**American Honey Still Contains Radioactive Fallout From Nuclear Tests Decades Ago**

Traces of radioactive fallout from nuclear tests in the 1950s and 1960s can still be found in American honey, new research reveals. The radioactive isotope identified, cesium-137, falls below levels considered to be harmful – but the amounts measured nonetheless emphasize the lingering persistence of environmental contaminants in the nuclear age, even a half-century after international bomb tests ended.

"There was a period in which we tested hundreds of nuclear weapons in the atmosphere," lead researcher Jim Kaste, an environmental geochemist at William & Mary university in Williamsburg, Virginia, [explained last year](https://www.wm.edu/news/stories/2020/a-radioactive-isotope-is-showing-up-in-honey.php) in comments about the research.

"What that did was put a blanket of these isotopes into the environment during a very narrow time window."

One of those isotopes was cesium-137, a byproduct of nuclear fission involving the reaction of uranium and plutonium, which can often be found in [trace amounts in food sources](https://www.sciencealert.com/radioactive-traces-fukushima-detected-californian-wine-caesium-137-napa) due to such nuclear contamination of the environment.

Some of these traces are much fainter than others, Kaste found out – but only by chance, as it happened, after assigning his students a Spring Break assignment in 2017.

To demonstrate to his class how radioactive contaminants from mid-20th century nuclear testing still persisted in the environment today, Kaste asked his students to bring back locally sourced foods from wherever they spent the holidays.

As expected, various samples of fruits, nuts, and other foods revealed very faint traces of cesium-137 when measured with a gamma detector, but even Kaste wasn't prepared for what happened when he ran the same test with a jar of honey from a North Carolina farmer's market.

"I measured it again because I thought something happened to the container or my detector was bonkers," [Kaste says](https://www.wm.edu/news/stories/2021/cold-war-legacy-a-spring-break-assignment-evolves-into-investigation-of-cesium-137-in-u.s.-honey.php).

"I reproduced the measurement. And it was, again, 100 times hotter than any of these other foods."

To find out why honey registered such high levels of cesium-137, Kaste and his team (including one of his students, Paul Volante) began testing samples of locally made raw, pure, and unfiltered honey from markets and beekeepers located across the eastern US.

Of the 122 honey samples tested, 68 showed detectable traces of the radioactive isotope – a legacy of atmospheric nuclear tests conducted by the US, the USSR, and other nations during the Cold War era.

The majority of detonations occurred above the Marshall Islands in the Pacific Ocean and Novaya Zemlya, an Arctic archipelago in northern Russia, with other tests being conducted in New Mexico and Nevada.

According to the researchers, the cumulative effect of over 500 of these test detonations released more ionizing radiation to the atmosphere than any other event in human history – not that all the blasts were equal in scope.

"We know that the cesium-137 production from the Pacific and Russian sites was more than 400 times the production of the New Mexico and Nevada explosions," [Kaste says](https://www.wm.edu/news/stories/2021/cold-war-legacy-a-spring-break-assignment-evolves-into-investigation-of-cesium-137-in-u.s.-honey.php).

"A single Russian bomb, the Tsar Bomb, was more than 50 times more powerful than all the Nevada and New Mexico tests combined."

While there's no way of knowing which of these explosions produced the fallout that can still be found in American foods today, we can at least explain how the isotope could disperse so far and wide.

"Many of the air detonations were so powerful that dozens of radioactive fission products were injected into the stratosphere and distributed globally with a residence time of [approximately] one year before deposition primarily by rainfall," Kaste and fellow researchers explain in a [new study](https://www.nature.com/articles/s41467-021-22081-8).

"The presence of radioactive pollution from nuclear testing is globally ubiquitous, and detectable on every continent and even in deep ocean trenches."

**Not just rainfall**

While the pollution may be globally ubiquitous, honey's high levels of cesium-137 compared to other food sources show that the fallout appears to concentrate in unexpected ways – but we can now explain that mystery too.

Rainfall might be the predominant force taking cesium-137 out of the atmosphere and depositing in on Earth's surface, but the honey samples registering the highest amounts of the radioactive isotope weren't produced in regions of the US that receive the most precipitation.

Rather, the honeys with the highest levels turned out to come from places in the US where the soil has low levels of potassium, which plants absorb as a nutrient source to fuel a range of metabolic processes.

Potassium and cesium share a number of atomic similarities, and when plants in potassium-poor soil can't get ahold of sufficient levels of their preferred nutrient, they'll absorb cesium instead – even if it's of the unstable, radioactive variety.

As a result, the isotope finds its way into plant nectar, which then gets passed to bees, who in turn magnify the concentration of cesium-137 when they make honey. Which then makes its way into your home.

The phenomenon has been [previously observed](https://www.sciencedirect.com/science/article/pii/0265931X88900811) in the wake of events such as the [Chernobyl](https://www.sciencealert.com/chernobyl) disaster, but such is the enduring half-life of radioactive particles, it can still be observed even several decades later, and in places located thousands of kilometers away from the site of the original nuclear tests in question.

If there's a silver lining to this unsettling discovery, it's that none of the cesium-137 levels detected in honey today are considered to be harmful to humans, falling below the 50-100 [becquerels](https://en.wikipedia.org/wiki/Becquerel) per kilogram threshold of radioactivity.

However, decades ago, the same toxic fallout would have been fresher, and potentially more hazardous to human health, not to mention other organisms too.

"What we see today is a small fraction of the radiation that was present during the 1960s and 1970s," [Kaste says](https://www.wm.edu/news/stories/2021/cold-war-legacy-a-spring-break-assignment-evolves-into-investigation-of-cesium-137-in-u.s.-honey.php).

