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**Placing, Displacing, Replacing the Sacred:
Science, Religion, and Spirituality**

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Lisa Sideris is right on target in her central concern. Many of us worry about scientism—elevating science into a life-orienting worldview. 'Science is portrayed as containing within it all that humans need to orient themselves meaningfully to the world around them', she writes (p. 141). Richard Dawkins and Edward O. Wilson are both guilty as charged of scientism, with 'the elevation of science to the role of a sacred new mythology, or virtually self-sufficient normative guide'. But are Brian Swimme and Mary Evelyn Tucker guilty also? Does their *Journey of the Universe* have 'pernicious implications and hegemonic ambitions'? I hope here to offer some help as Sideris twists and turns through the details in who moves and how from science to worldviews.

These big-history-epic-of-evolution accounts, Sideris claims, 'tend to encourage awe and wonder at scientific information and expert knowledge as that which is most "real", over and above direct encounters with the natural world' (p. 136). Do they encourage awe and wonder at the 'most "real" scientific explanation' that has been formed in the expert heads of scientists? Are they 'redirecting our sense of awe and wonder toward the scientific enterprise and its quest for totalizing knowledge?', she asks. Or are these accounts directing us to wonder about what these scientific explanations have discovered: a longstanding real, natural history. Is the awe and wonder at something subjective or objective; is biology a remarkable scientific discipline or what goes on out there remarkably and independently of humans? Yes, Wilson marvels at the human mind that can study ants, but he also marvels at

ants. There is no more forceful advocate for biodiversity on the face of the Earth.

Is there some less 'direct encounter with the natural world' that scientists such as Wilson with his ants have when compared with non-scientific 'everyday experiences and encounters'? Yes and no. An everyday experience is of bird calls, rain falling, scenic views, autumn colors, rivers flowing, living and dead animals, dirt with decayed matter in it, ants at our picnics, sunsets, stars in the sky, and perhaps of seasonal changes. A scientific account 'asks us to look behind the scenes, beyond the senses, to what is assumed to be a more fundamental domain of reality. The result is a displacement of primary experience—encounters with a more directly sensed world' (p. 147).

Science does extend our vision to the unseen. There is no everyday experience of the Pleistocene period, of DNA, of meiosis, of succession in ecosystems, of atoms or black holes, of Earth spinning on its axis in orbit around the sun, hardly of queen ants, trophic pyramids, and energy flows, or of the best adapted surviving. The 'essential truths to be found there must be mediated for us by experts' who have access to instruments, theories, technologies, long-term observations (David Abram in Sideris, p. 147). True, but that bigger picture enriches rather than prevents my direct field experience. To see better what is going on at your local, personal scale requires knowing about what is going on at microscapes, at ecosystemic, evolutionary, geological, astronomical scales.

We don't get put in place, *local* place, but in space, *cosmic* space—so Sideris worries that big history 'dislocates' us. Notice, though, that *Journey of the Universe* is told from the island of Samos in the Aegean Sea and visits local spots with much local color. My own experience is that I enjoy the several local places I have inhabited and most of those I have visited, but I constantly want not simply a *local* but a national, a *global*, and a *cosmological* sense of place. I don't like being lost out there in the stars. That's a major trouble with many indigenous faiths—they are *too* local; they can't be dislocated and exported anywhere else. Try moving Shinto to England.

Sideris worries that 'some proponents of these narratives express attitudes of intolerance toward religious and cultural traditions that do not derive meaning and values directly from science, even though these traditions may embrace green values on their own' (p. 136). Local religious faiths can be green on their own terms, without attention to any cosmic story. She cites 'Hindus protecting sacred forests in India' (p. 151). Again, I respond: yes, but...

I was at the Yamuna River in India recently, a major river that flows from the forested Himalayas through Delhi and into the Ganges and Bay of Bengal. Pristine at its origins, the river becomes dangerously polluted downstream from erosion due to forest cutting, from industrial pollution, and from human wastes. By Hindu accounts the river has (or is) a mother goddess. Krishna is said to have delighted in the river. Some conservationists there claimed that accentuating local beliefs that the pollutants were making the mother goddess sick and fearing her anger was a more effective strategy than teaching them any science. Keep their myths! Well, okay, perhaps provisionally, perhaps pragmatically such a tactic makes sense. But neither Sideris nor I believe that mythology. Eventually that account will have to be 'deconstructed' into a more scientific explanation, even if it can be simultaneously 'reconstructed' into some more generic account of rivers and forests as sacred gifts on a wonderland planet.

In Hawaii's Volcanoes National Park on a memorable evening, I watched in the twilight red lava roll into the ocean. The seashore on which I stood had literally been made only a few months before. Here was more land flowing forth; I knew something of how the world was made. Next morning, overlooking a dormant crater steaming with sulphurous fumes, I noticed flowers and a little food at the crater's edge. These were offerings made to Pele, a goddess who dwells in the Kilauea volcano, placating her to stop the flow (Dudley 1993).

