

THE PRIESTLY BLESSING AND SYNCHRONICITY IN BIBLICAL LITERATURE

Christopher P. Benton

In a 2004 article¹, Dr. Michael Brandt made several astute observations regarding numerical and geometrical patterns in that section of the *Torah* known as the *Priestly Blessing* (*Numbers 6:24-26*). In this article we'll not only make some additional observations with respect to the *Priestly Blessing*, but we'll also discuss the nature of Biblical patterns in general, and we'll offer some explanations via modern physics as to why they occur. The explanations offered will be highly speculative in that they will go beyond what is generally accepted as proven fact in quantum physics and relativity. Nonetheless, they will be interesting food for thought.

The Patterns

In English, the *Priestly Blessing* is often rendered somewhat as follows:

May the Lord bless you and keep you.

May the Lord make his face shine upon you and be gracious to you.

May the Lord lift up his countenance upon you and give you peace.

The Hebrew letters for the verses of this blessing are presented in order below in a grid for convenience. Also, by utilizing such a grid, we will be able to more easily discern various patterns in this blessing.

¹ "An Analysis of the Priestly Blessing using Gematria and Geometric Metaphor" by Michael E. Brandt, The MAQOM Journal for Studies in Rabbinic Literature, Volume VII, Winter 2003-04

						ך	ר	מ	ש	ו	י	ה	ו	ה	י	ך	ב	ר	ב	י					
		ך	נ	ח	ו	י	ך	י	ל	א	ו			י	נ	פ	ה	ו	ה	י	ר	א	י		
ם	ו	ל	ש	ך	ל		ם	ש	ו	י	ך	י	ל	א	ו	י	נ	פ	ה	ו	ה	י	א	ש	י

In the arrangement above, everything is center justified so that we may easily identify the middle letter of each verse. However, since the second verse has no letter exactly in the middle, we've split its middle word into two parts and we've used a grey box to indicate where the exact middle of the second verse should be. This splitting will turn out to be significant.

Righteousness in the *Priestly Blessing*

There are 60 letters in the *Priestly Blessing*, and 60 is the numerical value of the letter *samech*. Furthermore, the glyph for *samech*, S, is like a circle. Hence, we could say that this letter also represents eternity since a circle has no beginning and no end, and it also relates to cycles. This is an immediate hint that the *Priestly Blessing* may be connected with *Ecclesiastes* and its view of the cyclic nature of time. We'll find more connections with *Ecclesiastes* as we progress. Additionally, the letter *samech* stands for the word *samoch* which means a "support." The question now, however, is what kind of support might this letter be referring to? One answer is given by *Proverbs 10:25*, "*The Righteous is an everlasting foundation.*" The *Talmud* elaborates on this verse from *Proverbs* by concluding that the world must always contain a minimum of thirty-six righteous individuals in each generation. These thirty-six have come to be known as the "hidden righteous ones" or, in Hebrew, as the "*lamed-vav tzaddikim.*"

“Abaye said: The world must contain not less than thirty-six righteous men in each generation who are vouchsafed the sight of the Shechinah's countenance, for it is written, ‘Blessed are all they that wait for him [‘lo,’ lamed-vav] (Isaiah 30:18)’; the numerical value of ‘lo’ [lamed-vav] being thirty-six.” (B. Sanhedrin 97b)

Furthermore, if we spell out the letter *samech* as *samech-mem-caf*, then this spelling has a *gematria* (numerical value) of $\text{ס} + \text{מ} + \text{כ} = 60 + 40 + 20 = 120$. This is also the *gematria* of the word *amud* meaning “pillar” ($\text{א} + \text{מ} + \text{ד} = 70 + 40 + 6 + 4 = 120$). Hence, the following passage from the *Talmud* lends even more credence to our association of *samech* with the support of the righteous.

“R. Eleazar b. Shammua’ says: The world rests on one pillar, and its name is ‘Righteous’, for it is said: But ‘Righteous’ is the foundation of the world.” (B. Chagigah 12b)

And finally, if we look at the *Priestly Blessing* itself in the picture below, we see that the two letters in the center of the verses of the blessing (highlighted in blue) are *lamed-vav*, the very same letters used to symbolize the thirty-six righteous ones since $\text{ל} + \text{ו} = 30 + 6 = 36$. Also, do not fail to notice that this central column forms a pillar, one of the many meanings associated with the letter *samech*.

						ך	ר	מ	ש	ו	י	ו	ה	ו	ה	י	י	ך	ב	ר	ב	י					
		ך	נ	ח	ו	י	ך	י	ל	א	ו		ו	י	פ	נ	י	ה	ו	ה	י	ר	א	י			
ם	ל	ו	ש	ך	ל	ם	ש	ו	י	ו	י	ך	י	ל	א	ו	י	פ	נ	י	ה	ו	ה	י	א	ש	י

Thus, if we count the white fire along with the black fire, then we have 2 spaces in the first verse, 4 in the second verse, and 6 in the third verse, and if we add these 12 “white letters” to the 60 “black letters,” then we get a total of 72 letters which is significant because of the tradition that God has a name consisting of 72 letters. Today the 72 letter name of God is usually associated with *Exodus 14:19-21* where each of these three verses contains 72 letters, and by grouping them in threes, 72 names of God are created. However, ancient rabbinic literature records some other associations involving 72 letters.

“R. Eleazar said in R. Jose’s name: The Holy One, blessed be He, promised our forefather that He would redeem his children with these two letters (dalet-nun, din, judgment); but if they repented, He would redeem them with seventy-two letters. R. Judan said: In the passage, “Or has God ventured to go and take him a nation from the midst of another nation, by trials, by signs, and by wonders, and by war, and by a mighty hand, and by a stretched out arm, and by great terrors? (Deuteronomy 4:34),” you will find seventy-two letters, and should you object that there are seventy-five, deduct the second ’nation,’ which is not to be counted. R. Abin said: He redeemed them by His name, the Name of the Holy One, blessed be He, consisting of seventy-two letters.” (Genesis Rabbah XLIV:19)

Thus, we might think of the *Priestly Blessing* as yet another 72 letter name of God. However, if we do so, then what is this name telling us? The most evident thing is that the *Priestly Blessing* is not an appeal for personal wealth or happiness. Instead, it is a supplication that others, not us, be blessed and made whole. This is a good reminder to us that the *Torah* is primarily about giving to and supporting others (and this is yet another way in which *samoch*, “support” comes

into play). This interpretation is also supported by the following passages from both the *Talmud* and the *Tanach*.

“Charity is equivalent to all the other religious precepts combined.” (B. Baba Bartha 9a)

“Acts of loving kindness are even greater than charity.” (B. Sukkah 49b)

“Hillel said, ‘What is hateful to you, do not do to your neighbor. That is the whole of the Torah, while the rest is just commentary. Now go and learn the commentary.’” (B. Shabbath 31a)

“When you cut down your harvest in your field, and have forgotten a sheaf in the field, you shall not go again to fetch it; it shall be for the stranger, for the orphan, and for the widow; that the Lord your God may bless you in all the work of your hands.” (Deuteronomy 24:19)

“Thus speaks the Lord of hosts, saying, ‘Render true judgment, and show loving kindness and compassion every man to his brother. And do not oppress the widow, nor the orphan, the stranger, nor the poor, and let none of you plot evil against his brother in your heart.’”

(Zachariah 7:9-10)

Additionally, charity is equivalent to righteousness since in Hebrew both words are derived from the same three-letter root, *tzaddi-dalet-koof*, צדק. Consequently, the plain meaning of giving of the *Priestly Blessing* appears to be related to the numerical occurrences of 36 at the central core of the blessing.

The Arithmetic Sequences

If we go back to our original grid to search for more patterns, then it is obvious that there are 3 words in the first verse, 5 in the second, and 7 in the third verse.

