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Chapter 9 - Little green Gods

If contemporary atheists have a prophet, he is Richard Dawkins. The atheist holy book is Dawkins' *"The God Delusion"* [Dawkins 2006].

While his militant "New Atheist" followers can be annoying and aggressive, Dawkins himself is reasonable, measured, and insightful. In the chapter "Little Green Men" of *"The God Delusion,"* Dawkins mentions the excellent science fiction novels *"A for Andromeda,"* by Fred Hoyle [Hoyle 1962] and *"Contact,"* by Carl Sagan [Sagan 1985]. In both novels, humanity receives a message from incredibly advanced alien civilizations.

Dawkins is open to the idea that inconceivably advanced, God-like civilizations may be out there among the stars:

"Whether we ever get to know about them or not, there are very probably alien civilizations that are superhuman, to the point of being god-like in ways that exceed anything a theologian could possibly imagine. Their technical achievements would seem as supernatural to us as ours would seem to a Dark Age peasant transported to the twenty-first century. Imagine his response to a laptop computer, a mobile telephone, a hydrogen bomb or a jumbo jet. As Arthur C. Clarke put it, in his Third Law: 'Any sufficiently advanced technology is indistinguishable from magic.' The miracles wrought by our technology would have seemed to the ancients no less remarkable than the tales of Moses parting the waters, or Jesus walking upon them. The aliens of our SETI signal would be to us like gods, just as missionaries were treated as gods (and exploited the undeserved honour to the hilt) when they turned up in Stone Age cultures bearing guns, telescopes, matches, and almanacs predicting eclipses to the second.

In what sense, then, would the most advanced SETI aliens not be gods? In what sense would they be superhuman but not supernatural? In a very important sense, which goes to the heart of this book. The crucial difference between gods and god-like extraterrestrials lies not in their properties but in their provenance. Entities that are complex enough to be intelligent are products of an evolutionary

process. No matter how god-like they may seem when we encounter them, they didn't start that way.”

Dawkins also admits the possibility of the [simulation hypothesis] - the idea that our reality, and ourselves in it, might be a computer simulation:

“Science-fiction authors, such as Daniel F. Galouye in *Counterfeit World* [Galouye 1964], have even suggested (and I cannot think how to disprove it) that we live in a computer simulation, set up by some vastly superior civilization. But the simulators themselves would have to come from somewhere. The laws of probability forbid all notions of their spontaneously appearing without simpler antecedents. They probably owe their existence to a (perhaps unfamiliar) version of Darwinian evolution.”

If there are god-like civilizations among the stars, perhaps we ourselves may become one. In a *New York Times* interview of 2011 [Powell 2011], Dawkins states that “It’s highly plausible that in the universe there are God-like creatures,” and elaborates on the possibility that future generations might co-evolve with computers, in a silicon destiny, and our descendants might “become something like bolts of superpowerful intelligent and moral energy,” perhaps immortal.

In an Afterword to the Penguin Classics edition of Fred Hoyle's “*The Black Cloud*” [Hoyle 2010], Dawkins praises the novel as one of the greatest works of science fiction ever written.

I totally agree. In “*The Black Cloud*” we (actually, our fathers - the book was first published in 1957) are confronted with a fundamentally alien entity, with knowledge and powers vastly exceeding our own. Dawkins says:

“The Black Cloud vividly conveys to us what it would be like to be visited by an extraterrestrial being whose intelligence would seem god-like from our lowly point of view. Indeed, Hoyle’s imagination far outperforms all religions known to me. Would such a super-intelligence then actually be a god?

An interesting question, perhaps the founding question of a new discipline of ‘Scientific Theology.’”

“The answer, it seems to me, turns not on what the super-intelligence is capable of doing, but on its provenance. Alien beings, no matter how advanced their

intelligence and accomplishments, would presumably have evolved by something like the same gradual evolutionary process as gave rise to our kind of life.”

I don’t disagree, but I propose an alternative and I think clearer version of the last paragraph:

The answer, it seems to me, turns not on the provenance of the super-intelligence, but on what it’s capable of doing. Super-intelligent alien beings, no matter how they have evolved, would be so advanced in their intelligence and accomplishments that we could only call them Gods.

Or in other words, if it looks like a God, and it acts like a God, and it thunders like a God, then I call that entity a God.

Skeptic thinker Michael Shermer agrees [Shermer 2018]: “Civilizations this advanced would have so much knowledge and power as to be essentially omniscient and omnipotent,” he says. “What would you call such a sentience?”

“If you didn’t know the science and technology behind it you would call it God, which is why I have postulated that any sufficiently advanced extraterrestrial intelligence or far future human is indistinguishable from God.”

