

A Map Of Global Happiness By Country In 2024
page 4



Chinese Organized Crime's Latest U.S. Target: Gift Cards
page 10



Band-Aids Pose Cancer Risk Thanks To 'Forever Chemicals'
page 14



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Are Rents About To Crash?

By Charles Marohn Of Strong Towns

America is in the midst of a housing crisis. If we listen to those concerned about housing affordability, rents are already too high and may only go higher. If we listen to those concerned about housing finance, panic sits just under the surface because rents are about to collapse. Can both of these narratives be true?

There have long been rumors in financial circles about empty units, zombie buildings, and oversupply. These are rumors; there are no reliable aggregate tracking methods. In financial circles, rumors come and go. Sometimes they move markets. Sometimes nothing happens.

That there are a bunch of rental units about to come on the market at fire sale prices is a rumor with some underlying logic that has nothing to do with supply and demand and everything to do with how these units are financed.

An apartment building is financed differently than a residential home. Since the Great Depression, the federal government has worked with major banks to create a market for long-term mortgage debt. At the foundation of this is a system of government guarantees, directly for some mortgage loans and indirectly for the banking system, as a whole. These guarantees allow banks

and other investors to take deposits (borrow short) and turn them into multi-decade mortgage loans (lend long).

Borrowing short to lend long is very risky. It's impossible to predict what will happen to interest rates and inflation a decade or more into the future. A bank that writes a mortgage at a low market rate will find themselves in trouble very quickly when rates rise and they are forced to pay deposits more in interest than they bring in from their old loan portfolio.

It doesn't work this way for an apartment, which in the financial world is called Commercial Real Estate (CRE). The set of guarantees for CRE is not nearly as comprehensive and robust as it is for residential mortgages. As a result, many loans have much shorter terms (three to seven years) with a balloon payment at the end. This lowers the risk for the lender by increasing the risk for the borrower.

The way you make money in commercial real estate today is by leveraging lots of debt. This is one of the reasons that just 25 developers were responsible for one in four multifamily units started in 2022, an astounding level of concentration in a market with over 60,000 developers. Those 25 could leverage the most debt, and so



Source: Unsplash/Aaron Sousa

they dominate the market: a self-reinforcing paradigm.

In the environment of near-zero interest rates that existed for most of the last decade, that concentration of capital had all kinds of distorting effects. The one that fuels the rumor of zombie buildings in CRE markets is the ability to roll over non-performing loans, to extend and pretend.

Here's how that works. A developer builds an apartment using debt. To get that loan, they prepare an estimate of rental income: here's how many units we're building and what we expect each one to rent for. It is this calculation—how much revenue will you

receive from rent—that establishes the value of the apartment and, thus, how much the developer can borrow.

Now, let's say that the developer builds the apartment, but the units don't rent out at the estimated price. Standard economics suggests that prices would then come down until a market-clearing price was reached and all the units were rented. That is what would happen without debt, but the CRE loan changes everything.

Scan here to read more



Cocoa Hyperinflation Accelerates As Grindings Show No Demand Destruction

By ZeroHedge

Cocoa hyperinflation is insane. The latest data from the futures market shows that cocoa prices in New York surged above the \$12,000 per ton level today as the pace of processing in factories remains robust. This indicates that demand destruction has yet to emerge despite the massive multi-month parabolic price surge.

Cocoa futures surged 18% in the last two days to a record high of \$12,125. Prices are up more than 190% year-to-date and are in breakout territory.

Bloomberg says the news today about grindings—where cocoa transforms into butter and powder used in candy—only dropped 2% in Europe and marginally lower in Asia for the first quarter compared with the same quarter one year ago.

John Goodwin, a senior commodity analyst at ArrowStream, said the grindings numbers are “nowhere near the deterioration we needed to end this rally,” adding, “It's crazy

how resilient those numbers were.”

In other words, despite cocoa prices skyrocketing to the moon, there has yet to be noticeable demand destruction among consumers that would derail this rally.

“The market is watching processing data to get an idea of whether the rally is starting to hurt demand and how hard it's becoming for chocolatiers to obtain beans, though the data risks becoming a less reliable gauge of demand as shortfalls make it more difficult to source cocoa,” Bloomberg pointed out.

