

Study Guide

Angels of the Singularity Chapter 5



This episode is the most direct attack yet on key concepts behind the Singularity.

On the second page, Jackson's heads-up display shows him realistic neutron and gamma-ray spectra that would be emitted from a fusion reactor. I used to work in laser fusion. Jackson is pretty technical, so, just seeing the spectra he can deduce the source. How can neutrons have a spectrum? They can have varying amounts of energy, depending on how fast they go. The graph of how many of them versus how much energy each has is the spectrum, sort of analogous to a light spectrum. In a spectrum of visual light, for instance, the graph of how much light power versus wavelength is the spectrum, but you could also graph it versus the energy each light particle (photon) has, since shorter wavelength photons have higher energy. So, we can say that a light spectrum is a graph of how many photons there are versus the energy each has, and then extend this to any other particle. Gamma rays are just high energy photons, so they can have a spectrum also.

The "being of vast intelligence" referred to by the door is presumably the result of human handiwork. What if you created something smarter than yourself? This is one of the main goals of the singularitarians, who see it as a great watershed to be crossed. I see it as inviting disaster. First, what do we mean when we say "more intelligent?" We have a hard time quantifying even our own intelligence, and finally have to admit that intelligence is not something quantifiable. Rather, we have to describe it in terms of what different sorts of intelligence can do. What if it was a great manipulator and schemer, sort of like Hitler, Stalin, Mao, and a whole crew of fellow travelers rolled together? It could fool you. We'd like to say that we could prevent such dangers by controlling the nature of the intelligence, but the nature of intelligence is that it is unpredictable, being so complex. We will have a hard time understanding our own minds well enough to make one, but we will probably be incapable of understanding minds more powerful than our own, and may find ourselves controlled by them. The singularitarians see only a nerd's paradise.

What if you could boost your intellect? What would that mean? Would you be nicer to everyone? Have you ever known someone who was really smart but a jerk? I have. Or boring. Yep. Do we value intelligence in any form, or in particularly pleasing forms? If we paid for more intelligence, what would be left in its normal state? Could we buy extra empathy? Generosity? What if we got better at math but didn't love anyone anymore? What kind of future are the singularity jocks foisting on the world?

"Short duration ray" is just a bilingual pun. "Short" is "kurz," in German, "duration" is sort of a stretch from "while" which is "Weile" in German, so we might have "short while ray" or kurz Weile ray. Har de har. Maybe better left obscure.

Grant, possessed by the demon, erases pictographs like those in the Grand Gallery in Horseshoe canyon in Utah, a spectacular Native American art site. These paintings were featured in a slow zoom-out shot in the documentary/essay Koyaanisqatsi. I've been in front of them, and they are some of the most powerful images I've ever seen. A perceptive artist must have sensed the reaction one has to looming human figures, the activation of recognition modules built into all our brains. We have a face recognition module called the fusiform gyrus, so why not one for the rest of the body as well? Compare the Grand Gallery paintings with a Byzantine mosaic of Mary with Jesus, at the front of a 1000-year-old church on the island of Torcello near Venice. Is this what we see as newborn infants, before our brain really starts processing images? Is our automatic recognition remembered or just reactivated?

The graph Grant draws appears four times in various refinements in Ray Kurzweil's first chapter in *The Singularity is Near*. He purports to be finding a law of nature, like any scientist who plots his data points and then can draw a nice line through them. This is an indication of "lawlike behavior" in nature, and can be used to predict the future. Here, Kurzweil is predicting a time when there is practically no time between important events, a sort of explosion of innovation. But the graph is rigged. The conclusions are built in, so his reasoning is circular, but obscurely so. If you want to plot points on the graph, you can't do so above a diagonal line that runs

from the upper left to the lower right. Why? Because if the time till the next important event is greater than the time till now, the next data point is in the future and there is no future on the graph. If you plot points below this, and there is a burst of innovation some time in the past, it will look like the singularity already happened. That won't do, so you group them or thin them out till they move upward toward the diagonal line, which is exactly what Kurzweil does. Since they can't cross the line, they stick near it, and he has a perfect line-up of points. This all looks like science but it is not.

Maybe it's religion, specifically apocalypticism, which claims that something wonderful and world-changing is just about to happen. How long have we heard stories about the impending return of Jesus? Two thousand years? The Western European mind is soaked in these stories. Variations come out in strange forms, like Marx (the Revolution), Hitler (the 1000 year Reich), the New Aegers (Transformation of Consciousness to a Higher Dimension), and all the Ellen Whites (original 19th century Seventh Day Adventist) and Harold Campings (20th century televangelist/numerologist) with their actual dated predictions of Christ's return. How different are the singularitarians and their nerdy rapture?

Or, what could be more religious than doing God's will? Kurzweil's sacred graph implies that everything that's happened since the big bang has a grand purpose. He understands the purpose thusly: the universe has set things up so that intelligent life, specifically human, specifically Artificial Intelligence researchers such as himself (gotta watch out for people who put themselves at the center of the universe), will make machines that go throughout the universe turning everything (all mass! all energy!) into a giant, sentient computer. This is so that the universe's fondest wish is fulfilled; it will think. Thus, we start with a Deist concept of God setting everything in motion, so that finally Man can give the universe a brain, and God can think at last. But then, the humans' machines will be the brain, and will be God too. The universe as we know it will be destroyed (gotta watch out for people who want to destroy the universe), and everything will be the mind of God. I'm not making this up, but I'm making it sound as ludicrous as it really is. Am I talking about a religion? Can you tell I'm an atheist?

Deism: God sets things in motion, and then kicks back and doesn't meddle.

Monotheism: God exists, and there's only one. Not counting the other two parts of the Trinity, and of course the Devil, and all those angels and demons...

Pantheism: Everything is God. Not just that God is in everything. He is everything. Einstein believed something like this. Spinoza too. Although it gets more complex.

Jackson gives yet another objection to the graph. He refers to a "fractal view of time." This is an askance reference to Terrence McKenna and his "timewave," another apocalypticist crank idea rather similar to Kurzweil's linear graph. For McKenna, there is a fractal curve (one that looks the same when viewed from any scale) that indicates all the unique events in history, and which will end up in infinite novelty in December 2012 when the Mayan calendar... Oh, it's past. Well, so much for that.

Jackson seals Grant in his pod, and the conductive glass blocks the electromagnetic ray that the "vast intelligence" was using to control him. I based his remarks on people's reports of religious experiences. I was thinking of using quotes from Immanuel Swedenborg, who was an early 19th century spiritualist, but found nothing entertaining. If the intelligence could get inside Grant's brain, it could run around and push all the "profound" and "awesome" buttons, and make itself seem worth following.

At the end, Grant thinks Jackson might be gay. This could have an impact on their developing relationship. Grant is not gay. Neither is Jackson. But what does it mean to be heterosexual when practically all humans are dead or technically transformed beyond recognition, angels don't reproduce, and what it means to be human at all has been radically redefined? Also, I really don't want to draw female characters. I'm sick of all these gun-toting, tough chicks in comics. That was great when it was new, but it's been done to death. This comic came

about after years of attendance at a local comic convention, where all the trends catch on as people try to ply their predictable audience and hit the big time with a popular title. You see everybody copying each other, and an infinitude of guns and tits, tits and guns. Who are the readers? My readers are 60-year-old college professors. I deeply rebel. Deeply.

On the last page there are three geysers with built-up travertine tubes. On the first page there are three “fins” of sandstone. There are three pictograph figures possessed-Grant erases. These are all the same gods.