"And we can't say for sure if cesium-137 has anything to do with bee colony collapse or the decline of population."

In recent years, the ongoing [disappearance of bees](https://www.sciencealert.com/the-world-s-pollinators-are-dying-out-and-all-our-favourite-foods-could-go-with-them) and other insect pollinators has sparked [much concern in scientific circles](https://www.sciencealert.com/half-a-million-insect-species-face-extinction-and-we-re-doing-nothing-about-it), and while Cold War nuclear tests aren't often considered a primary driver of the problem, we can't afford to ignore that they too could be a contributor.

"Given that pollinating insects provide vital services to the world's ecosystem and are essential in maintaining global food security, more research is needed to help us better understand how ionizing pollution threatens their health and survival," [the researchers write](https://www.nature.com/articles/s41467-021-22081-8).

The findings are reported in [*Nature Communications*](https://doi.org/10.1038/s41467-021-22081-8).

**The New American Civil War**

The president and the vice president are who they are now because six Republican-controlled states forwarded questionable electoral votes, and Vice President Mike Pence missed a historic opportunity to challenge those votes. The current president and vice president seem trapped in foggy and abstract ideological slogans rather than providing executive leadership. Vague generalities and virtue signaling aren’t replacements for executive leadership.

**And who are the true executive leaders of the two Americas? Florida and Texas on one side, California and New York on the other side.**Their governors essentially dominate the bully pulpit formerly occupied by a sitting president. Many of the rest of the American states have aligned with one side or the other.

The American political conversation has become a modern Dr. Seuss’s “Sneetches With Stars” on steroids as **Americans are now beginning to group, assemble, and march separately according to our ideologies.** Both sides have equal ownership of this behavior - neither side should be excused or let off the hook on this matter.

**Two Americas/Two Systems**

**A part of this blue/red separation is the manifest “**[**Digital Apartheid**](https://www.theepochtimes.com/a-digital-apartheid-is-upon-us_3689300.html)**” that is being applied by the**[**blue side to the red side**](https://www.theepochtimes.com/kevin-sorbo-on-facebook-ban-conservatism-in-hollywood-keep-fighting-the-good-fight_3713603.html)**to create two social media systems.** This Digital Apartheid is pervasive and driven by the new, vicious, lockstep, “social justice” mantra that has taken over the automatons who lead U.S. social media.

We are experiencing an unprecedented shakedown by groups such as Black Lives Matter ([BLM](https://nypost.com/2021/04/14/blm-leader-defends-buying-1-4m-los-angeles-home/)) and Antifa who broadcast through their relentless bullhorn of social media and old media.

**There are now two business systems in America - blue and red. Many of the businesses that lead major market sectors have now revealed themselves to be de-facto thought police to enforce Social Justice.**

MyPillow CEO [Mike Lindell](https://www.theepochtimes.com/mike-lindell-costco-has-stopped-selling-mypillow-products_3774225.html) is the poster child of this, as he has been targeted for elimination by the self-appointed high priests of “wokism.”

We’re also finding out there are [two financial systems](https://www.theepochtimes.com/corporate-socialism-on-the-rise-in-us-scholar-says_3769170.html) in America, as those with capital now act as the gatekeepers of who receives capital and who is excluded. Bank of America has become “Bank of who I decide to allow access to the capital system.” That’s [a far cry from the intent of their founder who wanted to make sure all had access](https://www.occ.treas.gov/about/who-we-are/history/1866-1913/1866-1913-bank-of-america.html). The modern bank staff has now become an appendage of the virtue-signaling synchronized chorus.

**There are now**[**two media systems**](https://www.theepochtimes.com/hollywoods-leftist-political-agenda-can-destroy-creative-spirit-filmmakers_3754323.html)**in America.**The Hollywood award shows are now a Roman circus of self-loathing, lecturing, and virtue signaling. Few are watching these award shows, in fact, few are watching legacy media as ratings collapse.

It’s curious from an agnostic business perspective how CNN even survives at this point in time. Somehow, the citizen’s pocketbook is being fleeced by corporations and advertisers who recycle ad revenue through “woke” media to keep them alive when it’s patently obvious the viewership has imploded—but that’s the beauty of the new era of crony capitalism (which is a transition phase to socialism).

**The citizens of our nation have consciously or unconsciously chosen sides.**If you’re angry at yourself for not being woke enough and have righteous virtue-signal signs in your yard lauding BLM, you’re likely on the blue side. If the drivel of virtue signaling makes no sense to you, you’re probably on the red side.

**US Population Relocates**

**The biggest manifestation of this rapid reset of America into blue and red camps is the incredible internal movement of Americans.**

[Americans are moving to Texas from California](https://kinder.rice.edu/urbanedge/2021/03/03/californians-moving-to-texas-covid-migration) in significant numbers. California has seen its [first decline in population since 1900](https://www.bizjournals.com/dallas/news/2020/12/28/texas-population-gains-census.html). [**Americans are on the move, and it’s mostly from blue to red,**](https://www.bankrate.com/real-estate/states-growing-most-during-pandemic/)**with Texas and Florida receiving the refugees from New York and California.** My dreams of a large, inexpensive home in Florida have evaporated with the rise in home prices in my target localities.

I would suggest the numbers are even greater than what is being reported. This type of socio-economic data traditionally lags in reporting due to the time it takes to collect, aggregate, sort, and analyze. I would say there is easily six months to a year of lag in this reporting.

Last year, I found it difficult to find data on the population flows. Yet, at the same time, anecdotal data pointed to a strong movement not yet reflected. I was in New York in July 2020 and was shocked by the abandoned streets, yet little data pointed to movement at that time.

