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*Attitudes Towards
Cosmogony and Evolution
Among Rabbinic Thinkers in
the Nineteenth and Early
Twentieth Centuries: The
Resurgence of the Doctrine of
the Sabbatical Years*

The purpose of this essay is to present some modern rabbinic responses to the conflict between Jewish tradition and scientific views of cosmogony. The thinkers I will discuss, R. Israel Lipschutz, R. Eliyahu Benamozegh, R. Samson Raphael Hirsch, R. Shem Tov Gefen, and R. Abraham Isaac Kook,¹ articulated their positions in the nineteenth and early twentieth centuries. All of these thinkers were Orthodox rabbis; most of them served in important rabbinic posts and were not interested in compromising tradition for the sake of political correctness.

In comparing the approaches of these thinkers, one can appreciate, first and foremost, their genuine attempt to meet the issues head on in

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the pursuit of a viable synthesis with tradition. This was the approach taken by the pre-modern Jewish thinkers, from as early as Philo and through R. Saadyah Gaon and Maimonides, all of whom looked for bridges between Jewish tradition and the scientific thinking of their day, whether it was neo-Platonic or Aristotelian.²

Modern theories of cosmogony, especially the theory of evolution, posed a challenge to traditionalists. The rabbis of the eighteenth and early nineteenth century who did not see scientific research as a threat to religion looked for syntheses to solve any problem that might arise. Some of these thinkers predated the battles between the Church and Evolutionism and were therefore unaware of, or simply ignored, what I call the political element of the issue, and dealt only with the heart of the matter. This political element played a dominant role in the debate in the latter part of the twentieth century. By then the literalists had become an almost dominating voice. But before that happened, there was a creative and profound attempt to relate modern ideas to ancient sources, in this case, to relate modern theories of cosmogony to biblical or midrashic sources.

A second factor common to these thinkers is their use of the midrashic tradition of “the worlds that God created and destroyed” to harmonize tradition and science. This idea, which suggests that other created worlds predated our own, was developed and discussed extensively in Kabbalistic literature between the twelfth and sixteenth centuries; whereas the original *midrash* centered on the book of Genesis, the kabbalists applied it to allegorical interpretations of the *Shemittah* years discussed in the book of Leviticus. This motif disappeared after the sixteenth century until its resurgence in the late nineteenth century in the context of the discussion of tradition and modern cosmogony. Since this idea, referred to as the “Doctrine of the Sabbatical Worlds,” became the basis for discussion, I believe it is crucial to examine it at the beginning of this essay.

The Doctrine of the Sabbatical Worlds: The Source of a Tradition

The book of Genesis commences by stating that God created the world, an idea which has become a fundamental belief of Judaism.³ However, the idea that this world comes to an end or some form of transition from its present state is not obvious from biblical texts, which describe only the future ingathering of the exiles or the renaissance of Jewish life

in Israel after a period of exile. The idea that the world has not just a beginning but also an end wherein all life will be destroyed can be found in the apocryphal *Vision of Ezra*.⁴ In the *Book of Enoch*,⁵ this “end” is at the end of seven thousand years, mimicking the seven days of creation. This idea was restructured in the Talmud by differentiating between the six millennia and the seventh millennium: “R. Katina said: six thousand years does the world exist and one [thousand it lies] destroyed”.⁶ The Talmud then goes on to compare this idea of R. Katina with the commandment of the Sabbatical year in which the six years of working the land come to an end.

A baraita supports [the opinion] of R. Katina: just as the Sabbatical year falls once every seventh year, so too the world is put to rest one thousand out of every seven thousand years, as it says “none but the Lord shall be exalted on that day” [Isa. 2:11] and it says “A psalm, a song, for the Sabbath day” [Ps. 92:1], a “day” which is entirely Sabbath. And it says [as well] “for in your sight a thousand years are like yesterday that has passed” [Ps. 90:4].

According to this talmudic teaching of R. Katina, the six millennia of creation parallel the six years wherein one toils the land and the seventh millennium parallels the sabbatical year of rest. What happens at this point of rest is not clear. It is also unclear from here whether this is a one-time occurrence or a cycle. This query is addressed in the Midrash. The Midrash in *Bereshit Rabbah* begins by quoting Genesis 1:5:

R. Yehudah ben Shimon said: “Let there be evening” [*yehi erev*] is not written here, but “and there was evening” [*va-yehi erev*]. From this you can infer that a time-order existed before this. R. Avahu said: This teaches that God created worlds and destroyed them until He created this one. He said: This one pleases me and the others do not please me. R. Pinḥas said: R. Avahu’s [scriptural] basis [for his teaching] is: “and God saw all that He had made and found it very good,” (Gen. 1:31) [meaning], this [world] pleases me but the other [worlds] do not please me.⁷

This *midrash* is also found in a slightly different version:

“And God saw all that He had made and found it very good” (Gen. 1: 31). R. Tanhuma commenced [his exposition]: “He brings everything to pass precisely at its time” (Ecc. 3:11). R. Tanhuma said: The world was created when it was due, and the world was not fit to be created earlier. R. Avahu said: Hence we learn that the Holy One Blessed Be He created worlds and destroyed them, created worlds and destroyed them, until he created this one, and He said: “This one pleases me and the others do not please me.”⁸

The second version of the *midrash*, which mentions twice that God “built and destroyed worlds,” is of special interest to the commentators. What were these earlier worlds? Why does the *midrash* assume that there were more than one? And, lastly, why is it important to know about them?

Whereas the *midrash* derived its teaching from Genesis, the Talmud based its teaching on a parallel to the laws of the *shemittah* year. The Book of Leviticus states: “Six years you may sow your field and six years you may prune your vineyard and gather in the yield. But in the seventh the land shall have a Sabbath of complete rest, a Sabbath of the Lord (Leviticus 25: 3-4).”⁹ The ostensibly matter-of-fact verses pertaining to the *mizvah* of the *shemittah* year were understood as a portal to esoteric secrets by mystical thinkers from the twelfth to the sixteenth century.¹⁰ R. Abraham Ibn Ezra (1089-1164) wrote: “And the reason [the verse says in reference to *shemittah*] ‘a Sabbath for the Lord,’ [is] like the Sabbath day. The secret of cosmic history [*yemei olam*] is hinted to in this place.”¹¹ What is the cosmic historic secret to which the *shemittah* year hints?

R. Moses ben Nahman (1194-1270) wrote concerning these verses:

Behold [these verses] here draw our attention to a great secret of the Torah, as R. Abraham [Ibn Ezra] has already hinted. . . . And curl your ear to hear that which I am allowed to tell you in the way I shall tell you, and if you will be deserving you shall understand. I have already written in Genesis¹² that the six days of creation parallel the history of the world [*yemot olam*] and “the seventh day is a Sabbath of the Lord your God” (Ex. 20:10), for it will be the Sabbath of [His] great name. . . . The days [of creation] hint at what was created in the Work of Creation, and the years [of *shemittah*] hint to what will be in the works of the entire history of the world. . . . And possibly this is what our Rabbis hinted at when they said: “Fifty gates of knowledge were created and all were given to Moses save one,” because every sabbatical [year represents] the gate of one house. [Therefore] we see that he [Moses] was taught all of existence from beginning to end except for the holy Jubilee.”¹³

Ramban here expounds upon the “secret” mentioned by Ibn Ezra and cites a tradition wherein the *shemittah* year mentioned in Leviticus parallels the Sabbath day that followed the six days of Creation. As he stated already in his commentary to Genesis, these six days of Creation hint at the history of the world—which according to tradition is six thousand years long—and the seventh millennium parallels God’s Sabbath. This is the first secret. However, Ramban adds that: “these years hint to all which will occur in creation throughout all the history of the world.” This means

that in addition to the idea that the Sabbatical year parallels the seventh millennium of history, there are also seven sabbatical years in a Jubilee which parallel “all the history of the world.” What is the difference between the “history of the world” hinted to by the seven days of creation and “the entire history of the world” hinted to by the *shemittah* years? This second secret, referred to in Kabbalistic research as the “Doctrine of the Sabbatical worlds” assumes that our world is not the only one that ever existed. There were worlds that preceded ours, as taught in the *midrashim* cited above, and there will be worlds that will come after ours. The connection between the sabbatical years and world history was hinted at in the Talmud as well as by Abraham Ibn Ezra.¹⁴ However, the doctrine of the Sabbatical worlds was developed extensively in the writings of the kabbalists of Gerona, specifically R. Ezra and Nahmanides. According to Ramban, each world is destined, like our own, to exist for seven millennia. There are ultimately seven worlds, paralleling the years of the *yovel*. In addition, each world with its seven millennia parallels the kabbalistic idea of the seven lower *sefirot*, from *hesed* to *malkhut*, which represent the natural world. The Jubilee year, in kabbalistic terms, parallels the *sefirah* of *binah*, called the fiftieth gate, which is the beginning of the hidden *sefirot* and represents the idea of redemption. This is what Ramban means when he says: “and possibly this is what our rabbis hinted at when they said fifty gates of intelligence were created”; there are forty-nine thousand years which comprise these seven worlds and are then followed by the *yovel*.

R. Isaac of Acre, a student of Ramban, who seeks to expound on Ramban’s kabbalistic interpretations in his own commentary to the Torah, adds clarity to our understanding of the secret of the Sabbatical worlds:

You should know that, as the Jubilee in one generation is fifty years, in a thousand generations you have fifty thousand years. This is what [King David said:] “The promise he gave for a thousand generations,” (Ps. 105:8) [and we also read:] “Who keeps his covenant faithfully to the thousandth generation” (Deut. 7:9). And this is the order of the Sabbatical and Jubilee years about which it says “and each man shall return to his lot” (Lev. 25:12), that all shall return to the Jubilee which is the foundation; and the believer shall keep silent. And the scholar said, all was from the first cause and all returns to the first cause,¹⁵ and this secret now explains the meaning of the Sabbatical and Jubilee [years].¹⁶

According to R. Isaac of Acre, the seven worlds created and destroyed are part of a single process. His interpretation of the “destruction” during the seventh millennium is of particular interest:

“One [millennium] laid waste”—this means that there will be a time of absence of humans, fowl and animals, and their causes, which will stop their activity and their continuity and therefore will need and depend upon something to reinstate them. This is [what it says] “The Lord supports all who stumble” (Ps. 145). . . . And during that millennium [the world] awaits the time when it shall be remembered for renewal.¹⁷

According to R. Isaac the phrase “it will lie destroyed,” which refers to the seventh millennium, does not mean that the world itself will be destroyed, but only that life upon it will stop. This interpretation can also be found in the writings of the Italian kabbalist R. Menaḥem Recanati (late thirteenth to early fourteenth centuries),¹⁸ who writes:

