

# Ode to E Pluribus Unum for Sunday August 21 2022

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## Curious Kids



*(Image credit: Tithi Luadthong/Shutterstock)*

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## Welcome to Mars.



Easily explore all of the latest Martian terrain data and rover imagery, right here in your browser, on desktop & mobile.

[https://areobrowser.com/?utm\\_source=join1440&utm\\_medium=email&utm\\_placement=newsletter#/](https://areobrowser.com/?utm_source=join1440&utm_medium=email&utm_placement=newsletter#/)

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## **Is Sex Pleasure or Work**

A Canadian Army C.O. was about to start the morning briefing to all the staff.

While waiting for the coffee machine to finish its brewing, the C.O. decided to pose a question to all assembled. He explained that his wife had been a bit frisky the night before, and therefore he failed to get his usual amount of sound sleep.

He posed the question; "How much of the act of sex is "work," and how much is "pure pleasure"?"

A Captain chimed in with a 75-25% in favour of 'work'

A Lieutenant said it was probably about 50-50%.

A Warrant-Officer responded with a 25-75% in favour of 'pleasure', depending upon his state of inebriation at the time.

There being no consensus, the C.O. turned to the Newfie Private who was in charge of making the coffee. What was HIS opinion?

Without any hesitation, the young Newfie responded, "Sir, it has to be 100% pleasure, Sir."

The C.O., a little surprised and as you might guess, said "And why is that soldier"?

"Well, Sir, if there was any work involved, the officers would have me doing it for them, Sir."

The room fell silent .....

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## **Gaia Data Release 3: Exploring Our Multi-Dimensional Milky Way**



<https://youtu.be/x6MGF0BhckE>

In a mission first, the long-time star surveyor spotted two Jupiter-size planets in a remote spot of the galaxy. The find was confirmed with the Large Binocular Telescope, in Arizona, and reveals the spacecraft can double as a spotter for alien worlds.

*As more and more space data come pouring in, doing the scientific analysis is a mind-boggling endeavor.*

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## **1950s Commercials and Vintage Commercials**



<https://youtu.be/K3w2Gon-D1k?t=2>

A compilation of various 1950s commercials. Life was such a simpler time back then!  
Maybe you thought they waited until now to get stupid.

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**Leapin' Lena**



<https://bit.ly/3Og4ONS>

*I doubt it. I think it leaps because it can.*

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## **Sea Rise Explained**



**Any Questions?**

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### **Rolling Stone's Top 200 All-Time Dance Songs**

From Chic to Skrillex, from Chicago house classics to festival rave anthems, from songs that filled the floor at the Loft and the Warehouse to ones that blew up on TikTok.



*Number 159, The Orb's 'Little Fluffy Clouds' (1990). I missed this one. How about you?*

<https://www.rollingstone.com/music/music-lists/200-greatest-dance-songs-of-all-time-1372888/roni-size-reprazent-brown-paper-bag-1997-1372964/>

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## National Transportation Safety Board on Lithium Battery Fires



<https://mail.google.com/mail/u/1/#inbox/FMfcgzGqPzKbPMrRJPBVfVGikFJTCPML>

*I'm aware if you own a Tesla you'll say 'baloney,' so ignore this as you choose, but...*

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## On the Other Hand there's Tesla's Virtual Power Plant

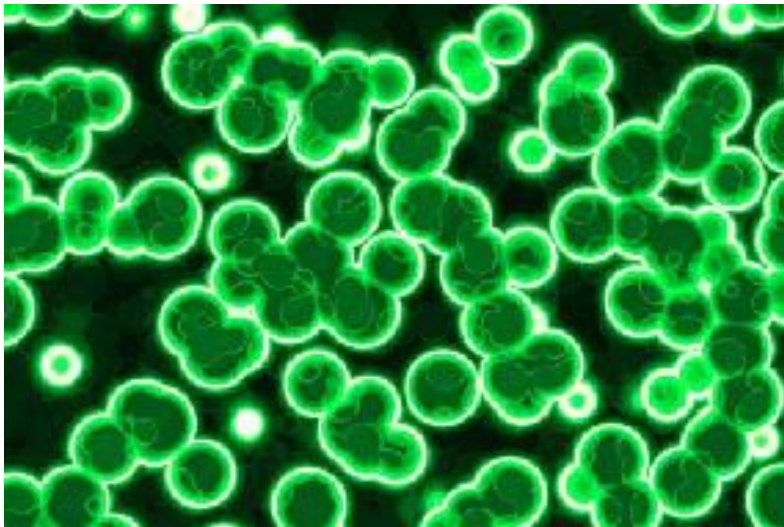


<https://electrek.co/2022/08/18/teslas-virtual-power-plant-first-event-helping-grid-future/>

*Don't forget the surfboard*

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## New "Origins of Life" Chemical Reactions



Scripps Researchers discover a reaction that generates amino acids and nucleic acids, the building blocks of proteins and DNA.