The data is starting to hit now. Among blue locales, Washington state is still showing population gains—I would suggest they’ve hit their apogee and will start down the backside of an arc as Seattle expands its footprint of boarded-up stores and restaurants, and major companies leave, as well as population.

We’re seeing the beginnings of the “[Detroit Syndrome](https://www.project-syndicate.org/commentary/lessons-from-detroit-for-emerging-economies-by-sanjeev-sanyal?barrier=accesspaylog)” on scale in blue states as Americans [vote with their feet](https://www.bankrate.com/real-estate/states-growing-most-during-pandemic/). The common refrain from conservatives is “I’m concerned this will flip Texas and Florida!” I, however, prefer to look at this from an optimistic perspective as an opportunity.

**Where Are We Headed?**

Despite the attempts of the current administration to transform American society with uncontrolled borders, **I see unanticipated consequences of the Blue strategy that will work in the red state’s favor.** Big Government’s plans always go awry and deliver unintended consequences.

Trend lines are bad for blue—the elites can socially engineer all they want—their **blue states are collapsing because of the brilliant plans of the leaders of the four corners of deceit in modern America: Big Tech, Big Finance, Big Government, and Big Academia.**

By fortifying Washington, D.C.—in a way that is eerily reminiscent of the American Civil War—House Speaker Nancy Pelosi (D-Calif.) has rendered fortified our capital of diminishing relevance. Austin, Tallahassee, and most importantly, Mar-A-Lago, are now the centers of gravity for America.

Big Tech can manipulate search results all they want, they are now living in their self-made [Ministry of Truth](https://thehill.com/opinion/civil-rights/534502-aocs-ministry-of-truth) and will go the way of MySpace and the Sears catalog as innovators such as  Lindell and others establish alternatives.

**The real game, the one that I haven’t mentioned yet, is the fast-approaching showdown with China.**Red states, in many ways, control the world’s food and energy supplies—both of which China is desperate for. The third leg of strategic essentials for national success is access to the world’s capital markets, and financial firms are beginning to exfiltrate to red areas from New York.

China is estranged from access to capital, which is the lifeblood of the Chinese Communist Party (CCP). Hopefully, the evolving United States is able to deter open conflict with an increasingly isolated CCP, but if kinetic conflict begins, likely nothing will be off the table for the CCP, and the blue states are still highly concentrated with their diminishing populations, which make them very vulnerable to additional biological, and God forbid, nuclear strikes from the CCP.

***Bottom line, let blue wallow in their destructive and nihilistic French Revolution bloodbath of trying to out virtue signal each other. They’ll never be happy, never satisfied, and seem to be removing themselves from the gene pool on their own accords. The rest of us can focus on defeating the CCP.***

**Global Cooling Collateral Damage**

Earlier this month, French farmers fought mother nature in their attempt to prevent frost from wiping out their crops. It appears their attempts have failed as the damage is extensive and could wipe out nearly a third of French wine output for the year.

In early April, French farmers scrambled to light-controlled fires across their vineyards to stave off frost. Euronews document these efforts in a series of stunning photographs.

A farmer burns a bale of straw in his vineyard to protect grapevines from frost. This picture was taken on April 7 at the heart of the Vouvray vineyard in Touraine, France

**Royal Bank of Canada**

# What will it look like when a national bank takes a holiday?

# Temporary issues when accessing some RBC Online services

Due to technical issues, you may experience some problems when accessing RBC Online and Mobile Banking, and Direct Investing..

We are working to fix the issue as soon as possible. We apologize for any inconvenience and thank you for your patience.

The Royal Bank of Canada is working to fix its online banking and web brokerage platforms after users complained of sporadic service.

"Some clients are experiencing delays when attempting to log on to our Online Banking and RBC Direct Investing platforms due to heavy trading volumes," said RBC spokesman AJ Goodman in an email.

"We regret any inconvenience this may cause clients and appreciate their patience as we diligently work to resolve them," he said, adding the bank is asking clients continue to try to log in to their accounts because the issues are intermittent.

The company's verified customer support Twitter account has been responding to customer complaints since early Wednesday morning. Twitter users have complained about trouble using the wallet application, logging into online banking and accessing RBC Direct Investing.

### WEIGH IN

RESULTS

The website CanadianOutages.com showed a jump in reports about problems with RBC Wednesday morning, reaching more than 400 complaints recently.

The Wolf, a Twitter user with the handle @ofBayStreet based in Toronto, said in a direct message they were unable to access their RBC Direct Investing account where their investments are held initially. After multiple attempts, the log in worked, but they couldn't modify orders for stocks.

The person estimates they lost out on about $400-$600 in potential gains.

RBC's issues come a day after [**TD's WebBroker website experienced a system issue**](https://www.bnn.ca/td-webbroker-faces-outage-as-customers-tweet-complaints-1.957161) that affected some clients' ability to log into or use the site.

A spokesman for TD said the bank planned to make capacity upgrades to WebBroker Tuesday night to help solve intermittent delays some clients experienced.

**Moonshine**

What if we found a clean, abundant resource that could provide the lion's share of the world's energy needs? How far would we be willing to go to get it?

[Gerald Kulcinski](http://www.engr.wisc.edu/ep/faculty/kulcinski_gerald.html), a nuclear engineer and director of the Fusion Technology Institute at the University of Wisconsin–Madison, has been researching the possibility of mining the moon's helium 3 for decades. He is, along with *Apollo 17* astronaut Harrison Schmitt, one of the concept's most prominent advocates. Schmitt wrote an article for [*Popular Mechanics* in 2004](http://www.popularmechanics.com/science/space/1283056.html?page=1) that describes a harvesting operation built on the Moon to supply reactors on Earth.