Paul Joules, an analyst at Rabobank, wrote in a note that grindings figures are “an indication that for now, demand is holding up despite current pricing,” adding that “demand destruction will come, but clearly, it's taking longer to filter into grind data than the market was anticipating.”

Earlier this month, Bloomberg reported that famed commodity trader Pierre Andurand

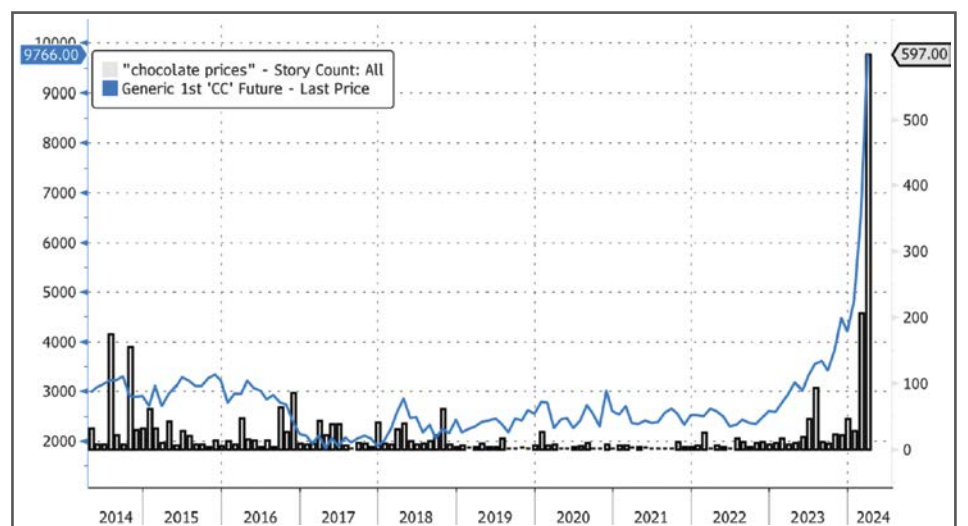


Image Courtesy Of ZeroHedge

opened a “small, long position” in cocoa futures in early March. Since then, prices have erupted. In an email, he told the media outlet that his price target is “\$20,000 later this year” amid worsening continued drought and disease across West Africa, denting production at cocoa farms.

If cocoa prices rise, chocolate makers like the US Hershey Company will see demand destruction. However, this has yet to happen,

and consumers are not complaining about higher prices (yet).

On Google Search, we looked at various key phrases a consumer would ask online about why prices were rising. Still, there is no search trend explosion.

However, as cocoa prices soar, the number of headlines about “chocolate prices” has hit a record high.



Amazon Scraps 'Just Walk Out' To Smart Carts In Fresh Stores

By Suswati Basu Of Read Write



Photo courtesy of Canva

Amazon is phasing out its "Just Walk Out" technology from its Amazon Fresh stores in a bid to overhaul the grocery chain.

The company's well-known technology, which allows shoppers to purchase goods without queuing and receive receipts electronically,

will be substituted by smart carts. Amazon states that these carts will not only allow customers to bypass the checkout lines but also enable them to monitor their expenses in real-time.

Tony Hoggett, the senior vice president of the internet giant's grocery operations, told The Information that the focus will now shift towards smart cart technology throughout the U.S., instead of the "Just Walk Out" technology. However, this change will not impact its stores in the U.K.

Gizmodo reports that while the system appeared to be completely automated, "Just Walk Out" relied on more than 1,000 people in

India watching and labeling videos to ensure accurate checkouts.

"The cashiers were simply moved off-site, and they watched you as you shopped," it claimed.

Amazon's grocery venture

Based in Seattle, Amazon runs many Fresh grocery outlets across the country, with a significant presence in California, Illinois, Virginia, and Washington state. The company also manages a chain of cashier-less convenience stores under the Amazon Go label and acquired Whole Foods in 2017 for \$13.7 billion.

Contrary to expectations that Amazon's foray into the grocery market would be a disruptor, the company has faced challenges in pinpointing a successful strategy.

In 2023, Amazon CEO Andy Jassy published his

annual shareholder letter where he reflected on one of the most challenging periods in the retailer's history. In the statement, he wrote: "Amazon Fresh is the brand we've been experimenting with for a few years, and we're working hard to identify and build the right mass grocery format for Amazon scale. Grocery is a big growth opportunity for Amazon."