						ך	ר	מ	ש	ו	י	ו	ה	ו	ה	י	ך	ב	ר	ב	י					
			ך	נ	ח	ו	י	ך	י	ל	א	ו	י	נ	פ	ה	ו	ה	י	ר	א	י				
ם	ו	ל	ש	ך	ל	ם	ש	ו	י	ך	י	ל	א	ו	י	נ	פ	ה	ו	ה	י	א	ש	י		

In addition to these numbers all being prime numbers, they also form an arithmetic sequence, 3,5,7, where the common difference between successive numbers is 2. If we also do a letter count by verse, then the first verse contains 15 letters, the second verse has 20 letters, and the third verse is comprised of 25 letters. Again, an arithmetic sequence, 15,20,25, arises where the common difference this time is 5. If we now add in the white letters (spaces) of each verse and do a count, then the sequence is 17, 24, 31. This is also an arithmetic sequence where the common difference between terms this time is 7. One wonders if this is simply a poetic structure such as one might find in a *haiku*, or if there is some deeper meaning to these sequences. We might note again that the terms of our first arithmetic sequence, 3, 5, 7, have a common difference of two, and the letter *bet* in the Hebrew alphabet not only has a numerical value of two, but also stands for a *brachah*, a blessing. This is certainly in keeping with the core meaning of the *Priestly Blessing*. And if we look at the common difference of 7 for the sequence 17, 24, 31, then this number not only represents *Shabbat*, the seventh day of the weekly cycle, but also the seven double letters of the Hebrew alphabet, those letters that can have either a hard or a soft sound. These letters are specifically mentioned in the *Sefer Yetzirah*, “The Book of formation,

the oldest extant work on *Kabbalah*, and thus, the number seven forms a link between the *Priestly Blessing* and that ancient Kabbalistic text.

“Seven doubles: *Bet, Gimmel, Dalet, Kaf, Peh, Resh, Tav*. Up and down, east and west, north and south, and the Holy Palace precisely in the center and it supports them all.”

(*Sefer Yetzirah* 4:4)

Also, if we combine the numbers 2, 5, & 7 to get 257, then this is the *gematria* of *liv’rachah*, “for a blessing,” ($\aleph + \beth + \daleth + \kaf + \peh = 30 + 2 + 200 + 20 + 5 = 257$), and this is a good reminder of what the *Priestly Blessing* is for.

Another, though perhaps more convoluted pattern that I find even more interesting is based on the numbers 2, 3, and 5. Recall that there are 3 verses, that the word count increases by 2 with each verse, and the letter count increases by 5 with each verse. If we multiply these numbers together, then we get $2 \times 3 \times 5 = 30$ which we can think of as a single number that summarizes the information of the words, letters, and verses that we’ve been discussing. Furthermore, by adding the digits across, as is often done in *gematria*, the number 30 reduces to 3, and so we might think of 30 as being equivalent to 3 and our sequence 2, 3, 5 as also being represented by 2, 30, 5. The import of this is that in Hebrew the number 5 is represented by the letter *hey*, ה, the number 2 is represented by *bet*, ב, and the number 30 corresponds to *lamed*, ל, and when you put these letters together they spell *hevel*, הבל, which means steam or vapor. This in itself may not seem like much until we realize that this is the key word of the key verse found at the beginning of *Ecclesiastes* (and often poorly translated as “vanity”),

“If my people, who are called by my name, shall humble themselves, and pray, and seek my face, and turn from their wicked ways; then will I hear from heaven, and will forgive their sin, and will heal their land.” (Chronicles II 7:14)

“Hear, O Lord, when I cry with my voice; be gracious to me, and answer me. Of you my heart said, Seek my face; Your face, O Lord, will I seek!” (Psalm 27:7-8)

“Seek the Lord, and his strength; seek his face continually.” (Psalm 105:4)

“As for me, I will behold your face in righteousness.” (Psalm 17:15)

“‘And seek My face.’ i.e. charity, as it is stated, ‘I shall behold Thy face in righteousness (Psalm 17:15).’” (Ecclesiastes Rabbah V:4)

The next to last verse in this collection establishes the link between seeking God’s face and righteousness, and the very last verse, from the ancient rabbinical commentary on *Ecclesiastes*, reiterates the connection between charity and righteousness, and it additionally helps to connect the *Priestly Blessing* with the book of *Ecclesiastes*.

Dr. Brandt remarked in his paper that the middle column of the three verses (highlighted in blue below) divides our letters into two sets of 29, and that if we add the number 3 to this, representing the 3 verses of the *Priestly Blessing*, then the overall sum is 32.

						ך	ר	מ	ש	ו	י	ה	ו	ה	י	ך	ב	ר	ב	י						
		ך	נ	ח	ו	י	ך	ל	א	ו	י	פ	נ	י	ה	ו	ה	י	ר	א	י					
ם	ל	ו	ש	ך	ל	ם	ש	ו	י	ך	י	ל	א	ו	י	פ	נ	י	ה	ו	ה	י	א	ש	י	

This number, of course, is important because it appears in the very first verse of the *Sefer Yetzirah*.

“With 32 wondrous paths of Wisdom engraved Yah, the Lord of Hosts, God of Israel, the Living God, King of the Universe, Almighty God, Merciful and Gracious, High and Exalted, dwelling in eternity, whose name is Holy, and He created His universe with three books, with text (sepher), with number (sephar), and with communication (sippur). Ten sefirot of nothingness and 22 foundation letters. Three mothers, seven doubles, and twelve elementals.” (Sefer Yetzirah 1:1-2)

It is from this verse that the *Kabbalistic Tree of Life* evolved with its 32 paths resulting from 22 specific paths corresponding to the 22 letters of the Hebrew alphabet and 10 spheres known as *sephirot* corresponding to the 10 utterances used to create the universe.

“With ten utterances was the world created.” (Pirkei Avot 5:1)

“R. Johanan said: The ten utterances with which the world was created. What are these? The expressions ‘And God said’ in the first chapter of Genesis. But there are only nine? — The words ‘In the beginning’ are also a creative utterance, since it is written, ‘By the word of the Lord the heavens were made, and all the host of them by the breath of his mouth.’”

(B. Megilah 21b)

“Although he has given us an awareness of the passage of time, we can grasp neither the beginning nor the end of what God does.” (The New Jerusalem Bible)

“He also puts eternity in their mind, but without man ever guessing, from first to last, all the things that God brings to pass.” (Jewish Publication Society)

“He has also put an enigma into their minds so that man cannot comprehend what God has done from beginning to end.” (The Stone Edition)

The primary variations in interpretation all stem from one word, *olam*. The difficulty is that *olam* is misspelled in this passage. The word is spelled *ayin-lamed-mem* instead of the usual *ayin-vav-lamed-mem*. This misspelling immediately enriches the interpretations that may be derived. In particular, *ayin-lamed-mem*, אֵלֶם, is also the spelling of a verb meaning “to conceal.” Thus, there is the sense of something hidden or concealed here. There is the notion that the entire world or eternity has been placed inside us, but that it is now concealed from us. This is reminiscent also of the following *Talmudic* passage.

“A light burns above the head of a baby in the womb, and it looks and sees from one end of the world to the other. As it is said, ‘Then his lamp shined above my head, and by His light I walked through darkness.’ . . . It is also taught all the Torah from beginning to end, for it is said, ‘And he taught me, and said unto me: Let your heart hold fast my words, keep my commandments and live (Proverbs 4:4).’ . . . As soon as it sees the light an angel approaches,

slaps it on its mouth and causes it to forget all the Torah completely, as it is said, ‘Sin couches at the door (Genesis 4:7).’” (B. Nidah 30b)

The fact that we forget as we are being born is meaningful because there are several ways in which the word “remember” seems to be encoded in the *Priestly Blessing*. For example, the number 257 that we discussed earlier is also the *gematria* of the *l’zachor*, “to remember” ($5 + 1 + 3 + 7 = 30 + 7 + 20 + 200 = 257$). Additionally, the *gematria* of the word *zachor*, “remember,” is the same as that of *brachah*, “a blessing” ($zachor = 1 + 3 + 7 = 7 + 20 + 200 = 227 = 2 + 200 + 20 + 5 = 3 + 7 + 3 + 7 = brachah$). Also, if we sum up the values of the three middle words of each verse (shown below in yellow), then we get $26 + 146 + 61 = 233$. This is the *gematria* of another way in which to spell *zachor*, “remember” ($zachor = 1 + 3 + 1 + 7 = 7 + 20 + 6 + 200 = 233$).

						ד	ר	מ	ש	ו	י	ה	ו	ה	י	ד	כ	ר	ב	י							
		ד	נ	ח	ו	י	ד	א	ל	ו		ו		פ	נ	י	ה	ו	ה	י	ר	א	י				
ם	ל	ו	ש	ד	ל		ש	ם	ו	י	ו	ד	א	ל	ו	י	פ	נ	י	ו	ה	ו	ה	י	א	ש	י

Thus, we find multiple ways in which the suggestion to “remember” is embedded in the *Priestly Blessing*.

