

**Religion and Science**  
(Genesis 1:1-1:8; Exodus 14:15-14:30)

Did you notice that there was a gorgeous full moon in Tuesday's clear night sky? In the Jewish calendar, that full moon marked the Jewish holiday of Tu B'shvat, the 15<sup>th</sup> day of the Hebrew month, identified in the rabbinic tradition as the New Year for trees.

Like Rosh Hashanah, the birthday of the world, Tu B'shvat marks a birthday, necessary to learn when trees were mature enough for their fruit to be harvested. Like Passover, Tu B'shvat is celebrated with a Seder, a meal with symbolic foods. With our current awareness from the scientific community of the dangers of climate change, Tu B'shvat has also become a time to redouble our efforts to care for the environment.

And thus, just as religion communicates with science, science informs religion. We have learned from scientists that the creation described in the bible is imperiled, that the natural world that embraces and sustains us may not endure without our stewardship.

It is perhaps not surprising that one significant intersection between religion and science is found in our appreciation of nature, our study of the natural world, our understanding of our place in the ecosystem that nourishes us. Often religious people express their sense of spirituality through nature. So do many scientists.

In an article published in 1931, Albert Einstein wrote, "The most beautiful experience we can have is the mysterious. It is the fundamental emotion which stands at the cradle of true art and true science." In his book, A Sense of the Mysterious, scientist and novelist, Alan Lightman asks, "What did Einstein mean by 'the mysterious?' I don't think he meant that science is full of unpredictable or unknowable or supernatural forces. I believe that he meant a sense of awe, a sense that there are things larger than us, that we do not have all the answers. A sense that we can stand right at the edge between known and unknown and gaze into that cavern and be exhilarated rather than frightened."<sup>i</sup>

Awe and mystery are no less accessible to scientists than to the religiously faithful. Indeed, scientists are faithful to a belief in the order of the universe, to the belief that the sun will rise and set and that glorious moon will appear each month. In Hebrew, the word for faith is “*emunah*”—which actually means “it shall be firm”.

The map of the universe found in the sacred texts is sometimes explored with scientific tools. In 2003, two scientists attempted to explain the parting of the Red Sea through field research. They evaluated the winds and tides to understand whether the most dramatic event in Exodus had been caused by natural phenomena. Naum Volzinger of the St. Petersburg Institute of Oceanography, and Hamburg based Alexei Androsov, made mathematical models of a reef that runs the length of the Red Sea. Volzinger says a 67-mile an hour wind, blowing all-night long, would have left the reef high and dry. And, he says, it would have remained that way for about five hours. "It would take the Jews—there were about 600,000 of them—four hours to cross the 7-kilometer reef that runs from one coast to another," he estimates. "Then, in a half-hour, the waters would come back." The study titled "Modeling of the Hydrodynamic Situation During the Exodus" which took almost six months to complete was published in the Bulletin of the Russian Academy of Sciences. Says Volzinger: "I am convinced that God rules the Earth through the laws of physics." <sup>ii</sup>

For this scientist, like many others, having faith in the laws of physics does not preclude being a religiously faithful man.

Perhaps the most surprising figure to hold science and religion in dialogue with one another was naturalist Charles Darwin. Darwin was no stranger to the miracles of the Bible. After leaving medical school as a young man, he entered seminary, intending to become a minister in the Church of England. According to Keith Thomson, author of *The Young Charles Darwin*, fortunately, he learned from his brother that they had sufficient means so that he did not have to work for a living and more fortunately still, he was invited to travel around the world on the *H.M.S. Beagle*. He never looked back. But as Darwin began to observe disparate phenomena and connect them in order to shape his theory of natural selection, he realized the import of his observations as a Christian and particularly as one who had once trained for the ministry. He knew what a challenge to religion he was about to unleash on the world.

Prior to publishing his work on natural selection, he wrote to a friend, that doing so was “like confessing a murder.”<sup>iii</sup>

In the century and a half following this insight, religious people have had to consider two different worldviews in relationship to one another. And, as Darwin anticipated, his work split open the worlds of some of the faithful. For some, the imagery of humans descending from apes is so aversive, so belittling to God and man, and so antithetical to their biblical understanding that Darwin and all he represents must be undermined and defeated. Theirs is the world of the gladiator valiantly battling for his life. They know from the Bible that life began literally as it is described in Genesis, created by God in six days some 6000 years ago. Each word of the Bible is true, literal and comprehensive. The battle against evolution is the battle for faith, for Biblical inerrancy, for God.

