text but various Greek translations as well. This document consisted pf six columns each containing a different translation of the text. These six translations is listed below:

1. Hebrew text
2. Greek transcription of Hebrew text
3. Greek translation by Aquila
4. Greek translation by Symmachus
5. Greek translation of Old Greek
6. Greek translation by Theodotion

The intention of Origen was to indicate how the text followed the Hebrew text used in synagogues and where it departed therefrom. This was a work of extremely high standard but was unfortunately lost leaving us with only small fragments. However this was not the only work in the Greek language and below there is a list of other Greek translations:

1. the Lucian version
2. Hesychius

As we have seen previously such a variety of work requires a standardization of the text in order to provide one official text for use. To arrive at the present state of the Septuagint (Greek translation of the bible) there are two methods that can be used during editing. One would be to print a text and supply alternative readings and the other would be to publish one version and supply evidence in critical apparatuses. The first was used when compiling the codex Vaticanus, and the second method in the undertaking of the Göttingen Septuaginta Unternehmen. This second method being the most favored and accurate method.

When looking at the direct witness of the Septuagint of the Old Testament there, the manuscripts date from the 2nd century to the late middle age. We can distinguish between three main groups of manuscripts in this period.

1. *early papyrus and leather scrolls and codices*

These manuscripts mainly date from the 2nd century BCE and consisted mainly of fragments of the torah. From these manuscripts we gain insight to the period before the Hexapla, with the book of Daniel being the sole witness to the Hexapla.

2. *Uncial or majuscule*

These manuscripts date from the 4th century and were written in capital letters. These manuscripts are the main source of knowledge of the Septuagint. Within this group we identify three important manuscripts.

B (Cod. Vat. Gr. 1209, indicated as Vaticanus)

This is the best complete manuscript where Isaiah is hexaplaric and the book of Judges contains another type of revision.

S (B.M. Add. 43725 indicated as Sinaiticus)

This manuscript agrees with *B* and is also influenced by later revisions of the Septuagint.

A (B.M. Royal MS 1 Dv- VIII indicated as Alexandrius)

This manuscript dates from the 5th century and is greatly influenced by the Hexaplaric tradition.

3. *Minuscule or cursive manuscripts*

These manuscripts date from the medieval times.

We can conclude the section on the Greek witness to the Old Testament by saying that the Greek text was probably translated in Egypt and is as rich in influences as the Greek culture itself.

Latin witness to the Old Testament

When we are looking at the Latin witness to the Old Testament we are mainly concerned with the Vulgate (the Latin translation of the Bible) which dates from 390-405 AD. This translation was done by Jerome Hieronymus and closely followed the Hebrew source while perusing certain literary principles. The contribution made by Jerome was:

- Commissioned by Pope Damasus 382 AD revise Latin translation
- Rapid and partial Psalter to agree with LXX
- Psalter and probably O.T. according to Hexaplaric LXX
- 390 – 405 AD Vulgate based on Hebrew source
- Vulgate official Bible of Roman Catholic church 1546

With these multiple influences on the text itself, in order to interpret the text of Genesis accurately we not only have to take the changes to the text that might have occurred into consideration, but we need to consider other non biblical text as well.

Creation narratives

The Genesis creation narrative is made up of two parts that is roughly equivalent to the first 2 chapters of the book of Genesis. The first part of the creation narrative is found in Genesis 1:2 to 2:3. It is in this first part that creation occurs within 6 days and being completed with the creation of man on the last day, and God resting on the seventh.

With comparative mythology a historical and cross-cultural perspective for Jewish mythology is gained, and it seems that the sources for the Genesis creation narrative borrowed themes from Mesopotamian mythology.² Adapting these borrowed themes created a monotheistic creation in opposition to the polytheistic creation myths of ancient Israel, as mentioned in the book Constructive theology formed a henotheistic religion.³ Genesis 1 bears similarities as well as differences to the Enuma Elish as well as the Baal Cycle from the Ugarit.

There are also cultural aspects that need to be taken into consideration. One example of this is the believe by ancient people that words not only convey messages, but contained something of the that which is referred to by the word. Therefore when a word is uttered it receives power and a life of its own which was effective in the in concrete world and that the speaker has no further control over it. It is because of this that since 2500BC in Egypt curse text were used to curse enemies. Sometimes names and titles of enemies were written on pot shards and papyrus and then destroyed with the belief that it would cause the person harm.

² Sarna 1997, p.50.

³ Henotheistic being the worship of one god, in the midst of the existence of other gods.

Creation in Genesis 1

Other creation narratives that are similar to the account of Genesis 1, which were mentioned earlier, mostly describe “agon”⁴ model, were the Genesis 1 account is a “logos”⁵ model. Further in Hebrew a sentence usually start with a verb, however the first sentence in Genesis 1 is “In the beginning” this emphasizes that it is truly the beginning. Further verses 1 to 3 can be translated in various ways, the first being as one continuous sentence, and this assumes the existence of unorganized matter before the creation acts of God. The second is as three separate sentences which can be understood in two different ways, firstly as a heading for the creation acts or as God firstly creating unorganized matter and then organizing creation.

Regarding the days that are mentioned in the creation narrative, there are differences in opinion whether they constitute a 24 hour day or not. The phrase that evening passed and morning came have caused people to assume a 24 hour day, however from Psalm 90:4 a day may also represent a 1000 years. However the account of the seventh day disproves both these theories as the phrases that marked the days is not found with regard to seventh day, begging the question if the seventh day ended? We also see God dividing the light from the darkness and calling the light day and dark is called night. However the sun, moon and stars which create the seasons were only made on the fourth day. The 24 hour day is measured by the movement of the earth around the sun, thus also disproving that creation took place in six 24hour days.

