

Reconciling Torah and Science – An Introduction

In the coming chapters we present the approaches of Dr. Gerald Schroeder to reconcile the apparent controversy between Torah and science. I find Dr. Schroeder's approach most satisfying since it does not force us to choose between our loyalty to Torah belief in its traditional sense on one hand, and on the other hand to respect many of the findings of science. However, it is vital to clarify and set forth at the outset that Dr. Schroeder is not the only voice that addresses this issue. It is important to set forth that there are three distinct approaches to this issue.

The Three Orthodox Approaches to Differences between Torah and Science

Many Orthodox Jews argue that since we know that the Torah is of divine origin, all necessary information regarding Creation is provided by the Torah rendering scientific endeavor regarding the origin and development of the world as superfluous and irrelevant. Moreover, this approach argues that science changes with time, with theories that have been accepted for many centuries suddenly being disproven and then the new theories rejected ad infinitum. Rav Ovadia Yosef (Teshuvot Yabia Omer 10: Yoreh De'ah 24) strongly adopts this approach. Rav Yosef argues that the same approach is to be taken in regard to the teachings of Chazal "We certainly should not deviate from what Chazal established in all of their assertions. This is because the spirit of Hashem informed their words". Rav Yosef cites Teshuvot Rivash (number 347) as precedent for this far reaching assertion.

On the other hand, other Orthodox Jews accept many scientific theories such as Evolution and the Big Bang as extremely well supported and highly unlikely to be disproven. Moreover, these believing Jews believe that the Torah account of Creation and current thinking of the consensus of the scientific community to be irreconcilable. This approach argues for a non-literal understanding of Bereishit chapter 1. Rav Natan Slifkin is the most enthusiastic supporter of this approach set forth in many of his works, especially "The Challenge of Creation".

Dr. Schroeder, along with Dr. Nathan Aviezer, are leading proponents of adopting a middle approach arguing that Torah and modern science are indeed compatible. Dr. Schroeder's primary works are called Genesis and the Big Bang and the Science of God and Professor Aviezer's works are In the Beginning and Fossils and Faith. Each of these books are well worth reading.

We now proceed to outline the basic arguments of these schools of thought. We will conclude that while despite this author's strong preference is for Dr. Schroeder's approach, it is very worthwhile studying the writings of each of these schools of thought and it is recommended for everyone to take in account each of the three approaches with the

advantages and disadvantages of each.

Rav Moshe Meiselman – Approach Number One

Rav Moshe Meiselman has written a most impressive, extensive and rich work entitled “Torah, Chazal and Science”. Rav Meiselman is eminently qualified to write such a work since on the one hand he is a Torah scholar of the first rank and on the other hand, he received a doctorate in mathematics from the Massachusetts Institute of Technology in 1967.

Rav Meiselman vigorously argues for adopting the approach he presents from Rav Yosef Dov Soloveitchik (pp. 693-721), that inquiry regarding the origin of the universe (cosmology) is beyond the legitimate sphere of inquiry of science. Rav Meiselman’s approach is summarized as follows: He forcefully asserts that all unqualified scientific statements of the Talmudic sages were divinely inspired and are therefore immutable: "All of Chazal's (the Talmudic sages') definitive statements are to be taken as absolute fact [even] outside the realm of halakhah (Jewish law)." The flip side of this thesis, and another major theme of the book, is that modern science is transitory and unreliable compared to the divine wisdom of the sage.

Rav Gil Student adds “Rav Meiselman addresses issues such as evolution, the age of the universe and the Sages’ knowledge of science. He eloquently presents a conservative approach, denouncing as unacceptable a revisionist reading or a rejection of traditional texts. It includes comprehensive and informed arguments for rejecting science when it conflicts with religion”.

Even in one does not adopt every nuance of Rav Meiselman’s monumental work, it is worthwhile to glean two fundamentally important points from him. First, it is important to exercise caution in regard to scientific theory. While a wholesale rejection may not be necessary, a wholesale acceptance is also not called for. Second, we must be wary of what Rav Meiselman calls cavalier allegorization of Torah and Chazal.

The most important lesson to be gleaned from Rav Meiselman’s work is the confidence one should have in regard to Torah and Chazal, and that ultimately, however the challenges are resolved, not a single scientific fact disproves Torah or Chazal.