Turning our attention now back to the *gematria* of the defectively spelled word for “world,” its value is 140 which is the same as that of *hikahel* (*hey-kuf-hey-lamed*, הקהל), the verb “to assemble” from which the appellation *Kohelet*, the Hebrew title of *Ecclesiastes*, is derived. We might also suggest that within each of us there is an “assembler” that constructs for us, out of our

An equally important lesson may be learned by looking this time at the inner letters of the three middle words, highlighted in blue below.

						ד	ר	מ	ש	ו	י	ה	ו	ה	י		ד	ב	ר	ב	י									
		ד	נ	ח	ו	י	ד	י	ל	א		ו		י	נ	י	פ		ה	ו	ה	י	ר	א	י					
ם	ל	ו	ש		ד	ל		ש	ם	ו	י	ו	ד	י	ל	א		ו	י	נ	י	פ		ה	ו	ה	י	א	ש	י

The *gematria* of these letters is 111 ($ה + ו + נ + י + ל + י = 5 + 6 + 50 + 10 + 30 + 10 = 111$), and this is the same as the numerical value of the word *masveh*, a “veil” or “face covering” (*masveh* = $מ + ם + ו + ה = 40 + 60 + 6 + 5 = 111$). This particular word, *masveh*, appears only once in the *Tanach* in *Exodus 34:33*, “And when Moses had finished speaking with them, he put a veil on his face.” The context of the story is that Moses has just returned with the tablets of the law from the summit of Mount Sinai, and his skin and face are glowing to such an extent that the people trembled, and he had to veil his face so that the people would not be overwhelmed. In a similar manner, God has to conceal or veil his presence so that we are not overwhelmed. See how this also relates to our earlier discussion regarding *Ecclesiastes* and the misspelling of *olam* so that we get, instead, a word that means “hidden” or “concealed.”

Though the *gematria* above is the most direct way to associate the *Priestly Blessing* with the number 111, it can also be derived in other ways. We’ve already associated the *Priestly Blessing* with the opening passage of the *Sefer Yetzirah*, and in that passage we encounter the words “With 32 wondrous paths.” The word that means “wondrous” or “miraculous” is *peiyot* and the root of this word, *pehleh*, has a *gematria* of 111 ($פ + ל + ה = 80 + 30 + 1 = 111$). Also, if we look at the most sacred name of God (יהוה, *yod-hey-vav-hey*) found in the middle of the first verse,

then this name has a *gematria* of 26 ($\aleph + \beth + \daleth + \beth = 10 + 5 + 6 + 5 = 26$) and this name is often associated with the letter *aleph*, א, since we can think of this glyph as being comprised of the letter *vav* and two *yods*, and the sum $yod + vav + yod = \daleth + \beth + \daleth = 10 + 6 + 10 = 26$. And now, to bring this current derivation to a conclusion, if we spell out the letter *aleph* as *aleph-lamed-peh* then the numerical value of this word is $aleph + lamed + peh = א + ל + פ = 1 + 30 + 80 = 111$. This is yet another clue that God has to remain veiled or hidden from our sight lest we be overwhelmed. And finally, let's examine some other conclusions that may be derived from the number of letters, words, and verses in the *Priestly Blessing*. Recall that if we include the "white fire" along with the "black fire," then the total number of letters in the *Priestly Blessing* is 72, and the number of letters in each verse increases by 7 each time while the number of words increases by 2 as we go from one verse to the next. If, as before, we use the number 30 as an equivalent substitution for 3, then the adjusted sum of the letter increments, word increments, and verses is $7 + 2 + 30 = 39$. If we add this number to 72, then once again we arrive at $39 + 72 = 111$. Hence, just as with the number 36 and numbers for the names of God, there are multiple connections that can be made between the number 111 and the *Priestly Blessing*.

Summary

If we summarize the expanded story we have worked to create, then it might go something like this. The *Priestly Blessing* is ostensibly a supplication that peace and favor be granted to others. Consequently, it has a core message that centers around giving. Additionally, it may be thought of as a name of God, and it emphasizes that God wishes to turn his face and benevolence to us. However, we, in turn, must turn our face to God, and this is accomplished through righteousness

which is equivalent to charity and acts of loving kindness to others. And as we draw closer to God, the veil is lifted and we can be witnesses to eternity and remember who we are.

Paradigm Shift

There is a well-known principle of rabbinical exegesis that “there is no early or late in *Torah*.” It is this principle that allows us to blithely connect dots and patterns across time often without regard to true historical development. Such a tool of analysis may have its origin in passages such as the one below from *Genesis Rabbah* that legitimizes using later texts to explain earlier ones.

“R. Judah b. R. Simon said: From the commencement of the world's creation 'He reveals the deep things,' for it is written, 'In the beginning God created the heavens,' but it is not explained how. Where then is it explained? Elsewhere: That stretches out the heavens as a curtain (Isaiah 40:22); 'And the earth,' which is likewise not explained. Where is that explained? Elsewhere: For He says to the snow: 'Fall you on the earth (Job 37:6). 'And God said: Let there be light (Genesis 1:3),' and the manner of this, too, is not explained. Where is it explained? Elsewhere: Who covers Thyself with light as with a garment (Psalm 104:2).” (Genesis Rabbah I:6)

Additional passages in rabbinic literature even place the *Torah* outside the confines of space and time as something that preceded the creation of the world. The *Torah* was seen as the blueprint for creation, and viewpoints such as these certainly elevated that stature of the *Torah* at a time when Judaism was in direct competition with other religions.

“Six things preceded the creation of the world; some of them were actually created, while the creation of the others was already contemplated. The Torah and the Throne of Glory were created. The Torah, for it is written, ‘The Lord made me as the beginning of His way, prior to His works of old (Proverbs 8:22).’ The Throne of Glory, as it is written, ‘Thy throne is established of old. (Psalm 93: 2).’” (Genesis Rabbah I:4)

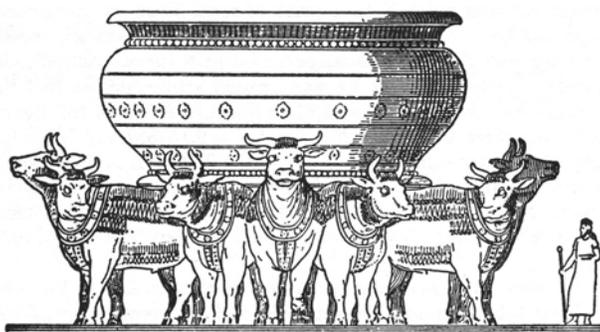
“The Torah declares: ‘I was the working tool of the Holy One, blessed be He.’ In human practice, when a mortal king builds a palace, he builds it not with his own skill but with the skill of an architect. The architect moreover does not build it out of his head, but employs plans and diagrams to know how to arrange the chambers and the wicket doors. Thus God consulted the Torah and created the world, while the Torah declares, ‘With the beginning God Created.’ ‘Beginning’ referring to the Torah, as in the verse, ‘The Lord made me as the beginning of His way (Proverbs 8:22).’” (Genesis Rabbah I:1)

In addition to the preeminence that these passages give to the *Torah*, they also result in principles of analysis that make the text extremely rich in meaning and enduring in vitality from one generation to the next. Because so much may be culled from the text via this doctrine of “no early or late in *Torah*,” the patterns and permutations that may be derived are virtually endless, and they provide a constant source of spiritual inspiration. Nonetheless, such a mode of analysis must be maddening for a historian who is bound by his profession to see everything with the arrow of time pointing in only one direction. Consequently, if we see patterns in the literature that are spanning centuries of time, we should feel some obligation to at least speculate upon how this may be possible. And that is exactly what we will try to do in this section.

In the first section of this paper we identified many patterns within the text of the *Priestly Blessing*, and by so doing, we enhanced and expanded upon the plain meaning of the text without straying from the core principles of Judaism. And that, of course, is the value of such a mode of analysis. However, we also want to address the question of what is meaning of the existence of patterns such as these and others that may be found in Biblical literature.