The lunar surface, Kulcinski says, should indeed be loaded with the isotope, which is in the solar wind, the stream of charged particles from the sun. It is scarce on Earth because the planet's atmosphere and magnetic field largely deflect the brunt of the solar wind, but the moon is far less protected. It’s collected in frozen pools mostly in the south pole region called Schrödinger’s Basin for billions of years. The Moon is the only body that's close to the sun that has neither an atmosphere nor a magnetic field.

Between the Indian lunar mission called Chandrayaan in 2008 and NASA’s LCROSS mission in 2009, we confirmed a 10 thousand year supply of helium 3 compared to the puny amounts available on Earth. Kulcinski estimates that there are more than a million metric tons of helium 3 embedded in the outermost layer of the moon's crust.

What is more, it could prove very valuable as a nuclear fuel—just 40 metric tons would power the U.S. for an entire year if the fusion process could be perfected, Kulcinski says. Perhaps more important, the isotope itself is not radioactive, and the products of its fusion would be much cleaner than the nuclear waste generated by today's fission plants.

But the holy grail of such clean energy research, fusing helium 3 atoms together to produce ordinary helium 4 and energetic protons, is no easy task. "Nature being as it is," Kulcinski says, "it made that reaction very difficult." The Wisconsin campus has a small-scale reactor that consumes helium 3, but Kulcinski notes it is a long way from breaking even on the energetic balance sheet—that is, the reactor consumes far more energy than it produces.

The disparity is enough to lead [some skeptics](https://www.scientificamerican.com/podcast/episode.cfm?id=E06922B1-BDEB-A748-83A39C51D1F1B2B5) to swear off the proposal entirely. In [a 2007 article for *Physics World*](http://physicsworld.com/cws/article/indepth/30679)*,*theoretical physicist [Frank Close of the University of Oxford](http://www-thphys.physics.ox.ac.uk/people/FrankClose/) dismissed the "clean" fusion of helium 3 with helium 3 as slow and requiring prohibitively high temperatures. On top of that, he said, estimates of the moon's reserves of the isotope are purely hypothetical. "The lunar helium 3 story," Close wrote, "is, to my mind, moonshine."

However, all estimates and attempts have been made here on Earth, with gravity and air to deal with. A small reactor in micro-gravity and in a near vacuum of space, would not require the resources to build a containment for the high activation energy. Once the fusion begins, it will provide enough energy to perpetuate the reaction as long as the compression and fuel supply are maintained.

**Libertarians**

On the day that Joe Biden was inaugurated as president, former CIA chief John Brennan announced on television that federal intelligence agencies ***"are***[***moving in laser-like fashion***](https://twitter.com/tomselliott/status/1352007118392582148)***to try to uncover as much as they can about"*** various suspect groups, **specifically mentioning libertarians**.

Libertarians are in the federal crosshairs. Six or seven years ago, there was a lot of prattle about how "the libertarian moment has arrived." I always knew that was hokum. Since then, **there has been a huge increase in hostility to libertarians in Washington DC and elsewhere around the country**.



Many libertarians assume they have nothing to fear because they are not engaged in seeking to violently overthrow the government. But the feds will be able to find many other pretexts to target peaceful citizens with supposedly subversive ideas. **Federal law already defines "domestic terrorism" far more broadly than most people realize.** As the *Oregonian*recently [noted](https://www.oregonlive.com/crime/2021/01/feds-in-oregon-filed-most-alleged-domestic-terrorism-prosecutions-in-us-mostly-related-to-protests.html), "Cases categorized as domestic terrorism include allegations of…knowingly entering or remaining in any restricted [government] building or grounds…civil disorders and making threatening communications." FBI chief Christopher Wray told a Senate Committee that the FBI has 2,000 ongoing domestic terrorism investigations. Wray recognizes the terrorist peril as the ticket to a [bigger budget](https://www.usatoday.com/story/news/politics/2021/03/02/fbi-director-christopher-wray-face-questions-deadly-capitol-riot/6868467002/): "We need more agents; we need more analysts."

The Biden administration is itching for a broad new domestic terrorism law to enable even more crackdowns. Libertarians need to recognize how that definition of terrorism has already mushroomed. Capitol Police acting chief Yogananda Pittman, testifying to Congress, [described](http://www.newsweek.com/capitol-police-chief-calls-january-6-riot-terrorist-attack-1564594) the January 6 clash at the Capitol as "a terrorist attack by tens of thousands of insurrectionists." **Apparently, anyone who tromped from Trump’s raging speech to the Capitol that day was a terrorist, or at least an "insurrectionist" (“terrorist” spelled with more letters?).**

After the clash at the Capitol on January 6, **the de facto definition of terrorism seems to be "anything that frightens politicians."** Will we find out too late that the new de facto definition of "domestic terrorist" is "individuals who distrust the feds and own two guns and more than 100 bullets"?

Another codeword for who the feds will target is "extremists." *The Washington Post* in January [portrayed](https://www.washingtonpost.com/national-security/capitol-attack-domestic-extremists/2021/01/23/1bc981c0-59b5-11eb-a976-bad6431e03e2_story.html) "domestic extremists" as "a disease that seems to have taken hold in the nation’s nervous system." Last fall, FBI boss Wray [told Congress](https://www.usatoday.com/story/news/politics/2021/03/02/fbi-director-christopher-wray-face-questions-deadly-capitol-riot/6868467002/) that among the "underlying drivers for domestic violent extremism" are "perceptions of government or law enforcement overreach." **Libertarians are practically defined by their perception of government as *overreaching*.** After the January 6 clash, Wray portrayed more busts as proof of FBI triumphs: "The more of the arrests that you see, well, that’s obviously good news for everybody that we’re arresting people who need to be arrested."

