

The Dark Forest Theory

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What is the DFT?

There is much puzzlement over why we haven't verifiably been visited by alien civilizations.¹ This paradox was voiced in 1950 by the eminent nuclear physicist, Enrico Fermi,² but never answered.

We look for alien signals, and to date have recorded nothing better than what seems like space noise. Despite numerous "ancient aliens" episodes on the *History Channel*, and many sci-fi movies, reputable scientists are still looking for that first real interactive contact with advanced life forms. Just finding some primitive tiny beings on Mars, on Jupiter's Europa, or Saturn's Enceladus will not suffice, even if they imply independent genesis. We desire to conversationally meet an emergent, evolved entity that is highly intelligent, as well as spiritually wise and benign. We hopefully imagine this entity would be like God, or even God.

We should carefully consider what we desire, because we might meet the wrong entities. We might suddenly encounter a previously cloaked, supremely powerful, version of the exact opposite of what we desire. Instead of the cuddly *ET* of movie fame, we may get something far worse, a galactic predator.

¹ http://bigthink.com/scotty-hendricks/the-dark-forest-theory-a-terrifying-explanation-of-why-we-havent-heard-from-alien-yet?utm_source=quora&utm_medium=referral

² https://en.wikipedia.org/wiki/Fermi_paradox

Versions of apocalyptic death threats have found their way into several Hollywood sci-fi horror movies. While we watch with wide open eyes and popcorn in hand, the bad aliens create havoc and nearly annihilate our Earth. Happily, something or someone on our side always defeats evil toward the end. It could be Earth's microbes, as in *War of the Worlds*. It could be the explosive climax in *Independence Day*, lifted from *Star Wars* when the Death Star was destroyed. It could be motley comic-book superheroes. Or it could improbably be somebody like the little old lady in *Mars Attacks* who loves bad country music. Popcorn aside, what's to stop any real, cloaked, interstellar invasion force from suddenly exterminating us?

The Chinese science novelist, Mr. Liu Cixin, discussed this dark idea in *The Dark Forest* (2008), the second book in his trilogy, *Remembrance of Earth's Past*:³

"The universe is a dark forest. Every civilization is an armed hunter stalking through the trees like a ghost, gently pushing aside branches that block the path and trying to tread without sound. Even breathing is done with care. The hunter has to be careful, because everywhere in the forest are stealthy hunters like him. If he finds other life—another hunter, an angel or a demon, a delicate infant or a tottering old man, a fairy or a demigod—there's only one thing he can do: open fire and eliminate them. In this forest, hell is other people. An eternal threat that any life that exposes its own existence will be swiftly wiped out. This is the picture of cosmic civilization. It's the explanation for the Fermi Paradox."

Alternatives to the Dark Forest

There are many possible scenarios associated with the Fermi Paradox. Scientists today operationally discount the DFT, but they cannot disprove this unsettling possibility. Science would

³ <https://www.goodreads.com/book/show/23168817-the-dark-forest>

rather think of the nearby Milky Way as full of life in simple forms, and occasionally blessed with advanced life forms.

The Drake Equation⁴ was advanced in 1961 to help us get a handle on what may be the odds for and against highly advanced life beyond our own planet. However, the multiplied variables within this “equation” are insufficiently known, which could lead to very different overall probabilities.

There are some eminent thinkers who have said it would be better to escape our garden planet and start again, before we destroy all advanced life. They seem to have given up on trying to fix the messes we make. They fear either accelerated self-extinction, directly or indirectly, or virtually instant desolation from a sneaky space invader.

It’s hard to argue for the escape fantasy when we calculate how extremely difficult it would be to *permanently* exit Earth within the next century, likely the most critical survival period.⁵ It’s one thing to send a few one-way humans to Mars and create a colony dependent on Earth resupplies. It’s totally different to imagine several million human Martians anytime soon. Also, if earthlings back on Earth are suicidally bent, why wouldn’t they launch a nuke or three to Mars to “complete the job”? Space invaders would annihilate our Martian outposts anyway.

We don’t need to have a deep understanding of human history to recognize how *the Dark Forest fear is a nightmare projection of our own killer-ape evolutionary history*. Systems theory explains why organized human conquerors slaughter, or at least minimize, the conquered. Education and cultural sophistication did not protect Germany from Hitler, China from Mao, and some 21st century countries from being dominated by retro-dictators and wannabe fascist leaders. Even very advanced technologies have the potential to facilitate Internet chaos, or terminator violence.