This formulation of Arthur Clarke’s Third Law - “Any sufficiently advanced technology is indistinguishable from magic” - is known as “Shermer’s last law.”

God-like post-biological civilizations in the universe

I enthusiastically support the space program, and I hope to see people walking on the Moon again, and then Mars and beyond. We need to see people in space to reboot our dreaming engine. At the same time I am persuaded that, ultimately, [we’ll leave our flesh and blood bodies behind, and space will be colonized by our post-biological mind children]. Many big thinkers and space enthusiasts share this view.

Arthur Clarke was one of the first to see it. In “2001” [Clarke 1968], he wrote:

“And now, out among the stars, evolution was driving toward new goals. The first explorers of Earth had long since come to the limits of flesh and blood; as soon as their machines were better than their bodies, it was time to move. First their

brains, and then their thoughts alone, they transferred into shining new homes of metal and of plastic."

Other science fiction writers have described a universe populated by upload civilizations, and many scientists agree.

In "*The Eerie Silence*" [Davies 2010], Paul Davies argues that advanced civilizations in the universe are likely to be post-biological, artificial intelligences in robotic bodies. Not only are machines better able to endure extended exposure to the conditions of space, but they have the potential to develop intelligence far beyond the capacity of the human brain.

"I think it very likely - in fact inevitable - that biological intelligence is only a transitory phenomenon, a fleeting phase in the evolution of the universe," says Davies. "If we ever encounter extraterrestrial intelligence, I believe it is overwhelmingly likely to be post-biological in nature."

I hope, and think, that we will colonize other planets and then reach out to the stars. But this will be done, Stephen Hawking believed [Prisco 2018], with intelligent machines. In his last book, "*Brief Answers to the Big Questions*" [Hawking 2018], published after his death, Hawking said:

"It might be possible to use genetic engineering to make DNA-based life survive indefinitely, or at least for 100,000 years. But an easier way, which is almost within our capabilities already, would be to send machines. These could be designed to last long enough for interstellar travel. When they arrived at a new star, they could land on a suitable planet and mine material to produce more machines, which could be sent on to yet more stars. These machines would be a new form of life, based on mechanical and electronic components rather than macromolecules. They could eventually replace DNA-based life, just as DNA may have replaced an earlier form of life."

"The time window during which detectable alien intelligence is biological is very, very short," said Seth Shostak of the SETI (Search for Extra-Terrestrial Intelligence) Institute [Shostak 2012]. "Machine intelligence - which could be durable and long-lasting far beyond the limits of a biological species - will dominate the universe."

Intelligence "will, I think, leave the cradle rather quickly," says Shostak.

“In other words, biological intelligence might be only a stepping stone to something far cleverer, something that is both longer-lived and more widespread than its protoplasmic precursors.”

“Biologically based technological civilization as defined above is a fleeting phenomenon limited to a few thousand years, and exists in the universe in the proportion of one thousand to one billion, so that only one in a million civilizations are biological,” said former NASA Chief Historian Steven Dick [Dick 2003]. “Such are the results of taking cultural evolution seriously, and applying the Intelligence Principle and the insights of Moravec, Kurzweil and Tipler to the entire universe, using Stapledonian thinking.”

According to Dick, advanced civilizations in the universe have probably evolved beyond biology, and machines are likely to be the dominant form of intelligence in the post-biological universe.

Royal Astronomer Martin Rees has similar thoughts on post-biological evolution, immortality, the singularity, vast oceans of yet unknown science, and synthetic realities created by super-advanced civilizations. Interstellar travel is “an enterprise for post-humans, evolved from our species not via natural selection but by design,” says Rees in an interview [Rees 2013] “They could be silicon-based, or they could be organic creatures who had won the battle with death.”

“Some proponents of the ‘singularity’ - the takeover of humanity by intelligent machines - claim this transition could happen within 50 years.”

Rees notes that our universe - “the aftermath of ‘our’ big bang” - may be just one of many universes in [the multiverse of inflationary cosmology]. The considerations in the interview are expanded and elaborated upon in the book “*On the Future*” [Rees 2018]:

“What we’ve traditionally called ‘the universe’ - the aftermath of ‘our’ big bang - may be just one island, just one patch of space and time, in a perhaps infinite archipelago. There may have been many big bangs, not just one. Each constituent of this ‘multiverse’ could have cooled down differently, maybe ending up governed by different laws. Just as Earth is a very special planet among zillions of others, so - on a far grander scale - could our big bang have been a rather special one.