LA JOLLA, CA—Four billion years ago, the Earth looked very different than it does today, devoid of life and covered by a vast ocean. Over the course of millions of years, in that primordial soup, life emerged. Researchers have long theorized how molecules came together to spark this transition. Now, scientists at Scripps Research have discovered a new set of chemical reactions that use cyanide, ammonia and carbon dioxide—all thought to be common on the early earth—to generate amino acids and nucleic acids, the building blocks of proteins and DNA.

“We’ve come up with a new paradigm to explain this shift from prebiotic to biotic chemistry,” says Ramanarayanan Krishnamurthy, PhD, an associate professor of chemistry at Scripps Research, and lead author of the new paper, published July 28, 2022 in the journal *Nature Chemistry*. “We think the kind of reactions we’ve described are probably what could have happened on early earth.”

In addition to giving researchers insight into the chemistry of the early earth, the newly discovered chemical reactions are also useful in certain manufacturing processes, such as the generation of custom labeled biomolecules from inexpensive starting materials.

Earlier this year, Krishnamurthy’s group showed how cyanide can enable the chemical reactions that turn prebiotic molecules and water into basic organic compounds required for life. Unlike previously proposed reactions, this one worked at room temperature and in a wide pH range. The researchers wondered whether, under the same conditions, there was a way to generate amino acids, more complex molecules that compose proteins in all known living cells.

In cells today, amino acids are generated from precursors called  $\alpha$ -keto acids using both nitrogen and specialized proteins called enzymes. Researchers have found evidence that  $\alpha$ -keto acids likely existed early in Earth’s history. However, many have hypothesized that before the advent of cellular life, amino acids must have been generated from completely different precursors, aldehydes, rather than  $\alpha$ -keto acids, since enzymes to carry out the conversion did not yet exist. But that idea has led to debate about how and when the switch occurred from aldehydes to  $\alpha$ -keto acids as the key ingredient for making amino acids.

After their success using cyanide to drive other chemical reactions, Krishnamurthy and his colleagues suspected that cyanide, even without enzymes, might also help turn  $\alpha$ -keto acids into amino acids. Because they knew nitrogen would be required in some form, they added ammonia—a form of nitrogen that would have been present on the early earth. Then, through trial and error, they discovered a third key ingredient: carbon dioxide. With this mixture, they quickly started seeing amino acids form.

“We were expecting it to be quite difficult to figure this out, and it turned out to be even simpler than we had imagined,” says Krishnamurthy. “If you mix only the keto acid, cyanide and ammonia, it just sits there. As soon as you add carbon dioxide, even trace amounts, the reaction picks up speed.”

Because the new reaction is relatively similar to what occurs today inside cells—except for being driven by cyanide instead of a protein—it seems more likely to be the source of early life, rather than drastically different reactions, the researchers say. The research also helps bring together two sides of a long-standing debate about the importance of carbon dioxide to early life, concluding that carbon dioxide was key, but only in combination with other molecules.

In the process of studying their chemical soup, Krishnamurthy’s group discovered that a byproduct of the same reaction is orotate, a precursor to nucleotides that make up DNA and RNA. This suggests that the same primordial soup, under the right conditions,

could have given rise to a large number of the molecules that are required for the key elements of life.

“What we want to do next is continue probing what kind of chemistry can emerge from this mixture,” says Krishnamurthy. “Can amino acids start forming small proteins? Could one of those proteins come back and begin to act as an enzyme to make more of these amino acids?”

In addition to Krishnamurthy, authors of the study, “Prebiotic Synthesis of  $\alpha$ -Amino Acids and Orotate from  $\alpha$ -Ketoacids Potentiates Transition to Extant Metabolic Pathways,” are Sunil Pulletikurti, Mahipal Yadav and Greg Springsteen.