In the coming years, the feds may treat libertarians like Muslims were treated after 9/11. Any new crackdown on terrorism will turn into a numbers game in which justice and fair play don’t have a snowball’s chance in hell. Between 2001 and 2006, federal prosecutors [charged 10 times](https://jimbovard.com/blog/2006/07/21/boston-globe-the-terrorist-batting-average/) as many people in terrorism investigations as they convicted on terrorism-related charges. President Bush [declared](https://www.washingtonpost.com/archive/politics/2005/06/12/us-campaign-produces-few-convictions-on-terrorism-charges/28d9a061-8f0b-4604-b418-9d4a2f2dfe74/) in 2005 that **"federal terrorism investigations have resulted in charges against more than 400 suspects, and more than half of those charged have been convicted."** **But only**[**39 people**](https://www.washingtonpost.com/archive/politics/2005/06/12/us-campaign-produces-few-convictions-on-terrorism-charges/28d9a061-8f0b-4604-b418-9d4a2f2dfe74/)**were convicted on crimes tied to terrorism or national security**, a *Washington Post*analysis found.

Entrapment opened the floodgates to federal terrorism indictments. Trevor Aaronson, author of*The Terror Factory: Inside the FBI’s Manufactured War on Terrorism*, estimated that only about 1 percent of the [500 people](https://www.salon.com/2013/07/10/only_1_percent_of_terrorists_caught_by_fbi_are_real_partner/) charged with international terrorism offenses in the decade after 9/11 were bona fide threats. Thirty times as many were induced by the FBI to behave in ways that prompted their arrest. In 2006, the FBI fabricated a terror scheme by the Liberty City Seven, where an informant encouraged a bunch of dimwits in Florida to [babble about](https://www.motherjones.com/politics/2011/07/fbi-terrorist-informants/) blowing up government buildings. That group was so knuckle-headed that [they asked the FBI](https://www.csmonitor.com/2007/1214/p99s01-woam.html) informant for military uniforms and wanted to conduct a parade.

Few Americans recognize how badly the legal playing field is tilted against them. When FBI agents knock on their doors, many Americans won’t hesitate to open up because they assume "those who have nothing to hide have nothing to fear." **But the FBI is exploiting a sweeping law that criminalizes casual comments.**Federal agents have the right to lie to you and to put you in prison if you lie to them. Any citizen who makes even a single-word ("no" or "yes") false utterance to a federal agent faces up to five years in prison and a $250,000 fine.

**It gets worse. You don’t have to actually lie.**FBI agents can fabricate the sentences they use to hang you. Unlike most law enforcement agencies, the FBI rarely videotapes interviews, thereby permitting agents to create the narrative or "facts" which then can be used to charge individuals with false statements. **Instead of a transcript, an FBI agent writes up a memo a day or two later asserting what you said.** FBI agents have been [taught](https://www.washingtonpost.com/archive/politics/1997/08/21/law-enforcement-ethics-a-new-code-for-agents/e7101354-da36-4f61-aaa7-019432c2ef38/?utm_term=.40c49b296667) that subjects of FBI investigations "have forfeited their right to the truth," which helps explain the vast increase in federal entrapment operations.

If the FBI shows up at your door, they might have already accessed every email and text message you sent in recent years. They may have vacuumed all your social media activity—those private Facebook messages you sent—HA! They may have also accessed all your credit card and other financial data. And the FBI may have already interrogated other people to squeeze out accusations against you that they can throw in your face. Then they launch into a game of 20 questions—with a federal indictment awaiting if they claim you answered untruthfully.

Politicians in Washington don’t see such abuses as a problem; instead, they are a grand opportunity to smite people who don’t kowtow. It wasn’t that long ago—in the final 15 years of J. Edgar Hoover’s reign—that the FBI became America’s thought police. The FBI’s COINTELPRO program conducted thousands of covert operations to incite street warfare between violent groups, to get people fired, to portray innocent people as government informants, to destroy marriages with poison pen letters, and to cripple or destroy leftist, black, white racist, and anti-war organizations. A 1976 Senate report warned, "The American people need to be assured that never again will a federal agency be permitted to [conduct a secret war](https://fee.org/articles/federal-surveillance-the-threat-to-americans-security/) against those citizens it considers threats to the established order." But legal and administrative restrictions on the FBI **evaporated in the post 9/11 panic**, resulting in [pervasive abuses of Americans’ rights](https://www.aclu.org/press-releases/aclu-report-documents-fbi-abuse-911).

The FBI now operates with near-total impunity. The same is true of many state and local police departments who may be hungering for new federal subsidies to crackdown on the extremist peril.

How might this play out in the daily lives of people guilty of entertaining libertarian ideas? **Consider Duncan Lemp, a 21-year-old Maryland man who was**[**shot to death**](https://www.usatoday.com/story/opinion/policing/2021/02/02/police-killing-shows-dangers-swat-no-knock-raids-column/4296067001/)**in a predawn raid in March 2021 after police smashed in his bedroom window and tossed flash bang grenades into his bedroom.** Lemp was active on Twitter and liked several tweets by Libertarian presidential candidate John McAfee. Lemp’s last tweet declared, "The Constitution is dead." Two months later, so was Lemp.

The Montgomery County, Maryland government later admitted that Lemp was targeted in part because [was "anti-government" and "anti-police"](https://mises.org/wire/one-year-later-police-still-wont-come-clean-duncan-lemps-death). Plus, **Lemp was outspoken about his support of the Second Amendment and posted photos of himself with guns on Instagram**. Police saw one such photo and concluded that Lemp possessed a semi-automatic rifle that was illegal to own in Maryland. **After they killed him and searched the Lemp home,** **they realized they had mis-identified the firearm—it was legal**. But police, prosecutors, and local politicians treated that like a harmless paperwork error: nobody cared about the wrongful killing of Duncan Lemp.