“One [millennium] it will lie destroyed” does not mean [that the world] will return to the chaos [of the beginning] as in the year of the Jubilee. Rather the meaning of destroyed [*haruv*] [is:] without man, animal and other living creatures. And all things composed of the four elements will return to their fundamental state.¹⁹

Recanati explains that it is only during the Grand Jubilee (after the existence of seven successive worlds), and not at the end of every Sabbatical (after the seven millennia of each world), that all of creation returns to the primordial state of being. So what is gained after the end of each world? There is a certain amount of progress reached when each world finishes its term and the next one starts: “And in every one of them [i.e. every world] there will be additional goodness and added blessing, more than there was before.”²⁰

Recanati is one of the first to mention that there were kabbalists who were disturbed by the doctrine of the Sabbatical years:

However I have found that some of the kabbalists of our time who have delved into the secrets of Torah, do not agree with what we have just written, for they find it troubling that the Messianic period for Israel should be so short, less than a thousand years. For reason dictates that the days of quietude [i.e. the messianic period] should be a thousand times longer than the time during which the nations oppressed us when we suffered to sanctify God’s name, may He be blessed.²¹

The opponents of the doctrine of Sabbatical years were troubled by a problem of logic: how could it be that the duration of the ultimate reward is less than that of the suffering which preceded it? In addition, Recanati raises an objection from Scripture: if the world is to be destroyed in totality in the fiftieth millennium, the Grand Jubilee, then what is the meaning of the verse in *Kohelet* that “the earth stands forever,” from which Rambam learned that the universe had a beginning but no end?²²

This last issue was addressed in the thirteenth century by R. Baḥya ben Asher, a student of Rashba.²³ R. Baḥya, commenting on the passage in Leviticus concerning the Sabbatical year, interprets its “secret” in the same way Ramban does. R. Baḥya explains that the verse in *Kohelet* does not contradict the doctrine of Sabbatical years, and, in fact, lends it support.

They all hint to the length of the world’s existence, as it indicates in the beginning of the book of *Kohelet*: “and the earth remains the same forever,” (Eccl. 1:4) where “forever” [*le-olam*] refers to the Grand Jubilee [which is also called *olam*].²⁴ This is the secret of the fifty gates of *binah* through which the world was created, and all of them were revealed to Moses save one. . . . This means that he was taught of every millennium which parallels each gate of intelligence, and that he was told of all of existence from beginning to end except for the Holy Jubilee which is the fiftieth gate, the innermost [gate] of *binah*.²⁵

R. Baḥya interprets the term “forever” [*le-olam*] in *Kohelet* as referring to the period up to and including the Grand Jubilee, which is fifty millennia all together.

R. Baḥya also explains what will happen between each Sabbatical world, though his explanation is different from that of Recanati: “And the land shall observe a Sabbath of the Lord’ refers to the one [millennium] of destruction, which is [a time] of total Sabbath and eternal rest. This is the world to come [that will become manifest] after the resurrection.”²⁶ According to this explanation, the seventh millennium of each world has its own respective Messianic era, resurrection, and world-to-come. Since, in this world-to-come, the spiritual dominates the material and the soul dominates the body, the material world is considered destroyed. This interpretation is not so different from those of Recanati and R. Isaac of Acre, but it emphasizes the spiritual state of humanity rather than the state of the cosmos.

Another interesting explanation can be found in the writings of R. Judah Ḥayyat (1450-1510). Quoting Ramban and Recanati, he explains that one millenium of destruction does not imply a total destruction of the earth. The seventh millenium is necessary because of the Talmud’s insistence that “the son of David shall not come until all the souls have emerged from their abode [and have been brought into physical existence].”²⁷ All the souls must emerge before the seventh millennium. The seventh millennium is not a physical state, for only existing souls continue for its duration and go from one spiritual state to another. Recanati explained that each new world is better than the previous one. This idea is well developed in the book *Ma’arekhet Ha-Elohut*, a book written by an anonymous author in the fourteenth century and ascribed to Rabbenu

Peretz.²⁸ Why does each world exist for seven thousand years? “Because each world has a sevenfold cycle, that is, seven worlds that parallel the seven upper [heavens], for each *sefirah* is called a world, and these are the 49 years [of the Jubilee] which are the 49 thousand [years of all seven worlds].”²⁹ If each world corresponds to one of the *sefirot* from *hesed* to *malkhut*. in which world are we now? The author of *Sefer ha-Temunah* claims that we are in the second world corresponding to *gevurah*, a world in which the attribute of stern judgement is dominant.³⁰ R. Isaac of Acre came to the same conclusion in his commentary to *Sefer Yezirah*.³¹

One can perhaps already see how this doctrine could be used to explain paleontologic findings by relating them to earlier worlds, but how does this help if the “Doctrine of the Sabbatical years” can conceive of no more than 50,000 years altogether? Modern science conceives of a much longer time frame of “creation.” For the answer, one need only look again to the writings of R. Isaac of Acre. In his still unpublished work *Ozar ha-Hayyim*, he presents an unusual twist to the whole doctrine of the Sabbatical worlds:

I have reason to write a great and divine secret, which should really be hidden. Know that God’s day is a thousand of our years, as it says: “For in your sight a thousand years are like yesterday that has past” (Psalms 90: 3). Our [solar] year is 365 days and a quarter; therefore the [Divine] year above is 365,000 [and 250] years. . . .³² And now I shall say something that needs meditation. It is that 100 years for the Holy One Blessed Be He, are 36 times 150,000 of our years. And since we said that the year above is 365,000 and 250 years . . . calculate for a 100 years and for a 1000 years and you will not need any more thought. Therefore, our eyes can see that the world shall exist for a very long time. This is contrary to those who say that it will exist only 49,000 years, which are seven sabbaticals.³³

According to R. Isaac of Acre, the Doctrine of Sabbatical years which assigns each world 7000 years, refers to Divine years. This means that, in our terms, each world is 365,000 x 7000, or 2,555,000,000 years, long. The Doctrine of Sabbatical Worlds was discussed by scholars from the time of the Spanish expulsion (Don Isaac Abarbanel³⁴ and R. Judah Hayyat) and later by Kabbalists of sixteenth century Safed. R. Joseph Karo (1488-1575) mentions the doctrine in his *Maggid Mesharim*, where he re-interprets the one millennium of destruction in a meta-phorical sense, “that in that millenium [physical] activity and creativity will be weaker than in the previous millennia.”³⁵ R. Moses Cordovero (Ramak, 1522-1570) mentions this doctrine in his *Shiur Komah*,³⁶ as well as in his

Eilima Rabbati,³⁷ where he ascribes the doctrine to some of the kabbalists.³⁸ The noted Kabbalistic authority, R. Isaac Luria of Safed (Ari, 1534-1572), rejected the entire doctrine, claiming that there were no worlds before us and there will be none after us. He claimed the whole concept was born out of a misunderstanding of the secret of the Sabbatical years, which referred to spiritual worlds that preceded the creation of our physical world.³⁹ It is perhaps owing to the Ari's influence that later kabbalists disregarded the doctrine of the Sabbatical worlds.⁴⁰ After the sixteenth century, discussion of the topic ceased. It is therefore of particular interest that this motif was revived in the past 150 years, not necessarily on account of its eschatological theme, but rather as a possible answer to the challenge of the modern theories of cosmogony.

The Doctrine of the Sabbatical Worlds: Its Modern Re-employment

R. Israel Lipschutz of Danzig

R. Israel ben Gedalyah Lipschutz (1782-1860) was born in Germany and served as Rabbi of Wronki (1821), Dessau and Colmar (1826-37), and Danzig (1837-60). He is best known for his commentary on the Mishnah, entitled *Tiferet Yisrael*, which is widely studied and is found in the libraries of all greater yeshivot to this day. Most biographies of R. Lipschutz discuss his commentary and his halakhic abilities alone and leave out his interest in the sciences. This interest is intermittently exhibited in his commentary to the mishnah, but is clear from other writings of his as well.

In a short essay entitled *Or ha-Hayyim*, which was based on a sermon he gave on Passover 5602 (1842), R. Lipschutz discusses the idea of the afterlife in talmudic sources. In the third part of the essay, he discusses the concept of resurrection, which he attempts to prove from both tradition and nature. If, he writes, one can prove that there were worlds that existed before our own, in which life was destroyed and then created anew, it would prove that a resurrection has already taken place and could therefore happen again. To prove from the tradition the existence of these past worlds, he introduces the Doctrine of the Sabbatical worlds.

It states in *Sanhedrin* [97a] . . . “six thousand years [does the] world exist and one [it is] laid waste.” And we have learned, just as the sabbatical year stops everything once every seven years, so too the world stops every seventh millennium. . . . This is the secret of what will be; the secret of

what was we also can find in the precious writings of our sages, to get a glimpse through the eye of a needle. In *Bereshit Rabbah* it says: “ ‘And it was evening and it was morning.’ Said R. Avahu: this teaches that the order of time existed previously . . . teaching that the Holy One Blessed Be He built worlds and destroyed them” . . . And in order to give us a broader understanding of this, R. Bahya revealed to us this kabbalistic secret in *Parashat Behar*.⁴³

He goes on to explain R. Bahya’s approach, and he cites Ramban and Ibn Ezra. R. Lipschutz then adds:

The Lord’s secrets are for those who revere Him, for they have received [the tradition] that we are in the fourth world, which in order of the seven days of creation, parallels the fourth day in which God created the luminary bodies. Therefore, in this cycle, the light of Torah has arisen which is the sun that lights up the entire world. So even if the honor of the holy nation is at a low, the holy Torah stands as a luminous light on the horizon . . . for the whole world. However, if the Torah is the large luminary of the day, the small luminary is human reason that rules in this world. It, too, arises in this cycle, and in the coming years it will reach heights previously unknown to the human mind.⁴⁴

After bringing a proof from tradition attesting to the existence of previous worlds, R. Lipschutz proceeds to demonstrate that the scientific exploration of nature attests to the very same thing.

And now my beloved brothers, see on what a sound basis our holy Torah stands. For this secret handed to us from our ancestors, revealed to us hundreds of years ago, can be found in nature in our own times in the clearest manner. The restless spirit in man, the desire to discover all mysteries, has [brought him to] dig and search the belly of the earth like a mole, as well as the highest of mountains, the Pyrenees and Carpathian, and in the Cordillera mountains in [South] America, as well as the Himalayas, digging and searching until they found an awesome order of fossils, one on top of another at a hair’s distance, where one can only assume that a world catastrophe was caused through His Divine hand, which sends fury through the land and causes it to tremble.⁴⁵

He continues to describe at great length the paleontologic discoveries of his day, in particular the fossils of creatures buried under four layers of earth. The lower layers contain creatures that are larger than those in the higher layers, but the higher layer possess creatures that are “more developed.” R. Lipschutz then explains that, according to scientists, the earth was crushed on its southwestern side, destroying all life upon it. The previous life that existed was different than present creatures.