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## Redbird Mixed Reality Flight Simulator



<https://youtu.be/ImGSgAKnOhE>

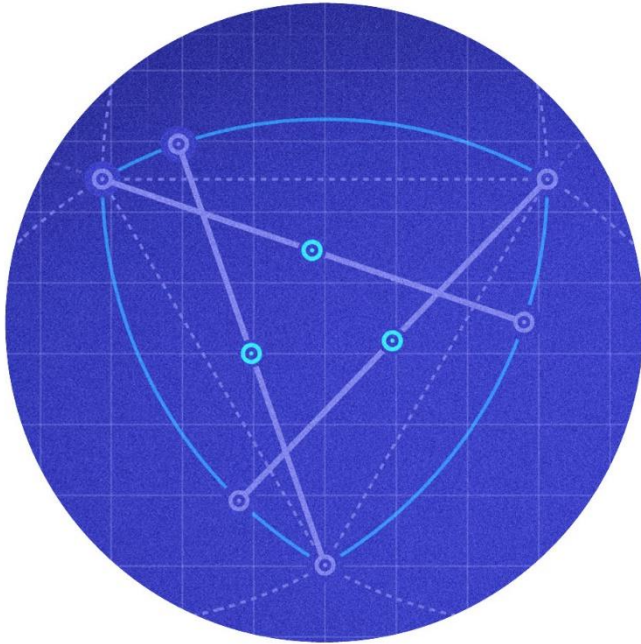
Redbird Flight Simulations came to AirVenture 2022 with a flight simulator concept that combines virtual reality technology with the company’s TD desktop sim. In this video, Josh Harnagel, Redbird vice president for marketing, discusses the ideas behind the design and the current state of development.

*Depending on the price, this could make sense for flight schools. On the other hand I still a believer in a chair fronted with a cardboard dash with pretend stick and throttle that engage the student’s focused imagination...and of course such litany as “Chop...Prop...110 Drop.” It worked amazingly well.*

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## What Makes Real Numbers Special

The Kakeya conjecture sounds like a brain teaser. Place a needle flat on a table. How much area do you need in order to be able to turn it so that it points in all possible directions?



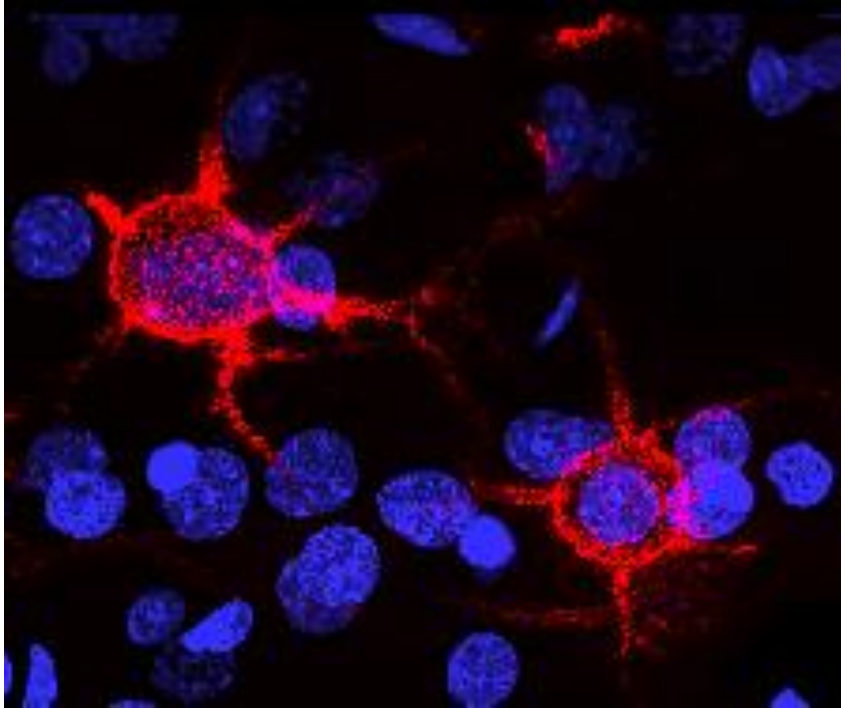
[https://www.quantamagazine.org/new-number-systems-point-geometry-problem-toward-a-real-solution-20220726/?mc\\_cid=4bb88e444c&mc\\_eid=636bc88d2e](https://www.quantamagazine.org/new-number-systems-point-geometry-problem-toward-a-real-solution-20220726/?mc_cid=4bb88e444c&mc_eid=636bc88d2e)

The most obvious possible answer is a circle whose diameter is the length of the needle. But this is demonstrably wrong. And over the last century, the effort to understand the ways in which it's wrong has revealed that what seems like a fun little question is in fact a deeply provocative mathematical problem about the nature of the real numbers themselves — those infinite ticks of the number line that serve as the coordinates in space where the problem was first posed.