Consequently, the central fronts for the war to win religious hearts and minds from the fallacy and danger of evolution are in public school classrooms, on school boards and in the courts. In particular, these religious warriors maintain that science textbooks, which teach evolution undermine faith. Throughout the decades, the battle has been joined under several banners. Biblical Literalists. Young Earth Creationists. Intelligent Design. This incarnation of Creationism unites two appealing words—and in our fashion conscious, competitive world, who could be against either designers or intelligence? But those whose faith is untrammelled by the demons of science recognize that Intelligent Design is a Trojan horse intended to bring particular religious beliefs into the classroom.

As a Jew, with antennae sensitive to Christian claims masquerading as universal truths, my understanding of the Bible—and the proper place for religious teaching-- is emphatically different. Different too, is how Jews reconcile religion and science, and even the passion with which we approach the discussion. Science does not threaten Judaism. On the contrary, inquiry is central to Jewish tradition. Isidor I. Rabi, the Nobel laureate in physics was once asked, "Why did you become a scientist, rather than a doctor or lawyer or businessman, like the other immigrants kid in your neighborhood?" "My mother made me a scientist without ever intending it. Every other Jewish mother in Brooklyn would ask her child after school: 'Nu? Did you learn anything today?' But not my mother. She always asked me a different question. 'Izzy,' she would say, 'Did you ask a good question today?' That difference - asking good questions - made me become a scientist."

Science, medicine and inquiry are valued in Judaism nearly as much as Torah study. But the Torah, the Bible is not a textbook of biology or archeology or geology. For 2000 years, Torah commentators have understood the words of the Bible to be a divinely inspired blend of myth, metaphor, law, poetry and wisdom that are meant to be studied and expanded with the insights of each new generation. The great medieval Jewish philosopher and physician, Maimonides, recognized the dangers of taking the Bible literally, and taught, “Literalism robs our religion of its beauties, darkens its brilliance, and gives contrary meanings to the laws of God.” (Perek Helek-Commentary on the Mishnah).

How Jews read the Torah—even what the page looks-- like defies literalism. There is a distinct traditional layout to the bound book of the Bible. It’s called “*mikraot gedolot*”—which means the Great Bibles—and it is both plural and great because in the center of the page is the Biblical text in Hebrew, while surrounding it are interpretations and clarifications composed by generations of commentators forming what Rabbi Chaim Seidler-Feller has called the “conversation among the generations”. Some contemporary thinkers have called this distinctly Jewish layout to the Bible the first hypertext, and indeed, a writer, Jonathan Rosen, has an essay about it called “The Talmud and the Internet”.

What is conveyed by this layout and why am I spending some time explaining it? Because, as Marshall McLuhan taught, “The medium is the message.” One cannot view the Bible surrounded by interpretation without recognizing and underscoring that the text does not exist in isolation. It is always contextualized by the body of commentary, both traditional and contemporary.

The Jews’ lifeline to God is the text, the Torah, so it is pored over like a love letter in order to understand what God wants of us. “There are seventy faces to Torah,” say the rabbinic sages, and it is through the prism of this complexity that the truth of the Bible is revealed. Jews are not literalists. The rabbis taught us not to read every word and every verse as a prose description. To understand the Torah is to understand that it also speaks in symbols, parables, metaphors and allegories.

If this reading of the Bible does not promote a literal interpretation of what it means to be God-fearing, what, then, does it teach? If Jews do not believe that God created the universe in six days some 6000 years ago, what

design or purpose was God attempting to convey through the Biblical account of Creation?

First, if you look carefully at Genesis, you see that there is something before creation. Verse 2 tells us that the earth was *tobu v'vobu*, unformed and void, chaos. Chaos preceded creation, and what God did was to order it. So we learn that order matters.

Second, over and over, we read God's observation that what was created was "good"— In verse 4, "God saw that the light was good;" in verse 10, the seas; in 12, vegetation; in 18, the separation of light and darkness; in 21, the sea monsters, swarming insects and birds; in 25, wild beasts, cattle and creeping things, and finally, in verse 31, "God saw all that God had made and found it very good." If Creation were simply artistic expression, how could a moral evaluation be given to it?

