

# Understanding the Beginning of *Genesis*: Just How Many Beginnings Were There?

הבנת ראשית בראשית  
כמה ראשיות היו באמת?

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## Abstract and Introduction

The first word of the Hebrew *Genesis*, as traditionally vocalized and pronounced, means literally “In a beginning”. However, tradition has it meaning and translated as “In the beginning”. The literal meaning is considered as contradicting reality. Therefore, Rashi, the noted medieval commentator, suggested a syntactic solution that maintains the traditional meaning. However, this syntactic solution, as is shown later, requires a change in the vocalization and pronunciation of the second word of *Genesis*. This paper argues that we should accept the traditional, Masoretic vocalizations along with its literal meaning, and explores the consequences of that literal meaning.

## A Possible Mistranslation and Misunderstanding

The most commonly given English translation,<sup>1</sup>

In the beginning, God created the heavens and the earth.

of the first sentence of the book *Genesis* (בראשית [b'reshit])<sup>2</sup> of the Bible (תנ"ך [tanakh]),

בראשית ברא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ; [b'reshit bara elokim et hashamayim v'et ha'aretz.]

may be wrong. This potential mistranslation is not restricted to English translations of the Bible. The same potential mistranslation occurs in every direct translation of the Bible, not only in English, that I have seen and understood.

The problem is that the first word “בראשית” [b'reshit] is translated as “In *the* beginning”. If the meaning were, in fact, “In *the* beginning”, the first word would have been vocalized slightly differently, with a “ָ” [ǎ, qamatz (קמץ)] underneath the “ב” [b] bet, to make the word “ברֶאשית” [bareshit]. What we have, however, is “ברֶאשית” [b'reshit] with a “ִ” [ī, shva (שווא)] underneath the “ב” [b] bet, meaning “In *a* beginning”. Put differently, the vowel underneath the “ב” [b] is “ִ” [ī, shva (שווא)], serving as an indefinite article, instead of “ָ” [ǎ, qamatz (קמץ)], serving as a definite article.

<sup>1</sup>All uses of God's names in Hebrew are slightly misspelled to avoid using God's names in vain and to avoid God's names being trashed if a copy of this paper were trashed.

<sup>2</sup>When a Hebrew phrase is given in parentheses, the Hebrew phrase is the Hebrew translation of the phrase that precedes the open parentheses. When a Hebrew phrase is followed by Latin-letter text in brackets, the Latin-letter text is a transliteration of the Hebrew phrase according to English pronunciation rules.

The Bible, in its traditional written form, has neither vowel signs, punctuation marks, nor paragraph and chapter divisions. Thus, the Bible does not provide the vowels that distinguish the two meanings of the first word, Thus, the first sentence, as found in the Bible, is

בראשית ברא אלקים את השמים ואת הארץ:

However, the vocalization that has been handed down by tradition, and documented in vocalized versions of the Bible, is the one that has the first word spoken and written as “בְּרֵאשִׁית” [b’reshit], with the indefinite article. Certainly, it is the vocalization that is used in every synagogue reading the author has heard on Simhat Torah (שמחת תורה), the holiday of Rejoicing of the Torah, and on Shabbat B’reshit (שבת בראשית), the sabbath following Simhat Torah, when the annual Torah-reading cycle begins anew with chapter one of *Genesis*.

Note that it is not just the translation that may be wrong. It appears, at least today, that even native speakers of Hebrew, in Israel, understand the word “בְּרֵאשִׁית” as meaning “in the beginning” and are surprised when I point out that it really means “in a beginning”. Once over the initial surprise, they agree with me. This observation is by a random sampling of more than a dozen native Hebrew speaking Israeli relatives and friends. Perhaps, this understanding has been caused by familiarity with the Bible’s translation into other languages. This understanding has been captured even in the standard multi-volume Even-Shoshan dictionary of the Hebrew language [2, 4], whose first entry for “בְּרֵאשִׁית” [b’reshit] is “בְּתַחֲלֵהּ, בְּרֵאשׁוֹנָה” [bat’hila, barishona], both with definite articles. It is not totally surprising that native Hebrew speakers might understand differently from what they hear themselves say, because English has many expressions that literally mean other than what people believe they mean, e.g., “head over heels”, which should be “heels over head” when its intent is to describe someone flipping through the air, either literally or figuratively.