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### **Neuronal Scaffolding Plays Unexpected Role in Pain**

Perineuronal nets, rigid structures that hold certain neurons in place, affect a surprising amount of brain activity, including some associated with chronic pain.



*Perineuronal nets (in red) surround neurons in a mouse brain (with nuclei stained blue). New research shows similar nets in the spinal cord also help regulate how a brain perceives pain.*

*Kuznetsova Svetlana, Melnikova Anastasiya, Arnst Nikita*

[https://www.quantamagazine.org/neuronal-scaffolding-plays-unexpected-role-in-chronic-pain-20220728/?mc\\_cid=4bb88e444c&mc\\_eid=636bc88d2e](https://www.quantamagazine.org/neuronal-scaffolding-plays-unexpected-role-in-chronic-pain-20220728/?mc_cid=4bb88e444c&mc_eid=636bc88d2e)

I wonder how long it will be before researchers have the tools to go orders of magnitude deeper into neural activity...or perhaps behavior?

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## **Can we rejuvenate aging brains?**

While it's unclear how this normal age-related decline relates to more severe cognitive impairment and dementia, one-third of Americans above age 85 have symptoms of Alzheimer's disease, and that number doubles over the next 10 years of life. Sadly, we have no tools to predict who will progress from forgetfulness to dementia.

Not everyone is destined to experience this downward trajectory, though. One in three centenarians seem to be resilient to cognitive decline. This provides hope and a springboard for studying brain aging and cognitive decline.



<https://stan.md/3zXZ3jV>

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### **A Gecko and a Possum Family Became Roommates**

They won't eat each other, and the family of marsupials does not seem to mind that the lizard is using them for warmth.



*Western pygmy possums and a western spiny-tailed gecko in a nest box in the Monjebup Nature Reserve in Western Australia.*

*Credit...Kelsey Lambert*

By Anthony Ham

When Alex Hams, a land conservation manager at Bush Heritage Australia, was giving a tour to visiting scientists and volunteers in mid-June, he got more than he bargained for. He opened the lid of a nest box for western pygmy possums at the Monjebup Nature Reserve, which his organization manages in southwestern Australia. There, among the leaves, he found not just a family of pygmy possums, but also a small, orange-eyed lizard known as a western spiny-tailed gecko.

“They were climbing all over each other and neither seemed to mind,” he said. “They were more concerned about the big human heads that were peering in through the top.”

He’d never seen anything like it, and neither had anyone he asked.

Mr. Hams returned twice in the following two weeks and little had changed. The pygmy possum mother, her litter of babies, and the two- to three-inch gecko were not just passing through. They were genuine roommates, sharing a crowded space that was no more than eight inches deep and the same length across.

“They’re really small boxes,” said Mr. Hams, who along with Bush Heritage shared the tale of shared animal occupancy on Facebook. “Pygmy possums are tiny creatures — you could fit a whole family of them on your hand.”

Inside the boxes, which replicate the kinds of natural hollows so many native Australian mammals and birds depend on for shelter, it’s a comfortable setup. “The pygmy possums use the eucalyptus leaves from nearby trees to establish the nest,” Mr. Hams said. “We provide the structure, they provide the interior design.”

Scientists tried to explain what they were seeing.

Conrad Hoskin, a gecko expert from James Cook University in Australia, noted that the two animals would have no interest in eating each other: Possums eat nectar and insects, and geckos eat insects and spiders. But the gecko may be getting something from its nestmates.

“The gecko will get some benefit from being in the warmth of those little mammals,” he said. “I suspect the presence of the gecko is neutral to the possum — a soft and harmless creature amongst them.”

Euan Ritchie, a professor in wildlife ecology and conservation at Deakin University in Melbourne, said that “the pygmy possum has made a nest out of all these leaves and twigs, which is exactly the sort of habitat that reptiles like.”

He added: “They like structural complexity. It’s a great place for a gecko to hang out.”