On the one hand, a person could certainly argue that these and other Biblical patterns were created deliberately. There is certainly a plethora of wordplay that is readily found in the *Torah* such as in *Genesis 2:7* where we read literally, “*And formed Adonai Elohim, the Adam (man) of dust from the Adamah (ground).*” As is often the case in the *Torah*, a person’s name is frequently a wordplay on either their origin or their purpose. However, as patterns become more complex, one begins to wonder if a human origin is even possible. Let me give a simple example involving some text and the number *pi* ($\pi \approx 3.1415$). We begin with a passage from *I Kings*.

“*He made the sea of a casting ten cubits from one lip to the other lip, circular all around, five cubits its height, a measuring line thirty cubits could encircle it all around.*” (*I Kings 7:23*)



What is happening here is that a circular vessel is being described that has a diameter of 10 cubits and a circumference of 30 cubits, and for those who are fond of Biblical inerrancy, these measurements are a serious problem because, as everyone should know, the ratio of the circumference of a circle to its diameter is always equal to π which is approximately 3.141592654... . However, our Biblical text seems to assert that in this case the value of π is exactly $\frac{30}{10} = 3$. Again, many people saw this as quite a problem, and they worked hard to concoct feasible explanations to account for the discrepancy. Maimonides stated that the true value of π can never be known (which is true since the decimal expansion is infinite), and that this is why the text, therefore, gives us a value that has been rounded to three. Nonetheless, there also seems to be some discrete wordplay involved in this passage.

If we look at the Hebrew for the phrase “a measuring line thirty cubits,” we get the following.

קוה שלשים באמה

קוה = 111

קו = 106

The interesting thing in this passage is that the word for “measuring line” is misspelled. It has an extra letter *hey* at the end, and this gives the word a numerical value of 111 instead of the 106 we would have gotten if the word had been spelled correctly. If we now multiply our original ratio of 30 to 10 by a “correction” factor of 111 to 106, then we’ll get an approximation for π that is accurate to five decimal places.

$$\frac{30}{10} \cdot \frac{111}{106} \approx 3.1415$$

Even though this is still just an approximation for π , it is certainly an improvement over our original, calculated value of 3. However, what would be even more fascinating would be for this number, coded in Hebrew as the sequence 3, 1, 4, 1, 5, to appear in this specific verse from *I Kings* as a *Bible* code. As fantastic and improbable as this may be, this is exactly what happens. Below is the relevant grid.

ן	ה	א	ר	ץ	ו	ה	פ	ר	ד	א	ש	ר	ת	ח	ת	י	ו	ע	ב	ר	ו	י	ר	א	א	י	ש	א	ח	ד	ו	י	ג	ד	ל	י	ו	א		
ת	ק	ש	ת	נ	ח	ו	ש	ה	ז	ר	ע	ת	י	ו	ת	ן	ל	י	מ	ג	ן	י	ש	ע	ך	ו	ע	נ	ת	ך	ת	ר	ב	נ	י	ת	ר			
ב	ו	ו	י	ב	א	ב	נ	י	ה	ו	א	ל	ה	ל	י	ה	ו	ה	ו	י	א	מ	ר	א	ל	י	ו	כ	ה	א	מ	ר	ה	מ	ל	ך	צ			
ע	ש	ר	ב	א	מ	ה	מ	ש	פ	ת	ו	ע	ד	ש	פ	ת	ו	ע	ג	ל	ס	ב	י	ב	ו	ח	מ	ש	ב	א	מ	ה	ק	ו	מ	ת	ו			
י	ס	ו	כ	ל	מ	ל	כ	י	ה	ע	ר	ב	ו	פ	ח	ו	ת	ה	א	ר	ץ	ו	י	ע	ש	ה	מ	ל	ך	ש	ל	מ	ה	מ	א	ת	י	ם		
מ	י	ס	ו	נ	ת	ש	א	ת	י	ש	ר	א	ל	מ	ע	ל	ה	א	ד	מ	ה	ה	ט	ו	ב	ה	ז	א	ת	א	ש	ר	נ	ת	ן	ל	א			
ל	ק	י	ש	ו	ן	ו	י	ש	ח	ט	ס	ש	ס	ו	י	א	מ	ר	א	ל	י	ה	ו	ל	א	ח	א	ב	ע	ל	ה	א	כ	ל	ו	ש	ת	ה		
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In red, we see the letters *gimmel*, *aleph*, *dalet*, *aleph*, and *hey*, corresponding to the digits 3, 1, 4, 1, and 5. The length of the skip sequence for this *Bible* code is 8976. But what is even more amazing is that our *Bible* code approximation for π actually begins in *I Kings* 7:23 with the

middle letter of the Hebrew word *agol* which means “circular.” What are the odds! And the final icing on the cake is that the misspelled word in this verse that guided us towards a more accurate approximation of *pi* has a *gematria* of 111. This is the same as the *gematria* of the Hebrew word *masveh*, “veil,” that we discussed earlier at such length in our analysis of the *Priestly Blessing*. In other words, isn’t it interesting how this one misspelled word turned out to be the key to lifting the veil off of the mystery of how to arrive at a more accurate value of *pi*.

The above example contains multiple coincidences that are unlikely to have been caused by individual humans. In contrast, the word *Torah* itself appears as a *Bible* code several times within the *Torah* with a skip sequence of 50 letters, and it is conceivable that this could be by human design. Given clever people, it is not that difficult to choose your words so that every 50 letters from some starting letter you arrive at the next letter in the word *Torah*. However, a skip sequence of 8976 letters is far less likely to be the work of human hands. Furthermore, *I Kings* was composed circa 550 BCE, and this is at least a thousand years before the creation of decimal numbers. Thus, for this wordplay to be the work of an individual person or persons is quite dubious

This leaves us, therefore, with two additional possibilities. It is either the result of pure chance, or it is the consequence of some other principle that extends beyond the scope of what mere mortals can accomplish. The possibility that the results are due to chance is a viable one and cannot be ignored. It is certainly possible that almost all pattern recognition in Biblical and rabbinic texts is no different from finding pictures in clouds in the sky. If the source material is rich enough, then an abundance of patterns will naturally occur and one can select from among

those which are most applicable. However, even if these patterns are due to chance that in itself does not negate their relevance. Just as the inkblots of a Rorschach test can draw hidden truths out of the subconscious mind of an individual, so can the patterns we focus on in the text help us discover spiritual patterns that enrich us.

Along these lines, I am reminded of the following story about the great 18th century mathematician and astronomer, Pierre-Simon, marquis de Laplace. Laplace's magnum opus was a five volume treatise on celestial mechanics that he presented to the Emperor Napoleon. The Emperor, upon examining the work, remarked to Laplace that while he had written a large tome on the universe, there was no mention of God in it. When he heard this comment from Napoleon, the face of Laplace transformed as he replied, "I had no need of that hypothesis." Later, when Napoleon told this story to another great mathematician, Joseph-Louis Lagrange, Lagrange quipped, "Ah, but it is a fine hypothesis. It explains so many things!" Consequently, even if many of the patterns found in *Torah* are due to random chance, I'm going to seek another explanation simply because if one is found, then it, too, may explain many other things. Additionally, I'm going to seek a natural explanation rather than resorting to the *deus ex machina* of simply saying, "God did it," and going no further. The justification for this is that even in the *Torah*, when God parts the Red Sea, a natural explanation is still given. The text, itself, in *Exodus 14:21* states that the waters were parted by a strong east wind that blew all night long.

At this point, I am also reminded of a story from *Genesis Rabbah* where the rabbis discuss a problem involving the orbits of the sun and the moon that is beyond their current scientific understanding. They conclude by saying that it is a difficult matter that no one can fathom.

“How do the orbs of the sun and the moon set? R. Judah b. R. La'i and the Rabbis disagree. R. Judah said: Behind the vault and above it. The Rabbis maintained: Behind the vault and below it. R. Jonathan said: The view of R. Judah b. R. La'i that it is behind the vault and above it is preferable in respect of summer, when the whole world is hot while the wells are cold; and the opinion of the Rabbis that it is behind the vault and below appears correct in respect of winter, when the whole world is cold and the wells are tepid. R. Simeon b. Yohai said: We do not know whether they fly through the air, glide in the heaven, or travel in their usual manner. It is an exceedingly difficult matter, and no person can fathom it.” (Genesis Rabbah VI:8)

When we read the story above, we immediately see what the problem is. The people of that day did not have a proper scientific understanding of gravity and celestial mechanics, and as a result, their ability to understand the orbits of the luminaries and the cause of the seasons was impaired. They were desperately in need of a new paradigm to guide their analysis. Similarly, I believe that people today also need new paradigms to guide their current thinking. For example, a thousand years ago, many people believed the earth was flat even though more learned scholars had deduced otherwise, and this flat earth belief was an impediment to progress. Likewise today many people have views of reality that conflict with known science, and so before proceeding further, let's examine ten results from modern physics and mathematics that provide us with new models for understanding the world around us as well as patterns within the text.

