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Parashat HaShavuah Series

Parashat Bo

Right from the start, Parashat Bo immerses us in the issue of Man's Free Will. Hashem declares to Moshe:

“Go in unto Pharaoh; for I have hardened his heart, and the heart of his servants, that I might show these My signs in the midst of them.”

Exodus 10:1

The implication is that for the first six plagues, Pharaoh's decision-making was unimpeded, and starting with the next wave of plagues, Hashem is somehow tampering. But can a finite physical being ever have true Free Will? Is the Universe not like a grand clock that Hashem wound up at the beginning of time and we are merely playing out each moment, trapped by the laws of physics?

The latter view was held by most scientists of the 18th and 19th centuries. Sir Isaac Newton's observation, that the behavior of small particles and heavenly bodies can be reduced to mathematical formulae, revolutionized not only science but philosophy. Pierre-Simon Laplace noted that since all particles' movements are governed by Newtonian law, if one had a “demon” (the computer was not invented yet) that can take into account the mass, position and speed of every particle in the Universe, then one would be able to calculate every past, present, and future event. This would include, I might add, human thought and actions. So where is Pharaoh's Free Will and why the need to harden his heart?

Quantum physics allows us to have a world of laws and also of Free Will. In the early 20th century, the likes of Einstein, Heisenberg, and later Feynman, described a microscopic world that is so fantastic that it goes against human nature to accept it. It has, however, also withstood over a century of experimentation. Briefly, the quantum world does not merely contain smaller and smaller particles with finite locations and movements. Rather at some level, say on the level of an electron, particles behave more like waves. What's more, these waves can be at more than one place at a time! An electron that we may be studying may be on the experimenter's table or can be flying next to the moon.

If you think the above is hard to fathom, we are only warming up. It is the *observer*, when he looks to measure the electron, who “collapses” the numerous probability

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waves and brings the electron into our reality, into one fixed place and time, no longer a wave but a particle again. In other words, the human experimenter can impose his will on the quantum world merely by observation and thought! If you have a problem with this concept, you are in good company! Einstein was very troubled by this concept as well, and he was one of its pioneers. Einstein exclaimed, "I like to think that the moon is there even if I am not looking at it." Einstein, however, never came up with an accepted alternate theory.

This opens the door for Free Will in a finite universe. Yes, Man is subject to the laws of physics, but perhaps human thought works on a quantum level. There may be numerous "probability waves" for our thoughts, but our cognitive mind brings one idea into reality. This may be how man was made *B'tzelem Elokim*. Clearly the term did not refer to facial or other physical characteristics. But it could imply the ability to use our minds to create, to bring thoughts out of the *Tohu Vavohu* of quantum potential and literally create and define reality.

Which brings us back to Parashat Bo. Pharaoh, like any other man, had Free Will as given us by Hashem. His thoughts and actions were wave-like in their potential as quantum mechanics would describe it, not fixed inflexible particles as Newton would see it. But after the sixth plague, Hashem had a different agenda: He wanted to bring more plagues,

"so that you may tell in the ears of your son, and of your son's son, what I have wrought upon Egypt, and My signs which I have done among them; that you may know that I am the Lord."
Exodus 10:2

Sforno explains that the next plagues were, at their essence, not a punishment for Pharaoh as much as they were to be an eternal sign of faith that was to be etched in the young Jewish Nation's heart.

At this point Pharaoh's own heart was "hardened". His creative waves were collapsed into "hard reality". He no longer mastered reality as the omnipotent observer, but had become its subject. Pharaoh had free choice for Parashat Va'era, but in Parashat Bo he was being "locked in" by his previous choices. Hashem was taking him out of Einstein's realm and placed him with Newton and Laplace. Pharaoh lost the privilege of quantum creativity. Let us appreciate ours.

Shabbat Shalom!

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