Not all inhabitants of Monjebup’s nest boxes have been quite so cute. Back in 2019, dozens of social huntsman spiders took over one of the boxes. Even today, an estimated 5 percent of the 103 boxes on the reserve are the domain of spider colonies. Pygmy possums would be unlikely to share their box with the spiders; in 2019, a huntsman, which can be six inches from leg to leg, reportedly ate a pygmy possum in Tasmania.

But with or without geckos and spiders, these nest boxes help protect pygmy possums.



“Tree hollows have been massively depleted around Australia because of logging, and pygmy possum habitat has become extremely fragmented,” Dr. Ritchie said. “Even if we stop cutting down trees now, it’s 100 years, and in some cases 150 years, before these hollows form, depending on the tree and the habitat.”

Bush Heritage Australia has been revegetating Monjebup, which had been farmland, for nearly a decade — nowhere near enough time for tree hollows to form. In the absence of natural shelter, pygmy possums now inhabit around two-thirds of the nest boxes at the reserve. This may even explain why the gecko decided to live with the pygmy possum family.

“Because this vegetation is so young and undeveloped — it’s only nine or 10 years old — there are no habitats like natural hollows or crevices, so these nest boxes are prime habitat,” said Angela Sanders, wildlife ecologist with Bush Heritage Australia. “Animals that wouldn’t normally cohabit are actually forced together because there is so little habitat.”

It is, of course, possible that cohabitations such as this one may be less unusual than unobserved. “With the advent of modern technology, we’re picking up more on these really interesting natural history observations that may have been happening for a long time,” Dr. Ritchie said.

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## **Jeff Gordon Pepsi Max Commercial ‘Test 2’**



<https://youtu.be/tRLvMUYcap8>

*Treatment for foot-in-mouth disease.*

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## Richard Wagner's *Rienzi*



The German dramatic composer's operas and music had a revolutionary influence on the course of Western music, either by extension of his discoveries or reaction against them. Among his major works are *The Flying Dutchman* (1843), *Tannhäuser* (1845), *Lohengrin* (1850), *Tristan und Isolde* (1865), *Parsifal* (1882), and his great tetralogy, *The Ring of the Nibelung* (1869–76).

Perhaps as a result of its unwieldy dimensions, *Rienzi* is rarely performed as a full opera. Yet, its powerfully dramatic Overture lives on in the concert hall. The Overture

begins with a single, mystical trumpet call which foreshadows the battle calls of Act 3. Gradually, the other instrumental voices seem to awaken from a dream. Suddenly, the music finds a way forward with a noble theme which returns in Act V as Rienzi's prayer, Allmächt'ger Vater ("Almighty Father"). The Overture concludes with a rousing military march from Act III. At moments, the influence of Carl Maria von Weber (1786-1826) is evident. Ultimately, the Rienzi Overture is a thrilling orchestral tour de force.

Rienzi Overture <https://youtu.be/URiwWtwN6qA?t=2>

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## **This'll Keep Them Redcoats from Coming Back...I Betcha.**



[https://www.youtube.com/watch?v=PYAe00t73\\_g](https://www.youtube.com/watch?v=PYAe00t73_g)

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Thag Anderson becomes the first fatality as a result of falling asleep at the wheel.

*Groan*

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## **Fire-Ravaged Notre Dame Cathedral to Reopen in 2024**



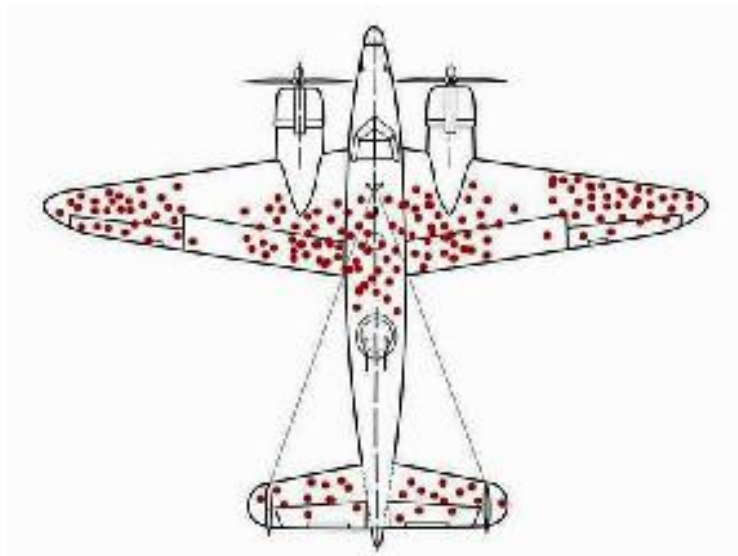
French culture minister Rima Abdul-Malak announced this week that Notre-Dame cathedral, which is undergoing a vast, €846 million (\$865 million) reconstruction after being ravaged by a massive fire in April 2019, should reopen in 2024 to coincide with

the Olympic Games in Paris—timing that is sure to bring the eyes of the world to the city of lights.

