

Lecture 11

The Talmud in the tractate of Shabbat explains that there are 39 categories of work that are forbidden on Shabbat. These are based on the 39 categories of work that were done in the Tabernacle. The Tabernacle is considered to be a miniature of the world. Science would do well to take a close look at these 39 categories of work and ask what each one corresponds to in nature.

Now, the 24th is tearing in order to re-sewn.⁹⁶ The Talmud asks: Where do we find this category of work taking place in the Tabernacle? The Talmud replies that this occurred when a worm hole appeared in one of the tapestries of the Tabernacle and then the fabric had to be torn and re-sewn. When you see this passage in the Talmud in relation to any book on modern physics today, it totally blows you away.

Today, modern science describes space-time as a fabric which can theoretically be torn, as a worm hole, and then re-sewn. And one of the main questions is whether indeed tears in the fabric of space are possible and whether they could be used to create wormholes, theoretic passages through space that would shorten distances considerably.

There were two layers of tapestries in the Tabernacle. One layer had 10 tapestries in it, and the other had 11 tapestries. In modern String Theory there are two types of theories: five theories that posit 10 dimensions and an 11 dimensional model (called M-theory), which unites all five by showing that each is a particular case of this more general model. Indeed, in the Tabernacle too, the lower layer of tapestries had 10 tapestries and the upper had 11.

Tosafot, the medieval commentary notes that the only thing that could happen to the tapestry was a wormhole forming in it and that this was the only place that a wormhole could occur in the Tabernacle. A wormhole in physics is like a "leap of distance" (*kefitzat haderech*) by the Ba'al Shem Tov.

The worm (once again from our particle zoo) is a symbol for King David, who describes himself as a worm: "I am a worm, not a man."⁹⁷ The Ba'al Shem Tov was the one who used to travel through

⁹⁶ קורע על מנת לתפור, *Shabbat* 74b-75a.

⁹⁷. Psalms 22:7.

“wormholes” in his journeys, and he is considered to be a reincarnation of King David.

In any case, according to GR, the fabric of space-time cannot be torn, the topology can change gently, but it cannot be torn. But string theory allows for this. We are discussing this in short, but the entire issue here in the Talmud has to be studied deeply.

Even more amazing is the fact that in the entire Talmud, there is only one place that it says that there is a commandment to study science. We find this statement immediately after the discussion of the tearing of the tapestry. The Talmud says:

Said Rav: One who knows how to compute *tekufot* and *mazalot* and does not do so, you are not permitted to quote his teachings in his name...

Said Rabbi Shimon son of Pazi: Rabbi Yehoshua ben Levi said in the name of Bar Kapara: One who knows how to compute *tekufot* and *mazalot* and does not, about him is written the verse: “They do not gaze at the acts of God, and His handiwork they do not see.”

Said Rabbi Shmu’el bar Nachmani, said Rabbi Yochanan: From where to we learn that man is commanded to compute *tekufot* and *mazalot*? From the verse: “And you shall keep and perform these, for they are your wisdom and understanding in the eyes of the nations.” What is wisdom and understanding in the eyes of the nations? The computing of *tekufot* and *mazalot*!

According to the *Smag* (and acronym for the Medieval index of commandments called: *Large Book of Mitzvot*), this is one of the 613 commandments. In his words: “It is a positive commandment to compute *tekufot* and *mazalot* and *moladot*...”⁹⁸ These three words “*tekufot*, *mazalot*, *moladot*” refer to the various cycles of the stars and planets (today we call this astrophysics).⁹⁹

On the words “in the eyes of the nations,” Rashi writes that science is “recognizable wisdom,” because all the nations of the world can recognize it. Science has an advantage over the wisdom of the Torah because it predicts. The Torah does not appear to predict anything and only the Jewish mind fully appreciates it. Torah is like concealed wisdom compared to science. As we know, the strength of any scientific theory is its power of prediction. So, according to the sages, the most important scientific endeavor is astrophysics, which it is a commandment to pursue.

Now, *tekufot*, which literally means “cycles” are a time image and *mazalot*, which literally mean “star constellations,” or “galaxies” are a space image, which also implies that it is a *mitzvah* to unite time and space. And, once more, this appears at the end of the discussion in the Talmud regarding the tearing of

⁹⁸. *Semag*, positive commandment 47.

⁹⁹. תקופות - time image, מזלות - space image, meaning that it is a *mitzvah* to understand space-time.

the fabric of the tapestry of Tabernacle, which we have explained corresponds to the fabric of space-time.

What Rashi says about science being “recognizable wisdom” is extraordinary. We mentioned earlier the cornerstone (or top stone) of the Temple through which all personal Divine Providence is focused. We noted that Zachariah describes this stone as having twice חן (i.e., grace, or symmetry). But, the two letter word חן is also an acronym for “concealed wisdom” (חכמה נסתרת), one of the names by which Kabbalah is referred to. So now we can add that חן is also an acronym for the new name for science that we learned from Rashi “recognizable wisdom” (חכמה ניכרת). So now, we can say that these two types of wisdom are the two חנן that the cornerstone (top stone) possesses. It even says that whoever is qualified and capable and has the mind to study science according to the Torah but does not do this and only studies Torah, even if he becomes a great Torah sage, you are not allowed to say a teaching in his name. It is forbidden to learn Torah from him.

One of the commentaries in the *Shulchan Aruch*, the *Eliyah Rabbah*,¹⁰⁰ tries to explain this harsh statement. He says that a person who has the ability of being wise in recognizable wisdom, in science, but does not do so, he himself has proven that he is not worthy of the title of “wise man.” So he himself has prevented himself from taking on the title of a sage. And, in principle, anyone that does not have the title of a sage you cannot repeat his teachings in his name, even if they are Torah teachings.

So we recommend strongly that this passage of the Talmud be studied in depth by everyone. God should grant us the talent and ability to learn, understand, and teach both types of wisdom, both the hidden wisdom, which is Torah, and the recognizable wisdom, which is science.

¹⁰⁰. אורח חיים סימן שמ, ס"ק יד.