Two important caveats should be made in regard to Rav Meiselman’s monumental work. In regards to the views of Rav Soloveitchik and evolution, a different approach than that presented in Torah, Chazal and Science appears in “The Emergence of Ethical Man” published by MeOtzar Horav based on Rav Soloveitchik’s original lecture notes with the guidance of Rav Aharon Lichtenstein, the son-in-law and leading student of Rav Soloveitchik.

The other caveat is in regards to Rav Meiselman’s utter rejection of the position of Rabbeinu Avraham ben HaRambam, who famously asserts

that Chazal occasionally relied on their contemporary science which was sometimes incorrect. Rav Student documents that this approach is cited as valid (though not necessarily conventional) by many contemporary mainstream figures such as Rav Yaakov Ariel, Rav Shlomo Aviner, Rav Chaim David HaLevi and Rav Shaul Yisraeli.

Rav Ovadia Yosef (in the aforementioned responsum) articulates a far more reasonable approach to the position of Rabbeinu Avraham ben HaRambam. Rav Yosef argues that although the majority of authorities do not adopt the approach of Rabbeinu Avraham ben Harembam, one who espouses (even in our time) the view of Rabbeinu Avraham ben HaRambam should not be dismissed as a heretic.

Rav Natan Slifkin – Approach Number Two

Rav Natan Slifkin's approach to resolving contradictions between Torah and science has been summarized as follows:

“According to Rabbi Slifkin's approach to the reconciliation of Genesis and modern scientific theory, traditional Judaism mandates neither a literalistic approach to Biblical cosmology, nor a belief that Chazal are always correct about scientific matters. Views similar to these were accepted by some as within the realm of Orthodox Judaism”.

Rav Slifkin summarizes his views as follows: “Genesis is best understood not as a scientific account but rather as a theological cosmology. As such, it presents a powerful worldview that has accomplished amazing objectives with mankind” (The Challenge of Creation p. 344).

A primary source for Rav Slifkin's approach is the Rambam in his Moreh Nevuchim 2:25 where he boldly asserts that had Aristotle proven that the world is eternal, he would have interpreted the Torah allegorically since it is impossible for the Torah to contradict reality. Rather, our literal interpretation of the Torah must be corrected if it does not correspond with demonstrable fact. Rambam emphatically insists that Torah passages that suggest the corporeality of Hashem, must be interpreted allegorically since the corporeality of God contradicts fundamental logic (an infinite God cannot be restricted to a body).

Rav Slifkin's second major classic source for his approach is a letter written by the great Rav Avraham Yitzchak HaKohein Kook (letter # 91) where he applies the aforementioned Rambam and writes that if the theory of evolution is proven, he would be willing to reinterpret Bereishit Perek 1.

Rav Slifkin (pp.184-185) rejects the approaches of Professor Aviezer and Dr. Schroeder, arguing that modern scientific findings and the order of Creation presented in Bereishit Perek 1 are incompatible. He also believes that science has definitely proven its case in regards to

Creation and Evolution. Rav Slifkin therefore boldly goes beyond the Rambam and asserts that Bereishit Perek 1 should be understood as teaches invaluable lessons but not the specific order of Creation.

There has been highly significant pushback against Rav Slifkin's approach. Perhaps had Rav Slifkin adopted a more cautious approach, hewing more closely to the example set by the Rambam and Rav Kook, he would have been spared the severe criticism hurled in his direction. Caution is very much a necessity in such matters. After all, history proves that the Rambam's hesitation in regard to the eternity of the world was correct. In the 1960's, as we discuss elsewhere, strong evidence was discovered proving that the world began with a Big Bang. Thus, today virtually all scientists agree that the world had a beginning, in stark contradiction to scientists who believed from the time of Aristotle and Plato until the 1960's that the world is eternal.

The Ramban's (to Bereishit 18:1) fiery criticism of the Rambam's interpretation of Bereishit Perek 18 should temper any conclusive assertion that a portion of the Torah should be interpreted allegorically. The Rambam (Moreh Nevuchim 2:43) argues that the events described in the first half Bereishit Perek 18, namely the visit of three angels to Avraham Avinu and Sarah Imeinu, occurred only in a vision to Avraham Avinu.