They found, in 1807 of their calendar, in Siberia, in the north of the earth under the permanent layer of ice, a mammoth elephant, three or four times the size of those of today, its bones are now exhibited in the Museum in Petersburg. Since that country does not normally have elephants, this is also a proof that the earth was crushed . . . changing its climate from that which was hot enough to support elephant survival there.⁴⁶

R. Lipschutz's familiarity with the discoveries of his day is also illustrated in his reference to a contemporary scientist by name: "We find as well in the depths of the mountains, sea animals who have fossilized into stone, and one scholar and natural researcher, whose name is Cufier,⁴⁷ wrote that of the 78 species found in the depths of the earth only 48 exist presently."⁴⁸ R. Lipschutz uses this new knowledge to answer textual problems in Genesis. For example, what is the meaning of the phrase "and the earth was without form [*tohu*] and void [*vohu*]" (Gen. 1:2). If the world had just been created, why would there be anything at all in existence? "Here our holy Torah revealed to us a handbreadth of this secret we just mentioned. For the world is not here for the first time. Even the four elements were created in previous cycles and therefore were not mentioned as being created this time around."⁴⁹ The meaning, therefore, of the verse in Genesis is that the world had been laid waste due to its previous destruction.

R. Lipschutz, who feels he has found a total agreement between modern science and Jewish tradition, also offers us a new interpretation of an old aggadic tradition. On the verse in Job, "How they were shriveled up before their time" (Job 22: 16), the Talmud says in the name of R. Shimon *he-Hasid*: "These are the 974 generations that were cut off before the creation of the world and were not created. The Holy One Blessed Be He, therefore, planted them in each generation, and they are the brazen ones of the generation."⁵⁰ Rashi explains that the Torah was supposed to be given after one thousand generations, as it says: "The promise he gave for a thousand generations" (Psalms 105:8). However, it was given after twenty-six generations instead. In order for this to happen, 974 generations had to be skipped. The simple understanding of the passage is that these generation were not created until later; R. Lipschutz, however, explains that they were created in a previous world cycle, before the giving of the Torah. This he proves by way of the anthropological discoveries of his day.

In my humble opinion, those men who lived in prehistoric times, called Pre-Adamites⁵¹ in their [i.e., the scientists'] language, are really the people of a world before Adam of our world. These are the 974 generations men-

tioned in in *Shabbat* (88a) and *Hagigah* (13b) who were created before this world. . . . Since their world was corrupt, they were cut off 26 generations before reaching twenty-six generations. . . . If we reckon that each generation is seventy years, this means that their world was destroyed after 6,818 years from its creation. These twenty-six generations that were missing in their world were completed from Adam to Moses our Teacher . . . in which the world was prepared and refined well in order to receive the Torah.⁵²

He explains that of the four worlds that have existed, including our own, humans have populated only the last two. He proves this homiletically, explaining why the Torah starts with a large letter *bet*:

Notice the large *bet*, that with which the Torah begins, and notice the four crowns [*taggin*] upon the bet. We have received from the Kabbalists that the four crowns hint to the fact that the world with all its hosts is here for the fourth time, and the large *bet* tells us that the greatest of creations, human intelligent life, is here for the second time.⁵³

R. Lipschutz is unique in that he goes into detail about the previous worlds and the scientific evidence for them. He is probably the first to claim that humankind inhabited only some of the worlds. He does not mention the nascent theory of evolution,⁵⁴ despite the fact that, according to his theory, each world is more developed than its predecessor. He does, however, consider seriously the paleontologic and anthropological discoveries of his day, from fossils of prehistoric animals to prehistoric humans. He sees these discoveries not as a threat to his religious belief, but as providing conformation for it. This extinct animal life was, he believed, the leftovers of a previous world, whose life was destroyed to enable a new world to form. The early forms of humans could belong to a world that did not reach a high enough level to merit the giving of the Torah.

R. Elijah Benamozegh

R. Elijah Ben Abraham Benamozegh (1822-1900) was an Italian Rabbi and philosopher. Born in Leghorn to wealthy Moroccan parents, he served as a Rabbi in Leghorn and taught in its rabbinical school. He was influenced by Kabbalah and philosophy, especially by the Italian philosophers Rosmini-Serbati and Gioberti, and he attempted to show affinities between Judaism and contemporary philosophy. He was well versed in many fields, including philology, archaeology and ancient history, and published numerous works in Hebrew, French and Italian on a variety of topics, including notes on Targum Onkelos, a commentary to the Bible, an introduction to the Oral Law, and a treatise defending the authenticity of the Zohar.⁵⁵

R. Benamozegh was both deeply rooted in Orthodox Jewish tradition and fully acculturated in the land in which he lived. Unlike many of his counterparts in Eastern Europe, he did not see secular studies as a threat to Jewish Orthodoxy as long as one did not lose sight of the appropriate order of priorities.⁵⁶ His surprisingly cosmopolitan approach, incorporating the ideas of non-Jewish philosophers and religionists in his discussions, is somewhat of an anomaly to Orthodox rabbinic thinkers of the nineteenth century. It should therefore not be surprising that R. Benamozegh saw it necessary to address the challenging ideas of evolution that were central to the scientific thinking of his day. Like R. Lipschutz, R. Benamozegh links the scientific discoveries in geology and anthropology concerning the age of the universe and humankind to the doctrine of Sabbatical worlds; unlike R. Lipschutz's, his later writings address the issue of evolution as well.

In *Em la-Mikra* (1862), his commentary on the Torah, R. Benamozegh considers the length of the days in the creation story in light of scientific research. He understands these "days" metaphorically and claims that they might be many thousands of years long.

Recently, researchers wanted to explain that those days [i.e. of Genesis] were not literal but were one thousand years or more. There is nothing new under the sun, for I have seen that R. Abraham Ibn Ezra wrote this (*Ozar Nehmad*, 215: 2), saying that each day was a thousand years; and, who knows, maybe this was what our sages meant when they said: This means that there was an order of time beforehand [i.e., before creation].⁵⁷

The idea that each day of Genesis is one thousand years long is not a literal interpretation of the text; it replaces, so to speak, regular days with Divine days.⁵⁸ However, R. Benamozegh says that each day was "one thousand years or more," which is already a non-literal way to explain the six days of Genesis, and argues that this is what the *midrash* meant when it referred to the "order of time" that came before creation.⁵⁹ This provides a possible answer to the problems posed by scientific estimates regarding the age of the world.

Just like R. Lipschutz, R. Benamozegh demonstrates that scientific discoveries prove the Rabbinic viewpoint, which speaks of an earlier order of time as well as earlier worlds.

Due to the natural research of our times, we know that there actually was an order of time beforehand—and in researching the sages of the Divine Kabbalah, we find that the writings of our sages [in the Midrash] are to be understood literally. Close to this we find their other statement saying: This teaches that that Holy One Blessed Be He was creating worlds and

destroying them. . . . The earlier scholars already interpreted this statement in a fine way that is close to the opinion of [Gottfried] Leibniz, for it is a fundamental ethical principle that this world was created by God through an act of will, therefore it is the best of all possible worlds. . . . Therefore we can say that God did not actually create and destroy worlds, but that [the *midrash*] teaches us through a parable that this world is the best of all possible worlds. . . . However, nowadays, we can even understand our Sages of blessed memory literally, and we do not need to sit in the shade of a parable, for it has been proven by natural scientists that before this creation of matter, plants and animals, that there was another order to the worlds, of very different matter, plants and animals. These worlds were literally destroyed and the remains of their destruction we can still witness today in the belly of the earth . . . all in accordance with the statement of Rabbi Yehudah Bar Simon.⁶⁰

R. Benamozegh uses the *midrash* that speaks of an earlier order of time in conjunction with the *midrash* of the earlier worlds to show that the scientific discoveries of his day serve to reinforce our belief in the sayings of our sages, and lead us to three new principles:

1. It is clear that the sayings of our sages of blessed memory, are true in their literal sense and that the spirit of an ancient tradition spoke from their mouths, for our sages were not even aware of the natural discoveries of today.
2. The words of the sages are identical with those of the sages of Kabbalah concerning the [Doctrine of the] Sabbatical [worlds], as is known.
3. This is a sign and proof that the Torah should not be understood without the [oral] tradition for without it we would not be able to see the connection to the wisdom and natural discoveries of our days. It is incumbent upon us to say that the writings of our sages of blessed memory have root in earlier times, for in the fourth book of Ezra, found in the Apocrypha, it says that the world will return to a state of turmoil as was at the time of creation.⁶¹

R. Benamozegh shows the same enthusiasm as did R. Lipschutz. Both believe that the new paleontological discoveries prove the ancient midrashic tradition of earlier worlds that predated our own. R. Benamozegh goes so far as to see in these discoveries a proof for the Divinity of the Torah.

In conclusion, this belief in earlier worlds is an ancient one in our nation, and it stands as a proof for the divine nature of the Torah, which natural science now confirms. . . . And I finish [this discussion] with the dear words of the scholar in the *Kuzari* who said [1: 40]: If a believer in Torah had to admit to the existence of primordial matter of earlier worlds that predated us, this would not blemish our faith.⁶²

Elsewhere, R. Benamozegh uses the doctrine of earlier worlds as proof that Judaism believes in the doctrine of progress:

To be sure, the Great Year of the pagans bears an apparent resemblance to those seven-year cosmic cycles which the Kabbalah calls *shemittot*, or the fifty year cycles called *yovelim* (Jubilees). But there is an essential difference: In the pagan cycles, there is merely a repetition of what had come before, whereas in the Hebraic, the occurrence brings improvement.⁶³

R. Benamozegh finds the idea of progress in the creation story as well and sees it as a precursor of the evolutionary theory:

In any event, the perception in Genesis of the creation of life as a progression from lower to higher forms has always attracted attention. It is a remarkable anticipation of what science would establish much later. Anaximander has sometimes been called the precursor of Darwinian theories, but in fact he has only a vague idea of progression. . . . We have only to reread the first page of the Pentateuch to be convinced of the superiority of biblical conceptions to the theories of the Ionian philosopher.⁶⁴

R. Benamozegh later adds that the Doctrine of the Sabbatical worlds is the best example of progressive improvement in creation;⁶⁵ it appears that Benamozegh's enthusiasm was not just for the scientific discoveries of the prehistoric age, but also for the new theory of evolution which speaks of a developmental process.