⁴ <https://www.seti.org/drake-equation>

⁵ <http://astronomy-links.net/100+years.pdf>

It is logical to conclude that civilizations emerge through a progression of sentient states, be they on Earth or on some Planet X. Those that coherently survive and excel for long enough to launch deep interstellar journeys likely have found ways to overcome their suicidal, social-Darwinistic atavisms.

A high level of social progress means an alien crew (thousands of years into our future) sent to directly interface with us may be benign, or at least curious. They won't be protoplasmic, but very intelligent machines that can survive the cosmic-ray perils of interstellar space. They want to analyze if we are a threat, or a chance for fellowship. Far enough into the future, we humans and/or our machines could make a similar trip out to nearby blue planets.

There are twelve possibilities *other than DFT* why we Earthlings have not clearly established a dialogue with distant others:⁶

1. **"There aren't any aliens to find.** As unlikely as it seems in a galaxy with hundreds of billions of stars and as many as 40 billion Earth-size planets in habitable zones, we could be alone.
2. **"There is no intelligent life besides us.** (This assumes, of course, that humans count as intelligent.) Life may exist, but it could simply take the form of minuscule microbes or other cosmically "quiet" animals.
3. **"Intelligent species lack advanced technology.** Currently, astronomers utilize radio telescopes to listen intently to the night sky. So if alien species aren't broadcasting any signals, we'd never know they existed.
4. **"Intelligent life self-destructs.** Whether via weapons of mass destruction, planetary pollution, or manufactured virulent disease, it may be the nature of intelligent species to commit suicide, existing for only a short time before winking out of existence.

⁶ <https://www.space.com/37157-possible-reasons-we-havent-found-aliens.html>

5. **"The universe is a deadly place.** On cosmic timescales – think billions of years – life may be fleeting. All it takes is a single asteroid, supernova, gamma ray burst, or solar flare to render a life-harboring planet lifeless.
6. **"Space is big.** The Milky Way alone is 100,000 light years across, so it's conceivable that the focused signals of intelligent aliens, which are limited to the speed of light, simply haven't reached us yet.
7. **"We haven't been looking long enough.** Eighty years. That's the amount of time that radio telescopes, which allow us to detect alien signals, have been around. And we've been actively searching for aliens for maybe sixty years. That's not very long at all.
8. **"We're not looking in the correct place.** As previously mentioned, space is big, so there are tons of regions to listen for alien signals. If we're not listening precisely in the direction from which a signal is originating, we'd never hear it. As Andrew Fain explained at Universe Today, it's like trying to speak with your friend on a 250,000,000,000 channels CB radio, without any knowledge of the frequency on which they are transmitting. You'll probably be channel flipping for a long time.
9. **"Alien technology may be too advanced.** Radio technology may be commonplace here on Earth, but on far-flung worlds, alien societies may have graduated to more advanced communication technologies, like neutrino signals. We can't decipher those just yet.
10. **"Nobody is transmitting.** Instead, everybody may be listening. That's basically how it is here on Earth. Apart from a few paltry efforts to broadcast strong signals over a narrow frequency band towards the stars above, we've barely made our presence known in the universe. In fact, if aliens have radio telescopes similar to what we have on Earth, our television and radio broadcasts would only be detectable up to 0.3 light-years away. That distance doesn't even transcend the farthest reaches of our solar system.

11. "**Earth is deliberately not being contacted.** On Earth, we have policies about contacting indigenous peoples; it's possible that the same thing could be happening with us. Just like in Star Trek, advanced alien societies may enforce rules that limit contact only to species that attain a lofty degree of technological or cultural evolution.

12. "**Aliens are already here and we just don't realize it.** Conspiracy theorists love this unlikely explanation. While the chances are remote, it's not impossible that government agencies are concealing the presence of aliens. Although it's more likely that aliens are already amongst us, observing humanity in the clever and ironic guise of lab mice."

The important lesson from these and additional possibilities is that they are all just unknown potentials within the foreseeable future. We should henceforth optimize our collective existence here on Earth. Today's wise path forward is to navigate a healthy median between fear and hope.