Unitarian Universalist Church of Columbia, Missouri
Sunday, Aug. 14, 2022

Reflections by Steve Scott
"The Meaning of Everything"
Based on *Children of Time* by Adrian Tchaikovsky

This morning you're going to hear about one of the best science fiction books I've ever read, *Children of Time* by British author Adrian Tchaikovsky. I was a huge sci fi fan as a pre-teen and teenager, and I've always preferred what I call "hard" science fiction as opposed to writing that leans into the realm of fantasy. I can honestly say that I came by the appreciation and understanding I have of the scientific method and basic science through my reading. After my teen years, most of my reading was in other genres – until the past three or four years when I've been trying to catch up on more than 50 years of sci fi.

I believe the best science fiction is not pure escapism. Rather, the best science fiction raises and tries to suggest answers to deep questions about the meaning of life, the universe and everything.

And no, the answer is not 42. [Pause] If you didn't get that reference, you need to read *The Hitchhiker's Guide to the Galaxy* series by Douglas Adams.

So what are some of the deep questions in *Children of Time*? Here are some you'll hear about this morning:

> Does life exist anywhere in the universe other than Earth?
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> How does evolution shape a species?
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> How does religion get started, and what does it take for a species to call something "God"?
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> When a species has more than one gender, is sexism inevitable?
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> What is the nature of humanity?
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> Are humans and alien species inevitable enemies?

I apologize in advance that I have to tell you the whole story to make some of my points, but my summary should not be a spoiler if you haven't already read the book because it is 600 pages of dense, well-written narrative, and if you read it, you'll find a richness and complexity that I can't possibly convey this morning.

The story starts thousands of years in the future after humans have spread throughout our solar system and traveled to distant star systems. Humanity being what it is, various conflicts have resulted in the collapse of a highly technological culture on Earth, and the Earth-bound survivors

are only slowly regaining some of that lost technology while dealing with a damaged ecosystem that will inevitably kill them off if they stay on Earth.

The first character we meet is a megalomaniacal scientist by the name of Dr. Avrana Kern. She is one of the survivors of the highly technological society, and her conceit is that she is going to create a species that will be similar to humans – but superior – on a planet that she has self-referentially named Kern's World. She has already seeded the planet with numerous fauna and flora from Earth, including trees and other plants, mammals, fish, insects and arachnids. She has released a nanovirus on the planet designed to speed up evolution. The finishing touch will be to release a large number of monkeys on the planet, and she expects them ultimately to evolve into a species superior to humans while she waits in cold sleep in a sophisticated spaceship orbiting the planet – from which she expects to ultimately greet her progeny.

Alas, as she settles into her spaceship, a saboteur in her group of fellow scientists who opposes her scheme blows up the shuttle taking the monkeys to the planet, so the monkeys never make it. The ensuing fight on the other spaceship carrying the scientists results in its destruction, leaving only Avrana orbiting the monkey-less planet. Although she witnessed the destruction of the shuttle carrying the monkeys, the shock is so great that she represses the memory and has her ship put her in cold sleep.

Down on the planet, one of the species brought from Earth is a type of jumping spider, *Portia Labiata*, which is found in Southeast Asia and the South Pacific. You have a photo of one of these spiders on the cover of your order of service. [Screen?] As spiders go, *Portia Labiata* are pretty intelligent. They have been called "eight-legged cats" because their hunting tactics are as versatile and adaptable as a lion's. While they have instinctive hunting tactics for their most common prey, they can improvise by trial and error against unfamiliar prey or in unfamiliar situations, and then remember the new approach. On earth, as is common in spiders, the females are faster and larger than males, their bodies measuring up to 4/10s of an inch long, while males top out at about 3/10 of an inch. As is also common, the females usually kill and consume males after mating.

These spiders turn out to be the main beneficiary of Avrana Kern's nanovirus designed to speed up evolution. Over about 2,000 years they grow in intelligence and establish a civilization with many nests – think of them as spider cities – around Kern's World. The spiders also grow in size. The females' bodies are ultimately about 4 feet long, and they stand about 3 feet tall, while the males are about 3 feet long and stand about 2 1/2 feet tall.

Let me pause here to ask a you question: How many of you are creeped out by spiders? Raise your hands. Yeah, me too, and I had to keep fighting that feeling as I read the book, particularly considering the size of these creatures!

OK, let's leave the spiders for now and hear about the other main thread of the novel. While the spiders are growing in intelligence and size, a very large spaceship named Gilgamesh that carries thousands of humans fleeing Earth's devastation is seeking a habitable planet to colonize. Most of the humans are in cold sleep all the time, but essential crew members are awakened in shifts to maintain and pilot the ship and then return to cold sleep while another shift takes over. These

humans are the less technical survivors from Earth, and their ship cannot travel faster than light, so it takes a very long time to travel to other solar systems. After about 2000 years, their ship approaches what appears to be a human-habitable planet – Kern's World.

