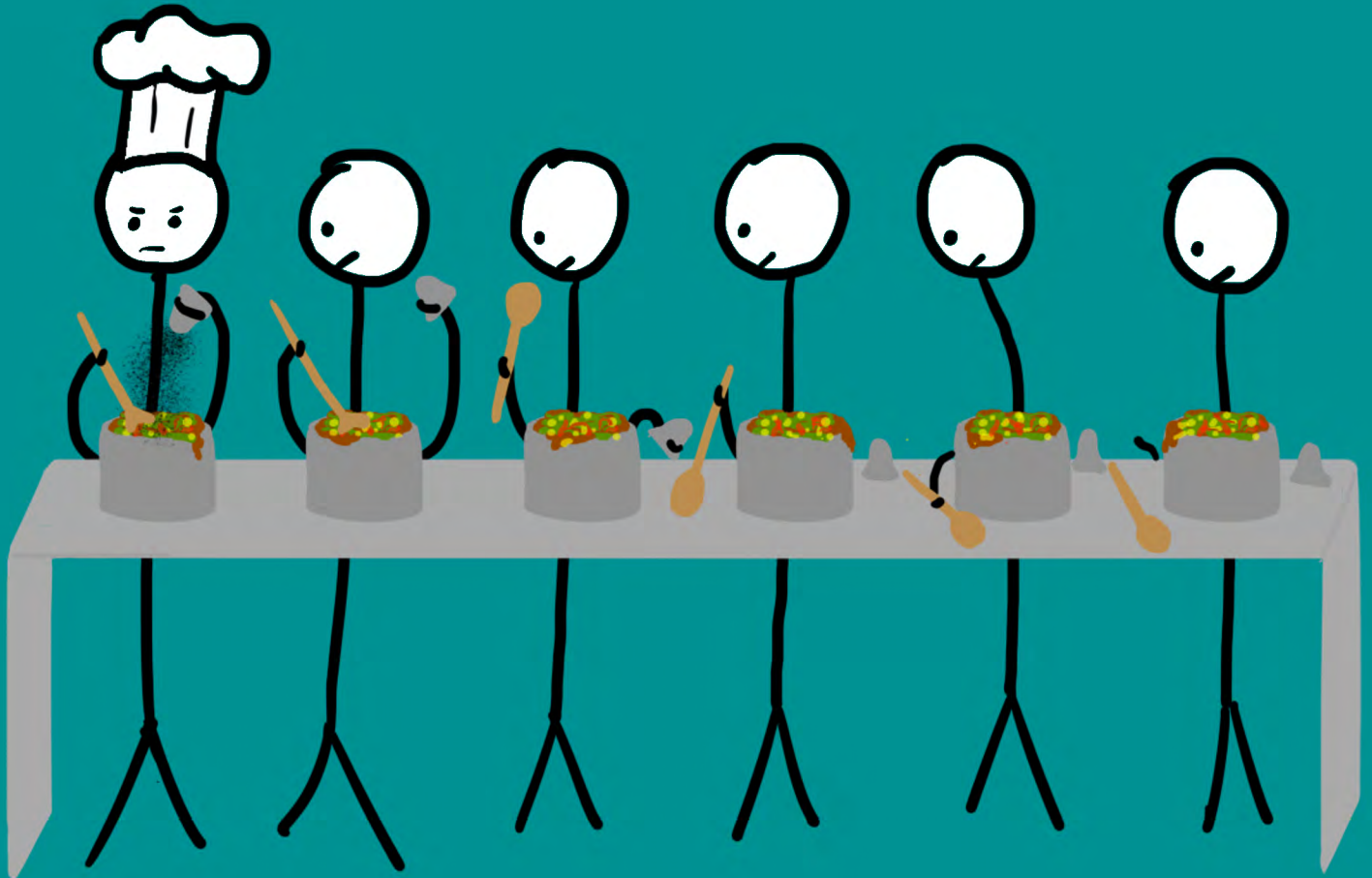


The Cook and the Chef: Musk's Secret Sauce

By Tim Urban



WAIT BUT WHY

The Cook and the Chef: Musk's Secret Sauce

This is the last part of a four-part series on Elon Musk's companies. For an explanation of why this series is happening and how Musk is involved, [start with Part 1](#). ¹

Welcome to the last post in the series on the world of Elon Musk.

It's been a long one, I know. A long series with long posts and a long time between posts. It turns out that when it comes to Musk and his shit, there was a lot to say.

Anyone who's read the first three posts in this series is aware that I've not only been buried in the things Musk is doing, I've been drinking a tall glass of the Elon Musk Kool-Aid throughout. I'm very, very into it.

I kind of feel like that's fine, right? The dude is a steel-bending industrial giant in America in a time when there aren't supposed to be steel-bending industrial giants in America, igniting revolutions in huge, old industries that aren't supposed to be revolutionable. After emerging from the 1990s dotcom party with \$180 million, instead of sitting back in his investor chair listening to pitches from groveling young entrepreneurs, he decided to start a brawl with a *group* of 900-pound sumo wrestlers—the auto industry, the oil industry, the aerospace industry, the military-industrial complex, the energy utilities—and he might actually be *winning*. And all of this, it really seems, for the purpose of giving our species a better future.

Pretty Kool-Aid worthy. But someone being exceptionally rad doesn't in itself nearly Kool-Aidy enough to warrant 90,000 words over a string of months on a blog that's supposed to be about a wide range of topics.

During the first post, I laid out the two objectives for the series:

1) To understand why Musk is doing what he's doing.

2) To understand why Musk is *able* to do what he's doing.

¹ Small orange footnotes are boring and when you click on one of these, you'll end up bored. They're for sources and citations.