The police case against Lemp also came from accusations from one or more confidential informants. Lemp trusted people who betrayed him to the police, allegedly with false accusations according to Lemp family lawyer, Rene Sandler. A month after Lemp was killed, activists held a protest at Montgomery County Police headquarters. I attended that event as a journalist (the ol’ press pass flopping around my neck) and was chagrined to see how the event went down. Guys in Hawaii-style "Boogaloo" shirts were using bullhorns to scream profanities at cops and were pointlessly blocking a road. One of the most prominent organizers told attendees to bring firearms to the event, despite Maryland law prohibiting firearms at protests. He told people on Facebook to show up with their guns anyhow and just walk around, pretending not to be part of the demonstration. That guy was full of bluster but never showed up for the protest himself. Almost 10% of the 30 protesters were arrested for firearms or other offenses. I later heard that one of the guys suspected of being a police informant against Lemp was at that rally pretending to demand justice for Lemp.

**In the coming months and years, many libertarians could be indicted not for violent acts against the government but for unwise or reckless words uttered in proximity to government informants.** If you don’t know someone like the back of your hand, then you better be damn careful what you say around them. And even if you know a person well, that doesn’t oblige you to join them in a leap off a legal cliff. Simply because someone spouts anti-government zeal doesn’t make them more trustworthy than a congressman. [Claire Wolfe](https://jimbovard.com/blog/2013/01/02/claire-wolfes-hot-rats/), the author of [101 Things to Do Until the Revolution](https://www.amazon.com/101-Things-Til-Revolution-Self-Liberation/dp/189362613X), wrote an excellent guide to recognizing government informants which she [made available for free](https://rats-nosnitch.com/rats/) online.

Simple prudence can suffice to avoid many tripwires. If some new acquaintance wants to provide you a pipe bomb to help "make a statement," he probably isn’t a real friend. There was a saying among antiwar activists in the 1960s and 1970s that the person who most fervently advocates violence is likely the undercover government agent. Activists should also recognize the likelihood that they could be surveilled online or in person. Parler was supposed to be a secure alternative to other online venues but millions of its messages [were leaked earlier this](https://www.techradar.com/news/massive-parler-data-leak-exposes-millions-of-posts-messages-and-videos) year.

**The answer is not to shut up and sure as hell not to cease fighting for your rights and liberties.**Friends of freedom need to continue valiantly and peacefully championing their ideas. At some point, more Americans will finally recognize the folly of permitting politicians and government agents to capture vast unchecked power over everyone else. In the meantime, prudent libertarians will avoid writing anything in an email that they don’t want to hear read out loud in federal court.

**Which Came First; the Universe or Consciousness?**

As humans, we know we are conscious because we experience and feel things. Yet scientists and great thinkers are unable to explain what consciousness is and they are equally baffled about where it comes from.

"Consciousness — or better, conscious experience — is obviously a part of reality," said Johannes Kleiner, a mathematician and theoretical physicist at the Munich Center For Mathematical Philosophy, Germany. "We're all having it but without understanding how it relates to the known physics, our understanding of the universe is incomplete."

With that in mind, Kleiner is hoping math will enable him to precisely define consciousness. Working with colleague Sean Tull, a mathematician at the University of Oxford, U.K., the pair are being driven, to some degree, by a philosophical point of view called panpsychism.

This claims consciousness is inherent in even the tiniest pieces of matter — an idea that suggests the fundamental building blocks of reality have conscious experience. Crucially, it implies consciousness could be found throughout the universe.

A mathematical model of consciousness could be based on data from the brain.  (Image credit: Getty Images)

**Can our brains help us to figure out the universe?**

If the researchers can answer how our brains give rise to subjective experience, there's a chance their mathematical model could extend to inanimate matter too, they said.

"A mathematical theory can be applied to many different systems, not just brains," Kleiner told All About Space via email. "If you develop a mathematical model of consciousness based on data obtained from brains, you can apply the model to other systems, for example, computers or thermostats, to see what it says about their conscious experience too."

Some prominent minds lend weight to the view of panpsychism, not least renowned Oxford physicist Sir Roger Penrose, who was among the first academics to propose we go beyond neuroscience when looking at consciousness.

He says we should strongly consider the role of quantum mechanics and in his book published in 1989 "[The Emperor's New Mind: Concerning Computers, Minds, and the Laws of Physics](https://en.wikipedia.org/wiki/The_Emperor%27s_New_Mind)" he argued that human consciousness is non-algorithmic and a product of quantum effects.

This idea evolved in collaboration with anesthesiologist and psychologist Stuart Hameroff into a hypothesis called Orchestrated Objective Reduction (Orch OR).

It claims consciousness is likely due to quantum vibrations in microtubules deep within brain neurons as opposed to the conventionally held view that it is due to connections between neurons.

Importantly, however, "Orch OR suggests there is a connection between the brain's biomolecular processes and the basic structure of the universe", according to a statement published in the March 2014 paper "Consciousness In The Universe: A Review of the "Orch OR" Theory", written by Penrose and Hameroff in the journal[Physics of Life Reviews](https://www.sciencedirect.com/science/article/pii/S1571064513001188).

And it's on this basis that Kleiner and Tull are working. They are also inspired by neuroscientist and psychiatrist Giulio Tononi, distinguished chair in Consciousness Studies at the University of Wisconsin.