The approach of the Gilgamesh prompts the artificial intelligence operating Avrana Kern's spaceship to wake her up. Still unaware that her monkeys perished and that spiders are flourishing below, Kern does not want the humans anywhere near Kern's World because she believes they will interfere with her project of creating a new species that will be superior but similar to humans. She uses the superior weaponry of her own spaceship to force the Gilgamesh to move on and try to reach another possibly human-habitable planet about another 1,000 years away. Kern then returns to cold sleep in her own spaceship to await the results of her experiment. She instructs her ship to broadcast basic mathematical equations to the planet below, anticipating that eventually her progeny will develop radio technology and be able to respond.

Down on the planet the spiders continue development of their civilization. They breed different varieties of ants and beatles to perform tasks such as mining and manufacturing. Ultimately, they stumble upon radio technology, and with a crude receiver, they begin receiving the broadcasts from Kern's spaceship. They quickly realize that the bright object in the sky that circles the planet is the source of the broadcasts, and they comprehend the mathematical equations being sent, but they do not understand what message they are intended to receive.

The radio technology is jealously guarded by what develops into a sort of priestesshood, who attempt to interpret the mysterious messages, posit that the object in the sky is somehow responsible for their existence, and spread their interpretations to lay spiders. I say priestesshood because females are dominant and in charge of all nests. Most of the spiders' nests, or cities, have such a priestesshood. Ultimately the spiders come to view the bright object in the sky that broadcasts mysterious messages as a god, and they want to do what they can to please the god.

As I mentioned, female spiders dominate the society, but discontent is brewing among the males. A particularly bright male spider named Fabian has managed to become a helper in the priestesshood of the spiders' main nest, and in an interesting twist on our human experience, he initiates what amounts to a male liberation movement that demands equal treatment for male spiders – and no more eating them after mating. In the end his campaign is about as successful as the women's liberation movement we're familiar with – which is to say, progress is made, but true equality is elusive.

By this time, about 1,000 years after Gilgamesh departed Kern's World, it arrives at the other possibly human-habitable planet. Explorers from the ship quickly learn that the planet is not suitable for colonization because the local life forms are hostile and deadly, and the biosphere is incompatible with humans. Reluctantly, given their limited supplies and fuel, the humans decide their only choice is to return to Kern's World and try to persuade Avrana Kern to allow them to settle there. The ensuing 1,000 year trip back to Kern's World sees the humans on the ship developing into various cliques who clash with each other and damage the ship. However, the damage is not bad enough to keep on going.

In the meantime, as their civilization continues to develop and become more technological, the spiders learn to fabricate a radio transmitter, whereupon they start sending messages to the bright object in the sky, essentially saying, "We are here!" This prompts the spaceship to awaken Avrana Kern from cold sleep, and she is thrilled with the success of her experiment, still thinking it is her monkeys who have now learned how to build a radio transmitter.

Kern begins sending messages down to the planet, and eventually she develops a common "language" with its inhabitants that allows simple ideas to flow both way. By this time, a number of the increasingly techno-savvy spiders have rejected the gospel of the priestesshood and have come to believe that the bright object in the sky is not a god but rather another form of technology.

Ultimately, Kern learns that the creatures below are not the descendants of her beloved monkeys, but, rather, spiders. The shock causes her to remember the destruction of the shuttle carrying the monkeys and just about drives her crazier than she already is. But she comes to accept the reality and is determined to help the spiders achieve an even higher level of civilization.

Fast forward now to the return of the Gilgamesh to Kern's World, some 2,000 years after it left. The ship is crippled, its weaponry is depleted and unreliable, and many of the humans are now dead, but the surviving humans do their best to prepare for confronting Kern and hope they can persuade her to allow colonization.

For her part, Kern refrains from destroying the Gilgamesh with her superior weapons and allows the spiders to take the lead. There follows one of the most bizarre space battle scenes ever depicted in a sci fi book. Spider warriors ascend to the upper atmosphere in dirigibles and then jet to the Gilgamesh in their makeshift spacesuits. They breach the hull of the Gilgamesh, and it appears to be game over for the humans.

But wait – the spiders have decided they will not kill the humans, but instead will allow them to set up residence in designated areas on Kern's World. The spiders had a hard time convincing Kern to allow this, but in the end she acquiesced.

And everyone lived happily ever after – except for those relatively few humans who cannot ever get over their fear of spiders.

If you want the "rest of the story," as Paul Harvey used to say, you'll need to read the sequel by the same author, *Children of Chaos*. In that book, you'll see the spiders and humans finding ways to communicate effectively with each other and interacting productively. You'll also meet intelligent octopuses and another very strange species.

At the beginning, I said *Children of Time* raises some deep questions, so now let's hear about how the book addresses those.