1. **The universe began with a bang.**

Most people today are probably familiar with the Big Bang theory of creation and they accept it as a given fact. However, let's not forget that it was only a few decades ago that the

majority of scientists still preferred the steady state theory that assumed that the universe had always existed and always will exist. After all, if you assume the Big Bang, then you also have to come up with an explanation of how the universe came into being *ex nihilo*, how something was created from nothing. Nevertheless, these days the Big Bang theory comes with an impressive amount of supporting evidence.

2. **There is no universal “now.”**

Most people conceive of time as something that flows like a river where the present moment is the same for everyone throughout the universe as are both the future and the past.

However, over a hundred years ago in 1905 the publication of Einstein’s Theory of Special Relativity showed that this is not at all the case. Instead, past, present, and future are intimately connected with the individual observer. Using nothing more complicated than high school algebra, Einstein showed that while one observer may see two events, *A* and *B*, as happening simultaneously, another observer can see *A* happening before *B* while a third observer sees *B* as preceding *A*. All of this happens because of the experimentally verified fact that the speed of light in a vacuum is the same for all observers regardless of whether they are traveling in the same direction as that beam of light or in the opposite direction. In order for light to always appear as traveling at the same speed to all observers simultaneously, the rest of space and time have to bend. And one of the consequences of this bending of space and time is that there is no such thing as a universal past, present, and future that is the same for everyone. In fact, it is probably more accurate to think in terms of all of space-time existing simultaneously.

3. **Everything is simultaneously both a wave and a particle.**

This is without a doubt the crux of modern quantum physics, the fact that all objects of study have both a wave nature and a particle nature. The classic experiment involves a barrier with two slits in it that particles, such as electrons or photons, are directed towards and a screen on the other side to record where the particles land. If we cover up one of the slits, then our particle does indeed act like a particle as it goes through the opening and creates a record of its position on the other side.



A photon will pass through a single slit as a particle.

However, when we uncover both slits, then the particle suddenly behaves like a wave and we see an interference pattern on the wall on the other side.



The photon goes through the double slit as a wave.

As a wave, an element of matter extends throughout the universe with only a tendency in terms of probability to appear in one place instead of another. When matter appears as a particle, however, its boundaries are somewhat more fixed. Nevertheless, matter is never entirely in one mode or the other. There is always some uncertainty involved. Furthermore,

the transition of a particle from its wave form back to particle form has been called the central mystery of quantum physics and it is referred to as “the collapse of the wave function.” The implications of this collapse are many, and several are included in the remainder of this list.

4. **The act of observing changes reality**

This is the classic viewpoint of quantum physics, and as such, quantum physics appears to require the existence of a conscious observer in order for the collapse of the wave function to occur. Whether something appears to us as a particle or wave depends upon how we experimentally decide to observe it, and mathematically, the transition from one state to another may occur only at the actual instant of observation.

5. **Parallel worlds may exist.**

In the late fifties, physicist Hugh Everett proposed that the wave function may not collapse after all. Instead, reality may be constantly splitting into parallel worlds, each world corresponding to a different possible outcome for a particular particle. Even though, the many worlds interpretation of quantum physics is consistent with the mathematics involved, it was not well received when first proposed. Nonetheless, it is an alternative that has grown in popularity with the passage of time.

6. **We live not in a universe, but in a multiverse.**

The latest theories of physics require not only multiple dimensions but also multiple universes in order to explain the origin of the fundamental forces of the nature. Additionally,

the plethora of universes now postulated to exist solves another dilemma of physics.

Namely, the fact that the universe appears as a finely tuned instrument. In other words, there are several universal constants in physics whose values, if they differed by just the smallest amount, would have made life and the existence of stars and planets utterly impossible. Our universe, thus, gives the appearance of being “just right” for the emergence of intelligent life. Physicist Leonard Susskind concludes that such a finely tuned universe exists, not because of the presence of an intelligent designer, but because since so many universes are now postulated to exist, it becomes an almost certainty that at least one of them will have the conditions that life requires. It is quite analogous to a lottery where the chance of any individual winning may be one in sixteen million. Nonetheless, if enough people buy lottery tickets, then it becomes almost a certainty that at least one of them will have the winning ticket.

7. **Information can travel not only from past to present, but also from future to present and present to past.**

In the late seventies, physicist John Wheeler proposed ways in which choices could be made in the present that would result in wave functions collapsing retroactively in the past. These experiments are now known as delayed choice experiments. Additionally, an interpretation of quantum physics proposed in the mid-1980s by John Cramer and known as the transactional interpretation describes how information may travel backward from the future to the present. Some physicists have even created models based on this interpretation to explain how we often react to things at speeds that should not be possible given the amount of time that it takes for information to travel from our sensory nerves to the brain and back

again.

8. **When things are too large, they become unknowable and contradictory.**

In the late 1800s, the mathematician Georg Cantor created set theory which revolutionized modern mathematics. Essentially, a set was thought of as a collection, and his theory not only provided a convenient language to use in talking about collections of solutions to equations, it also led to the discovery that there can be infinite sets of different sizes. In other words, not all infinities are the same. Some infinities are bigger than others, and in mathematics we have an infinite number of infinities all of different infinite sizes! However, trouble began to appear in this mathematical paradise that Cantor had created once people began to ponder the set of everything. For example, given any set or collection, Cantor had discovered a standard way to construct another collection that was even bigger. But how could anything possibly be bigger than everything? This and other paradoxes began to appear when sets became too large, and so mathematicians began calling these objects that were too large “classes” instead of “sets,” and they reserved the term “set” only for those collections that did not appear to lead us into such contradictions. In a sense, classes exist outside of the axiomatic laws that we develop for the behavior of sets, and in many ways, even though we seem to easily give verbal descriptions of them, they reside outside of the realm of the known. They are examples of a “many” that cannot be thought of as a “one”² without introducing contradictions and paradoxes into the system.

² One of Cantor’s originally definitions of a set was as “a many that can be thought of as a one.” In other words, when we take the infinite list 1, 2, 3, and so on., and call them simply the “counting numbers,” we have turned that many into a single unity.

9. **Not everything that is true can be proven or disproven.**

In the early twentieth century, the great logician Kurt Gödel astonished the mathematical world by showing that within a mathematical system as elementary as basic arithmetic there exist propositions that are true which, nonetheless, cannot be proven from the existing axioms. Gödel also showed that there exist statements which can neither be proven nor disproven using the axioms for a given system. Think of something, for example, like Euclidean geometry which many people had exposure to while growing up. In Euclid's plane geometry, you begin with a small list of axioms and postulates that appear to characterize the subject matter, and then you prove more complicated results as logical consequences of the axioms. Mathematicians had always assumed that in any axiomatic system that everything that is true could be derived from the axioms. Gödel, however, showed that this is not the case, and in so doing, he changed the nature of mathematics forever. The bottom line for us, though, is that some things in this world are simply beyond proof. A principle of science known as *Occam's Razor* suggests that if you can't prove or disprove some hypothesis, then that hypothesis is probably an unnecessary complication that can be discarded. However, Gödel's work suggests that even if one can't prove or disprove a hypothesis, such as the existence of God, then that doesn't in any way mean that the hypothesis is false.

10. **Everything may be connected with everything else.**

This is the final paradigm I want to present, and as you might suspect, it is the one that will be most important to us. In a nutshell, when two atomic particles interact, they become part of a single system, and this allows us to know information about one particle simply by

knowing the relevant piece of knowledge about the other particle. The problem, though, is that this connection exists without regard to the magnitude of the separation between the particles, and since we are able to impose information on one of the particles simply by choosing how we want to measure a characteristic of that particle, it appears that that information is conveyed instantaneously across time and space to the other particle, and how such information could travel at faster than light speeds is unknown. And yet, it has been verified experimentally. An analogy would be having two twins that always dressed alike. As long as you know what one twin is wearing, you instantly have the correct information about the other twin regardless of where the other twin is in the universe.