### A Syntactic Solution

I am not the first to note the problem. It was noted as early as the 11<sup>th</sup> Century by the French scholar Rashi (RAbbi SHlomo ben Yitzhak), probably the most prolific author of Biblical commentary, who provided a grammatical solution. That is, he treated what is normally considered the first sentence as a relative clause modifying what is normally considered the second sentence. In Rashi’s treatment, the traditional first sentence is treated as a relative clause, having been vocalized as,

בְּרֵאשִׁית בְּרֹא אֱלֹקִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ, [b’reshit b’ro elokim et hashamayim v’et ha’aretz,]

leading into the traditional second sentence

וְהָאָרֶץ הִיְתָה תְהוֹ וּבְהוּ וְחֹשֶׁךְ עַל־פְּנֵי תְהוֹם וְרוּחַ אֱלֹקִים מְרַחֶפֶת עַל־פְּנֵי הַמַּיִם:  
v’ha’aretz hay’ta tahu vavohu v’hoshekh ‘al-p’ney t’hom v’ruah elokim m’rahefet ‘al-p’ney hamayim.

now considered the main clause modified by the relative clause. Under this vocalization, the relative clause can be translated as

In the beginning of God’s creation of the heavens and the earth,

leading into the main clause, translated as

the earth was unformed and void, and darkness was on the face of the deep, God’s wind hovered on the face of the waters.

This different division into sentences is not a problem. Just as there is neither vocalization nor punctuation in the Bible as written, there are no sentence-ending markers. Thus, the division into sentences is also something determined by tradition. Here, בְּרֵאשִׁית בְּרֹא אֱלֹקִים [b’reshit b’ro elokim] is a construct form in which the definite article would show up only in the last word, and only if that last word were not a proper noun. Since in this case, the last word, אֱלֹקִים [elokim], is a proper noun, the definite article is only implied.

The primary support offered for this interpretation is that the traditional first sentence now has a grammatical construction that is identical to that found in the so-called second creation narrative that begins in the second half of *Genesis* 2:4,

בַּיּוֹם עָשׂוֹת יְקוּה אֱלֹקִים אֶרֶץ וּשְׁמַיִם, [b’yom ‘asot YKWH elokim eretz v’shamayim,]

This narrative can be translated as:

on the day of YKWH God's making earth and heavens,

There is one main reason to discount Rashi's interpretation. It requires a change from the traditional vocalization of ברא, from בָּרָא [bara] to בְּרָא [b'ro]. This interpretation is taken to avoid a problem arising from the traditional vocalization of בראשית as בְּרֵאשִׁית [b'reshit] and to avoid having to vocalize it differently, as בְּרֵאשִׁית [bareshit]. Thus, Rashi offers one change in vocalization to avoid another change in vocalization. Who is to say which change is more acceptable, especially in a tradition that devoutly adheres to traditional vocalizations?

The grammatical approach to solving the problem arose from an attempt to keep to the understanding that God is talking about *the* beginning of the universe. That is, a syntactic change is accepted to preserve the understood semantics.

Nahum Sarna's recent conversational translation, adopted by the Jewish Publication Society [1], is

When God began to create heaven and earth, ...

Sarna thus skirts the issue entirely by converting "beginning" to a verb form, thus avoiding the need for any article.

### A Semantic Solution

The thrust of this paper is basically: Let us see what happens if we keep the traditional vocalizations and understand it as written. That is, let us see the implications of the semantics of the text as it is written.

So, let us now accept that the first sentence of *Genesis* says

בְּרֵאשִׁית בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ: [b'reshit bara elokim et hashamayim v'et ha'aretz.]

and that it means what can be translated into English as:

In a beginning, God created the heavens and the earth.