<u>Does life exist anywhere in the universe other than Earth?</u>

Clearly, Adrian Tchaikovsky is convinced that the universe is teaming with life in various forms. While Kern's World was seeded with plants, animals, insects, fish etc. from Earth, he makes clear that the planet already had its own biosphere including plants and animals.

Tchaikovsky's thoughts are supported by our scientists known as exobiologists, who point out that about 95% of life on Earth is built on only six elements common in the universe: carbon, hydrogen, nitrogen, oxygen, phosphorus and sulfur. The carbon atom has the unique ability to make four strong chemical bonds with other atoms and can form the skeletons of complex 3-dimensional structures such as nucleic acids and proteins. The versatility of the carbon atom, and its abundance in the visible universe, makes it the element most likely to provide the base for life on other planets. As one of our readings this morning said, we are all made of star stuff!

And now the Webb space telescope is graphically showing us that the universe is even more vast and varied than we perhaps appreciated. It seems only a matter of time – perhaps a very long time, though – before we'll have proof that life is not unique to Earth,

Another question: How does evolution shape a species?

Tchaikovsky's view tracks with that of our scientists who study evolution. They say that evolution is change in the heritable characteristics of biological populations over successive generations. Evolution occurs over time when evolutionary processes such as natural selection and genetic drift result in certain characteristics becoming more or less common within a population.

On Kern's World, Tchaikovsky posits that the nanovirus seeded on the planet by Avrana Kern speeds up the evolutionary process so that the spiders grow, gain sentience and build a civilization in mere thousands of years instead of eons.

Next, how does religion get started, and what does it take for a species to call something "God"?

One of the fascinating aspects of *Children of Time* is seeing the process though which the spiders come to view Avrana Kern's spaceship in orbit around their planet as a god. At first, before they invent a radio receiver, the visible ship seems like just another unexplainable feature of their visible universe. After they begin receiving the radio signals from the ship, they come to believe that the ship is somehow responsible for their existence – and they're not entirely wrong about that.

This belief morphs into what we would call a religion, complete with a priestesshood that jealously guards the radio technology, attempts to make sense of the ship's broadcasts, and prescribes proper spider behavior based on their interpretations. Later, when the spiders learn to broadcast as well as receive radio waves, their communication with the ship seems at first to strengthen their belief in the god that created them.

But as the spiders become more technologically sophisticated, along come the heretics who contend the ship is not a god but rather just another piece of technology. And ultimately, the heretics are proven correct.

Those who study the history of Earth religions generally posit that as ancient humans encountered phenomena they could not explain, such as lightning, they attributed agency to these occurrences and began to think of them as being caused by beings with supernatural powers, leading to belief in gods. Much later, as humans developed more understanding of nature, science and religion clashed – an ongoing conflict that still continues.

Another question: When a species has more than one gender, is sexism inevitable?

Tchaikovsky seems to think so. Among the spiders, the females dominated because they were larger and more powerful than the males. Their society was structured as a matriarchy, with the males being clearly subservient. But Tchaikovsky also seems to think that the subservient gender will inevitably seek equality, with mixed results.

What is the nature of humanity?

Tchaikovsky's portrayal of humanity is that, as a whole, we are contentious, competitive, and prone to conflict. In his telling, conflict led to the demise of an advanced technological civilization on Earth and an ensuing struggle by the survivors to regain some technology and flee the devastated planet.

But Tchaikovsky also believes there are some among us who are empathetic and who work for the common good of all. This belief is manifest in the final saga of the Gilgamesh as a few dedicated humans manage to keep the ship going back to Kern's World for the good of everyone on the crippled ship – in the face of self-destructive behavior among others on the ship.

Finally, are humans and alien species inevitable enemies?

Tchaikovsky's answer is no, they are not inevitable enemies. In his sequel, *Children of Chaos*, Tchaikovsky even more clearly advances the view that humans and aliens, while not necessarily friends, can co-exist and cooperate with other intelligent species, including octopuses and very strange, shape-shifting entities with a chemical basis far different from humans.

Tchaikovsky's nuanced view of relations between intelligent species is in sharp contrast to a genre of science fiction loosely termed "space opera" that sees all aliens as enemies, leading to pitched battles for control and even survival.

Conclusion

In conclusion, as I said at the outset, the best science fiction raises and tries to suggest answers to deep questions about the meaning of life, the universe and everything. This reminds me of a common UU saying – "We have questions for your answers."

Said another way, in Tchaikovsky's own words, the problem with ignorance is that you can never truly know the extent of what you are ignorant about.

Given the vastness and complexity of the universe, we can surmise that it will be eons before we know the ultimate answers – if ever. In the comedic *Hitchhiker's Guide to the Galaxy* series by Douglas Adams, the universe's most powerful artificial intelligence computer is tasked with answering the question, "What is the meaning of life, the universe and everything?" After many years of investigation and cogitation, the computer spits out what seems to humans to be the nonsense answer of a single number – 42.

Maybe 42 isn't the answer, but perhaps it's the best we can expect for now.

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