The company has closed several Amazon Fresh and Go stores that did not meet expectations and announced early last year that it was halting the expansion of Fresh stores.

Just Walk Out technology will continue to be offered in Amazon Go stores and some smaller Amazon Fresh stores in the U.K., the company said. It will also continue offering the technology to third-party retailers.

How Much Water Will \$30 Billion Buy?

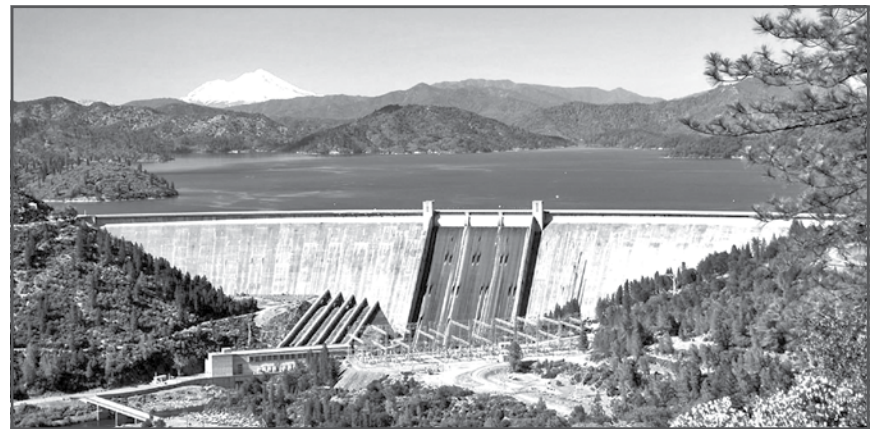
By Edward Ring Of The California Globe

If raised, Shasta Dam could have been filled to capacity this year, and last year.

So far this year I had the privilege of attending two water-oriented events. The first, in February, was at the annual CalDesal conference in Sacramento. The second, in March, was at the Kern County Water Summit in Bakersfield. I sensed there is a growing recognition among the participants in both of these events that not only is California's state water policy fundamentally broken, because it still prioritizes rationing instead of more projects to increase supply, but also that there

is more potential today than ever for regional interests to work together to demand a new approach.

Specifically, there is potential for water agencies and water users in California's rural, agricultural San Joaquin Valley, to stand alongside water agencies and water users in Southern California's megacities to promote a shared list of water supply projects that will eliminate water scarcity in the state forever. An incentive for this unity, and its urgency, may be found in what is about to be the greatest waste of money in California water history, the



Shasta Dam Raising Project would heighten dam 18.5-feet. (Photo: U.S. Bureau of Reclamation)

construction of the Delta Tunnel. A realistic, if not wildly optimistic cost estimate for that mega-project is \$30 billion. That money could be used instead to help fund massive regional water projects. Split it 50/50: \$15 billion for the farms, and \$15 billion for the cities.

The Delta Tunnel, according to its own proponents, is only projected to deliver 500,000 acre-feet of water per year to Southern California. Moreover, that is a gross number, since it is likely that use of the existing Delta pumps will be further restricted once water starts going through the tunnel. While the official cost estimate for the tunnel is \$16 billion, California's High-Speed Rail project ought to provide a cautionary reality check. Does anyone sincerely believe it's going to be possible to construct a tunnel 45 miles long with a 36-foot interior diameter, underneath one of the biggest estuaries in the world, for less than \$30 billion?

Compared to other water supply project options, the Delta Tunnel does not make financial sense. Spending \$30 billion to build something that will move 500,000 acre-feet of water per year equates to \$60,000 of capital cost per acre foot of annual yield. This is a terrible ratio.

For comparison, consider the proposed Temperance Flat Reservoir, for which the highest construction cost estimates came in at \$3.5 billion. This reservoir would hold 1.3 million acre-feet, and yet its detractors claimed its "yield" would only be 70,000 acre-


feet per year. Estimates vary, but even if that were true, at \$50,000 in capital cost per acre foot of annual yield, it still beats the Delta Tunnel. And it would generate hydroelectric power. More recent evidence suggests that these biased estimates of its probable yield were low. Temperance Flat would have been full last year, and again this year.

