



A SCIENCE & RELIGION COMMENTARY

GENESIS 1:14-19

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And God said, "Let there be lights in the dome of the sky to separate the day from the night; and let them be for signs and for seasons and for days and years, **15** and let them be lights in the dome of the sky to give light upon the earth." And it was so. **16** God made the two great lights—the greater light to rule the day and the lesser light to rule the night—and the stars. **17** God set them in the dome of the sky to give light upon the earth, **18** to rule over the day and over the night, and to separate the light from the darkness. And God saw that it was good.

Psalm 136:7-9 . . . who made the great lights, for his steadfast love endures forever; the sun to rule over the day, for his steadfast love endures forever; the moon and stars to rule over the night, for his steadfast love endures forever;

Physical cosmology is the science that deals with the origin and development of the universe. Within the history of the interaction between science and Christian theology, this passage from Genesis 1 has stood as one of the most contentious in relationship to cosmological science. It hardly merits status as a pun to say these controversies often generate more heat than light. Young earth creationists insist on the creation *ex nihilo* of the sun, moon, and stars on a fourth 24-hour day of creation, while an old-earth creationist such as Hugh Ross in his book *A Matter of Days*, advocating a 'progressive creationism', suggests that the heavenly bodies were created earlier with the original appearance of light, but only became visible from earth when a heavy cloud layer dissipated. Both sides attach great significance to ultra-fine parsing and sensitive subtleties in the Hebrew text – subtleties which it is doubtful the

original text can sustain. To this textual reading a scientific-cosmological-historical narrative is shaped to conform broadly to the Biblical text (Ross, for instance, claims to find support for Big Bang cosmology in the Genesis 1 account). Scientific arguments are offered to undercut opposing textual readings, as in Ross's argument that the creation of the heavenly lights on the fourth day would have created gravitational perturbations that would have destroyed the earth.

The debate here between young- and old-earth creationists is of some interest in the science – theology realm. There are two significant dangers. The first is that science is made the ultimate arbiter of truth so that the veracity and effectiveness of scripture is dependent on complete integration with contemporary science. Scientific creationism accepts the dubious premise that contemporary scientific methodology is the ultimate arbiter of truth. It simply holds that the Bible is an authoritative scientific textbook. The second danger in this debate is that it threatens to miss the most interesting connections between Genesis and contemporary science.

Theologically and scientifically, these verses from Genesis manage to accomplish two things at once – two things, it should be noted, that cut in opposite directions and suggest a nuanced appreciation for the divine wisdom manifest in the heavenly lights. On the one hand, the text downplays the status of the sun and moon in the ancient Near Eastern universe. By refusing to name the sun and moon, instead referring to them as simply the greater and lesser lights, Genesis 1:16 avoids the danger of granting them divine status such as they possess in the Egyptian pantheon or in other divine arrays of the ancient world.

At the same time, Genesis establishes a royal role for the sun and moon. It does not deny their strategic importance in establishing and

governing the patterns and processes of the earth. They may not be divinities themselves, but by divine authorization the sun and the moon rule the day and night respectively. The Hebrew verb 'to rule' (mashal) is not a timid verb. It is a verb that connotes dominion, or lordship, and is most frequently used of God's dominion. The sun and moon rule their respective domains of day and night under a divine grant of authority.

The authoritative role of the heavenly lights is well appreciated in cultures and contexts dependent upon natural light: farmers dependent on sun and rain, shepherders whose vigilance waxes or wanes from new moon to full moon, mariners reliant on stellar identification (and later the sextant) for direction and location, and so forth. Contexts such as these would have provided a natural interpretational matrix for Genesis 1:16.

Contemporary biological and physical science can, however, deepen our appreciation of this text. Theology need not limit itself strictly to historical context in elucidating the text. Take the matter of the tides, which post-Newton were understood to be due to the gravitational attraction of the moon. A correlation between the tides and the position of the moon was noted already in ancient times. Various theories were offered, none compelling. An alternative theory of the tides (non-lunar) played a pivotal role in the Galileo controversy of the early 17th century. Is it anachronistic to suggest that a lunar cause for the tides comprises a manifestation of its rule? Hardly. It does not violate exegetical principle to suggest that modern science gives us a fuller and more specific scientific understanding of a Biblical-theological point.

The field of chronobiology, which studies periodic phenomena in living organisms in response to solar and lunar cycles, provides a fuller and at times awe-inspiring understanding. The biotic realm is

replete with instances where circadian rhythms, solar and lunar cycles, and light sensitivity play a determinative role. Plants grow in response to seasonal variation in the sun's position and many, like the sunflower, are heliotropic. For many creatures, especially marine organisms, sexual reproduction is triggered by lunar phase.

Animals, whether diurnal, nocturnal, or crepuscular, pattern their day based the movement and presence/absence of sunlight. Within humans, the absence of light triggers the production of melatonin, a hormone which governs the sleep cycle. The increased use of artificial light has been tied to sleep disruption. Recently, it has been shown that blue wavelengths of light suppress melatonin production to a greater extent than red, a matter of particular concern since LCD monitors and LED/CFL lights tend towards the blue end of the spectrum.

Preaching Suggestions

It would be unusual to select Genesis 1:14-19 as sermon text, but it might be included in a series on the days of creation. Rather than use the text to explore cosmogony (the origination of the universe), a series of preaching points might include 1) God's supreme status as Creator of even the sun and moon; 2) God's delegation in wisdom of ruling authority to the heavenly bodies (lots of wonderful examples from the natural world here); 3) how this ruling authority manifests itself in creatures lives, including our own (yes, the sun and moon rule over us, too, within God's sovereignty); and 4) the peril we place ourselves in if we cavalierly ignore the subtle and not-so-subtle rule of sun and moon. This last point will require some dexterity. The point is not to become Luddites who reject the electric light or astrologers who read the Zodiac. But a healthy reminder that we are

physical creatures subject to the influences of the natural world, and that we were made to be influenced by these things is helpful.