There are several advantages to doing so:

1. This interpretation fits the traditional vocalization.
2. God is indeed literally talking about more than one creation. The first creation is that of the universe on day one. Then there are a myriad of creations of light, night, day, the earth, oceans, plants, animals, and finally human beings, created in God's own image.
3. This interpretation solves the age-old question of from where Cain's wife (*Genesis* 4:17) comes. At the time she is mentioned, there had been only four people mentioned, Adam, Eve, Cain, and Abel. Cain had killed Abel. There was no mention of any sister. Besides, would Cain marry his sister? Perhaps, as the attorney Henry Drummond in the play *Inherit the Wind* suggested to the opposing attorney and witness on the stand, Matthew Harrison Brady, when the latter could not answer the same question, there *was* another creation going on over in the next county [6]. If God is describing with Adam, Eve, Cain, and Abel, only one representative creation among many creations of human beings, then another creation over in the next county could easily have provided a proper and unrelated woman for Cain to marry. Indeed, this interpretation is more appealing than conjecturing that Cain married a previously unmentioned sister.
4. This interpretation provides the other creations that can explain the existence of the people who might want to kill Cain for having murdered Abel (*Genesis* 4:14) and of the people for whom Cain built a city (*Genesis* 4:17).

### Multiple Creations of the Universe

One exciting implication of the multiple creation implication of the literal reading of the first sentence of *Genesis* is related to the observations detailed by Prof. Gerald Schroeder, a physicist turned talmudic scholar, in his book titled *Genesis and the Big Bang* [16]. Briefly stated, Schroeder contends that the Biblical description of the first six days since the creation of the universe in *Genesis* is God's description for early man of the first 15.75 billion years since the Big Bang. Schroeder reminds readers that the description of *Genesis* was intended to be read by early man, who clearly did not have an understanding of the universe that we have today. Consequently the description is at a rather high level of abstraction using vocabulary that is not precise by today's standards. Thus for example, the word for water is used to describe plasma, since the concept of plasma was not comprehensible until this

century and water is the best approximation for the concept in early man's experience. Also, the phrase for the heavens and the earth is used to describe the entire universe, since to early man, the heavens and the earth *were* the entire universe.

Schroeder shows that by relativistic time dilation,<sup>3</sup> 6 days of seconds counted from the Big Bang in God's space-time frame of reference amounts to 15.75 billion years counted from the Big Bang in Earth's space-time frame of reference. Furthermore, if one determines for each day of the first six days of the universe by God's reckoning the corresponding epoch during the first 15.75 billion years of the universe by Earth's reckoning, the correlation<sup>4</sup> between what happens each day according to *Genesis* and what happens in its epoch according to our understanding of cosmology, paleontology, archeology, and history is, according to Schroeder, enough to send chills up our spines [17].

Schroeder adds that there are events in the history of the universe that have no explanation that appear to be the result of intervention by God. For example, he points out that even under optimistic estimates of the probability for various processes to happen by chance, the time required for random chemical reactions to produce a simple bacterium exceeds not only the 4.5-billion-year age of the Earth, but also the 15.75-billion-year age of the universe. What caused life to evolve as we know it, and in fact to appear only 0.7 billion years, very soon in the cosmic scale, after the formation of the Earth?

Another of these may be the one-time force that inflated the  $10^{-35}$ -second old universe for  $10^{-34}$  second from a diameter of  $10^{-24}$  centimeter to the size of a grapefruit at an exponential rate of expansion that was far in excess of linear rate of expansion that held before the inflation and has held ever since [3]. Just before the inflation, the universe was a black hole from which no light could escape. After the inflation, conditions eventually permitted light to escape, and there was literally light. Without the one-time force, the universe would have collapsed back to the singularity from which it had started  $10^{-35}$  seconds earlier and the universe we know today would never have happened. What caused the one-time force?

According to *Genesis*, God created life. Did God provide the one-time inflation force? The second sentence of *Genesis* seems to say so. This second sentence,

וְהָאֵרֶץ הָיְתָה תוֹהוּ וָבֹהוּ וְחֹשֶׁךְ עַל־פְּנֵי תְהוֹם וּרוּחַ אֱלֹקִים מְרַחֶפֶת עַל־פְּנֵי הַמַּיִם:  
v'ha'artz hay'ta tahu vavohu v'hoshekh 'al-p'ney t'hom v'ruakh elokim m'rahefet 'al-p'ney hamayim.]

can be translated as

The earth was unformed and void, and darkness was on the face of the deep, God's wind hovered on the face of the waters.