Third, there is literary order to the story of Creation. Each unit begins with "God said", followed by a command, a statement of fulfillment, a notice of divine approval and a closing formula. "There was evening and there was morning, with the accompanying number day. Scholar Nahum Sarna notes that the systematic progression from chaos to cosmos unfolds in an orderly and harmonious manner through six successive and equal units of time, with the first three days in parallel to the last three days. (Please note that the Hebrew word, *yom*, conveniently translated, "day" does not presume twenty-four hours. It means a long sustained period of time.) In the first three time-units or days, resources are created, which are then utilized by the creatures formed in the next three days. On day one, light is created; on day four, the sun, moon and stars. On day two, the upper and lower waters are divided; on day five, those waters are inhabited by the fish and fowl. On day three, the dry land and vegetation are formed, which are then populated by the land creatures and humankind, which were created on day six.<sup>iv</sup>

Such readings of Genesis in particular and the interpretive tradition of Torah in general are religious, authentic--and inferential. Those who teach them do not purport to speak for God. Even Moses at Sinai, at the height of his leadership, was refused when he asked to know God's ways. When Moses asks God, "Let me see You!" God replies: "I will make all my goodness pass before you...but you cannot see my face; for a person cannot see me and live." (Exodus 33:19, 20). Jews believe there is a limit to what we humans can know of God. We learn from the Bible itself that humans cannot be ventriloquists for God. We cannot be certain of God's ways.

So, how do we reconcile different ways of knowing? How then does science intersect religion? With a *havdalah*, a distinction. Science is not Torah. And Torah is not science. This was said best by one of my teachers, Rabbi Harold Schulweis, who sadly died six weeks ago. Rabbi Schulweis appreciated the contributions of both science and religion. Raised in an avowedly anti-religious home, he grew up surrounded by the most well-known Jewish secularists of the early Twentieth Century. He taught, “Science is concerned with facts. Torah is concerned with values. Science is concerned with “what is”. The Torah is concerned with “what ought to be”. Science is morally neutral. I do not go to the ophthalmologist to discover my vision of life ...He shows me the letters on an eye chart, not the goals of my life. Science offers us knowledge. Torah offers wisdom. Darwin is concerned with the Descent of man. Torah is concerned with the destiny of man. The truth of evolution and the truth of Judaism are complementary...within every human being lies dormant an evolving Image of God...As Jews, we are bidden to transform nature... to use science to soften nature’s blows, to elevate the fallen, remove the toxicity of the waters and the contamination of the air. We are to engage in research that will free those crippled by illness.”<sup>v</sup>

In this vision, articulated by Rabbi Schulweis, this religious vision, science helps us to become partners with God in an evolving creation. We are enjoined to imitate God’s attributes. When Moses asked to see God’s ways, God taught Moses, “The Eternal our God is merciful, gracious, compassionate, patient, abounding in kindness and faithfulness.” (Exodus 33:6-7) We cannot be certain of God’s ways, we cannot speak for God, but we are commanded to be merciful, gracious, compassionate, patient, kind and faithful.

To do so is to affirm religion, to affirm God, without insisting on the literal, without having to bludgeon science and scientific inquiry into a mute witness.

My husband George is a biologist. Over thirty years ago, when we stood under the *chupah*, the wedding canopy, Rabbi Chaim Seidler-Feller, one of the two rabbis officiating at our wedding, said to us, “What joins you is that you are each committed to exploring mystery. George, through your science, you explore the external mysteries, while Patricia, in your rabbinate, you explore the internal mysteries. You are each students and teachers of the awe and wonder of the world around us, whether in the laboratory or in the sanctuary, whether in the budding of a plant or in the tenderness of a baby’s face. It is through an

appreciation of mystery that you are each partners, not only with one another, but partners with God in *tikkun olam*, in the repair of our precious world.”

In our home, there is a graceful dance between religion and science, between the rabbi and the biologist. I am grateful to live in a time when I can say with equal fervor, *Amen* to science—with its medical advances and insight into the universe, and *Amen* to God—author of the vast heavens and of finite and precious human life. May we each be able to say Amen—it is firm, to the mystery within, and to the mystery beyond.

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<sup>i</sup> <http://www.mitpressjournals.org/doi/pdf/10.1162/001152603771338733>

<sup>ii</sup> <http://www.christianitytoday.com/tc/2004/004/9.11.html>

<http://www.washingtontimes.com/news/2004/jan/22/20040122-113947-8632r/>

<sup>iii</sup> “The Forces that Shaped a Young Charles Darwin”,

<http://www.npr.org/templates/story/story.php?storyId=100118047>

<sup>iv</sup> Nahum Sarna’s Commentary, JPS Torah Commentary, Genesis 3-15, Philadelphia: JPS, 1989

<sup>v</sup> Rabbi Harold Schulweis, “Secular Science and Jewish Faith”, Yom Kippur 2002

<http://www.vbs.org/rabbi/hshulw/secular.htm>