Contrast my understanding with this native 'superstition'. The native peoples gave an animistic account; I know about tectonic plates, magma, basaltic lava, shield volcanoes, calderas, lava *plateaux*, and *nuées ardentes*. My scientific account has replaced their local faith. Yet, in my scientific superiority, I too experienced the sublime there—a virtually religious experience—as lava out of the bowels of Earth created new landscape. I placed the geomorphology in the larger story of a creative Earth.

The American Indians repeatedly warned John Wesley Powell against his first trip through the Grand Canyon (Powell 1961 [1895]: 36-37). The canyon once contained a trail made by the god Tavwoats for a mourning chief to go to see his wife in a heaven to the West. Then the god filled up the trail with a river and forbade anyone to go there. Such belief would, of course, conserve the canyon. Powell would draw Tavwoats's wrath (James 1910:225-31). Powell saw the canyon geologically. He too experienced awe, but of the erosional forces of time and the river flowing. The Indian legends have only antiquarian interest. No one appreciates the canyon for what it really is, unless helped by geologists to know about the Supai formation, the Redwall limestone, the inner Precambrian gorge, and so on. That is the definitive interpretation. Better still if one

can fit Earth's geological forces into a more comprehensive story of the remarkable genesis of a planet supporting life.

Sideris's concern here is a little puzzling because she showed great insight a decade back, cautioning about an ethic that was overly romantic about harmonious ecosystems and oblivious to the more real science of nature red-in-tooth-and-claw (Sideris 2003). She judged that the accounts of many ecotheologians—especially ecofeminists such as Sallie McFague and Rosemary Radford Ruether—were 'insufficiently grounded in what science reveals to be real and true' (as she puts it, p. 141). Now she is swinging the pendulum to the other side, warning against taking science so seriously that one elevates it into a 'new sacred myth for our times' (p. 137).

Use of the word 'myth' typically introduces a nest of confusions. The first thing to do when one encounters appeals to or accusations of 'myth' is to find out who, if anyone, claims they have non-mythic worldviews. Does anyone live in *amythia*, being without a myth? Dawkins uses 'lucid scientific explanation' to 'explode myths' (p. 144). Or are we rather seeking the most 'serviceable myth', the 'superior mythology' (Rue in Sideris, pp. 139,140). We are encouraged to 'imaginative mythmaking under the critical and watchful eye of contemporary science' (Rue in Sideris, p. 143). '[T]he evolutionary epic is probably the best myth we will ever have' (Wilson in Sideris, p. 143), but is this a 'truth myth'?

Is what we want 'science-based mythmaking'? If so, what that means will have to be explained and re-explained again and again, every time the conversation is resumed. Better to leave the word 'myth' for scholars of religion to quibble over. In public discourse, why not just say that we are seeking the most plausible worldview that takes account of the best scientific natural history that we have and sets that in a more comprehensive framework of life-orienting meaning and significance? Call this, if you like, using 'modulated criteria of "tenability"', following Callicott. If one seeks 'to deploy modern science in order to instill in readers and audiences a profound sense of connection with the universe, and thereby foster environmentally responsible behaviors' (p. 140), then I am all for it. If 'the Epic gives us an account of how things are *and* which things matter'—if it successfully does that—and if it 'can inspire grateful service to the enduring promise of life on the planet' (Rue [2000] in Sideris p. 140), I welcome it. This grand narrative—tracing a story from big bang to contemporary science, including conservation science, and religion, including ethical concern for flourishing human and natural communities—is 'one of the monumental accomplishments of the human species, a crowning intellectual achievement' (Swimme in Sideris, p. 151). I agree and call this 'the genesis of caring' (Rolston 2010).

'The magic of reality is—quite simply—wonderful. Wonderful, and real. Wonderful *because* real' (Dawkins in Sideris, p. 144, italics original). I agree, even with Dawkins, though I would put a different spin on it, checking the scientism. 'Our exhaustive journey through the vast and numinous universe, through the whole riveting drama of our planet's evolution, leads us back to profound admiration of...ourselves' (Barlow in Sideris, p. 149). Though I might replace 'admiration of' to 'wondering about', I think this is true. Humans are the most remarkable product of evolutionary genesis (Rolston 2011).

As she nears her conclusion, Sideris says, 'I believe science to be indispensable for guiding and informing our ethical interventions in the natural world. Seen in its proper perspective, science may help to underwrite a sense of humility and wonder at vast and ancient processes of which human beings are a small part' (p. 148). Again, she is right on target. Amen.