Creation in Genesis 2

There are various differences between the creation narrative of Genesis 1 and 2, firstly is structure and secondly in content. Regarding the structure, Genesis 1 with the repetition of phrases and word play used resembles a poetic rhetoric writing style, were the structure of Genesis 2 resembles that of narrative. These two accounts of creation should be viewed as complimentary rather than overlapping.

With regard to content we notice in Genesis 1 that man was created on the sixth day as the crown and completion of creation. In Genesis 2 we see the creation of man in the beginning of the narrative, and so placing emphasis on his role as co-creator alongside God. It is also in Genesis two that read about life in the Garden of Eden and fall, which is not mentioned in the first creation “poem”. In Genesis one we notice that God is referred to, in the Hebrew text, as Elohim (meaning Lord) whereas in Genesis 2 he is identified as Yahweh.

The question is then how do we interpret these creation narratives? With regard to Genesis 1 we should consider that Israel had to define themselves as well as their religion in the midst of polytheistic world view. When comparing the Genesis 1 to other creation narratives of the same period, which were mentioned previously, it affirms Elohim as Lord, forming a henotheistic belief system. In this manner the Israelites separate themselves and their God from all others. In the Genesis two narrative the focus is on the function and purpose of man, and continues to develop into a narrative of the relationship between God and his people.

⁴ Agon meaning to struggle or combat

⁵ Logos meaning speech

The Flood narrative

In the debate between Ken Ham and Bill Nye, the flood narrative was another point of heated discussion. The key points of difference were that in flood narrative the whole earth is flooded and Noah and his family escape the destruction of the world on the Ark with the animals. From the scientific point of view the ark, as well as global flood does not seem possible. This is also topic of separation between religion and evolution.

If we take into consideration what is said with regard to Genesis and the origin and context of the text, the same would apply to the narrative of the flood. When we take into consideration that world exploration did not occur until later in history and that popular believes held that the earth is flat and resting on pillars, with the heavens above the earth and hell beneath the earth, the term global flood gains new meaning. During the period in which the bible was written the world only consisted of what is now know as the Middle East. It is estimated the flood of Noah occurred approximately in 2300BC, and taking into consideration what was said regarding the world view of the period, a flooding of the Middle East only is a more viable explanation. Similar to the creation narratives there are also various other tales regarding flooding that is similar to the accounts of the Bible. One such tale would be the epic of Gilgamesh.

“A survey of the crater itself could reveal tell-tale melted rock. "If we could find fragments of impact glass, we could date them using radioactive dating techniques," he said.

A date of around 2300 BC for the impact may also cast new light on the legend of Gilgamesh, dating from the same period. The legend talks of "the Seven Judges of Hell", who raised their torches, lighting the land with flame, and a storm that turned day into night, "smashed the land like a cup", and flooded the area.

The discovery of the crater has sparked great interest among scientists.”

-Robert Matthews, The Sunday Telegraph, 4 November 2001

From the quote stated above, a flooding of the middle east alone and not globally is not only more viable but scientifically provable as well.

Conclusion

As mentioned I do not aim to solve the Science vs. Religion, as I strongly believe in both these systems. However I would propose with regard to a debate between the two fields, a responsible use of the Bible is required. I do believe that the two fields can co-exist and complement each other. However during the period in which the Bible was written it was written in a specific context with a specific world view, as well as a unique socio-economic environment.

Through the contribution of the scientific revolution has understanding of the world has changed dramatically. The task of theology is thus then to adapt to these changes and interpret the Bible, God and religion in a new way in order to compliment the scientific understanding of the world.

Bibliography

1. Tarnas, R. 1996. *The passion of the western mind*. Pimlico, London.
2. Deist, F E. 1978. *Towards the text of the Old Testament*. TR by W K Winckler. Pretoria: D R Church Booksellers.
3. Deist, F E. 1988. *Witness to the Old Testament*. Pretoria: NG Kerkboekhandel.
4. McCarter, P K. (Jr.) 1986. *Textual criticism Recovering the text of the Hebrew Bible*. Fortress press. Philadelphia.
5. Tov, E. 1992. *Textual criticism of the Hebrew Bible*. Fortress press. Minneapolis.
6. Brotzman, E R. 2005. *Old Testament textual criticism: a practical introduction*. Baker Books. Grand Rapids.
7. Willis, J. 1972. *Latin textual criticism*. University of Illinois press. Chicago.
8. West, M L. 1973. *Textual criticism and editorial techniques: applicable to Greek and Latin text*. B. G. Teuber. Stuttgart.
9. <http://abob.libs.uga.edu/bobk/cc110501.html>
10. <http://www.telegraph.co.uk/news/worldnews/1361474/Meteor-clue-to-end-of-Middle-East-civilisations.html>
11. Vosloo, W. & van Rensburg, F.J., 1999. *Die Bybelenium: een volume komentaar*. Christelike Uitgewers Maatskapy, Vereeniging.
12. Thompson chain reference Bible King James version
13. http://en.wikipedia.org/wiki/Genesis_creation_narrative
14. Sarna, Nahum M. (1997). "The mist of time: Genesis 1-2". In Feyerick, Ada. *Genesis: World of Myth and Patriarchs*. New York: NYU press.