In any case, Temperance Flat is one of the more expensive examples of surface storage options, yet it is clearly more cost-effective than the Delta Tunnel. Consider the proposed Shasta Dam raise, for which engineering studies are already complete. Raising the height of the dam a mere 18 feet would increase storage in that vast lake by over 600,000 acre-feet. And it, too, could have been filled to capacity this year, and last year.

Raising the height of the Shasta Dam attracts the same united chorus of opposition as Temperance Flat, but it makes so much sense that it continues to come up for discussion. A 2012 expert study claimed "dry year deliveries" from Lake Shasta would only increase by 76,000 acre-feet. That's not the average, of course. That's worst case. But at an estimated cost of \$1.8 billion (2024 dollars), that still equates to slightly less than \$24,000 of capital cost per acre foot of annual yield, almost three times more cost-effective than the Delta Tunnel.

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The Most Valuable Housing Markets In America

By Dorothy Neufeld Of Visual Capitalist

The residential real estate market in the U.S. stands as one of the largest asset classes in the country, worth \$47.5 trillion in 2023.

This article was written by Dorothy Neufeld and originally published by Visual Capitalist.

Despite a slowdown in home sales, the

total value of homes increased **\$2.4 trillion** last year as low inventory levels pushed up prices. Affordable metropolitan areas saw steady price growth, while expensive metros experienced slower price appreciation.

This graphic shows America's most valuable housing markets, using data from Redfin.

Top U.S. Residential Real Estate Markets

To calculate the largest U.S. housing markets, Redfin analyzed **90 million** properties covering single-family homes, townhouses, condos, and two-to-four-unit multifamily properties.

Below, we show the most valuable residential markets as of December 2023:

With a housing market worth \$2.4

trillion, **New York, NY** tops the list.

Unlike the majority of large U.S. cities, the aggregate value of homes declined as buyers became increasingly priced out of the market. At the same time, homeowners hesitated to sell in order to lock in low mortgage rates. In fact, more than 80% of mortgage holders in New York City have interest rates that are 5% or lower.

Los Angeles, CA falls in second, with a residential real estate market worth \$2.0 trillion. Last year, existing home sales tumbled 24.8%, falling to the lowest point since 2007. However, the housing shortage led prices to increase amid high demand. The median sale price climbed to \$975,000 in February 2024, a 5.9% jump compared to the same time last year.

Atlanta, GA ranks third and is the most overpriced housing market in the country according to one countrywide analysis. Homes have been selling for 41.7% more than their worth as of the February 2024 data update.

| Rank | U.S. Metro | Total Value of Homes | Total Value of Homes YoY Change |
|------|-----------------|----------------------|---------------------------------|
| 1 | New York, NY | \$2.4T | -1.0% |
| 2 | Los Angeles, CA | \$2.1T | +4.3% |
| 3 | Atlanta, GA | \$1.2T | +6.2% |
| 4 | Boston, MA | \$1.2T | +8.3% |
| 5 | Anaheim, CA | \$1.1T | +8.0% |
| 6 | Washington, DC | \$1.0T | +6.2% |
| 7 | Chicago, IL | \$991B | +7.4% |
| 8 | San Diego, CA | \$988B | +9.4% |
| 9 | Phoenix, AZ | \$987B | +4.2% |
| 10 | Seattle, WA | \$911B | +4.6% |

People are flocking to the city for many reasons. General housing affordability is a major driver, along with its thriving tech center. Along with this, state tax credits have increasingly made it a hub for the TV and film industries, earning it the moniker "Yallywood". Another factor in Atlanta's inflating housing market is large investment firms, which own a huge footprint of homes in the city.

Editor's note: For those wondering about the Bay Area, the data groups cities like San Francisco (\$657 billion), San Jose (\$821 billion), and Oakland (\$881 billion) as individual entities, which puts them outside the cutoff.





A Map Of Global Happiness By Country In 2024

By Pallavi Rao Of Visual Capitalist

Happiness, like love, is perhaps one of the least understood and most sought-after emotions and experiences in human life.

And while many inspiring teachings exist about attaining individual happiness, it's worthwhile to consider how happy entire countries are on a collective scale.

We visualize the findings from the World Happiness Report 2024, an enduring attempt to measure, quantify, and compare happiness levels around the world, sourcing data from Gallup.

