



## MAKING OUR WAY - A McMahon/Cheyne Podcast

Cheyne Reaction (Season 1; Episode 16) - 2/28/24

**Host:**

**Jim Cheyne**

**JIM:** And now for something completely different.

[music]

Have you ever seen one of those reaction videos where people video themselves watching someone else's video, and then react to it? The music ones are nice. Some are cross-genre, as when hip-hop heads hear Pavarotti's *Nessun Dorma* for the first time, or when college kids first listen to Marvin Gaye's "What's Going On?" Most end with a host saying in tears, "How did I never know this existed?" Or the videos might be of some specialist in a field, a scientist or a psychologist, and they're reacting to a video where a non-specialist with an opinion, camera, and an audience gets everything gloriously wrong.

The first reaction video I saw was of some trained singers reacting to Disturbed's cover of "Sound of Silence" with David Draiman's hyper-passioned vocals. Go listen to it if you haven't. It's approved by Paul Simon himself.

So, I thought I'd give reaction videos a try and call the project "Cheyne Reaction," because why not? My topic today? Conspiracy theories. Kennedy assassination, Area 51, UFOs, the moon landing, Princess Diana, objects on Mars, subliminal advertising, chemtrails, vaccines, pizza gate, Paul is dead, birtherism, anything COVID, birds aren't real, Denver Airport and the Illuminati,

Taylor Swift and the NFL. If you're unfamiliar with some of these, happy Googling.

We could take each in turn as links in the chain, if you will, but today we'll focus on one topic. Here we go. The Earth is flat. It is. Don't take my word for it. Go outside and see for yourself. I'll wait.

[music begins]

For me, it started in 1964. Our family was vacationing in Washington, DC, and we visited the Smithsonian's Museum of Natural History. In the main hall, as I remember it, was a large, Foucault pendulum, just installed that year. The pendulum swung back and forth, back and forth. No big deal. We went on to visit other parts of the museum, but when we returned, the pendulum was swinging in a different direction. It had rotated. How'd that happen? A guide explained, the pendulum didn't rotate, the Earth did. The pendulum maintained its angle of momentum while the Earth turned underneath. As an eight-year-old, that blew my mind. I can't say I had given much thought to the shape of the Earth before that. We had a globe in the classroom, but now here was an actual demonstration of what a spinning globe did. I had learned something for the first time, or, according to flat-earthers, as they're called, I had been deceived by a government agency intent on brainwashing its citizens into compliance with its every wish. I had become what flat-earthers called a globe-tard. That is not a compliment.

Here's the point. A recent survey showed that only 66% of Millennials, those in the 18-24 age range, say they have always believed the Earth is a sphere. Only 66%. And by "always believed" it means "as reasonable adults." It doesn't include the time Santa would come visit from the North Pole. And this is only one instance of a much larger, more troubling trend. More and more people are

doubting the truths of scientific claims. And that is what this podcast is really about.

But let's return to my eight-year-old self and a story about a guy named Columbus.

I remember thinking that "back in the day," everyone used to think the Earth was flat, and that world maps ended at the edge where ships would fall off if they sailed too far. But then a brave sailor named Columbus decided to set the world straight, or on a curve, and convinced Ferdinand and Isabella of Spain to finance his trip to discover a cheaper, better way to sail to India. So Columbus set sail, traveling west instead of east, until he bumped into America, though he thought it was India, and named the inhabitants Indians. And, well, the story gets messy after that. Columbus returned to Europe with his discovery, and everyone traded in their maps for globes. That's what I thought.

The first principle for flat Earthers is this. Don't just take someone else's word for something. Find out for yourself. Now, that's good. That's really good. I'm on board. But then things start to go off the rails.

Flat Earthers all agree on just one thing. Earth is not a sphere. It doesn't look like a sphere, and spheres don't make sense. If Earth were a sphere, people in Australia would be upside down and would fall off. If you're about to mention gravity, don't. Flat Earthers will tell you flat out, gravity doesn't exist. Gravity is an idea made up to support the whole globe Earth hoax thing. Have you ever seen gravity?

Well, we'll get back to gravity in a moment. But first, if the Earth is not a sphere, then where did the idea of a spherical Earth come from? Answer? It is something THEY invented. Who are THEY? THEY are the people in power. The real power. The power behind the world governments. Their globe hoax is one of many

hoaxes designed to brainwash people in order to control them so THEY can hold on to power. But this is a rabbit hole at best. And let's leave it for another time.