In this hugely expanded cosmic perspective, the laws of Einstein and the quantum could be mere parochial bylaws governing our cosmic patch. So, not

only could space and time be intricately 'grainy' on a submicroscopic scale, but also, at the other extreme - on scales far larger than astronomers can probe - it may have a structure as intricate as the fauna of a rich ecosystem. Our current concept of physical reality could be as constricted, in relation to the whole, as the perspective of the Earth available to a plankton whose 'universe' is a spoonful of water."

Rees eventually brings the reader to a "wild speculation" - the [simulation hypothesis]:

"Every structure in the universe is composed of basic 'building blocks' governed by mathematical laws. However, the structures are generally too complicated for even the most powerful computers to calculate. But perhaps in the far-distant future, posthuman intelligence (not in organic form, but in autonomously evolving objects) will develop hypercomputers with the processing power to simulate living things - even entire worlds.

Perhaps advanced beings could use hypercomputers to simulate a 'universe' that is not merely patterns on a chequerboard (like [Conway's game]) or even like the best 'special effects' in movies or computer games. Suppose they could simulate a universe fully as complex as the one we perceive ourselves to be in. A disconcerting thought (albeit a wild speculation) then arises: perhaps that's what we really are!"

If these scientists are right, and I think they are, the most advanced civilizations in the universe have transcended biology and moved on to a post-biological phase of their evolution. If we want to become an advanced civilization and colonize the stars, this is what we must do.

Once we get out there, we'll meet God-like teachers and learn how to become God-like entities ourselves. [Expanding into outer space is our manifest cosmic destiny], and out there we'll find out how to re-engineer spacetime and resurrect the dead.

Benevolent alien providers of resurrection services

Those who take seriously the idea of technological resurrection often assume that we'll be resurrected by our own descendants. But what if aliens civilizations will resurrect us in the far future? What if they are doing it already now?

Betting on our descendants seems safer, and it's more useful because it motivates us to do whatever it takes to facilitate the emergence of a God-like human civilization in the far future. But the idea of alien resurrection service providers can't be dismissed.

In "*Darwinia*" [Wilson 1998], science fiction writer Robert Charles Wilson imagines that a super-advanced galactic civilization routinely resurrects all sentient beings after physical death.

“Sentience had conquered mortality, at least on the scale of the galaxy. Since before the advent of mankind, any arguably sentient creature that died within the effectual realm of the noospheres was taken up into paradise.”

Dan Massey, a Renaissance man interested in everything under the stars, who passed away in January 2013, was persuaded that death is not the end. Dan expected to go on an eternal, infinite journey after death. I hope the cosmic winds will be fair to Dan, and I hope to see him again out there.

I first met Dan and Alison Gardner at Transvision, an itinerant transhumanist conference that I organized in Milan in October 2010 [Prisco 2010]. We became good friends and met often after the conference, both online and face to face.

This section dedicated to Dan is excerpted from an essay [Prisco 2014] that I published in the *VenusPlusX* magazine, founded by Alison and Dan and now edited by Alison.

Dan used to drop intriguing hints about a “cosmic government” - a confraternity of natural Gods and advanced galactic civilizations. Perhaps we will join the cosmic government when the time is right, and perhaps the cosmic government is benevolently interested in our world here and now, and may give some help now and then.

Dan was inspired by [The Urantia Book] and [Terasem]. “I've given a lot of thought to the idea of a religion that would sustain Transhumanist ideals without introducing irrational or mythic ideas,” Dan told me in a letter.

“When I finally got around to reading Martine Rothblatt's Truths of Terasem [Terasem 2012] I was surprised to see that the concepts she had assembled at the outset, as she set out to define Terasem, were nearly congruent with a concept I had come to know quite well in a totally different setting, specifically, The Urantia Book.”

Dan explained to me that, in the Urantia cosmology, “we, as individual persons, are participating in the development of the Supreme Being, an incompletely realized deity of finite space and time, which even now shapes events (I often use the term force of destiny) to assure its final emergence. At this occasion, the 'finality,' all persons will have become elements of a complete cosmic consciousness. But long before this final event many ordinary people will have learned to participate in an integrated, orderly life, in which everything and everyone work together better if you give them a chance.”

“What sort of vision can illuminate the path to a meaningful and worthwhile future?,” continued Dan. “It must recognize the potential of humans to become 'as gods.'”

“The Terasem notion of a technodeity, constructed through human action and culminating at 'the end of time,' or some other definite but undefined occasion in the future, with the power to reach back through time and across space to force the actions that finally lead to its full emergence, constructed from the collective consciousness of all universe creatures, is certainly a good start. This provides a vision that we shall all then become fully functioning personalities of a supreme, finite deity.”