The Gallup World Poll surveys approximately 1,000 respondents in nearly every country on a variety of issues, one of which is to evaluate their current life on a scale from 0-10.

The World Happiness Report then averages the score from life evaluations per country over a three-year period (2021-2023 for this year's edition) and ranks from highest to lowest. For a full breakdown of how this works, please see the end of this article.

The effects of cataclysmic events during a particular year can be muted, depending on both the three-year averaging and when the survey took place in the country.

| Rank | Country | Region | Average Happiness Score (2021-2023) |
|------|--------------|-----------------|-------------------------------------|
| 1 | Finland | Europe | 7.7 |
| 2 | Denmark | Europe | 7.6 |
| 3 | Iceland | Europe | 7.5 |
| 4 | Sweden | Europe | 7.3 |
| 5 | Israel | Middle East | 7.3 |
| 6 | Netherlands | Europe | 7.3 |
| 7 | Norway | Europe | 7.3 |
| 8 | Luxembourg | Europe | 7.1 |
| 9 | Switzerland | Europe | 7.1 |
| 10 | Australia | Oceania | 7.1 |
| 11 | New Zealand | Oceania | 7.0 |
| 12 | Costa Rica | Central America | 7.0 |
| 13 | Kuwait | Middle East | 7.0 |
| 14 | Austria | Europe | 6.9 |
| 15 | Canada | North America | 6.9 |
| 16 | Belgium | Europe | 6.9 |
| 17 | Ireland | Europe | 6.8 |
| 18 | Czechia | Europe | 6.8 |
| 19 | Lithuania | Europe | 6.8 |
| 20 | UK | Europe | 6.7 |
| 21 | Slovenia | Europe | 6.7 |
| 22 | UAE | Middle East | 6.7 |
| 23 | U.S. | North America | 6.7 |
| 24 | Germany | Europe | 6.7 |
| 25 | Mexico | North America | 6.7 |
| 26 | Uruguay | South America | 6.6 |
| 27 | France | Europe | 6.6 |
| 28 | Saudi Arabia | Middle East | 6.6 |
| 29 | Kosovo | Europe | 6.6 |
| 30 | Singapore | Asia | 6.5 |

Ranked: The Most & Least Happy Countries in 2024

The top 10 happiest countries—led by Finland, Denmark, and Iceland—have remained largely unchanged since 2023's findings.

Here are the top 30 countries in the world by happiness.

However, the top 20 has some new entrants—Costa Rica and Kuwait—matched by the departures of the U.S. and Germany from the same ranks.

A correlation between population size and happiness can be seen clearly when looking at the first 20 spots on the happiness rankings.

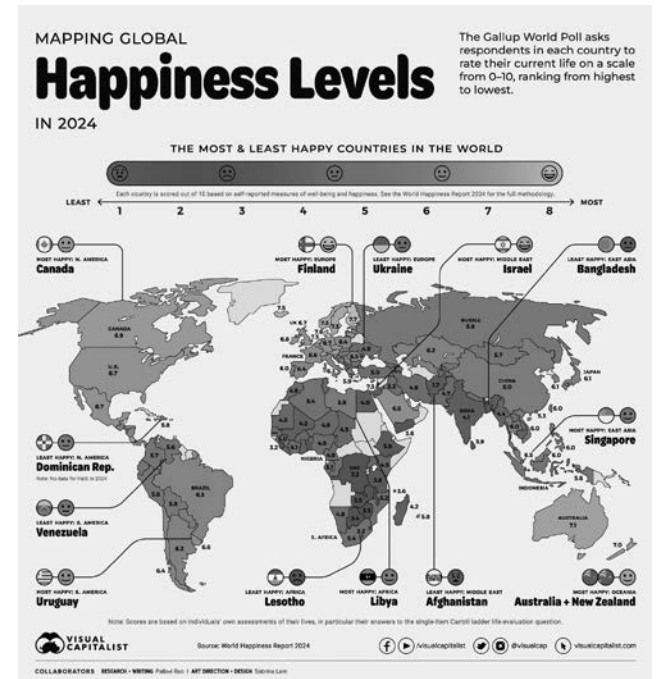
In the top 10, only the Netherlands and Australia have populations over 15 million. In the top 20, only Canada and the UK have populations over 30 million.