Orchestrated Objective Reduction (Orch OR) claims consciousness is likely due to quantum vibrations in microtubules deep within brain neurons. (Image credit: Getty Images)

Tononi's theory of Integrated Information Theory (IIT), published in the journal [BMC Neuroscience](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC543470/), is one of a small class of promising models of consciousness. “IIT is a very mathematical theory,” Kleiner said.

IIT says consciousness is a fundamental aspect of reality; that it exists and is structured, specific, unified and definite. A core idea suggests consciousness will emerge when information moves between the subsystems of an overall system: to be conscious, an entity has to be single and integrated and must possess a property called "phi" which is dependent on the interdependence of the subsystems.

In other words, you could have a bunch of coins on your desk, on top of each sits a bunch of neurons. If information which travels along those pathways are crucial for those coins, then you've got a high phi and therefore consciousness.

If those coins could operate perfectly well as subsystems without information flowing to and from other coins, then there is no phi and there is no consciousness. The greater the interdependency between subsystems, the more conscious something will be.

"Integrated information is an abstract quantity which you can calculate if you have a good detailed description of the system," Kleiner said, adding that the system does not have to be biological.

"The result is a number, denoted by phi, so if you have an apple, you can ask how much integrated information is in there, just as you can ask how much energy is in there. You can talk about how much integrated information is in a computer, just like you can talk about entropy."

Phi is the symbol used to represent the Integrated Information Theory. (Image credit: Wikimedia Commons/ Jossi)

IIT backs panpsychism to a great extent because even a proton can possess phi, according to the theory. And just as an apple, thermostat and computer can possess it, so can your chair and your desk all manner of other things across the universe.

"When it comes to experimental evidence, there are several independent studies which point at a correlation between integrated information and consciousness," Kleiner said.

So do the subsystems have conscious experience? No. Are all systems conscious? No.

"The theory consists of a very complicated algorithm that, when applied to a detailed mathematical description of a physical system provides information about whether the system is conscious or not, and what it is conscious of," said Kleiner.

"The mathematics is such that if something is conscious according to the theory, then the components which make up that system can't have conscious experiences on their own. Only the whole has conscious experience, not the parts. Applied to your brain, it means that some of your cortex might be conscious but the particles that make up the cortex are not themselves conscious."

**What does that mean for the universe?**

"If there is an isolated pair of particles floating around somewhere in space, they will have some rudimentary form of consciousness if they interact in the correct way," said Kleiner.

So according to IIT, the universe is indeed full of consciousness. But does it have implications for the physical part of the universe? The math of the theory says it does not. A physical system will operate independently, whether it has a conscious experience or not.

Kleiner gives a computer as an example, saying that IIT's math shows it may have consciousness but that won't change the way in which it operates.

"This is at odds with the metaphysical underpinning of the theory which is strongly idealist in nature,” Kleiner said. "It puts consciousness first and the physical second. We might see some change in the mathematics at some point to take this underpinning more properly into account."

This is what his and Tull's study seeks to resolve. Emergentist theories of consciousness tend to claim physics is all there is.

The Integrated Information Theory shows that consciousness could be found within the universe (Image credit: Getty Images)

"They would reject the idea that consciousness is separate from or more primary than the physical and they would say consciousness is nothing but a specific physical phenomenon which emerges from the interaction of the fundamental physical quantities in certain conditions," said Kleiner.

His and Tull's math version of IIT, on the other hand, is intended to be what could be called a fundamental theory of consciousness. "It tries to weave consciousness into the fundamental fabric of reality, albeit in a very specific way," said Kleiner. And if it's shown that the universe is conscious, what then? What are the consequences?

"There might be moral implications. We tend to treat systems that have conscious experiences different from systems that don't," said Kleiner.

Yet if it is proven that consciousness plays a causal role in the universe, it would have huge consequences for the scientific view of the world, said Kleiner. "It could lead to a scientific revolution on a par with the one initiated by [Galileo Galilei](https://www.space.com/15589-galileo-galilei.html)," he said.

And that really is something to bear in mind.

**EM Drive Tested Again**

The EM Drive is a hypothetical rocket that proponents claim can generate thrust with no exhaust. This would violate all known physics. In 2016, a team at NASA's Eagleworks lab [claimed to measure](https://www.sciencealert.com/it-s-official-nasa-s-peer-reviewed-em-drive-paper-has-finally-been-published) thrust from an EM Drive device, the news of which caused quite a stir.

The latest attempt to replicate the shocking results has resulted in a simple answer: the Eagleworks measurement was from heating of the engine mount, not any new physics.

The EM Drive is a relatively simple device: it's an empty cavity that isn't perfectly symmetrical.

According to proponents of the EM Drive, by bouncing electromagnetic radiation within the cavity, the tapering in the cavity result in a net thrust of the engine, despite nothing leaking from the drive.

In [2016](https://www.sciencealert.com/it-s-official-nasa-s-peer-reviewed-em-drive-paper-has-finally-been-published), a team at NASA's Eagelworks lab reportedly measured a net thrust from their EM Drive experiment, which they claimed was a revolution in our understanding of physics and the future of spaceflight.

Physicists were…[skeptical](https://www.universetoday.com/139287/uh-oh-the-emdrive-and-mach-drive-could-be-getting-their-thrust-from-cables-and-earths-magnetic-field/). Conservation of momentum dictates that a stationary object cannot move without a net force acting on it, which the Eagleworks experiment [claimed to violate](https://www.universetoday.com/19347/is-the-impossible-emdrive-possible/).

But conservation of momentum has been tested countless times over centuries – in fact, that principle forms the bedrock of almost every single theory of physics. So, in essence, almost every time physics is tested, so is the conservation of momentum.