Let's focus on one question. If the Earth is not a sphere, what is it? The answer? Pizza. Pizza. As with many of life's problems, the answer is pizza. And what is pizza? It's round. It's flat. It's the shape of the Earth. The North Pole is at the center. The toppings are all the continents and islands. And the crust is a 150-foot-tall wall of ice we call Antarctica. Seriously, that's actually the model. Think of the United Nations emblem on their blue flag. All of Earth's continents cozying up around a central point called the North Pole. Put an ice wall along the edge, and you've got it.

I know you're skeptical about Antarctica being an ice wall, but think about this. The Antarctic Treaty, which makes it impossible for normal people like you and me to visit Antarctica to check things out for ourselves without official permission, was passed in 1959. That's just one year after NASA was founded in 1958. Is that a coincidence? I don't think so.

That last bit was true information packed inside logical gibberish. That's the syntax of conspiracies. By the way, I've always had a question about flat-earthers and the UN flag. If the powers of the world want to convince us the Earth is a globe, why would they plaster a flat Earth map on their flag? Conspiracies, it seems, run on suspicion, not on consistency.

Okay, now, take your pizza and put a dome over it, or what Genesis calls a firmament. (See what I did there?) Put some lights in the dome and you have the flat Earth universe. You really do. That's it.

I sense you have some questions.

You might ask, and I really hope you do, if that's what the universe really looks like, what about all the pictures of Earth we have from space? Quick answer: Photoshop. Really. Every photo we have of space or from space is photoshopped. Faked. Or you might ask, what about all those missions to space, the astronauts and cosmonauts? Answer: fake. Yes, rockets go up. It's a nice show, but no one is on board. Next question, what about the moon landing? Answer: fake. It's all Hollywood. Don't you think it more than just a coincidence that "2001, A Space Odyssey," a science fiction movie, with all its super realistic special effects set in space, came out in 1968, just one year before Apollo 11 supposedly went to the moon? But they made mistakes with Apollo. Have you seen the photos? Where are the stars? They're supposed to be on the moon with no atmosphere, but there aren't any stars? And what about that flag they planted? It moves and waves all by itself, when there's not supposed to be any atmosphere on the moon. And what about the tapes that stored all of Apollo 11's telemetry? They're all missing. All of them destroyed. They claimed the tapes were accidentally recorded over, but c'mon. The most important scientific achievement in human history, and they accidentally erase all the evidence? They didn't erase the evidence, because the evidence never existed. It's all cover-up.

Now, I hear you might have another question: But faking all of that means that thousands of people from space agencies all over the globe - I'm sorry, all over the world - and countless astronomers, scientists, engineers, pilots, contractors, all those people are part of a giant conspiracy? Answer? That just proves how much control they have. At this point, flat earthers might throw in an anecdote or two about someone who threatened to disclose the whole conspiracy and who met a mysterious and unfortunate end.

Another question: What about photos taken from high-altitude weather balloons that show a curve to the Earth? Answer: That's lens distortion. Question: What

about passengers in high-altitude aircraft, such as the Concorde who noticed a curve of the Earth? Answer: Distortion from the thick glass windows. Flat earthers, you see, are covered with Teflon. No questions stick to them at all. They wipe them all off with a bevy of ready-made, well-rehearsed responses. By the way, Teflon is what NASA uses in heat shields. Just a side note.

Wait a minute, though. There's a problem here. Maybe you've noticed it. Think again about our pizza. It's flat, right? But look at the crust. What shape is that? It's curved, isn't it? From every angle you look at it, except edge-on, there's a curve. I've never understood why flat earthers are so adamant about saying Earth has no curve when their own model, the pizza-shaped, pancake-shaped model they use, shows there should be one.

Okay, back to gravity. What's their problem with gravity? Well, gravity has to go because gravity - and every astronomer and physicist will tell you this - gravity tends to pull very large objects like the Earth into themselves, together into spheres. That's why large objects like stars, planets, and moons are always spherical, but smaller objects like asteroids, comets, and meteors are not. So, goodbye gravity.

But before we leave the subject completely, let's meet Mike Hughes, or as he was known professionally, Mad Mike Hughes. Mad Mike Hughes was a flat earther who wanted to see things for himself, things like the curve of the Earth, if it's really there. So Mad Mike Hughes, a limousine driver and daredevil by trade, decided to build himself a rocket and launch himself into space so he could check things out for himself, curve or no curve. The rocket he built was steam powered, and he wasn't really aiming for outer outer space, he just wanted to get high enough above ground that a curve, if there is a curve, would be detectable. He figured 62 miles ought to do it.

This story does not end well.