But she does not think the *Universe Journey* stories have the proper perspective. Swimme and Tucker arrogantly claim theirs is the best story we have. These stories are 'crafting a new religion, grounded in a myth that explains our origins and destiny', Sideris maintains (p. 137 n. 2). Promoting an evolutionary epic 'comes perilously close to asserting itself as the one true story for all inhabitants of our planet' (p. 142). Calling your own religious story 'true' has a pitfall: it implies 'that all other religions are false' (Bellah in Sideris, p. 141): I claim 'exclusive access to the Truth (with a capital "T") about Reality (with a capital "R")' (Callicott in Sideris, p. 142). I 'thus dismiss all other knowledge systems as cultures as mere myth and superstition' (Callicott in Sideris, p. 142). Again, yes and no. Believing that Christianity is true does not imply that the Jewish view of God in Moses or the Hebrew prophets is false, mere myth, though it may involve the view that Jesus came to fulfil law and prophets. Jesus and the Hebrew prophets did regard the worship of Baal idols and the Pharaohs as myth and superstition. So do I, and probably also so do Sideris and Callicott.

There is 'slippage' from pure science to 'a culture's shared understanding or all-encompassing vision', says Sideris (p. 141). 'Slippage' is a pejorative word here. Any contemporary culture in its encompassing vision must 'incorporate' science—*slip* in vast amounts of it, in fact. No story is worth listening to that cannot do this. I do believe that evolutionary natural history is, in a quite positive sense, the one true story for everybody on the planet. We all got here, historically, via something rather well described by this account—even if this account is radically incomplete as of yet in explaining critical transitions: the origin of life, the origin of mind.

'[N]o worldview is, strictly speaking, true' (Callicott in Sideris, p. 142 n. 8). I suppose. Quibbles about what 'true' means are as endless among philosophers as quibbles about what 'myth' means among religious scholars. I would quibble about Swimme's tendency toward the Gaia hypothesis. Meanwhile, the natural history account is the best account we have. Many of its essential elements are here to stay: a huge expanding universe, nucleosynthesis in the stars, life starting simpler and elaborating in biodiversity and biocomplexity through processes involving adaptive fit.

Uluru (Ayer's Rock) in Australia is a sacred mountain to the local Anangu people. Their warrior men climb the mountain to gain strength and wisdom about living on their arid landscape, which they claim to have done 'sustainably' for millennia. There is a rock cave on the side of the mountain that they call *Mala Puta*. This cave is thought of as the pouch of the female hare wallaby, and it is here that the Anangu believe they were created, descended from wallabies. *Uluru* is one of the most impressive landmarks in Australia. Many tourists visit this World Heritage site, as I did in 1996. The Australian government has a national park there but, deferential to the Anangu people, considers the park to be leased on their tribal lands.

In the *Uluru* interpretive center there are parallel interpretations of the origins of the mountain and the origins of the native peoples in Australia. By the scientific account, this is a geological sandstone monolith originating 600 million years ago. Indigenous peoples emigrated from Asia about ten thousand years ago, earlier from Africa where *Homo sapiens* originated. By the Anangu account, they originated in the *Mala Puta* cave. By my account, one of these stories is true, the other false. You can, if you like, find a softer response. This is the best the Anangu knew, by their lights. They sensed some deeper, sacred powers, and this was the groping mythology through which they expressed it. Meanwhile, in any plausibly descriptive sense, their account is false.

Humans have produced some 100,000 religions (Wallace 1966:3). But the religions that persist and develop over the centuries, spreading worldwide, are quite few; ten or so religions form the chapters in a typical world-religions textbook. Call the myriad religions all 'fractured omnipresence', find something green wherever you can in them, but mostly they are animisms in an enchanted world and will never be globally plausible faiths. The few that have become global will not persist in the contemporary world unless they can accommodate the cosmological and evolutionary stories told by science. In that sense, this is the one true account, which disenchant, displaces all the others. 'Any story of human nature not firmly grounded in the sciences does not merit the

attention of youthful minds' (Rue and Goodenough in Sideris, p. 150). I agree. But I do not believe that this account is self-interpreting about the meaning and significance of life without being complemented by philosophical (ethical/metaphysical) and theological/religious accounts.

My problem is not that Swimme and Tucker with their cosmic story discredit local and specific religions, that they 'displace or pronounce false all rival stories' (p. 151). Just the opposite: they include them all—in some re-mythologized, highly metaphorical, deeper down senses. Swimme says, 'Perhaps a new story is emerging in our time, one grounded in contemporary science, and yet nourished by the ancient religious wisdom of our planet' (Swimme and Tucker 2011: 00:2:35). Tucker with John Grim, her husband, an executive producer of the film, in a recent account say that they set out 'to retrieve, reexamine, and reconstruct these human-Earth relations that are present in all the world religions' (2014: 42). *Journey of the Universe* is an excellent video, a dramatic story well told. I recommend it. I'd also be pleased to hear them say, if only occasionally, that somebody is wrong.

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