According to R. Benamozegh's understanding, if the evolution of the species describes a process where simple organisms developed into humankind, cannot humankind develop into something more spiritual? This he states in another work:

I believe, as science teaches, that animal forms appeared on the earth and evolved into more perfect beings, either as Cuvier said, by revolutions and cataclysms, or by a slow evolutionary processes, like the opinion of the modernist Lydell, or Darwin and others. More and more perfect species have developed, one after the other, over the course of millions of years on the face of the earth. The most perfect form is Man. But will nature stop here? This would indeed be strange. Present humankind, as Renan says, will evolve into another, more perfect human being. But Renan and the others stop here. They do not say that the order that reigns in the physical world has to reign in the moral one as well, and that there is no reason to believe that the "I," that force which created the actual human, does not have to create the future human as well. They do not say that the monads, the atoms, which are minuscule forces, are indestructible (as science teaches), for it is inevitable to believe that they will compose the future Man on a regenerated earth. All this is stated by Judaism, and is called the Resurrection.⁶⁶

R. Benamozegh claims that the same creative force which formed present humankind will bring about a new Man, one who is more morally and spiritually aware, in a new world, which in Jewish belief is called the world of the Resurrection.⁶⁷ This optimistic view of the evolutionary theory is developed more in the writings of Rabbi Kook as I will demonstrate below.

R. Samson Raphael Hirsch

While R. Hirsch (1808-1888) was a slightly older contemporary of R. Benamozegh, I present his ideas only now, since he differs from R. Benamozegh and R. Lipschutz. Whereas the other scholars share enthusiasm for the idea that the new scientific discoveries support ancient rabbinic traditions, R. Hirsch is skeptical towards the new scientific theories.

R. Hirsch was born in Hamburg, and was the son of R. Raphael Frankfurter. R. Raphael was an opponent of the Reform congregation in Hamburg but a supporter of Ḥakham Bernays, who included secular studies in the curriculum of the Talmud Torah. R. Hirsch himself was quite influenced by R. Bernays, as well as by R. Jacob Ettlinger, whose Yeshiva in Mannheim he attended.⁶⁸ He went on to attend the University of Bonn, where he befriended Abraham Geiger (who would subsequently become his opponent). In 1830, he became the *Landrabbiner* of Oldenburg. There he published his *Nineteen Letters on Judaism* (under the pseudonym “Ben Uziel”) in 1836, as well as *Horev* (1837). In 1841 he moved to Emden, where he served as rabbi of Aurich and Osnabrueck in Hanover, and he later served as the Rabbi of Moravia. Despite his battle against the Reform movement, Hirsch believed that revisions were necessary, although only of the externals of Judaism and not of its principles. His insistence on Bible study, his method of teaching, and his donning a robe during services aroused opposition among the extreme Orthodox elements. Finally, in 1851, R. Hirsch moved to Frankfurt where he found a group of like-minded friends. There he created a synagogue and a school that embodied his ideas of modern Orthodoxy.⁶⁹

Much has been written on R. Hirsch as a central figure of European Jewry in the nineteenth century. In this discussion, I will limit myself to R. Hirsch's thoughts on cosmogony and evolution. He explains in his essay, “The Educational Value of Judaism,” that although Jews believe that God created the universe, Judaism has no dogmas about the specific order of creation or of the universe.

What Judaism does consider vitally important is the acceptance of the premise that all the hosts of heaven move only in accordance with the laws of the one, sole God. But whether we view these laws from the Ptolemaic or Copernican⁷¹ vantage point is a matter of total indifference to the purely moral objectives of Judaism. Judaism never made a credo of these or similar notions.⁷²

Even though Judaism holds no dogmas concerning the natural world, R. Hirsch claims that one should still not rush to adopt the latest scientific theories, which have yet to be substantiated. After all, scientific theories, unlike absolute truths, are subject to change.⁷³ In addition, he expresses some skepticism about modern science's ability to assess the age of the earth.⁷⁴

Despite this skepticism concerning some of the scientific theories of his day, R. Hirsch explains that these discoveries can coexist peacefully with tradition. The first question he addresses is the age of the universe, with which he deals by using some of the same arguments as his predecessors.

Judaism is not frightened even by the hundred of thousands and millions of years which the geological theory of the earth's development bandies about so freely. Judaism would have nothing to fear from that theory even if it were based on something more than mere hypothesis, on the still unproven presumption that the forces we see at work in our world today are the same as those that were in existence, with the same degree of potency, when the world was first created. Our rabbis, the Sages of Judaism, discuss (*Bereshit Rabbah* 9:2, *Hagigah* 16a) the possibility that earlier worlds were brought into existence and subsequently destroyed by the Creator before He made our own earth in its present form and order. However, the Rabbis never made the acceptance of this and similar possibilities an article of faith binding on all Jews. They were willing to live with any theory that did not reject the basic truth that "every beginning is from God."⁷⁵

R. Hirsch's basic notion is that the Torah wants to teach us that God created the universe, and not how He did it. If one so desires, one can find a Rabbinic foothold for the new theories of the age of the universe in the midrashic tradition of earlier worlds, but the truth is that the Rabbis in general were interested more in the moral messages of the Torah than in speculating about what actually happened at the point of creation.⁷⁶ Therefore, it doesn't matter what theory is held, as long as one believes that God was the creator. R. Hirsch deals with the theory of evolution in a similar fashion:

Even if the latest scientific notion that the genesis of all the multitude of organic forms on earth can be traced back to one single, most primitive, primeval form of life, . . . were ever to gain complete acceptance by the scientific world . . . Judaism in that case would call upon its adherents to give even greater reverence than ever before to the one, sole God, who, in his boundless creative wisdom and eternal omnipotence, needed to bring into existence no more than one single, amorphous nucleus and one single law of adaptation and heredity in order to bring forth from what seemed chaos but was in fact a very definite order. . . .⁷⁷

Having argued that evolution is acceptable if Divine origin is attributed to it, R. Hirsch goes on to hypothesize that the idea of evolution might actually be hinted at in the Torah:

This would be nothing else but the actualization of the law of *le-mino*,⁷⁸ the “law of species” with which God began his work of creation. This law of *le-mino*, upon which Judaism places such a great emphasis in order to impress upon its adherents that all of organic life is subject to Divine laws, can accommodate even this “theory of the origin of species.” After all, the principle of heredity set forth in this theory is only a paraphrase of the ancient Jewish law of *le-mino*, according to which, normally, each member of a species transmits its distinguishing traits to its descendants.⁷⁹

While R. Hirsch mentioned the tradition of earlier worlds in his discussion, he did not try to use that tradition at any great length. His chief concern was to explain that Judaism can accommodate any theory as long as it does not conflict with the idea that God is the ultimate origin of the universe. Upon that premise, any theory is plausible, for the Torah comes to teach us an ethical teaching and not physics. R. Hirsch argues that the Rabbis were not concerned with theories of cosmogony, and therefore did not mention the theory of earlier worlds, nor any other theory, as a binding dogma. By definition, therefore, no particular scientific theory of nature should be seen as a threat.

R. Shem Tov Gefen

While R. Shem Tov Ben Mordekhai Gefen (1856-1933) does not discuss the doctrine of the Sabbatical worlds, he does follow his predecessors by seeking a synthesis between science and tradition. His ideas, however, come from an entirely different perspective. Rabbi Gefen was born in the Ukraine in 1856 and passed away in Tel-Aviv in 1933. Already in his youth he was well read in Talmud (both Bavli and Yerushalmi), Kabbalah, Jewish and general philosophy and science. He was an original thinker, as well as an innovator in the Hebrew language. Rabbi

Abraham Isaac Kook referred to him as a “man with perfect Torah and scientific knowledge.”⁸⁰

R. Gefen opens his essay, “The Creation and Geology,” with the statement that the sequence of creation as determined by geologists on the basis of their findings is similar to the order of creation in the book of Genesis. The major difference is the time frame in which these events to take place.⁸¹ R. Gefen offers a creative approach to solve the conflict based on Kantian philosophy. Kant differentiated between our perception of something as it appears to us, the phenomenon, and the thing in itself, the noumenon. Space and time are “a priori” forms in which objects appear to us.⁸² That is, all objects are experienced by us as located in space and time; but location in space and time does not necessarily characterize the object in itself.⁸³ R. Gefen connects Kant’s ideas to our discussion.

Since the time of Kant we know well . . . that the forms of time and space do not exist in the essence of things, by themselves, but are forms used by the person perceiving these objects, just like color, heat, cold and the like, for all these forms have no existence but in the human psyche which perceives them.⁸⁴

R. Gefen goes on to say that the only way to perceive the noumenon of an object would be through prophecy, which originates beyond the human mind.⁸⁵ Applying this to the scientific discussion, R. Gefen asserts that the geological findings are correct. The animal fossils and early human forms do suggest a progressive order in creation. The fact that the human is at the end of this progressive order is compatible with the creation story in Genesis. Since the human being comes last in this progressive order, however, all creations that preceded humanity had no temporal existence, for there cannot be a concept of time without human beings.

From what we have said until now, the deep difference between two parts of geology, the “order of creation” and the “course of time,” becomes clear. Through digging in the earth, which has been done lately in many areas, we can perceive the chain of creation and the making of life-forms in a progression, from the lowest strata, where we find inorganic things, to strata above them, where we find vegetation, and to higher strata, where we find animal life, until we reach the highest strata where we find early human life forms. However, the time factor cannot be perceived by any human being. The simple reason is that this whole process and chain of events took place before Man was on this earth, whose forms we find only in the highest strata of the digs.⁸⁶

Geologists draw conclusions about the amount of time it should

have taken for the events in this progression to happen based on an analogy with events which they themselves have perceived, but this analogy is based on a fallacy. The events of creation happened without reference to time.⁸⁷ R. Gefen admits that this seems like a strange conclusion, but it is the “impeccable truth firmly seated on deep contemplation.”⁸⁸ R. Gefen admits that by the same logic, it is also impossible to assess what the Torah meant when it spoke of the six “days” of creation; if humans were created at the end of creation, then the six days can not have any temporal meaning either.⁸⁹

Rabbi Abraham Isaac Kook

R. Kook (1865-1935) was born in Griva, Latvia, and he held rabbinic posts locally before settling in Palestine in 1904. He served as the Chief Rabbi of Jaffa and the settlements of the new *Yishuv*. Stranded on a visit to Europe at the outbreak of World War I, he accepted a position in London for the duration of the war. Upon his return to Palestine he was appointed the Chief Rabbi of Jerusalem, and became the first Chief Rabbi of Palestine in 1921.⁹⁰

R. Kook was a gifted scholar. His writings range from Halakhah to Musar, Aggadah, Jewish philosophy and Kabbalah. His strong point was the ability to offer new perspectives on familiar sources in ways that were creative and at the same time loyal to their original context.⁹¹ R. Kook believed that holiness cannot exist without roots in the secular world.⁹² This is true both in the realm of knowledge as well as the realm of ethical conduct; one cannot build up a spiritual environment without the proper natural understanding of right and wrong.⁹³ It is therefore not surprising that in his speech at the inauguration ceremony of the Hebrew University, R. Kook stated that it is important to learn secular sciences in order to absorb the best of them into traditional Jewish life. This combination is not to compensate for a deficiency in Torah, but to create richer modes of understanding.⁹⁴ Despite the importance of secular knowledge in the thought of R. Kook, he urged that one take proper precautions when studying it, since its source originates from outside of Judaism.⁹⁵ R. Kook, like R. Hirsch, tended to seek synthesis between the tradition and the positive challenges of modernity;⁹⁶ unlike R. Hirsch, he saw secular studies as contributing to the understanding of Torah and Jewish life but inferior to it, like the relationship of a branch to the tree, its source.⁹⁷ R. Kook discusses modern cosmogony and the theory of evolution in a number of places, among them a letter that he wrote to Dr. Moshe Seidel. At the time of the letter in 1905, Seidel was a young student of Bible and Semitic lan-

guages in Bern, Switzerland.⁹⁸ R. Kook opens his letter with the doctrine of the Sabbatical worlds as it is found in the Midrash.