The Rambam arrives at this conclusion due to the difficulty regarding spiritual beings, in this case angels, assuming the appearance of human beings and partaking of food. The Ramban rejects this approach in the strongest of terms writing "these words which contradict the Torah are forbidden to be heard much less to be believed". The Ramban's fierce rejection of the Rambam's allegorical interpretation should give anyone pause before conclusively asserting that contemporary science has proven the need to reinterpret the Torah in a non-literal manner.

Professor Aviezer and Dr. Schroeder

Many Orthodox Jews feel most comfortable with embracing many scientific findings without compromising fidelity to the literal meaning of the Torah. Professor Aviezer and Dr. Schroeder allow us to have our proverbial cake and eat it too. The question is whether their interpretations are convincing. The jury is out regarding this question. The question also becomes what happens when the scientific consensus revises or even changes its theories, must our interpretation of the Torah change as well to adjust to each new finding or adjustment to prior assertions?

Conclusion

Humility is most the order of the day when addressing the conflict of Torah and science. Science is very prone to change on the one hand, and we might not be interpreting Torah

correctly on the other hand. Thus, while one may have a preference for one of the three approaches we outlined, he should not rigidly rule out the other two approaches. When presenting this issue to students, whether adults or youngsters, I present all three approaches, as one cannot be certain which of these three approaches is correct.

Moreover, one does not have to rigidly adhere to everything one of these authors asserts. One may find it very worthwhile to adopt some of the conclusions of each of these three approaches, depending on the level of comfort and cogency one finds with the arguments of each of the authors. Whatever one's perspective on this issue, it is undoubtedly in the best interest of lovers of Torah and science to be familiar with each of these works.

Postscript – Chazal Ahead of Their Time: Pi, The Five Species of Grain, Hemophilia, the Regenerative Property of the Liver and the Dimensions of Noah's Ark

Whatever one's evaluation of Rav Meiselman's work, the book includes the following insights with which it is exceedingly worthwhile to be aware. Rav Meiselman (pp. 153-155) notes that Chazal (see Rambam, Peirush HaMishnayot, Eruvin 1:5 and Tosafot HaRosh to Eruvin 14a d.v Kol Sheyeish B'heikeifo) were aware that π is an irrational number (an irrational number is one that can be expressed neither as an integer nor as a proper fraction of two integers). This was not known beyond Chazal until the eleventh century.

Rav Meiselman (pp. 155-157) also notes that Chazal (Pesachim 35a) insist that only five grains are capable of becoming Chameitz (leavened). These are wheat, barley, oats, rye and spelt. Rav Meiselman notes that "to this day no additional gluten-containing species (a grain can rise only if it contains gluten) have been found".

He also notes that Chazal were way ahead of the curve in recognizing hemophilia is hereditary and that it is passed on through the mother (Yevamot 64b). Similarly, he writes that Chazal were the first to recognize that a liver can regenerate itself (see Mishnah, Chullin 3:2).

Rav Meiselman's presents these examples to demonstrate that Chazal did not merely arrive at their conclusions based on the available knowledge of the time. Moreover, Rav Meiselman cites Rav Yehuda HaLevi (Sefer HaKuzari 4:31) who writes that Chazal arrived at conclusions ahead of their time due to Hashgacha, the subtle intervention and support from Hashem.

Most remarkable, though, is Chazal's statement regarding the dimensions of the Teivah (Noah's ark). Rav Meiselman cites Bereishit Rabbah 31:10 which teaches:

[It is written] "The length of the Teivah should be three hundred Amot (cubits), fifty Amot wide and thirty Amot high" (Bereishit 6:15). BarChityah said....The Torah has taught us the way of the world - if one wishes to build a boat that will stand off shore

(i.e is stable), one should make its width one-sixth of its length and its height one-tenth of its length.

Rav Meiselman cites contemporary studies that verify that a barge with the Teivah's dimensions would have optimal stability. He also notes that Chazal drew only one practical inference from the Teivah, despite the many technical considerations that must have gone into the making and operating of the Teivah. Moreover, Rav Meiselman notes that in the Babylonian flood story, the Ark constructed by the hero is described as a cube, a totally unseaworthy structure.

This fascinating information constitutes an important addition to the many layers of evidence of the divine authorship of the Torah that we among many others have outlined. It also corroborates Rabi Yehuda HaLevi's assertion that the Talmud and other classic rabbinic writings were written with Hashgacha, divine assistance and support.