After earlier attempts that topped out at about 1800 feet, Mad Mike entered his newest steam powered rocket on February 22, 2020. A film crew was there to document the flight for a future Science Channel program. You might have seen it in the news. At takeoff, the landing chute must have snagged on the launcher or something. It ripped away. The rocket shot up maybe a couple thousand feet, gravity took over, and with no landing chute to slow descent, the rocket crash landed, killing Hughes. He was 64. It would be easy, and quite frankly cheap, to make a Darwin Awards joke here, but I kind of admire the guy for his commitment to his idea and his investment in trying to confirm things for himself.

But if gravity is off the table, then why do objects like homemade rockets fall? Introducing density and buoyancy. Flat earthers say that density and buoyancy are forces. They're not. They're properties. But let's hear them out. Objects fall when their density is greater than the environment they are in. Think of rocks sinking in water. On the other hand, objects rise when their density is less than their environment due to buoyancy. Think of helium balloons rising in the air. There's a glaring problem with this idea though. Did you catch it? Why does the density of a rock make the rock sink? Why does it go down? If it's just a difference in density, why doesn't the rock go up and to the left instead? Why does density mean down and buoyancy mean up?

So, let's now meet Darrylee Marble. Darrylee Marble calls himself a realist, also known as a flat earther. Darrylee designed a scientific experiment to prove the Earth is flat. Think about flying in an airplane. Darrylee figured out that if the Earth is curved, then airplane pilots would have to be constantly pointing the nose of their aircraft down to stay level with the ground and avoid flying off into space. Makes sense, in a way. So Darrylee decided to book a flight to test his idea. He took on board with him a spirit level. Yes, a common level used in construction to keep walls level. What did Darrylee find? At cruising altitude, between takeoff

and landing, the airplane was consistently level. The pilot did not have to keep pointing the nose down to avoid flying off into space. Therefore, the Earth is flat. Grab a camera and post it on YouTube. He did, by the way. It's called "Flat Earth PROOF: Spirit Level Flight Experiment." You can look it up.

Just as a point of trivia, astronaut Gene Cernan took a photograph of Earth from Apollo 17 from about 18,000 miles away. It shows the globe Earth in all its glory. The photograph is called the Blue Marble. I wonder if Darryle Marble has ever seen it.

We could go on with the many ideas flat earthers have about science, and it might be amusing in a way, but I'd like to get to the deeper issue here.

Skepticism about science, about history, about news is on the ascendancy. People are anxious about their futures, anxious about being overwhelmed by the complexities and uncertainties of the world and of their place in it. We are built to comprehend and cope with local things, with local communities, with local interactions, and with local problems. That's how we're made. We are not cut out for global problems, except perhaps as helpless spectators. People are anxious.

I use the word anxious whenever I can. That's because it's the word that knocked me out of a school spelling bee when I was eight years old. A-N-X-I-O-U-S. Miss Daniels, can you hear me?

People become skeptical about science, I think, because science's frontiers are more and more esoteric, well beyond everyday experience. It's difficult even to read a scientific paper today without a foundation of years of education and training, much less to understand what it says. Our minds are geared toward everyday experience. Life is at our scale. Life is at Isaac Newton's scale. Things that are super large or super fast, well that's where Einstein lives. And how many



people do you know who could give a cogent, off-the-cuff explanation of special or general relativity? I can't. Or of how Einstein differs from Newton. I mean, I know that Einstein's equations somehow explain the eccentricities of the orbit of Mercury, but I can't explain how they do it.

On the other end, things that are super small are where quantum mechanics lives. And no one understands quantum mechanics. The equations, I'm told, are reliable. In fact, I recently read that part of quantum theory was tested under extreme conditions. They were using intense electromagnetism, if I remember correctly. It was in Germany, I think, Darmstadt, and the results matched what the theory predicted. So quantum mechanics equations work. (By the way, if I've gotten any of this wrong, I'll edit this part out and you'll never know.) But as far as understanding it, Richard Feynman, a pioneer in quantum theory, famously said, "If you think you understand quantum mechanics, you don't understand quantum mechanics." So if scientists even have difficulties with these concepts, what hope is there for the rest of us?

It seems that whenever once-reliable explanations become too difficult for us to assimilate into daily routines, our reaction is to recoil to much simpler, more user-friendly explanations.

No, Virginia, the Earth is not flat.

People in Aristotle's time, over 300 years before Christ, already knew the Earth was spherical through simple observations. Ships disappear over the horizon from bottom to top. The Earth's shadow on the moon at lunar eclipses is circular, no matter where on Earth you observe it. And as you travel south or north, different stars and constellations rise above or dip below the horizon. This is all explainable by a spherical Earth, not a flat Earth. I'll go one further.

Eratosthenes, the head of the legendary Library of Alexandria, calculated the circumference of the Earth to within 1% accuracy, using easy observations and

simple math. That was over 200 years before Christ, over 1,700 years before Columbus.