As to the calculation of number of years since the creation in relation to the calculation of today's geologists, it is generally accepted that there were many earlier epochs preceding our recorded epoch. This was common knowledge among all our kabbalists,⁹⁹ and is mentioned in *Bereshit Rabbah* (5: 3,9), "He was building worlds and destroying them."¹⁰⁰

R. Kook begins by following in the footsteps of R. Lipschutz, whose work *Tiferet Yisrael* was well known by that time. He understands the Doctrine of the Sabbatical Worlds in the same way that R. Lipschutz, and before him Menaḥem Recanati, had—that each world lies lifeless at its end, but is not totally destroyed.

Excavations may teach us that there were living creatures, including humans in [earlier] periods, but there is no proof that there was not in the interim a planetary cataclysm and a new formation [of life]. Rather there is just an unsubstantiated hypothesis [progressive evolution] that need not worry us.¹⁰¹

Up to this point, R. Kook is following R. Lipschutz's line of argument in its entirety. He even argues that evolution *per se* is just one possible explanation of the scientific findings, and that there may have been a series of completely new worlds (or epochs), followed by the regeneration or re-creation of life. However, R. Kook now brings up a few new ideas of his own. The first one occurs apropos his discussion on the doctrine of the Sabbatical worlds, and is intended to show, as R. Lipschutz suggested, that there might have been humans at the beginning of each world.

Indeed in the Zohar on the portion of Leviticus, it is written that there were other types of humans in addition to Adam mentioned in the Torah. However, one must understand well the profound words [of the Zohar], which need a comprehensive explanation.¹⁰²

R. Kook seems to be referring to a passage found near the beginning of Leviticus. The Zohar comments on the verse: "When any of you [lit. when a man (*adam*) of you] presents an offering to the Lord" (Lev. 1, 2): "R. Elazar said: This verse should have been written, 'A man who brings an offering,' why [does it say] 'of you'? This is to exclude Adam, who offered an offering when God created the world. Therefore it is written, 'of you,' from this Adam, to exclude other Adams that are not of you."¹⁰³

But actually we do not need this [attempt to synthesize between modern scientific theories and tradition], since even if it were proven true that the order of creation was through the evolution of the species, this would

not contradict our calculation of time. We count according to the literal text of the Torah's verses, which is much more meaningful than all the knowledge of prehistory, which has little relevance to us.¹⁰⁴

The above statement appears to be a retreat into a fundamentalist argument that Scripture is more accurate than science. A closer look reveals that it is actually anything but that. R. Kook is not rejecting prehistoric findings because of Scripture; he is simply saying that Scripture overlooks prehistory, which it considers irrelevant for its own purposes. In other words, even if it is true that the world is older than the simple meaning of the Torah suggests, and that there were prehistoric humans before us, the Torah is only concerned with modern Man, the intelligent Homo Sapiens to whom God spoke and gave a moral code. We therefore do not have to resort to the doctrine of Sabbatical Worlds in order to understand the new scientific discoveries. In another text, R. Kook states this clearly.

To compare the creation story with the latest [scientific] studies is of importance. There is nothing to stop us from explaining the passage concerning the creation of heaven and earth to include worlds containing millions of years, until reaching a man who realized that he is different from the animals and therefore came to the realization that he needs a unique type of family life with a woman whom he would embrace more than his parents.¹⁰⁵

There is, then, no reason why one cannot say that Adam was the end product of a developmental process, either in earlier epochs or in earlier worlds (as R. Lipschutz said) and that the Torah is interested only in the end product.

To understand this idea better, one must realize what is entailed in the Jewish calendar's enumeration of 5766 years. This chronology is based on the work *Seder Olam Rabbah* ascribed to the Tanna R. Yosi Ben Halafta.¹⁰⁶ This work uses the biblical text to calculate the years from Adam until the Tannaitic period. Its calculations were later expanded and updated, bringing us today to 5766. An interesting point that R. Kook fails to mention is that this calculation begins with Adam, that is, with the sixth day of creation. According to the Talmud, Rosh Hashanah is the commemoration of the creation of humankind and not the world *per se*.¹⁰⁷ This means that from the past Rosh Hashanah, the world was created 5766 years and 5 days ago. This of course assumes that the days in Genesis 1 consisted of 24 hours each, an idea challenged by some thinkers, but which I will not discuss here. Let it suffice to point out that since the sun was created on day four, it is difficult to understand the

first three days of creation literally. Did all of evolution happen during the six days? R. Kook does not discuss this. He just says that the Torah is interested in Man as we know him. If, however, it is true that (as we have demonstrated) the six days of creation might have been longer than 24 hours each, it would only strengthen his argument.

R. Kook also deals with the question of whether the book of Genesis gives us a literal account of creation.

The Torah certainly obscures the act of creation and speaks in allegories and parables. Indeed everyone knows that the stories of Genesis are part of the secrets of the Torah, for if all the narratives were taken literally, what secrets would there be?¹⁰⁸

R. Kook here follows Ramban.¹⁰⁹ Ramban initially questions the query of R. Yizḥak, cited in Rashi, as to why the Torah begins with the story of creation. After all, the creation of the world is a principle of faith, and it is obviously necessary to know about it. He clarifies R. Yizḥak's question:

Since the Work of Creation is a deep secret and is not clear from Scripture and cannot be known in its totality except through a Divine tradition from Moses and those who do know it must conceal their knowledge, therefore R. Yizḥak says that the Torah should not have started from Genesis.¹¹⁰

If the creation story is a secret of Torah, one cannot take it literally or claim, on its basis, that it negates a certain scientific theory. One could further ask whether the Torah is concerned with the scientific truths of the world at all, or if the point of the Torah is simply to teach moral truths. This non-literalist claim of Ramban, which was adopted by R. Kook, finds support in the Mishnah, which states that the real meaning of the first chapter of Genesis may only be transmitted cryptically to the select few who are worthy of such secrets. This, of course, assumes that the simple meaning of the text is not the "real story."¹¹¹ In fact, Ramban himself does not see the six "days" of creation necessarily as a temporal concept at all.¹¹²

R. Kook's final argument concerns the idea of evolution of the species. If evolution did, in fact, happen, why didn't the Torah mention it? R. Kook answers:

Just as we say "and then Solomon built [the temple for God," Kings I 6: 1] rather than say that Solomon gave the order to the ministers and the ministers in turn to their subordinates and they to the architects and the architects to the craftsmen and laborers, for this is as obvious as it is secondary.¹¹³

Obviously it is the one who started the process and gave the order that is the builder. So, too, it is possible to understand the creation story as implying that God gave the order and the world evolved through a process of evolution. R. Kook does not assert that this is what happened, as evolution is just a theory; he simply claims that it could have been what happened and this would not contradict the Torah.

We do not have to accept theories as certainties, no matter how widely accepted, for they are like blossoms that fade. Very soon science will be developed further and all of today's new theories will be derided and scorned and the well-respected wisdom of our day will seem small-minded.¹¹⁴

He concludes: "At any rate there is no contradiction whatsoever between the Torah and any of the world's scientific knowledge."

Elsewhere, R. Kook takes a different approach to the same issues he addressed in his letter to Dr. Seidel. While in his letter, R. Kook attempted to downplay the importance of the theory of evolution, even while attempting a synthesis with the creation story,¹¹⁵ in *Orot ha-Kodesh* he displays an unprecedented enthusiasm towards it, viewing it as being close to Kabbalistic thinking.

The theory of evolution which at present is conquering the world is in harmony with the eternal secrets of the Kabbalah more than any other philosophic theory. Evolution, which talks of the ascent [of life], gives optimism to the world. After all, how can one despair if we see that everything develops and is elevated constantly? When one delves deeply into the basis of evolutionary ascent, one finds a clear and luminescent Divine element within it, whereby actual infinitude is bringing forth potential infinitude.¹¹⁶

Two questions arise at this point. (1) With which secrets of the Kabbalah is the theory of evolution in harmony? (2) Why does R. Kook react so enthusiastically to evolution, given that, in his letters, he was no more than apologetic about it? R. Kook answers the first question elsewhere; there he discusses the changes which occurred in the modern period, in our concepts of society, the cosmos and evolution. In this context, he explains why the evolutionary concept makes sense from a Kabbalistic perspective

The concept of evolution, which has gained popularity in all fields due to the new understanding of nature, has made a conceptual revolution. Not in the minds of those special few masters of knowledge and thought [i.e. the kabbalists] who have always seen the order of gradual emanation even in the spiritual realm from a hidden perspective. For it is not

unusual for them to understand by analogy that this is the way of physical development in the tangible world. It should be so, for [the physical world] should be in harmony with the spiritual emanation of existence, which does not miss or skip a level.¹¹⁷

R. Kook explains that since, according to the Kabbalists, the spiritual worlds that preceded our own were created through a series of gradual emanations, it stands to reason that the physical world should work in the same pattern of gradual development.¹¹⁸ R. Kook was well aware that the idea of the evolution would be conceptually difficult for the average Jew to swallow. After all, didn't the scholars of the Middle Ages talk of creation *ex nihilo*, where a world is spontaneously brought into the full bloom of being? How can this idea hold up in light of an evolutionary explanation of nature? R. Kook addresses this clearly:

The masses were not capable of understanding evolution as a complete and inclusive idea and could not [therefore] relate it to their spiritual world. The problematic aspect, which weighs so heavily on the masses, isn't the incompatibility of the biblical verses or of traditional texts with the idea of evolution. This type of work [of explaining the verses of Genesis or Rabbinic texts on creation] is quite easy. [After all] everyone knows that metaphors and riddles dominate these areas which are cosmic secrets. . . . But [the problem is] how to relate to the idea of evolution all of the wealth of spiritual ideas developed by the masses which are based on the idea of [creation] *ex nihilo* and which [was taught since it] saves the mind from floating into areas too removed from understanding. . . . This needs a great deal of the light [of pedagogical explanations].¹¹⁹