The name for this phenomenon is “quantum entanglement,” and even Einstein once speculated that if everything was together as a single system at the Big Bang, then every particle in our universe may be entangled with every other particle. And it is this phenomenon of quantum entanglement that we’ll invoke to offer speculation on how it may be that so many unlikely patterns exist in the literature of the *Bible*.

When quantum physics was first created, the common belief was that all the “weird” behavior such as information traveling backwards through time or waves changing into particles and then back into waves again was something that would exist only at the level of the atomic particles

involved and certainly not at the level at which we experience reality. To paraphrase a modern saying, the belief was that “what happens at the quantum level stays at the quantum level!” To a large extent, however, I suspect that the founders of quantum physics took this attitude because they were strict scientific rationalists whose worldview would not permit them to experience anything as exotic as what happens in the quantum realm. However, today people’s experiences are more varied, and there are even some physicists who suspect that the laws of the quantum world also impact reality experientially at our level, too. At the very least, many things in quantum physics are metaphors for human experience. For example, there are times when our boundaries feel very rigid, and we are keenly aware of our separateness from things, and there are other times when our boundaries are more fluid and it is difficult to tell where we end and others begin. I call these two modes of being our “particle” mode and our “wave” mode, and, just as in quantum physics, we oscillate from one to the other, and we are never completely at one extreme or the other. Additionally, many of us have had the experience of being extremely connected to another person and accurately knowing things about their current state in ways that traditional science can’t explain. In such situations, I suspect that we are experiencing the effects of quantum entanglement at the macroscopic level. Before continuing further, though, let me reiterate that I am engaging in speculation that travels beyond where most physicists would currently go. Nonetheless, there are some physicists who also engage in such conjecture, and as long as we are clear that we are engaging in speculation, based upon the new paradigms presented above, and not trying to present such speculation as established scientific fact, then we should proceed. Having said that, I now offer the hypothesis that many of the patterns we find in Biblical text are the result of quantum entanglement, or something akin to it, manifesting itself at the macroscopic level. In other words, the *Bible* is a book that has impacted millions of people

of more than one religion throughout the centuries, and extrapolating from quantum physics, I suspect that the world has become “entangled” with the text in such a way that, like a hologram, information of the whole has become embedded in its parts. For this to make any sense, though, one has to think of reality in a nonlinear way where past, present, and future are constantly impacting and modifying one another. In other words, one has to think about the world through new paradigms. Otherwise, the conceptual leaps will be too difficult. Again, this is a theory that goes beyond where modern physics would dare to tread, and it assumes things that are beyond what we can currently prove. Nevertheless, if we are all connected throughout space and time, as my life experience suggests, then it is not so surprising that our great works would contain traces of those connections.

And now, let me mention two final things. First, just as people long ago had to abandon the model of a flat earth and that of a world around which the rest of the universe revolved and replace those concepts with new models, so should people today make good use of the current understandings of humankind to help them solve age-old problems. And second, if my hypothesis of universal connectedness and information being shared across time and space seems too radical to accept at this point, then let me remind you of this. The concept of “God” is even more radical!

Synchronicities between Ancient Rabbinic Literature and Modern Science

I have always been pleasantly surprised by what appear to be synchronicities between conclusions found in rabbinic literature and modern science. Again one wonders if this is the

result of connections between past and present information, or if it is just a string of lucky guesses. In either case, the correspondences are interesting and worth exploring. Additionally, while many of the conclusions of the rabbis and sages are similar to those of modern science, their methodology and rationales for drawing those conclusions are, of course, very different.

The Big Bang

We mentioned previously that the Big Bang theory once faced stiff opposition from the steady state theory that proposed that the universe had always existed. This position, of course, is not one that the ancient rabbis would have accepted because the position of *Genesis* is that there was a moment of creation. In the *Zohar*, however, we find an elaboration of this moment that sounds very much like a very beautiful and poetic description of the Big Bang and even includes reference to an expanding universe. Also, at the end of this description, a textual problem is resolved. As many are aware, the very first verse of *Genesis* already contains a grammatical problem. The verb form for “created” is singular while the apparent word for God, *Elohim*, is plural. The *Zohar* resolves this grammatical inconsistency by identifying *Elohim* with the creation and then retranslating *Genesis 1:1* as, “In the beginning, It created *Elohim*”

“The most mysterious Power enshrouded in the limitless clave, as it were, without cleaving its void, remaining wholly unknowable until from the force of the strokes there shone forth a supernal and mysterious point. Beyond that point there is no knowable, and therefore it is called Reshith (beginning), the creative utterance which is the starting-point of all. It is written: And the intelligent shall shine like the brightness of the firmament, and they that turn many to

righteousness like the stars for ever and ever (Daniel 12:3). There was indeed a 'brightness' (Zohar). The Most Mysterious struck its void, and caused this point to shine. This 'beginning' then extended, and made for itself a palace for its honor and glory. There it sowed a sacred seed which was to generate for the benefit of the universe, and to which may be applied the Scriptural words 'the holy seed is the stock thereof' (Isaiah 6:13). Again there was Zohar, in that it sowed a seed for its glory, just as the silkworm encloses itself, as it were, in a palace of its own production which is both useful and beautiful. Thus by means of this 'beginning' the Mysterious Unknown made this palace. This palace is called Elohim, and this doctrine is contained in the words, 'By means of a beginning (it) created Elohim.'" (Zohar 1:15a)

We might add to this discussion a note of the difficulties that exist in modern physics and cosmology in determining what happened at the instant or even before the Big Bang. Some scientists say that time did not exist before the Big Bang, and therefore, the question cannot even be asked. This stance is once again in harmony with the views of some of the ancient sages. In *Genesis Rabbah*, we find a discussion to the effect that the beginning of creation is, indeed, the absolute limit of what we can know.

"IN THE BEGINNING (BE-RESHITH) GOD CREATED. R. Jonah said in R. Levi's name: Why was the world created with a beth? Just as the beth, ב, is closed at the sides but open in front, so you are not permitted to investigate what is above and what is below, what is before and what is behind. Bar Kappara quoted: For ask not of the days past, which were before thee, since the day that God created man upon the earth (Deuteronomy 4:32): you may speculate from the day that days were created, but you may not speculate on what was before that. And from one end of

heaven unto the other (ib.) you may investigate, but you may not investigate what was before this.” (Genesis Rabbah I:10)

The Simultaneous Existence of Space-Time

The ability in relativity theory for a sequence of events to be different for different individuals and the ability in quantum physics for information to flow from future to present as well as from past to present all suggest that a better paradigm is to think in terms of all of space-time existing simultaneously. Essentially, this is what is being done when one assumes that “there is no early or late in *Torah*.” Also, the rabbis had to come to this same conclusion of simultaneous time in order for God to be omniscient since omniscience implies complete knowledge throughout time as well as space. Thus, we find in the following passage in *Genesis Rabbah* that whereas we experience time in one way, God can experience it in a different way.

“AND GOD SAW EVERY THING THAT HE HAD MADE, AND, BEHOLD, IT WAS VERY GOOD. R. Johanan and R. Simeon b. Lakish each commented thereon. R. Johanan said: When a mortal king builds a palace, he can only take in the upper stories with one look and the lower stories with another, but the Holy One, blessed be He, casts but a single look at the upper and the lower portions simultaneously. R. Simeon b. Lakish said: BEHOLD, IT WAS VERY GOOD implies this world; AND BEHOLD implies the next world: The Holy One, blessed be He, cast but one look at this world and at the future world together.” (Genesis Rabbah IX:3)

The Mystery of Light

In spite of all that is known about the physics of light, I still think of it one of the great mysteries of this world. It is mysterious how its speed represents a limit that matter cannot reach, and it is mysterious how its speed in a vacuum is the same for all observers. To understand the implication of what this means, suppose you are reading a book while sitting in the back of a car that is traveling at 60 miles per hour. Then from your perspective the book isn't moving at all while from the point of view of a pedestrian, the book and you are both traveling at 60 miles per hour. Now suppose it is dark and that you turn on a flashlight to help you read. From your perspective, the light from your flashlight will travel at 186,000 miles per second or 669,600,000 miles per hour. However, the pedestrian in the street will also see your beam of light as traveling at exactly 669,600,000 miles per hour and not at $669,600,000 + 60$ miles per hour as you might think. Everyone measures light as traveling at the same speed in all frames of reference, and this is why the rest of time and space have to "bend" in order to make this possible. Of course, if we were able to make light appear to be moving slower or faster by moving with it or against it, then even stranger things would happen. For example, to return to the analogy of the car, if you are riding in a car that is traveling at 60 miles per hour in one direction and you throw a baseball at 61 miles per hour in the opposite direction, then the pedestrian in the street would see the ball travel with a net speed of 1 mile per hour. Think of how strange it would be if light behaved this way. How strange would it be to be sitting on a porch and suddenly see a beam of light from a distant galaxy amble across the lawn at a leisurely 1 mile per hour. Strange indeed! As unusual as the constant nature of the speed of light (in a vacuum) might seem to some, the universe would be even more bizarre if it were not so.