The results of the Eagleworks experiment were not very strong. While the team claimed to measure a thrust, it wasn't very statistically significant, and appeared to be a result of "cherry-picking" – the authors watching random fluctuations and waiting for the right time to report their results.

But in the spirit of scientific replication, a team at the Dresden University of Technology led by Professor Martin Tajmar [rebuilt the Eagleworks experimental setup](https://www.grenzwissenschaft-aktuell.de/latest-emdrive-tests-at-dresden-university-shows-impossible-engine-does-not-develop-any-thrust20210321/).

And they found squat.

Reporting their results in the Proceedings of Space Propulsion Conference 2020, Professor Tajmar said:

"We found out that the cause of the 'thrust' was a thermal effect. For our tests, we used NASAs EM Drive configuration from White *et al*. (which was used at the Eagleworks laboratories, because it is best documented and the results were published in the *Journal of Propulsion and Power*.)

With the aid of a new measuring scale structure and different suspension points of the same engine, we were able to reproduce apparent thrust forces similar to those measured by the NASA team, but also to make them disappear by means of a point suspension."

In essence, the Eagleworks EM Drive apparent thrust came from a heating of the scale they used to measure the thrust, not from any movement of the drive itself.

"When power flows into the EM Drive, the engine warms up. This also causes the fastening elements on the scale to warp, causing the scale to move to a new zero point. We were able to prevent that in an improved structure," Professor Tajmar continued.

His conclusion puts the final nail in the coffin for [EM Drive dreams](https://www.universetoday.com/130649/nasas-em-drive-passes-peer-review-dont-get-hopes/): "Our measurements refute all EM Drive claims by at least three orders of magnitude."

The only EM drive units that have actually worked, accelerate noble gases like Zenon out a small nozzle at very high speeds. F=ma, is a well known process, but when the gas tank runs out, the electro-magnetic drive stops producing thrust.

The true solution to deep space, very fast space travel is Helium3 fusion rocketry. So far, we have not achieved temperatures high enough, or plasma compression pure enough to achieve it, but once it is started, it will be self-sustaining, as long as the Helium3 is supplied. Fortunately, it is very light and not radioactive.

**Our Sense of Time Is Warped When We Catch The Eye of Another Person**

Our language weighs heavily with idioms and clichés about the human gaze. Whether they're windows to the soul, or we're staring daggers, eye contact communicates more about our intentions than words ever could alone.

Poetry aside, the mechanisms behind our response to the gaze of another human are less than clear. Is it an emotional reaction that grabs our attention, or is it our attention that's hooked, with emotions coming along for the ride?

Each step in the sequence recruits entirely different areas of the brain, so understanding the process could help us better understand why eye contact makes some people so incredibly uncomfortable.

To provide some insight into this puzzle of the human gaze, psychologists Nicolas Burra and Dirk Kerzel from the University of Geneva in Switzerland recruited a number of volunteers to assist in a series of eye-catching experiments.

The first involved 22 recruits observing a series of animated images representing 40 stoic-faced strangers. Some of the short clips had the stranger looking to one side, before shooting a look down the barrel of the camera [Blue Steel](https://www.dictionary.com/e/fictional-characters/blue-steel/) style. Others were reversed, with brief eye contact broken by a deviating glance.

Each clip appeared for a period of time ranging from 986 milliseconds to nearly 1.5 seconds, a duration on par with the kinds of eye glances we trade during social interactions.

All the subjects had to do was determine whether the moving image had been visible for a short duration or a long one.

"While deviated glances do not distort our perception of time, we found that, on the contrary, when glances crossed, the participants systematically underestimated the duration of these eye contacts," [says](https://www.unige.ch/communication/communiques/en/2021/notre-attention-captivee-par-un-regard/) Burra.

The first experiment's results were compared against trials using non-social subjects and static photographs of faces, where no significant differences in time estimates could be seen.

"It seems that not only a gaze, but also a movement is required," [says](https://www.unige.ch/communication/communiques/en/2021/notre-attention-captivee-par-un-regard/) Burra.

In follow up experiments involving new sets of volunteers, faces were respectively flipped, and reduced to a narrow band for the eyes. Once again, time seemed to pass slightly faster when eyes met with a brief stare.

That underestimation of the passing seconds implies our attention wiring is occupied the moment we make eye contact, leading us to perceive the time that passes in a locked gaze as slightly shorter than it really is.

Had the subjects experienced time slowing, much as we might sense when dealing with a spider crawling through our field of vision, it would imply our emotions were more heavily involved.

What's more, the presence of an easily recognizable face surrounding the eyes isn't a necessary feature. Our eyes are more than capable of stealing a few moments all on their own.

"From an early age, we learn to decipher the feelings and intentions of our interlocutors through their eyes," [says](https://www.unige.ch/communication/communiques/en/2021/notre-attention-captivee-par-un-regard/) Burra.

"Thus, meeting someone's gaze is a very common social situation, but it always leads to a particular feeling."

For some, [especially those on the autism spectrum](https://www.sciencealert.com/for-those-with-autism-eye-contact-isn-t-just-weird-it-s-distressing), that particular feeling isn't at all pleasant.

In this age of [Zoom and doom](https://www.sciencealert.com/here-s-why-zoom-meetings-can-feel-so-draining), those of us trapped in front of a screen for hours could be experiencing a [form of fatigue](https://news.stanford.edu/2021/02/23/four-causes-zoom-fatigue-solutions/) made worse by forced, if slightly artificial, periods of intense eye contact.

In light of this research, the attention devoted to extended durations of eyeballing other humans could be sapping our energy faster than we're used to.

This research was published in [*Cognition*](https://www.sciencedirect.com/science/article/pii/S0010027721001530?via%3Dihub).