1 Blue numbered notes like the **1** on the left are for fun facts, extra thoughts, extraneous quotes from my conversations with Musk, and further explanation. They'll appear in the margins. Orange numbered notes like the orange **1** on the left are for sources and citations—they'll appear at the bottom of each page.

So far, we've spent most of the time exploring objective #1. But what *really* intrigued me as I began thinking about this was objective #2. I'm fascinated by those rare people in history who manage to dramatically change the world during their short time here, and I've always liked to study those people and read their biographies. Those people know something the rest of us don't, and we can learn something valuable from them. Getting access to Elon Musk gave me what I decided was an unusual chance to get my hands on one of those people and **examine them up close**. If it were just Musk's money or intelligence or ambition or good intentions that made him so capable, there would be more Elon Musks out there. No, it's something else—what TED curator Chris Anderson called Musk's "secret sauce"—and for me, this series became a mission to figure it out.

The good news is, after a *lot* of time thinking about this, reading about this, and talking to him and his staff, I think I've got it. What for a while was a large pile of facts, observations, and sound bites eventually began to congeal into a common theme—a trait in Musk that I believe he shares with many of the most dynamic icons in history and that separates him from almost everybody else.

As I worked through the Tesla and SpaceX posts, this concept kept surfacing, and it became clear to me that this series couldn't end without a deep dive into exactly what it is that Musk and a few others do so unusually well. The thing that tantalized me is that this secret sauce is actually accessible to everyone and right there in front of us—if we can just wrap our heads around it. Mulling this all over has legitimately affected the way I think my life, my future, and the choices I make—and I'm going to try my best in this post to explain why.

Two Kinds of Geology

In 1681, English theologian **Thomas Burnet** published *Sacred Theory of the Earth*, in which he explained how geology worked. What happened was, around 6,000 years ago, the Earth was formed as a perfect sphere with a surface of idyllic land and a watery interior. But then, when the surface dried up a little later, cracks formed in its surface, releasing much of the water from within. The result was the Biblical Deluge and Noah having to

deal with a ton of shit all week. Once things settled down, the Earth was no longer a perfect sphere—all the commotion had distorted the surface, bringing about mountains and valleys and caves down below, and the whole thing was littered with the fossils of the flood’s victims.

And bingo. Burnet had figured it out. The great puzzle of fundamental theology had been to reconcile the large number of seemingly-very-old Earth features with the much shorter timeline of the Earth detailed in the Bible. For theologians of the time, it was their version of the general relativity vs. quantum mechanics quandary, and Burnet had come up with a viable string theory to unify it all under one roof.

It wasn’t just Burnet. There were enough theories kicking around reconciling geology with the verses of the Bible to today warrant a 15,000-word “Flood Geology” [Wikipedia page](#).

Around the same time, another group of thinkers started working on the geology puzzle: scientists.

For the theologian puzzlers, the starting rules of the game were, “Fact: the Earth began 6,000 years ago and there was at one point an Earth-sweeping flood,” and their puzzling took place strictly within that context. But the scientists started the game with no rules at all. The puzzle was a blank slate where any observations and measurements they found were welcome.

Over the next 300 years, the scientists built theory upon theory, and as new technologies brought in new types of measurements, old theories were debunked and replaced with new updated versions. The science community kept surprising themselves as the apparent age of the Earth grew longer and longer. In 1907, there was a huge breakthrough when American scientist Bertram Boltwood pioneered the technique of deciphering the age of rocks through [radiometric dating](#), which found elements in a rock with a known rate of radioactive decay and measured what portion of those elements remained intact and what portion had already converted to decay substance.

Radiometric dating blew Earth’s history backwards into the billions of years, which burst open new breakthroughs in science like the theory of Continental Drift, which in turn led to the theory of Plate Tectonics. The scientists were on a roll.

Meanwhile, the flood geologists would have none of it. To them, any conclusions from the science community were moot because they were

breaking the rules of the game to begin with. The Earth was *officially* less than 6,000 years old, so if radiometric dating showed otherwise, it was a flawed technique, period.

But the scientific evidence grew increasingly compelling, and as time wore on, more and more flood geologists threw in the towel and accepted the scientist's viewpoint—maybe they had had the rules of the game wrong.

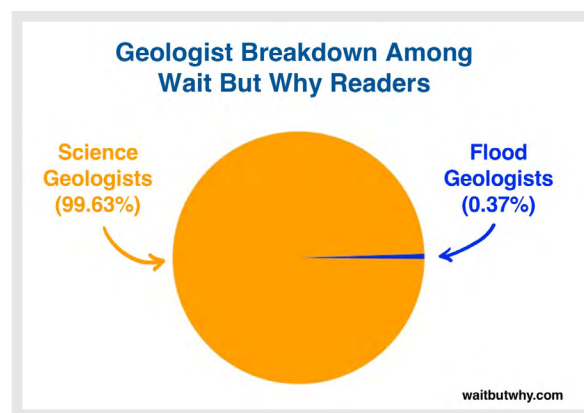
Some, though, held strong. The rules were the rules, and it didn't matter how many people agreed that the Earth was billions of years old—it was a grand conspiracy.

Today, there are **still many** flood geologists making their case. Just recently, an author named Tom Vail wrote a book called ***Grand Canyon: A Different View***, in which he explains:

Contrary to what is widely believed, radioactive dating has not proven the rocks of the Grand Canyon to be millions of years old. The vast majority of the sedimentary layers in the Grand Canyon were deposited as the result of a global flood that occurred after and as a result of the initial sin that took place in the Garden of Eden.



If the website analytics stats on **Chartbeat** included a “Type of Geologist” demographic metric, I imagine that for Wait But Why readers, the breakdown would look something like this:



It makes sense. Whether religious or not, most people who read this site