Light is also a mystery within mystical Judaism. In fact, the *gematria* of light is 207 ($aur = aleph + vav + resh = 1 + 6 + 200 = 207$), and this is the same as the *gematria* of *raz*, a word for secret or mystery ($raz = resh + zayin = 200 + 7 = 207$). Additionally, another word in Hebrew for light or radiance is *aurah* (*aleph-vav-resh-hey*), and if we replace, in this word, the letter *aleph* (the first letter of the Hebrew alphabet) by the letter *tav* (the last letter of the Hebrew alphabet), thus performing what is known in *gematria* as an *atbash* transformation, then the word *aurah* is transformed into *Torah*. Given that the plural of light, *aurot*, has a *gematria* of 613, the same as the number of commandments in the *Torah*, this wordplay only adds to the mystique of light within Judaism. However, the real mystery to me of light, from the perspective of Jewish literature, is that it is at the center of light that we find God. Thus, we read the following in *Psalms 104*.

“Bless the Lord, O my soul. O Lord my God, you are very great, you are clothed with glory and majesty, Who covers himself with light as with a garment, who stretches out the heavens like a curtain.” (Psalms 104:1-2)

Multiple Worlds

There is a theory of modern physics that postulates multiple dimensions and layers to reality called “branes,” and, in fact, one current theory of the origin of the Big Bang is simply that the universes of two branes collided and gave rise to our universe as the consequence. Like these modern physicists, the ancient rabbis could also think in terms of multiple worlds or a multiverse instead of just a single universe. Their justification for this, however, was different from that of

21st century scientists. One rationale for their belief in multiple worlds was based upon a wording found early on in *Genesis* that suggests that time, and hence, other worlds existed before the creation of ours. Another motivation, though, found in rabbinic literature for the existence of multiple worlds was the cyclic nature of time found in *Ecclesiastes* where everything is subject to impermanence and change with one notable exception, God. Additionally, the rabbis believed that God went on creating and destroying worlds until one was made in which the balance was just right. This line of thought appears to foreshadow what modern cosmology knows about how finely tuned our universe is so that stars, galaxies, and life could all come into existence.

“AND THERE WAS EVENING. R. Judah b. R. Simon said: ‘Let there be evening’ is not written here, but AND THERE WAS EVENING. Hence, we know that a time-order existed before this. R. Abbahu said: This proves that the Holy One, blessed be He, went on creating worlds and destroying them until He created this one and declared, ‘This one pleases Me; those did not please Me.’ R. Phinehas said: This is R. Abbahu’s reason: And God saw everything that He had made, and, behold, it was very good (Genesis 1:31). This pleases Me, but those did not please Me.” (Genesis Rabbah III:7)

“R. Tanhuma commenced: He has made every thing beautiful in its time (Ecclesiastes 3:11). Said R. Tanhuma: The world was created when it was due, and the world was not fit to be created earlier. R. Abbahu said: Hence we learn that the Holy One, blessed be He, went on creating worlds and destroying them until He created these (heaven and earth), and then He said: ‘These please Me; those did not please Me.’” (Genesis Rabbah IX:2)

“THE LORD GOD MADE EARTH AND HEAVEN. This may be compared to a king who had some empty glasses. Said the king: ' If I pour hot water into them, they will burst; if cold, they will contract and snap. ' What then did the king do? He mixed hot and cold water and poured it into them, and so they remained unbroken. Even so, said the Holy One, blessed be He: 'If I create the world on the basis of mercy alone, its sins will be great; on the basis of judgment alone, the world cannot exist. Hence I will create it on the basis of judgment and of mercy, and may it then stand!' Hence the expression, 'THE LORD GOD.'” (Genesis Rabbah XII:15)

In this last passage, the crux of the analysis is the expression “Lord God.” In Hebrew this appears as *Yahweh Elohim*. The rabbis were aware that the name *Yahweh* often appears in the Biblical text when God is performing acts of mercy, and the name *Elohim* is often used when God is judgmental. Hence, the appearance of the two names in juxtaposition is interpreted in terms of a balance between judgment and mercy.

The Paradoxical Nature of the Totality

As mentioned earlier, when Georg Cantor invented set theory, most people naively thought of a “set” as a collection of objects, and all went well until mathematicians began to consider things such as the “set of all sets.” This notion quickly led to paradoxes and contradictions that were resolved simply by utilizing a more restrictive, axiomatic characterization of a set that would exclude those objects which turned out to be just too large. Additionally, for those objects that were too large to be called sets, the term “class” was used so we could verbally mention the “class of all sets” instead of the “set of all sets.” In a way, this verbal gymnastics restricted our

attention only to those objects that did not lead us into contradictions, and for those objects that were too large to be sets, they became somewhat ineffable in that the rules that applied to the study of sets could no longer be used to illuminate their structure.

In rabbinic literature, it was likewise intuited that if God both contained and transcended all things, then God would also have to be paradoxical and ineffable in many ways, and the rules of knowledge that apply to ordinary objects would not necessarily apply to God. One of my favorite passages, along these lines, from rabbinic literature is a declaration by Rav Huna, based upon a passage from *Job*, that we can only see the parts of God, but never the whole.

“’Lo, these are but parts of His ways; and what blemish of aught is heard of Him! (Job 26:14)?’
Rav Huna said: Whatever things you see are but parts of the ways of the Holy One, blessed be He, as it says, ’Lo, these are but parts of His ways; and what blemish of aught is heard of Him!’
(Genesis Rabbah XII:1)

In a similar vein, Maimonides explains the verses *Exodus 33:20-23* as meaning that we can never see God directly. We can only see the effects of God’s existence.

“And he said, You can not see my face; for no man shall see me and live. And the Lord said, Behold, there is a place by me, and you shall stand upon a rock. And it shall come to pass, while my glory passes by, that I will put you in a cleft of the rock, and will cover you with my hand while I pass by. And I will take away my hand, and you shall see my backside, but my face shall not be seen.” (Exodus 33:20-23)

The term “backside” in verse 23 refers, according to Maimonides, to the effects of God’s actions. In fact, it may be quite likely that just as there are things in mathematics that are true that can’t be proven, so may the existence of God be one of those things that lies beyond proof or disproof.

In *Job 25:2* we read, “*He makes peace in his high places.*” The rabbis interpreted this as meaning that within God contradictions can exist and be reconciled. Thus, just as contradictions appear in mathematics when things get too large, so do contradictions exist within God. The only difference we find is the statement that God is able to, nonetheless, make peace between these opposing forces. Below are a few examples from rabbinic literature.

“R. Johanan said: It is written that He makes peace in high places (Job. 25:2). The firmament is made of water and the stars are of fire, and yet they do not harm one another.

(Song of Songs Rabbah III:24)

Michael is the Prince of snow and Gabriel is the Prince of fire, and neither quenches or injures the other. R. Ahib said: It is not merely between one angel and another that the Holy One, blessed be He, makes peace, but even between the two parts of an angel, one half of which is snow and the other half fire. (Song of Songs Rabbah III:24)

“The flashes are flashes of fire, a flame of the Lord.” R. Berekiah said: Like the fire of heaven, where the fire does not consume the water nor the water reduce the fire.