The problem that the masses have with evolution is neither scriptural nor Rabbinic, but conceptual. For the masses were never exposed to the Kabbalistic concepts of emanation, but instead were taught that Genesis describes the story of creation from nothing to full bloom. This was done for educational reasons, to keep the masses from thinking that the world was eternal as Aristotle claimed, or created from primordial matter as Plato had said. In reality, however, the act of creation was not necessarily instantaneous. There could have been a gradual sequence of events, and this actually accords better with the concepts of Kabbalah than the standard philosophic concept of creationism.¹²⁰

A Final Thought

As a last point of this essay, it is necessary to point out how Jewish religious thinking on evolutionism differs from its Christian counterpart.¹²¹ Christian thinkers, as well as all those who rely only on the biblical

account of creation, are presented with two options: the fundamentalist approach of the six days of creation, or the more liberal approach of offering some type of synthesis with evolutionary theories. There are two such possible syntheses—non-literal interpretation (i.e. each day is a long period of time) and a gap theory (i.e. fossils found are part of an earlier creation).¹²²

On the surface, the rabbinic thinkers discussed above seem to be taking the road of synthesis: they seek reconciliation, either using the doctrine of the Sabbatical Worlds as a sort of gap theory or, as in the case of R. Kook, they offer a non-literal reading of the text. In fact, they only appear to be compromising between the tradition and evolutionary theory. The legitimate authority of the oral tradition to interpret the biblical text is a fundamental Jewish belief. These traditions, usually from the classical period of the Mishnah and the Talmud, are considered by many as binding even in areas that do not concern Jewish law. They are considered by all as authoritative interpretations of the text. Rabbis who utilized these sources to create syntheses between new theories of cosmogony and the Bible were doing nothing untraditional; they were simply reinterpreting traditional sources in the light of new information. What thinkers like Rabbi Lipschutz did with the doctrine of the Sabbatical Worlds, Rabbi Kook did with Kabbalistic concepts of emanation. Ancient texts and ideas were used to create reconciliation without stepping out of the fold. It is only at first glance, therefore, that one finds Orthodox thinkers preaching seemingly liberal views of reconciliation.

In conclusion, the rabbinic authorities quoted, living in the nineteenth and early twentieth centuries, saw the geological discoveries of their day as a challenge to be dealt with, but never as a threat. Some, such as Rabbis Lipschutz and Benamozegh,¹²³ actually greeted these discoveries with great enthusiasm, seeing them as a confirmation of the ancient *midrashim* which spoke of the worlds that predated our own. Others, such as Rabbis Gefen, Hirsch and Kook, saw them as a challenge, but felt that they had created a perfect synthesis between the new theories and authentic Jewish traditions. The concept of evolution was seen as a greater challenge than the geological discoveries, but even so was dealt with as a problem that lent itself to a satisfying solution. At times, as in the writings of R. Kook, evolutionary theory was greeted with great enthusiasm as a way to illuminate ancient kabbalistic doctrines.

R. Isaac Halevi Herzog,¹²⁴ writing in the mid-twentieth century, displayed the discomfort that many later rabbinic figures were to have with evolutionism. This discomfort was caused not just by the challenge

which evolutionary theory posed to biblical exegesis, but by the fact that it was considered the flagship of secular scientific thought, which was trying to fight all organized religion. As a result, some of the rabbis of the second half of the twentieth century began, like their Christian co-religionists, to see the theory of evolution as a threat. As Orthodox Jews entered the arena of secular studies, many of them entered the battle against evolution, arguing from a scientific standpoint rather than to a biblical or talmudic point of view¹²⁵ and looked to those who opposed evolution as their comrades in arms. Why were the syntheses drawn up by Rabbis Lipschutz, Benamozegh, Hirsch, and Kook so quickly forgotten? Obviously, as R. Kook already pointed out, the answer to this question has more to do with politics and society than it does with exegesis.

Notes

I would like to thank Professors Yemima Ben Menahem, Alessander Guetta and Gad Freudenthal for their helpful insights and remarks.

1. In this discussion, I leave out R. Meir Leibush Malbim (1809-1879), who does not discuss our main motif and only hints at evolutionism, as well as Naftali Halevi (1840-1894), an Orthodox *maskil*, who published a short essay on evolution and the Torah called *Toledot Adam*. He did not mention our theme and did not hold a rabbinic position like the others. For further information on his work see Shai Cherry, *Creation, Evolution and Jewish Thought* (Ph. D Dissertation, Brandeis University, 2001), 129-134. Cherry discusses both Orthodox and non-Orthodox thinkers of the nineteenth and twentieth centuries. See pp. 92-190. I found it rather curious that he left out both R. Lipschutz and R. Gefen from his quite encompassing discussion of evolution. He seems to have also missed the importance of the Doctrine of Sabbatical years for this discussion.
2. See I. Robinson, "Judaism Since 1700," in *The History of Science and Religion in the Western Tradition*, ed. Gary B. Ferngren (New York and London, 2000), 288-290. Robinson claims that Jewish attitudes to the theory of evolution in the nineteenth century ranged from fierce opposition to acceptance (p. 289). I will demonstrate that in the nineteenth century there was a more accepting attitude among rabbinic authorities to scientific cosmology, which turned into opposition only in the second half of the twentieth century.
3. See, for example, Maimonides, who incorporated the idea of God being the cause of all into the belief in God's existence. See *Hakdamot Ha-Rambam*, ed. Yizhak Shilat (Jerusalem 1992), 141 (fourth *ikkar* in introduction to *Helek*). See also *Guide of the Perplexed*, II: 27. Maimonides sees belief in the creation of the world as a principle of Judaism but not belief in its demise. Much has been written on Maimonides and creationism. For further reading see Michael Schwartz's edition of *Moreh Nevukhim* (Tel Aviv, 2002), Vol. 1,

- p. 346, note 1 and p. 341, note *. See also Marc B. Shapiro, *The Limits of Orthodox Theology: Maimonides' Thirteen Principles Reappraised* (Oxford 2004), 71-77; Yeshayahu Leibowitz, "Berī'at ha-Olam be-Emunato shel Ha-Rambam," *Berī'at ha-Olam, ba-Madda ba-Mitos ba-Emunah*, ed. L. Mazor (Jerusalem 1991), 71-78.
4. Also known as *Fourth Ezra* or *Propheta Ezra*, chapter 5, 30-31.
 5. *Enokh II* (also called the *Slavic Enokh*), 11; 81.
 6. *Sanhedrin* 97a.
 7. *Gen. Rabbah* 3: 7. I have followed the Soncino translation with some changes.
 8. *Gen. Rabbah* 9: 2. See also *Kohelet Rabbah* 3 on *Kohelet* 3: 11. Also see *Midrash Shohar Tov* on Psalm 34.
 9. For biblical quotations I followed the New JPS translation (Philadelphia, 1999).
 10. For more on the Kabbalistic origins of the doctrine of the Sabbatical worlds, see Haviva Pedaya, *Ha-Ramban: Hit'alut: Zeman Maḥzori ve-Tekst Kadosh* (Tel Aviv, 2003), 12, 32-33, 92-93.
 11. Ibn Ezra, *Lev. 25: 2*. Ibn Ezra implies that just as humankind has a Sabbath day for rest, so too, the end of each cosmic cycle is a rest for the whole world and therefore referred to as "the Lord's Sabbath."
 12. Ramban, *Gen. 2: 3*: "For the six days of creation parallel all of the history of the world, for its existence will be six thousand years. That is why they [the Sages] said: 'God's day is a thousand years' [*Gen. Rabbah* 19:8]." See *Perushei ha-Torah le-Rabbi Moshe Ben Nahman*, ed. Chaim D. Chavel (Jerusalem, 1959-1960), Vol. 1, pp. 30-31.
 13. Ramban, *Lev. 25:2*. (Chavel ed., vol. 2, pp. 166-167).
 14. A contemporary of Ibn Ezra, R. Abraham Bar Ḥiyya, argues that the world must have an end if it was created. One of the possibilities he mentions is 49,000 years. However he does not connect this to the notion of the sabbatical years. See *Megillat Ha-Megalleh* (Berlin 1924), 10. Israel Weinstock argues that the basis for the doctrine of Sabbatical years is hinted to already in the book of the Bahir. Gershom Scholem differs on this point. (See I. Weinstock, *Be-Ma'agalei Ha-Nigleh Ve-ha-nistar* [Jerusalem 1969], p. 159 note 28). Scholem takes issue with Weinstock on a few counts. (See this book in the Scholem Library in a handwritten note taking issue with Weinstock. Catalog No. 6190.1, pp. 158-159). On the development of the doctrine of the Sabbatical years in Jewish philosophy, see Weinstock, 177-241.
 15. R. Baḥya B. Asher, a contemporary of Isaac of Akko and a student of the Rashba, uses the same phrase, attributing it to "the scholars" (*Ḥahmei Hameḥkar*). See his commentary to *Lev. 25:10*, *Rabbeinu Behaye'i: Be'ur al-Hatorah*, Chavel edition (Jerusalem, 1967), Vol. 2, p. 565.
 16. R. Isaac of Akko, *Meirat Einayim* (Jerusalem, 1993), 230-31.
 17. *Ibid.*, 130.
 18. The exact dates of his lifetime are unknown.
 19. R. Menahem Recanati, *Levushei Or Yekarot* (Jerusalem, 1961), 68b.
 20. *Ibid.* The idea that each subsequent world is better than the previous one is well developed in the book *Ma'arekhet ha-Elohut*, written by an anonymous author in the fourteenth century and ascribed to Rabbeinu Perez. "Seven worlds that parallel the seven upper [heavens], for each *sefirah* is called a world." (*Ma'arekhet ha-Elohut* [Jerusalem, 1963], 187b. Concerning the

authorship of this work, see G. Scholem, *Mehkarei Kabbalah*, ed. Y. Ben-Shlomo and M. Idel [Tel-Aviv, 1998], 171-176. Scholem takes the position that the author was of Ramban's circle.) According to this explanation, each world corresponds to one of the *sefirot* from *hesed* to *malkhut*. In which world are we now? The author of *Sefer ha-Temunah* claims that we are in the second world, corresponding to *gevurah*, a world in which the attribute of stern judgment is dominant. (For a comparison between *Sefer ha-Temunah* and Christian mysticism, see: Gershom Scholem, *Origins of The Kabbalah* [Princeton, 1987], 460-475.) R. Isaac of Acre came to the same conclusion in his commentary to *Sefer Yezirah*. See G. Scholem, "Peirush R. Yizhak Me-Akko Le-Sefer Yezirah," *Kiryat Sefer* 31 (1957): 392: "This world, the sabbatical that we are in, is from the *sefirah* of *gevurah*, as you can see. For all the punishments in this world come from fire, as our sages of blessed memory said (Jerusalem Talmud, *Sanhedrin* 10:3) that the flood [of Noah] was of boiling water and so, too, was Sodom and Gemorrah's punishment in fire." (My translation).