[https://news.artnet.com/art-world/notre-dame-reopening-2024-2153958?utm\\_source=join1440&utm\\_medium=email&utm\\_placement=newsletter](https://news.artnet.com/art-world/notre-dame-reopening-2024-2153958?utm_source=join1440&utm_medium=email&utm_placement=newsletter)

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### **Learning from What isn't There.**



During World War II, fighter planes would come back from battle with bullet holes. The Allies initially sought to strengthen the most commonly damaged parts of the planes to increase combat survivability.

A mathematician, Abraham Wald, pointed out that perhaps the reason certain areas of the planes weren't covered in bullet holes was that planes that were shot in certain critical areas did not return. This insight led to the armor being re-enforced on the parts of returning planes where there were no bullet holes.

This wisdom was also beneficially applied to the Skyraider during the Korean War. This shows that the reasons why we are missing certain data may be more meaningful than the available data, itself. In questions of aircraft design, don't only listen to what the evidence says, listen also to what is not being said.

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### **Life and Death of Buckminster Fuller's "Car of the Future"**



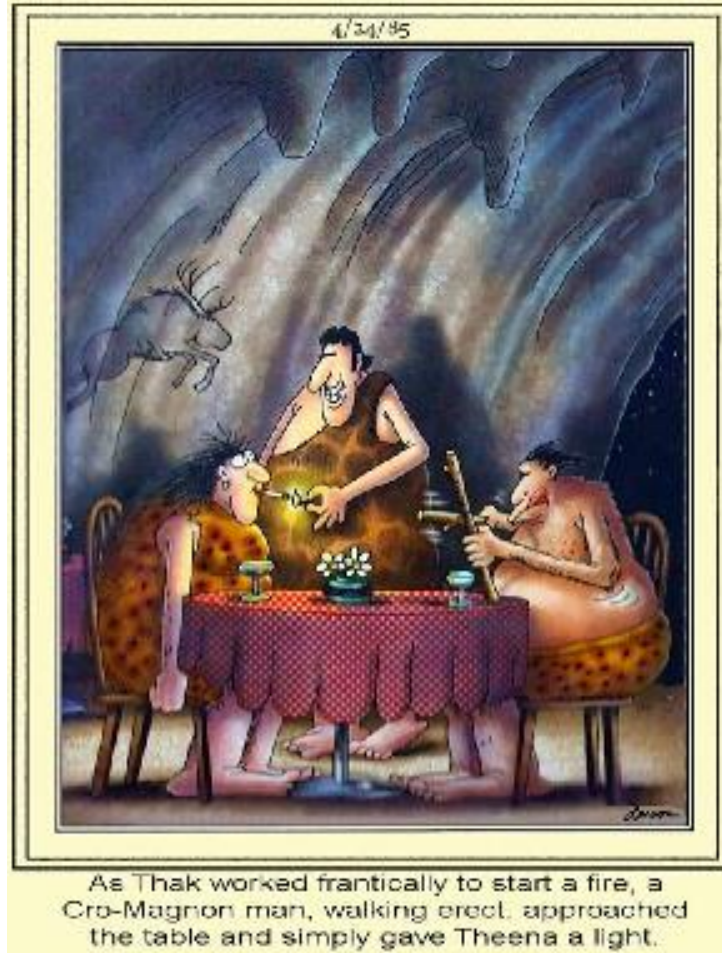
*Dymaxion Car under construction in Bridgeport, Connecticut (1933). Fuller is kneeling to examine the engine compartment at the far left.*

*Courtesy of the Estate of R. Buckminster Fuller.*

On July 21, 1933, the architectural designer and inventor Buckminster Fuller unveiled the first prototype of his iconic Dymaxion Car. It was a streamlined, futuristic vehicle with three wheels, a periscope, and an ovoid body that reminded observers of a tadpole or a flying fish. Fuller—who became famous years later as the visionary behind the geodesic dome—hoped that it would revolutionize both transportation and urban design, but only three were ever made.