(Song of Songs Rabbah VIII:7)

"And God called the firmament heaven (Shamayim)." Rav said: Shamayim is a compound of Eish (fire) and Mayim (water). (Genesis Rabbah 4:7)

What does 'heaven' [Shamayim] mean? . . . It is taught in a Baraita that it means 'fire' and 'water'. This teaches that the Holy One, blessed be He, brought them and mixed them together and made the firmament from them. (B. Chagigah 12a)

When God created the world, He made the heavens of fire and of water united together. (Zohar I:77a)

For three years there was a dispute between Beth Shammai and Beth Hillel. The former said, "The halachah is in agreement with our views," and the latter asserted, "The halachah is in agreement with our views." Then a bat kol (heavenly voice) declared, "The utterances of both are the words of the living God." (B. Eiruvim 13b)

R. Nehemiah said: If two scholars argue over a law and each one cites a general principle to support his view, the Holy One, blessed be He, says, "Their source comes from Me."

(Song of Songs Rabbah 1:16)

Man as Co-Creator

We stated above that the collapse of the wave function, the transition of matter from wave form to particle form, has been referred to as the essential mystery of quantum physics. In the

standard interpretation of quantum physics, the wave function doesn't collapse until an observer makes an observation, and this seems to introduce conscious awareness itself into the equation. Furthermore, by deciding how we are going to observe reality, we play a part in determining what that reality will be. For example, if we try to measure the location of a particle, then that act of measurement actually helps create the location. Prior to that, the particle exists more or less as a wave that extends throughout space without specific location. In rabbinic literature, we likewise find man designated as a partner or co-creator with God, and we find specific instances in the *Zohar* of how our insights constantly create new worlds.

“R. Samuel b. Ammi said: From the beginning of the world's creation the Holy One, blessed be He, longed to enter into partnership with the mortals.” (Genesis Rabbah III:9)

“Whatever was created in the first six days requires further preparation, e.g., mustard needs sweetening, vetches need sweetening, wheat needs grinding, and man too needs to be finished off.” (Genesis Rabbah XI:6)

“How greatly is it incumbent on a man to study the Torah day and night! For the Holy One, blessed be He, is attentive to the voice of those who occupy themselves with the Torah, and through each fresh discovery made by them in the Torah a new heaven is created. Our teachers have told us that at the moment when a man expounds something new in the Torah, his utterance ascends before the Holy One, blessed be He, and He takes it up and kisses it and crowns it with seventy crowns of graven and inscribed letters. When a new idea is formulated in the field of the esoteric wisdom, it ascends and rests on the head of the 'Zaddik, the life of the universe', and

then it flies off and traverses seventy thousand worlds until it ascends to the 'Ancient of Days'. And inasmuch as all the words of the 'Ancient of Days' are words of wisdom comprising sublime and hidden mysteries, that hidden word of wisdom that was discovered here when it ascends is joined to the words of the 'Ancient of Days', and becomes an integral part of them, and enters into the eighteen mystical worlds, concerning which we read 'No eye hath seen beside thee, O God' (Isaiah 64:3). From thence they issue and fly to and fro, until finally arriving, perfected and completed, before the 'Ancient of Days'. At that moment the 'Ancient of Days' savors that word of wisdom, and finds satisfaction therein above all else. He takes that word and crowns it with three hundred and seventy thousand crowns, and it flies up and down until it is made into a sky. And so each word of wisdom is made into a sky which presents itself fully formed before the 'Ancient of Days', who calls them 'new heavens', that is, heavens created out of the mystic ideas of the sublime wisdom. As for the other new expositions of the Torah, they present themselves before the Holy One, blessed be He, and ascend and become 'earths of the living', then they descend and become absorbed into one earth, whereby a new earth emerges through that new discovery in the Torah. This is implied in the verse, 'For as the new heavens and the new earth, which I am making, rise up before me, etc.' (Isaiah 64:22). It is not written 'I have made', but 'I am making', signifying continual creation out of the new ideas discovered in the Torah."

(Zohar I:4b-5a)

The rabbis also recognized that each of us is witness to our own unique world which is never entirely the same as that observed by another person. While still being part of the greater whole, each of us also co-creates our own personal reality. Consequently, for this reason, the rabbis stated that each person is obligated to say that the world was created just for them.

“The Holy One, blessed be He, fashioned man in the stamp of the first man, and yet not one of them resembles his fellow. Therefore, every single person is obliged to say, ‘The world was created for my sake.’” (B. Sanhedrin 37a)

The Wave-Particle Duality

As we’ve mentioned repeatedly, according to quantum physics every bit of matter is simultaneously a particle and a wave. As a particle, matter tends to be localized in space and time, but as a wave, it extends with merely a tendency, expressed in terms of probabilities, to be found either here or there. As individuals, we experience something similar, whether it be the result of quantum physics or not. For example, when we are in what I call our particle mode, our personal boundaries feel very rigid, and we have a strong sense of identity at the cost of feeling very isolated from the rest of the world. On the other hand, when we are in what I call our wave mode, our personal boundaries are less rigid, and we feel connection between ourselves and others. The ancient rabbis were also aware of these two modes of being, and they wrote about it in the *Talmud* and the *Midrash*.

“Joshua b. R. Nehemiah and R. Judah b. R. Simon in R. Leazar's name said: He created Adam filling the whole world.” (Genesis Rabbah VIII:1)

“Thine eyes did see mine unformed substance, and in Thy book they were all written (Psalm 139:16).’ R. Joshua b. R. Nehemiah and R. Judah b. R. Simon in R. Eleazar's name said: When the Holy One, blessed be He, created Adam, He created him extending over the whole world.” (Genesis Rabbah 24:2)

“R. Eleazar said: The first man extended from the earth to the firmament, as it is said: Since the day that God created man upon the earth. But as soon as he sinned, the Holy One, blessed be He, placed His hand upon him and diminished him, for it is said: Thou hast fashioned me after and before, and laid Thine hand upon me.” (B. Chagigah 12a)

Like a wave, Adam initially extends throughout space, but sin diminished this ability and he became more localized in space and time. The wave-particle duality for human beings may also be characterized in terms of the tension between being a member of society and being an individual. The two well-known sayings of Hillel that follow characterize the need to find a balance between these two modes, while the third passage quoted illustrates that we can never be entirely separate from the community or our affect upon it. Likewise, in physics, something can never be entirely a wave or a particle. Never one without the other. There is always some uncertainty involved.

“Hillel used to say, ‘If I am not for myself, who is? But if I am only for myself, what am I?’” (Pirkei Avot 1:14)

“Hillel said, ‘Do not separate yourself from the community.’” (Pirkei Avot 2:4)

“It is said: Should one man sin, and will You be wroth with all the congregation? (Numbers 16:22). R. Simeon b. Yohai taught: This may be compared to the case of men on a ship, one of whom took a borer and began boring beneath his own place. His fellow travelers said to him: ‘What are you doing?’ Said he to them: What does that matter to you, am I not boring under my own place?’ Said they: Because the water will come up and flood the ship for us all. Even so did Job say: And be it indeed that I have erred, mine error remains with myself (Job 19:4), and his friends said: He adds transgression unto his sin, he extends it among us. They, thus, said to him: You extend your sins among us.” (Leviticus Rabbah IV:6)

And finally, what I have called the wave-particle experience at the human level is exactly what philosopher Martin Buber refers to as *I-Thou* versus *I-It* relationships in his classic tome, *I and Thou*. To quote Buber,

“The world of the It is set in the context of space and time. The world of Thou is not set in the context of either of these. The particular Thou, after the relational event has run its course, is bound to become an It. The particular It, by entering the relational event, many become a Thou.” (I and Thou, Part I, by Martin Buber)

In other words, when we see anything outside of ourselves as an *It*, we localize both ourselves and the object in space and time. We enter our particle mode. However, when we enter into an *I-Thou* relationship with something, we transcend space-time boundaries and become one with the other. We are in the boundlessness of our wave mode.

Final Thoughts

Throughout this paper we have engaged in both certainty and speculation. Among the certainties are the patterns we've found in the *Priestly Blessing* and elsewhere in Biblical and rabbinic literature. What is speculative, though, are our suspicions regarding the causes of these patterns. Another certainty, however, is that even if modern science cannot fully explain these causes, it, nonetheless, has progressed far enough to where many of us need to change the paradigms that we use to help us understand the world around us. And as for those parts that we still cannot fully explain, we will, for the time being, simply have to do as the sages of yore did and admit, "*It is exceedingly difficult, and no one can fathom it (Genesis Rabbah VI:8).*"