I find Dan's vision beautiful and insightful. The supreme consciousness, God, emerges from the community of advanced forms of life and civilizations in the universe, and is able to influence spacetime events anywhere, anytime, including here and now, with self-consistent causal loops that ultimately ensure the emergence of God. I think this is what the prophets of the world's great religions tried to say, in the language of their times. In this book, I'm trying to say the same in the language of our times.

Dan was a frequent participant in online discussions hosted by Turing Church, Terasem, and the [Mormon Transhumanist Association] (MTA). Dan wasn't a Mormon or a sympathizer, if anything he was very critical of some aspects of Mormon society, but appreciated the scientific theology promoted by Mormon transhumanists.

In an online discussion hosted by the MTA, Dan described very eloquently the idea that other civilizations in the universe may have already developed resurrection technologies and may be already “providing resurrection services” to less advanced civilizations like ours [Prisco 2012a]. If this is the case, we and everyone else in the universe will be resurrected by the cosmic government.

Here is a (slightly edited, but almost literal) transcript of Dan's words:

“I think you start out realizing that the universe is vastly older than the little area within the light sphere that we can see from this planet on the backwater of the Milky Way galaxy.

Let's say just for the sake of argument that it is not merely a few billion years old, but it is a few trillion years old, maybe even quadrillion years old, I have no idea obviously, no way to find out, really, right now anyway, but I feel that there is a well organized cosmic government and civilization, that populates literally millions and millions, I really should say billions and billions (Carl Sagan) of planets scattered throughout this part of the universe, and they are all, you know, most part of them are in some degree of communication with each other, there is some sort of coordinated sense of purpose in this community, and they have been at it for a very long time by our standards.

So during this time, you expect that these kinds of things, life extension, and mind uploading, and all these other technologies that we speculate about, would have been long explored, analyzed, built on, other things developed. Frankly, I think the promises of many religions of personal immortality on some terms, sometimes the terms are absurd, but the idea of personal immortality is not absurd at all, because just as we think that we could resurrect our dead, and we might go out and help other people to resurrect their dead, well, rather than being at the front-end of that process, we are at the back-end of that process, we are the clients, not the service company for the project.

Why? Because there is some really big project going on in the universe, and it's bringing about the universe in unity and harmony. It has really long ways to go, but on this planet it has incredibly long ways to go, because, you know, whether you call it the fall of man or the planetary rebellion or any of these things that are written down in some garbled form in the myth books of world religions, the fact is that something very bad happened here a long time ago, and we have been pretty much in the backwater, cut off from cosmic civilization ever since.”

I hope an alien “service company” has taken good care of Dan, and he is now a happy and productive part of the cosmic mind. But even if at this moment there are no alien service companies providing resurrection services to the little people of infant backwater civilizations, we will progress and become the service company ourselves. From his subjective point of view, Dan is still with us, out there.

See also my longer video interview [Prisco 2012b] with Dan and Alison on transhumanism, the singularity, physics, religion and spirituality, and civil rights. Social activism, frontier physics, and new cosmic religions in the same talk, it's really awesome.

Notes

[Conway's game] See "The Life of Joe Glider."

[Expanding into outer space is our manifest cosmic destiny] See "The sacred road to the stars."

[Mormon Transhumanist Association] See "Man will become like God, say Mormons and transhumanists."

[simulation hypothesis] See "Sims City."

[Terasem] Terasem is a synthetic "transreligion" developed by biotechnology entrepreneur and transhumanist thinker Martine Rothblatt. See [Terasem 2012].

[the multiverse of inflationary cosmology] See "Exotic space, mysterious time, magic quantum."

[The Urantia Book] Dan served for more than two decades on the Executive Committee of the Urantia Book Fellowship. "*The Urantia Book*" [Urantia 2013], of unknown authorship, is a philosophical and spiritual book first published in 1955. See also Martin Gardner's book "*Urantia*" [Gardner 1995] and the Urantia Book Fellowship website: <http://www.urantiabook.org/>

[we'll leave our flesh and blood bodies behind, and space will be colonized by our post-biological mind children] I think far future humans, our mind children [Moravec 1988], will have bodies that could be very different from today's bodies, and wouldn't even meet our current definition of "body." For example, future bodies could be robotic, or based on exotic material substrates (e.g. plasmas, quantum matter, radiation). Some far future humans could exist as pure software running on computing systems equipped with suitable sensors and actuators. Post-biological bodies could be anything that allows human consciousness to function, and interact with the rest of the world and with other humans. Post-biological doesn't necessarily mean non-biological: The definition of

“biology” could be extended to include whatever material substrates our mind children will port themselves to.

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