

# The Shul

at the Lubavitch Center

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www.chabadshul.org



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Shevi shel Peasch

21 Nisan, 5781

## How Scientific is Torah?

### Question:

So we hear all the time about how Torah and science don't really contradict. But can you give me at least one or two examples where they actually coincide?

### Answer:

The most outstanding example: For millennia, we were ridiculed for believing the world began. Only in the latter half of the 20<sup>th</sup> century did the evidence come out overwhelmingly on our side. As Dr. Arno Penzias (one of the three who received a Nobel Prize for identifying the "background radiation" that became one of the pillars of the current Big Bang cosmology) writes, "creation is supported by all the data so far."<sup>1</sup>

Abraham was a maverick for believing that all the forces of the cosmos are really a single force. This is the contention of science for the past 100 years and the driving force behind the search for the Unified Field Theory.<sup>2</sup>

The Torah's account of Creation and of events that defy the laws of physics — and even defy logic — implies that the laws of logic are not absolute — i.e. it is not impossible for those laws to have been created otherwise, and even now, the Creator could adjust them or supersede them at whim. An inkling of this kind of thinking opened the way for modern mathematics, breaking away from the Euclidian view that the axioms of geometry are absolute "self evident truths," and laying the ground for Einstein's relativity. Indeed, later attempts to demonstrate that mathematics is based on logic have all failed. Thinkers today question the absoluteness of logic itself.<sup>3</sup>

Torah, by presenting the concept of Divine Providence within nature, requires a universe that is only loosely linear, rejecting the determinist concept that cause and effect are inherently linked. This is an outcome of the Principle of Uncertainty, first enunciated by Heisenberg in 1928.<sup>4</sup> Over the past 30 years, experimentation has repeatedly affirmed this concept.

Torah does not talk in terms of matter as a self-contained substance, but as an event, a 'word'. Today we understand matter as simply a dynamic of concentrated energy, as in the familiar formula  $E=mc^2$ . Or, in physicist David Bohm's definition, "That which unfolds, whatever the medium."<sup>5</sup>

Torah relies on witnesses and observation over intuition. Today we call this objective empiricism. It is what distinguishes the scientist from the Hellenist or medieval philosopher.

Torah recognizes the role of human consciousness as an active, rather than passive, participant in forming reality.<sup>6</sup> This outcome of the standard model of quantum mechanics was first enunciated by John von Neumann in 1932.<sup>7</sup>

Torah consistently relies on the concept of synergy: The whole is greater than the sum of its parts. This has become an essential principle in many modern disciplines, from sociology to chemistry.

Torah, in many halachic applications, relies on "quantum" — smallest possible increments of change within space and time. This was the postulate of Max Planck that opened the field of quantum mechanics.

The Torah describes all of humankind as descending from a single man and — earlier — a single woman.<sup>8</sup> The overwhelming genetic evidence concurs, although the dating is still somewhat skewed. They're still catching up.

Torah understands the human psyche as being multi-layered and multifaceted — there isn't just one person inside. Welcome to modern psychology.

Torah describes planet earth and the entire cosmos in holistic terms. Science today is moving sharply in this direction, in life sciences and in physics and cosmology.

Torah provides inference to many of the customs, beliefs, politics, technologies, etc. of ancient times at which historians once balked and archeologists have only recently confirmed.

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Torah presents and rigorously develops the chazakah: An event must occur repeatedly under identical conditions to be considered the most likely outcome in the future (such as the case of the consistently going ox). This is the basis of the scientific method.<sup>9</sup>

Torah prescribes public education, popular involvement and constitutional governance. Sociologists describe how these elements generate stability and productivity in a society.

Torah prescribes a responsible stewardship of our environment. Today we have demonstrated that such an approach is the only one possible for sustainable life on the planet.

Many of these examples may seem obvious and trite, however none of them were accepted as such until recently.

1. See his Creation is Supported by All the Data So Far, page 78 in Margenau and Varghese, Cosmos, Bios, Theos, Open Court, 1992.
2. As the Lubavitcher Rebbe once put it to a group of scientists, "So let's just say we already know there is a Unified Field Theory and we'll call it G-d."
3. See Tzvi Saks, On the Nature of Truth in Mathematics, in B'Or HaTorah vol 9, pp. 95-103. In the inimitable style of George Burns (playing G-d), "Mathematics! Another one of my mistakes!"
4. For an intelligent exposition of this concept for the rest of us, see John Gribbin, In Search of Schrodinger's Cat, Bantam, 1979. Gribbin dismisses the common misconception that Heisenberg et al are talking about our inability to measure precisely. Rather this is an inherent characteristic of the universe, that there are no perfectly knowable ("discrete") states. As Heisenberg himself put it to the philosophers of his time: Without discrete causes, there are no pre-determined effects — and determinism is out the window.
5. In Wholeness and the Implicate Order, Routledge & Kegan Paul, 1980
6. See Tzvi Freeman, Knowledge and Reality, Chabad.org., 2001
7. In Mathematical Foundations of Quantum Mechanics. Eugene Wigner later became the major proponent of this idea, the only coherent competition being the "Multiple Worlds Model". That's not so original, either.
8. Men (y chromosome) from Noah. Women (mitochondrial DNA) from Eve. The women on the ark were from various families, while the men were from a single father and mother.
9. See responsum of Rabenu Asher ("the Rosh" 1250-1328 ) 68:23 for a very modern exposition of this concept.

*(by Tzvi Freeman from <http://www.chabad.org/>)*

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### DAVENING AND SHIURIM SCHEDULE

**Friday — Chol HaMoed Pesach, 4/2 — 20 Nisan**

Shacharit — 6:30 a.m. and 8:00 a.m.  
 Shabbat / Yom Tov Candles — 7:13 p.m.  
 Minchah / Ma'ariv — 7:00 p.m.

**Shabbat — Pesach — Yom Tov, 4/3— 21 Nisan**

Shacharit — 9:00 a.m.  
 Sof Z'man Kriat Shema — 9:56 a.m.  
 Berachot Gemora Shiur — 6:10 p.m.  
 Minchah — 7:10 p.m.  
 Yom Tov Candles — 8:22 p.m.  
 Ma'ariv — 8:22 p.m.

**Sunday — Pesach — Yom Tov, 4/4— 22 Nisan**

Shacharit — 9:00 a.m.  
 Sof Z'man Kriat Shema — 9:55 a.m.  
 Yiskor — approximately 10:45 a.m.  
 Mincha — 5:50 p.m.  
 Seudat HaMoshiach — 6:10 p.m.  
 Ma'ariv — 8:15 p.m.

**Monday, 4/5 — 23 Nisan**

Shacharit — 6:50 a.m.  
 Minchah / Ma'ariv — 7:20 p.m.

**Tuesday, 4/6 — 24 Nisan**

Shacharit — 7:00 a.m.  
 Minchah / Ma'ariv — 7:20 p.m.

**Wednesday, 4/7 — 25 Nisan**

Shacharit — 7:00 a.m.  
 Minchah / Ma'ariv — 7:20 p.m.

**Thursday, 4/8 — 26 Nisan**

Shacharit — 6:50 a.m.  
 Minchah / Ma'ariv — 7:20

**Friday, 4/9 — 27 Nisan**

Shacharit — 7:00 a.m.  
 Shabbat Candles — 7:20 p.m.  
 Minchah / Ma'ariv — 7:00 p.m.