21. See note 19.
22. *Guide for the Perplexed*, II:27
23. Biographical dates for R. Bahya are unavailable, but his commentary to the Torah was written in 1291.
24. See Lev. 25:34.
25. R. Bahya Ben Asher, Commentary to the Torah, Lev. 25:8, Chavel edition, 564.
26. Ibid. Lev. 25: 2., 564.
27. *Avodah Zarah* 5a.
28. Concerning the authorship of this work, see Gershom Scholem, *Mehkarei Kabbalah*, ed. Yosef Ben-Shlomo and Moshe Idel (Tel-Aviv, 1998), pp. 171-176. Scholem takes the position that the author was of Nahmanides' circle.
29. *Ma'arekhet ha-Elohut*, Mantua 1558 (Jerusalem 1963), 187b.
30. For a comparison between *Sefer ha-Temunah* and Christian mysticism, see G. Scholem, *Origins of Kabbalah* (Princeton, 1987), 460-475.
31. See the quotation from Scholem, "Perush . . ." at the end of note 20.
32. *Ozar ha-Hayyim*, Ginzburg collection ms. 775, 87a. Later in the work, he adds 250 years to represent the "quarter."
33. Ibid., 88a-b.
34. Abarbanel's commentary to the Torah (Leviticus) (Jerusalem, 1964), 158-159.
35. *Maggid Mesharim* (Jerusalem, 1960), *Parashat Behar*, 111a.
36. *Shiur Komah* (Warsaw, 1883), 23a.
37. *Eilimah Rabbati* (Levov, 1881), Tamar 1, chap. 13, 5b.
38. Weinstock sees Ramak as siding against this doctrine, but there is no basis for this claim. See Bracha Zak, *Be-Sha'arei Ha-Kabbalah Shel Rabbi Moshe Cordovero* (Jerusalem, 1995), 31 and especially note 129. It is of interest, however, that Ramak offers a non-temporal explanation of the "*shemittot*" in his *Pardes Rimmonim*, *Sha'ar ha-She'arim*, chap. 13.
39. *Sha'ar Ma'amarei Rashbi* (Jerusalem, 1959), 46b.
40. See I. Weinstock, 230. In R. Naftali Bakhrakh's *Emek ha-Melekh* (17th cent.) he writes: "This is contrary to those who hold that there were sabbatical [worlds] of kindness [*hesed*] and now it is the sabbatical of strength [*gevurah*]. All this is untrue. They heard from their rabbis that God built previous worlds and destroyed them and they added to this the notion of the

- sabbaticals, but this is not true.” See *Emek ha-Melekh* (Jerusalem, 2003), vol. 1, pp. 58, 237.
41. For more on this commentary, see A. Posner, “*Ba’al Tiferet Yisrael u-Perusho le-Seder Nashim*,” *Shanah be-Shanah* 4 (1963- 5724): 395-401.
 42. In an interesting defense of modern medicine, R. Lipschutz interprets the Talmudic saying: “The best of doctors are for Gehinna” to mean that a doctor who thinks that he is the best and does not take advice from his colleagues is destined for *gehinnom*. (*Kiddushin*, chapter 4, commentary 77. See Posner, 400). In another commentary, R. Lipschutz quotes a doctor named Hovland from a work on microbiology (Posner, 398).
 43. *Or ha-Ḥayyim*, part three, 4a. Found in *Tiferet Yisrael* (New York, 1969), *Nezikin*, end of Vol. 1.
 44. *Ibid.*
 45. *Ibid.*
 46. *Ibid.*
 47. “Cuvier” refers to Baron Georges Cuvier (1769-1832), who was considered the man who brought extinct animals of the past to “life.” He published three works on general zoology: *Tableau Elementaire de L’histoire Naturelle des Animeaux* (1797), *Lecons d’Anatomie Comparee* (1800), and *Le Regne Animal* (1817). His classification of animals influenced Lamarck, despite the battle between them over the latter’s materialism. Cuvier believed that creation had taken place in stages and for many years disputed the accepted theory of the “Great Chain of Being,” which, however, he later accepted. His work on fish, entitled *Histoire des poissons* (1828), became the basis of modern ichthyology. For more on Cuvier, see: C.C. Gillespie (ed.), *Dictionary of Scientific Biography* (New York, 1971), Vol. III, pp. 521-527.
 48. *Ibid.*
 49. *Or ha-Ḥayyim*, 4b.
 50. *Ḥagigah* 13b-14a.
 51. The pre-Adamite theory was popular during the first half of the eighteenth century, although more so among Protestants than Catholics. It supposed the existence of humans who predated Adam of the Genesis story in order to find a synthesis between science and religion. For more information, see D. Livingstone, “The Origin and Unity of the Human Race,” in *The History of Science and Religion*, ed. Gary B. Ferngren (New York and London, 2000), 452-57.
 52. *Or ha-Ḥayyim*, 4b. R. Lipschutz was not the first to make a connection between the 974 generations and the Doctrine of the Sabbatical years. This link can be understood from *Tikkunei Zohar Ḥadash* as well. The Vilna Gaon, in his commentary to *Tikkunei Zohar Ḥadash*, spells out the connection clearly but with a fundamental difference. He understands the Doctrine of the Sabbatical years in the Lurianic fashion, that it is a metaphor for spiritual worlds and not physical ones. See *Tikkunei Zohar Ḥadash im Beurei ha-Gra* (Vilna, 1862), 27a.
 53. *Or ha-Ḥayyim*, 4b.
 54. He appears to be unaware of evolution despite the fact that Lamarck published his *Philosophy of Zoology* in 1809.
 55. M. N. Zobel, *Encyclopaedia Judaica*, s.v. “Benamozegh, Elijah Ben Abraham,” Vol. 4, 462-463. For more on the writings of R. Benamozegh, see A. Guetta, *Philosophie et Kabbale: Essai sur la Pensée de Elie Benamozegh* (Paris, 1998).

56. See M. Lutria, *Elijah Benamozegh, Israel and Humanity* (NY and Mahwah, 1995), Introduction p. 3.
57. *Em la-Mikra* (Livorno, 1862), 4b commentary on Gen. 1:5.
58. The idea of a “Divine day” being 1000 of our years is based on Psalms 90; 4.
59. Ibid. See also *Bereshit Rabbah* 3:7.
60. *Em la-Mikra*, 5a.
61. Ibid, 5b.
62. Ibid.
63. *Israel and Humanity* (New York and Mahwah, 1995), 176. He goes on to explain in some detail the Doctrine the Sabbatical worlds, connecting it to the midrashic idea of earlier worlds. (180-182).
64. Ibid., 180.
65. Ibid., 181.
66. “Il Mio Credo,” found in *Teologia-Dogmatica E Apologetica* (Livorno, 1877), Vol. 1, 276-277. The original is as follows:

Credo come insegna le Scienza che le forme animali sono apparse sulla terrasempre piu perfette, che sia per rivoluzioni o cataclismi come vol-eva l’anticageologia con Cuvier, sia per lenti evoluzioni come vuole la moderna con Lyell, Darwin ed altri, specie e generi sempre piu perfetti siansi succeduti per milioni di anni sulla faccia della terra. La forma sin ora piu perfetta e l’uomo. Ma la natura si fermara qui? Questo dav vero sarebbe strano. All’umanita presente, come ben dice Renan, un’altra piu perfetta Umanita dovra subentrare. Ma Renan ed altri qui si arrestano. Non dicono che l’ordine che regna nel mondo fisico deve pure regnare nel mondo morale, e che non c’ e ragione per credere che quel Me quella forza che ha formato l’uomo attuale, non debba ascendere a formare l’uomo avvenire. Non dicono che essendovi monadi, atomi, che sono anche forze organizzatrici per se medesime, questa essendo indistruttibili (come tutto cio insegna la scienza), e inevitabile il credere che dovranno entrare a comporre l’uomo avvenire sulla terra rigenerata. Ora tutto cio dice l’Ebraismo, e questo chiama col nome (appunto perche tale e) di *Resurrezione*.

67. See also Dante Lattes, *Ani Ma’amin Shel Filosof Yehudi* (Jerusalem, 1953), 20.
68. Hillel Zeidman, “Ha-Rav Shimshon Raphael Hirsch,” in *Hokhmat Yisrael be-Eitropah*, ed. S. Federbush (Jerusalem, 1965), 115.
69. Simha Katz, *Encyclopaedia Judaica*, vol. 8, pp. 508-510.
70. Lawrence Kaplan wrote an important article on his relationship to the sciences: “Torah U’Mada in the Thought of Rabbi Samson Raphael Hirsch,” *BDD* 5 (1997): 5-31.
71. Ibid., 23.
72. “The Educational Value of Judaism,” *The Collected Writings*, ed. E. Bondi and D. Bechhofer (New York and Jerusalem, 1992), vol. 7, 263.
73. “So many of the theories confidently advanced by science to disprove the Jewish concept of God and man are subject to change at any time. How many decades ago was the variety of human races known today cited as an argument against the Biblical account which traces the descent of all mankind to one single human couple? And yet, today’s science would brand as an ignoramus anyone who would dare discount the thesis that all living creatures, not only man and orangutan, but also the elephant and the spider,

- the eagle, the lizard and the tapeworm, etc., etc. are descended from one single living creature.” Ibid., 265.
74. “The reviewer himself admits that all we know about the earth is its surface, and that the relationship of this surface, so far as it is known to us, to the whole mass of our planet is something like the relationship of the membrane that surrounds an egg yolk to the egg in its entirety. . . . Could such a superficial knowledge, then, enable us to form a judgment ‘according to the laws of thought’ not only on the origins and sources of the membrane itself but also on the origins and sources of the ‘egg-planet’ as a whole, if you will, and the entire universe with all its heavenly bodies moving in the immeasurable expanse of space—in short the origins or sources of the world?” *The Collected Writings*, vol. 8, 299-300.
 75. *The Collected Writings*, vol. 7, p. 265.
 76. Ibid.
 77. Ibid., 264.
 78. R. Hirsch seems to be referring to the Divine command whereby the earth is to bring forth all species (*min*) of trees and plants (Gen. 1:11).
 79. Ibid.
 80. Letter to R. Gefen printed in the latter’s *Ha-Memadim, ha-Nevuah, ve-ha-Admetanut* (Jerusalem, 1974), Introduction p. 8.
 81. Ibid., 223.
 82. “Inasmuch as space and time are *a priori* forms of human sensibility, the range of their application is extended only to things as appearing to us.” Frederick Copleston, *A History of Philosophy* (New York, 1964), vol. 6, pt. II, p. 35.
 83. Ibid., 36. Space and time are the spectacles through which we see reality. It must be noted, however, that although we cannot remove these spectacles to check what is really there, this does not necessarily mean that space and time are illusions either. “It has often been pointed out that the argument from the *a priori* character of space and time to their subjectivity is not conclusive. It is always logically possible that what we perceive under the form of space and time is so ordered independently of our perception.” S. Korner, *Kant* (London, 1977), 37-38.
 84. Gefen, *Ha-Memadim, ha-Nevuah, ve-ha-Admetanut*, 226.
 85. Ibid., 226-227.
 86. Ibid., 227.
 87. Ibid., 235.
 88. Ibid.
 89. Ibid., 236. A more modern version of this idea was written based on the philosophy of George Berkeley. See Kenneth Norwich, “The Physics of Prayer and the Origin of the Universe,” *Conservative Judaism* 40, 2 (1987): 14-19. R. Gefen goes on to mention the Darwinian theory by name, but it does not seem to bother him much. He only argues that the evolution of species could not have taken place in the framework of time, which is a human tool of perception. See *Ha-Memadim*, 240.
 90. Tzvi Feldman, *Rav A. Y. Kook, Selected Letters*, (Maaleh Adumim, 1986), xviii. For more on R.Kook, see also Zvi Yaron, *Encyclopaedia Judaica*, vol. 10, pp. 1182-1187 and his book *Mishnato Shel ha-Rav Kook* (Jerusalem, 1993).
 91. Hillel Zeitlin claims that, despite the fact that R. Kook never took a text out of its original context to build up a new idea, his writings appear as a total innovation. This is due to the fact that the innovation is organic to the text