[https://slate.com/technology/2022/08/the-dymaxion-car-the-true-history-of-buckminster-fullers-failed-automobile.html?utm\\_source=join1440&utm\\_medium=email&utm\\_placement=newsletter](https://slate.com/technology/2022/08/the-dymaxion-car-the-true-history-of-buckminster-fullers-failed-automobile.html?utm_source=join1440&utm_medium=email&utm_placement=newsletter)

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## The Aurora Restoration Project

Saving A Massive Historic Ship



Christopher Willson found the Aurora nearly abandoned on the California Delta in 2008. After some investigation I found that she is one of the most historic liners still in

existence today. Understanding the significance of her rich history he decided to go all in to save and preserve this ship for future generations.

[https://youtu.be/rkG\\_dZ\\_YT0I?t=4](https://youtu.be/rkG_dZ_YT0I?t=4)

An interesting work-in-progress.

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## **The Lone Ranger...Herbed Up**



<https://1funny.com/the-lone-ranger-story/>

What the hey...I'd believe him

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## **Homecomings**





<https://1funny.com/most-emotional-soldiers-coming-home-compilation/>

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**See JWST's incredible reach into the universe (video)**



[https://www.space.com/james-webb-space-telescope-zoom-video-cartwheel-galaxy?utm\\_campaign=58E4DE65-C57F-4CD3-9A5A-609994E2C5A9](https://www.space.com/james-webb-space-telescope-zoom-video-cartwheel-galaxy?utm_campaign=58E4DE65-C57F-4CD3-9A5A-609994E2C5A9)

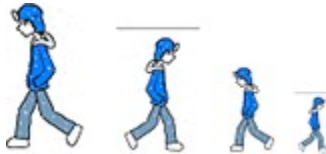
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When you get super drunk and end up with the wrong group.



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## My Walking Thoughts



## For Sunday August 21 2022

### Please do something to tame my confusion

I was on the road much of this week leaving little time for walking thoughts, so bear with me as I try and arrange a bunch of bits and pieces into something that makes sense.

My incentive was a pair of very distinctive billboards eastbound on Highway 94 between San Diego and La Mesa advertising in bold colors, **CANNABIS.**

"Huh," I thought, fielding an unaccustomed jolt to my 'rural' sensibilities, "didn't our keepers used to toss potheads into the pokey for rolling a joint?"

I was of two minds about such societal matters at that moment; pleased that law enforcement agents were now free to deal with murder, rape, robbery, and other crimes involving victims rather than mandating what ordinary folk could do on their own time, on the other hand believing there may be genuine physical and emotional health

consequences in its use...ditto alcohol for that matter but that's a subject for another day.

'Maybe things had changed in the consequence arena,' I opined, so it was time to see what if there were any unambiguous research studies available to me via DuckDuckGo.

Lots of studies out there but nothing close to unambiguous other than the normal research mantra... 'we need more money to do more study.'

That said, there seemed to be some unanimity in two arenas of concern: (1) cardio and pulmonary impacts appeared to be consistent with those from smoking cigarettes at a similar rate, and (2) there was evidence of cognitive impairment for those who usage begins at a young age, before the brain is fully formed. How much damage seems to be a function of how young and how much.

How about adults? Here the picture grows fuzzier, perhaps for lack of valid comparator information, perhaps because many of the studies are conducted by researchers within the academic community, maybe injecting a whiff of, 'well I enjoy a hit now and then and look how smart I am' bias into the scholarship.

The assumption that those who came late to the party and are occasional users are no more at risk than non-users breathing the air in the neighborhood of any institution of higher learning, may be correct. What do I know or even care?

But...and this is something in which I have a sliver of knowledge and concern... three friends my age have seen their bright—even overachieving sons—turned into degraded ciphers through the overuse of marijuana and perhaps other drugs. Sad as the condition is, heartbreaking as the situation is to the parents and friends, the worst part is that the young men knew even at the time that damage had been and was being done. Is it irreparable? I don't know. Perhaps going fogbound through life has its rewards. I don't think so, but there again I don't know.

Underlying the message to those signboards is the realization that government decisions are all too often rooted in the quest for money and power (that I do understand), however, with all those gigadollars finding their way into the governmental trough, I wish one small beneficial outcome would be deep, unambiguous study on the impacts of Cannabis relative to physical, mental, and emotional health.

What are your thoughts on the subject...as wide ranging as you wish? Are you concerned? Do you care? Do you care to know the truth?