So where did today's flat Earth movement come from? Let's meet a man named Samuel Birley Rowbotham from London, England, who developed flat Earth ideas in the 1840s. And if Samuel Birley Rowbotham isn't a striking enough name for you, he published under the pseudonym Parallax. Now that's a cool name. Parallax. It's all in his book called "Zetetic Astronomy: Earth Not a Globe," published in 1865. It's still available on Amazon if you want it. In it, you'll find a diagram of the pizza-shaped Earth I've described.

I don't think it's a coincidence that Rowbotham developed his alternate personal-based observation ideas of Earth at the same time that physics was embracing atomic theory and Darwin was publishing about evolution. When science outpaces the ability of common people to absorb it, to accept it, it's understandable that some will retreat to a safer, more understandable, more personal place. To broaden it out into today's headlines, I'll rephrase it this way. When society outpaces the ability of common people to absorb it, to accept it, it's understandable that some will retreat to a safer, more understandable, more personal place.

All right. Let's finish with a story about Bob. Flat earther Bob Knodell knew that if Earth were truly rotating a full circle - 360 degrees - every 24 hours, then it would rotate 15 degrees per hour. And he could measure that with a gyroscope. The angular momentum of the gyroscope, as with Foucault's pendulum, would remain fixed while the Earth rotated beneath. So, someone in the Flat Earth community, some wealthy someone, bought Bob a gyroscope. He bought a high-tech, super precise, ring-laser gyroscope. \$20,000. A tip of the hat to their all-in commitment.

What were Bob's results? Here's what Bob had to say. "What we found is when we turned on that gyroscope, we found that we were picking up a drift of 15 degrees per hour drift." How did Bob feel about that? "Wow, that's kind of a problem, right? We obviously were not willing to accept that." Let me run that by you again. He said, "We obviously were not willing to accept that. So we started looking for ways to disprove that it was actually registering the motion of the Earth, and that it, in fact, was registering the motion of the sky." I don't know how it would have been measuring the motion of the sky, but let's continue.

"So the next thing we set out to do was to encase the fiber-optic gyro in what's called a zero gauss chamber to see if we could actually shield the energies being generated by the heavens." So, let's Google zero gauss chamber. "A zero gauss chamber reduces the environmental magnetic field to near zero inside the chamber." All right. What did you find, Bob? Here he is again. "We were unsuccessful with that, unfortunately." And by unsuccessful, I think Bob means he didn't get the result he wanted. But that's not what science is for. Don't try for a certain result. Accept the result you get, and try to understand it.

So what'd you do next, Bob? "The next thing we were going to try is encapsulating the entire apparatus in bismuth." All right. Google bismuth. Bismuth. "No other metal is verified to be more naturally diamagnetic than bismuth." Now we're getting somewhere. Google diamagnetic. "Diamagnetism is the property of materials that are repelled by a magnetic field." All right. So, Bob and his crew are trying to eliminate any possible magnetic influence over the gyroscope, believing that once magnetism is removed as a possible variable, the reading of the gyroscope will be true.

Bob was hoping to present his findings at a flat Earth conference in Raleigh, North Carolina, in 2018. Bob knew that either his idea was wrong or his methodology was wrong. When his results refuted his idea, he tried everything

he could to think of how to blame his methodology, to tinker with it, trying to produce the result he wanted. When he failed, he hid his results so they wouldn't get out. This is not science.

I should say, sadly, Bob Knodell passed away last year. His experiment, though, lives on in the annals of flat Earth lore as a denial of evidence in pursuit of an untenable position.

So what can we learn? First, flat Earthers find community in their beliefs. They feel left out of current scientific discussions, so they form communities - online, through emails, at conferences - communities of those who are like-minded. Next, flat Earthers, like most conspiracy theorists, start at a very good point. "Don't accept something as true just because it comes from an authority." This is something we can all agree with. Knowledge of the physical world comes not by authority, not by fiat, but by empirical verification. Skepticism is essential to growth, to progress, to improvement of one's condition.

The error arises when "don't assume it's true just because an authority said it" turns into "if an authority said it, it's axiomatically false."

So that's Cheyne Reaction for today. If you liked what we did today, or if you have comments about it, send us a line at [cheynepodcast@gmail.com](mailto:cheynepodcast@gmail.com). That address is C-H-E-Y-N-E - Are you listening, Miss Daniels? - C-H-E-Y-N-E [podcast@gmail.com](mailto:podcast@gmail.com). About a week from today, Jan and Rob will return from their safari in Tanzania, and we look forward to all the wonderful stories they have for us, and we'll be posting photos they've taken at our website. We are making our way. Until next time.

[music]