Schroeder argues that the darkness that was on the face of the deep was the black hole universe at  $10^{-35}$  seconds and the wind that hovered on the face of the waters (מים [mayim]) was the one-time inflationary force expanding the black hole into a ball of plasma. It is clear that there could not have been true water at the time because not even atoms had formed. The next mention of the word "waters" ("מים" [mayim]) in sentence 6 is still not of true water because as the waters are divided, heaven is made, not land. Only in sentence 9, when the waters under the heavens are gathered together in one place so that dry land may appear, does true water appear. Recall that after the inflation, light could finally appear. Well, the sentence after the second, about God's wind, is none other than

וַיֹּאמֶר אֱלֹקִים יְהִי אוֹר וַיְהִי־אוֹר:  
[vayomer elokim y'hi or vay'hi or.]

<sup>3</sup>To understand this time dilation, consider that God arranged that every second a pulse of light would flash. The speed of light is about 300 million meters per second. Thus, at least initially, the pulses were spaced 300 million meters apart. Since then, however the universe has been expanding, at a speed greater than the speed of light. This expansion is a stretching of space itself and thus also of the distance between the pulses. Since the speed of light remains constant, the time between pulses has been expanding to the point that what was one second in God's frame of reference is about a trillion seconds in our frame of reference. Six trillion days is about 16 billion years.

<sup>4</sup>If one goes into the seventh day by this correlation, it is supposed to be 0.125 billion years starting from the day of the creation of sentient human beings 5762 years ago. Therefore, while man counts about  $5761 \times 52$  (299573) sabbaths since that day, God is only  $5762/125000000$  ( $4.6096 \times 10^{-5}$ ) of the way into God's first sabbath. This observation may account for God's relative scarcity these days. God is still resting and is able to interrupt the rest only in cases of dire emergencies and threats to life, only for פְּקוּחַ נַפְשׁ [pikuah nefesh]. Perhaps, we can expect a more active God starting 125000000–5762 (124994238) years from now. It will be difficult to verify this prediction.

translated as

God said: Let there be light, and there was light.

Schroeder points out that Nahmanides had figured out essentially the Big Bang theory [16] when Nahmanides described the first seconds of the universe in his *Commentary of the Torah*.

At the briefest instant following creation, all the matter of the universe was concentrated in a very small place, no larger than a grain of mustard.

One question still not answered about the universe is how much matter is in it and thus, what is the future history of the universe. We know that ever since the universe began with the Big Bang, the universe has been expanding and that this expansion has been slowing down. What is the fate of this expansion? There are three possibilities: [5]

1. There is sufficient matter in the universe for gravity to slow down the the expansion enough to begin a contraction back to the singularity that existed at the start of the universe, that is, a Big Crunch.
2. There is not enough matter in the universe to slow down the expansion; thus the universe will expand forever.
3. There is precisely enough matter in the universe to slow down the expansion and stop it, but not to cause contraction.

In the latter two cases, the universe dies a heat death, in which everything is at the same temperature and there is not enough energy to do anything. This heat death has been called the Quiet Whimper. The first case, the Big Crunch, sets up the possibility of a universe in infinite oscillation and thus without ever having a beginning. That is, we have infinite repetitions of the cycle:

1. Singularity
2. Big Bang
3. Expansion
4. Gradual Slowing
5. Contraction
6. Implosion, the Big Crunch
7. Singularity

Scientists are still debating this issue. Schroeder gives reasons to believe that it cannot be an infinite cycle that implies that there is no need for a creator. The argument against it is the same as against a perpetual motion machine. Even in a vacuum, a bouncing ball that does not achieve escape velocity never bounces quite as high as it did the previous time around. The bouncing dissipates some of the energy. Likewise, with each big crunch, the next big bang will not achieve the same maximal expansion as before. If this cycle has been going on infinitely, it would long since have expired, to a permanent singularity with insufficient energy to have another big bang. Therefore, argues Schroeder, there must have been a unique beginning.

However, we already know that God provided a force beyond what was already there to get the universe to expand beyond a black hole. If God has done it once, why could God not have done it before and continue to do so in the future. If God can provide a one-time-per-Big-Bang inflationary force to get the expansion going in earnest, God can surely provide enough energy to overcome the energy loss in the Big Crunch to make sure that the next Big Bang is big enough to expand out to the same point.

Since God is infinite, there is no problem for God to have done this always or to have started once with a first big bang and to have done some, many, but still only a finite number of cycles.