- and not grafted from an idea foreign to it. See H. Zeitlin, *Sifran Shel Yehidim* (Jerusalem, 1979), 237.
92. *Orot ha-Kodesh* 1 (Jerusalem, 1963), 64.
93. *Orot ha-Kodesh* 3 (Jerusalem, 1964), Introduction, p. 34.
94. *Orot ha-Kodesh* 1, 63.
95. Lecture at the Inauguration of Hebrew University, Jerusalem, 1925 found in *Hazon ha-Geulah* (Jerusalem, 1941), 265-271.
96. For more on R. Kook's approach to science and religion, see Shalom Rosenberg, *Torah u-Madda be-Hagut ha-Yehudit ha-Hadashah* (Jerusalem 1988), 46-58, Zvi Zinger (Yaron), "Dat u-Madda be-Mishnat ha-Rav Kook," in *Emunah, Dat, u-Madda: Ha-Kinnus ha-Shenati le-Maḥashevet Yisrael* (Jerusalem, 1966), 97 – 121.
97. See *Orot ha-Kodesh* 1, 51. See also Singer, "Dat u-Madda," 109, as well as my article: "The Debate Over Secular Studies Among the Disciples of the Vilna Gaon," *The Torah U-Madda Journal* 8 (1998-1999): 283- 294.
98. He eventually founded the Efrata Religious Teachers College in Jerusalem.
99. Despite the fact the R. Kook follows the Ari in most areas of Kabbalah, he felt that an idea found in the writings of Ramban and R. Baḥya remains legitimate despite the Ari's criticism.
100. Letter 91, in Feldman (ed.), *Rabbi A. Y. Kook*, 5.
101. Ibid.
102. Ibid.
103. *Zohar*, III (Lev.) 5a. The Aramaic reads:
 א"ר אלעזר: האי קרא כי הוה ליה למכתב, אדם כי יקריב קרבן לה'. מהו מ'מכס'
 אלא לאפוקי אדם הראשון דהוא אקריב קרבנא כד ברא קב"ה עלמא והא אקמוה.
 והכא מ'מכס' כתיב, האי אדם לאפוקי אדם אחרא דלא הוה מ'מכס'.
- I have translated the passage according to how R. Kook seems to have understood it. There is an alternative reading of the text, however. "This is to exclude Adam who offered an offering when God created the world. [Therefore, it states] here 'of you,' from this man [who comes from you to offer a sacrifice], to exclude the other man [Adam] who was not from you [i.e., not born from humans but created by God]." Since the idea of additional humans in addition to Adam is not conclusive from the text, R. Kook brought this as an auxiliary argument for the doctrine of the Sabbatical worlds, and not as an independent one.
104. Ibid.
105. *Shemoneh Kevazim* (Jerusalem, 1999), vol. 1, p. 188.
106. *Seder Olam Rabbah*, also called *Midrash Seder Olam* (Jerusalem, 1988, based on the Vilna 1896 version).
107. In fact the Talmud says that the Jewish sages count from Tishrei because it is the beginning of the year and not because the world was created then. See *Rosh Hashanah* 12a according to Rashi. According to the opinion that the man was created on the first of Tishrei there is a custom to mark the creation of the world five days before on the 25th of Elul. See S. Divlizki, *Ozār Nehmad* (Bnei Brak, 1980), p. 36.
108. Feldman (ed.), *Rabbi A. Y. Kook*, 5.
109. See also G. Gvirtzman, "Be'ayat Beri'at ha-Olam ve-ha-Meḥkar ha-Madda'i," in *Emunah, Dat U-Madda: Ha-kinnus ha-Shenati le-Madda'ei ha-Yahadut* (Jerusalem, 1966), 136-142, who discusses this connection between R. Kook and Ramban.

110. Ramban on Genesis 1: 1.
111. *Hagigah* 2a.
112. Ramban, commentary to the Torah, Exodus 20: 11 (Chavel ed., vol. 1, p. 403). This view he shares with R. Ezra of Gerona (Jewish Historical Society of Warsaw, mss. ZIH760, p. 3a) and it appears to be that of the Vilna Gaon as well. (See his comment to *Even Ha-Ezer* 126:3. See in addition, H. Tchernowitz, *Toledot ha-Posekim* [New York, 1947], vol. 3, p. 214.)
113. Feldman (ed.), *Rabbi A. Y. Kook*, p. 7.
114. *Ibid.*, p. 6.
115. See Shai Cherry, "Three Twentieth-Century Jewish Responses to Evolutionary Theory," *Aleph* 3 (2003): 258.
116. *Orot ha-Kodesh* 2 (Jerusalem, 1964), 537.
117. *Shemoneh Kevazim*, 1: 42-44.
118. In applying the Kabbalistic concept of emanation to physical events, R. Kook is following in the path of R. Mosheh Ḥayyim Luzzatto (Ramḥal), who used this idea to formulate a developmental understanding of history. In his *Da'at Tevunot*, Ramḥal develops a theory of historiosophy whereby the Divine element of unity, *hanhagat ha-yiḥud*, pushes all of creation to its *telos*.

You have already heard how an end will be to all the darkness of good and bad [mixed together] during the six thousand years [of history]. For [God] had decreed from the beginning that end will come to this and his unity will be revealed and [only] the goodness of the world will remain forever. Therefore, every day that goes by, the world is that much closer to its perfection. Also, the Holy One Blessed Be He, according to his deep plan, does whatever is necessary to bring the world to this perfection. (*Da'at Tevunot* [Bnei Brak, 1975], 39-40.)

Ramḥal's concept is that since, logically speaking, the world will always be full of both good and evil and there will always be wicked and righteous people, the only way for the redemption to come is if God pushes a bit from behind the scenes to help the course of history towards its goal. Ramḥal describes a concept of moral or spiritual evolution, which focuses on the future, in contrast with the modern theory of evolution, which focuses on the past. However, if one were to postulate that the past also developed from simple to complex and from animal to moral man, this should make us optimistic about the future. After all, who says that evolution stops with modern man? Maybe humanity is developing into more ethical and morally sensitive beings than before. In this conceptualization, evolution is understood as part of a greater Divine scheme wherein God works behind the scenes to propel the world forward. For more on comparisons between R. Kook and Ramḥal see Y. Avivi, "Historiyah Zorekh Gavoah," in *Sefer ha-Yovel le-Rav Mordekhai Breuer* (Jerusalem, 1992), Vol. II, pp. 709-771. For more on R. Kook's concept of historical development see: Yosef Ben-Shlomo, "Shelemut ve-Hishtalmut be-Torat ha-Elohut Shel ha-Rav Kook," *Iyyun* 33 (1984): 289-309, esp. 296-309; R. Gerber, *The Development of National Vision in Rabbi Kook's Philosophy*, (Ph. D. dissertation, Hebrew University, 1991), 246-256.

119. *Shemoneh Kevazim*, vol. 1: 42-44.
- 120 This possibly explains why R. Kook did not include the Kabbalistic explanation in his letter to Dr. Seidel. For more on the Ḥassidic understanding of creationism, see: R. Shneur Zalman of Liadi, *Likkutei Amarim*, chap. 49; Rachel

- Elior, *Torat Ha-Elokut Ba-dor Ha-sheni Shel Ḥasidut Ḥabad*, Jerusalem 1982, pp. 38, 44, 48 and note 100.
121. For a discussion of Christian approaches to evolutionism see: P. Bowler, "Evolution," in *The History of Science and Religion in the Western Tradition*, ed. Gary B. Ferngren (New York and London, 2000), 458-465; James R. Moore, "Geologists and Interpreters of Genesis in the Nineteenth Century," in *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, ed. David C. Lindberg and Ronald L. Numbers (Berkeley, 1986), 322-350; A. Hunter Dupree, "Christianity and the Scientific Community in the Age of Darwin," in *God And Nature*, 355- 360, and 362; Frederick Gregory, "The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century," in *God and Nature*, 386. On the revival of creationism among religious thinkers, see Ronald L. Numbers, "The Creationists," in *God and Nature*, 391-423. See also his *Darwinism Comes to America* (Cambridge and London, 1998).
 122. Numbers, "The Creationists," 392.
 123. Even the Syrian rabbis who criticized R. Benamozegh's *Em la-Mikra* for bringing in non-Jewish points of view didn't seem to have any problem with his liberal interpretation of creation as being thousands of years. See *Zori Gilad*, R. Benamozegh's response to the Syrian Rabbis, in *Ha-Levanon* (1871-72), vol. 14, 15, 16, 17, 18, 19, 20, 23, 24, 32, 36, 42 and 43.
 124. I will discuss his ideas on this issue at length in a forthcoming article.
 125. See for example: *Emunah U-Madda* (Kfar Ḥabad, 1977), 89-99, wherein Rabbi Schneerson of Lubavitch argues against evolutionism as being unscientific and takes issue with anyone who attempts to argue that the six days of creation were anything but 24 hours each (99). Avraham Korman takes a similar approach in his *Evoluziyah ve-Yahadut* (Tel Aviv, 1974). This is the approach today taken by modern ḥaredi Jewish outreach institutions such as Arakhim and Aish Hatorah. Modern Orthodox Rabbis have mixed views today. Many have sided with Nathan Aviezer's book, *In the Beginning* (Ramat Gan, 1994), which assumes that the six days were epochs and not literal; however, Aviezer himself, while accepting the dates of modern cosmogony, does not accept evolutionism *per se*. Aviezer's counterpart, Gerald Schroeder, in his *Genesis and the Big Bang* (New York, 1992), with his interesting synthesis between the literal reading of the Bible and modern science, is considered more welcome in ultra-Orthodox circles.