This is where the multiple beginning semantics for the first sentence comes in. Perhaps in saying “In a beginning, God created the heavens and the earth,” God is saying that this creation was just one of many, that indeed there is a cycle of expansion and contraction, and that God provides the force to make it work over and over again, at God’s will. Schroeder points out that we revise our understanding what the Bible says, and has said for a long time, only when we advance enough in our knowledge of the universe to see in the Bible meaning that was not apparent before. Perhaps the use of “In a beginning...” was intended to alert us of the ultimate fate of the universe in which we live.

Interestingly, the Midrash speculating about the great flood in Noah's time, remarks that there were many creations. *Rabbi Abbahu said: "The Almighty created many worlds and destroyed them ... until our present world was formed."* (B'reshit Rabba 9:2). This midrash supports the idea of multiple big bangs.

### Another Syntactic Solution

Gerald Schroeder also offers yet another syntactic attempt to recover "in the beginning" from "בְּרֵאשִׁית" [b'reshit] [15]. His solution appears to be a variation of Rashi's discussed above. As did Rashi, he suggests that "בְּרֵאשִׁית" [b'reshit] is really a construct form, meaning "In the beginning of", that requires a noun after it to serve, in English terms, as the object of the preposition "of". Rashi's solution was to turn the word בָּרָא [bara], following "בְּרֵאשִׁית" [b'reshit], into a noun, בְּרָא [b'ro], meaning "creation". Schroeder's solution is to suggest that a noun is missing between "בְּרֵאשִׁית" [b'reshit] and בָּרָא [bara], and that this noun is חִכְמָה [hokhma], meaning "wisdom". Certainly God used wisdom to create the universe. Moreover, as Schroeder points out, each elementary particle, each atom, each molecule, etc. carries information, an encoding of wisdom. Indeed, the DNA molecule is recognized as carrying the instructions, an algorithm, to build life itself. Thus, Schroeder is suggesting to read the first sentence as saying:

בְּרֵאשִׁית חִכְמָה בָּרָא אֱלֹהִים אֶת הַשָּׁמַיִם וְאֶת הָאָרֶץ; [b'reshit hokhma bara elokim et hashamayim v'et ha'aretz.]

and as meaning:

In the beginning of wisdom, God created the heavens and the earth.

However, as with Rashi's solution, Schroeder's solution has the drawback that it requires modification of the traditional text.

### Multiverses

Another exciting implication of the idea of multiple creations is the work on multiverses, the idea that there are multiple universes. Andrei Linde, in an attempt to deal with predictions of the standard Big-Bang theory that run counter to observations has proposed another model, that of the self-reproducing inflationary universe [8]. Instead of there being a single universe that began at the beginning of time from one singularity, there is a multiverse, a growing fractal<sup>5</sup> that sprouts inflationary universes, each of which sprouts more inflationary universes. Each such universe undergoes its own big bang. According to Linde, our universe is just one of these sprouted universes [7]. Experimental evidence for this theory is hard to obtain because the other universes are not visible to us, standing in one universe which extends beyond what we can see. Perhaps, the first word of *Genesis* is telling us that God created our universe as just one of many.

Still another interpretation, based on work by Arthur Prior [11, 13, 14, 12] is offered by Richard Schwartz. Each individual determines her own destiny by making choices. She has her own trace through history from the unique origin of the universe through choices made by her ancestors and her up to the present time. Each choice represents a branch point in a tree of choices. In branching-time temporal logic [9, 10], each trace from the unique beginning to now is one person's beginning-to-now path. This person's beginning would be described as "a beginning" from the global perspective, even though all share the same beginning. Remember that "a" is used as a universal quantifier in a sentence of the form, "Let  $x$  be a real number; then ...."

### Conclusions

I have noted a problem with the translation and understanding of the first sentence of the Bible. A literal translation and understanding says that the creation of the universe described in *Genesis* was only one of possibly many creations. This literal meaning was considered contradicting reality and thus, incorrect. Rashi attempted a syntactic solution to resurrect what is believed to be the intended understanding. I have argued that we should accept the literal semantics, for it answers some other questions about *Genesis*, namely from where did the other people that are mentioned in the text come. Then I have suggested that the literal meaning of multiple creations might be God's clue to solve a mystery in cosmology of the ultimate fate of the universe.

<sup>5</sup>A fractal is an extremely rich curve for which any subpart is similar to the whole. For the purposes of this article, it can be regarded as an unbounded tree with unbounded branching.

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