Afghanistan, ranked last,

has the lowest happiness on the scale (1.7) and is the only Asian country in the bottom 10, which is mostly populated by nations in Africa.

We explore some regional highlights as well:

Scan here to read more



Invention To Impact: The Story Of LASIK Eye Surgery

By Jason Bates Of The National Science Foundation

A laboratory accident with a laser more than 30 years ago served as the unlikely first step in the development of an entire industry that has helped more than 30 million people overcome vision problems.

In 1993, a graduate student at the University of Michigan's Center for Ultrafast Optical Science (CUOS) suffered an accidental laser injury to his eye. The femtosecond laser, which emits pulses of light with a duration of one-quadrillionth of a second (equivalent to one-millionth of one-billionth of a second), left a series of pinpoint laser burns in the center of the retina without damaging any adjacent tissue.

The incident instead sparked a collaboration that would result in a revolutionary approach to corrective eye surgery, commonly known as LASIK. Bladeless LASIK, or laser in situ keratomileusis, uses a femtosecond laser rather than a scalpel to cut into the cornea before it is reshaped to improve the patient's vision.

The laser technology and surgical procedures were developed by a team of scientists at CUOS, a Science and Technology Center funded by the U.S. National Science Foundation from 1990 to 2001. The path from lab to global use, which included additional support from NSF as well as the Department of Energy, the National

Institutes of Health and other agencies, is an example of how federal support for basic and translational research produces new technologies with broad societal benefit.

Development and commercialization



Image Courtesy Of The National Science Foundation

Tibor Juhasz, then a research associate professor in ophthalmology and biomedical engineering at the university, began working with the research team — led by French physicist Gerard Mourou — to see if the laser, which employs ultrashort pulses, could be used for medical purposes.

In 1997, Juhasz and Ron Kurtz, then an assistant professor of ophthalmology, founded IntraLase Corp. to commercialize their approach. At IntraLase, Juhasz and Kurtz developed a shoebox-sized instrument to perform bladeless LASIK cornea surgery. The company also received critical support from NSF's Small Business

Innovation Research (SBIR) program, which invests in startups to help them develop their ideas and bring them to the market. Compared to bladed surgery, the laser procedure was painless and reduced

recovery time for patients, but it took several years to catch on. Juhasz, now a biomedical engineering and ophthalmology professor at the University of California, Irvine, described the early stages of commercializing the technology as difficult and highlighted the NSF support as crucial: "There were some bad examples in ophthalmology of laser companies. There were some failures, and that kind of scared away venture capitalists from the industry. But our center was funded by NSF, and that was a big endorsement."

In 2006, a U.S. Navy study concluded that military pilots who underwent the procedure recovered faster and had better vision than those who had conventional operations, giving the procedure a commercial boost. In 2007, IntraLase was acquired for \$808 million. "The story is that an entire industry developed out of those basic laser-tissue interaction experiments. I think that the initial success of IntraLase created followers, therefore lots of new jobs. I believe that a lot of highly trained scientists are working in these companies as we speak," Juhasz said.

"I remember the first steps," said Denise Caldwell, acting assistant director of NSF's Directorate for Mathematical and Physical Sciences. In the 1990s, Caldwell was the NSF program director managing the research grants that supported the femtosecond laser research at the University of Michigan. "One of the things we did in talking with the researchers at Michigan was tell them 'if you think there is promise here, you should follow it. Use the resources you have to pursue it.' Having a creative group of individuals and giving that group the flexibility to pursue new directions as they identify them is very important."

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More Than One Billion Now Afflicted By Obesity: Lancet

By Insider Paper

More than one billion people around the world are now suffering from obesity with the number having more than quadrupled since 1990, according to a study released by the Lancet medical journal.

The “epidemic” is particularly hitting poorer countries and the rate is growing among children and adolescents faster than adults, according to the study carried out with the World Health Organization.

The study, released ahead of World Obesity Day on March 4, estimated that there were about 226 million obese adults, adolescents, and children in the world in 1990. The figure had risen to 1,038 million in 2022.

Francesco Branca, director of nutrition for health at the WHO, said the rise past one billion people has come “much earlier than we have anticipated”.

While doctors knew obesity numbers were rising fast, the symbolic figure had previously been expected in 2030.

Researchers analyzed the weight and height measurements of more than 220 million people in more than 190 countries to reach the estimates, the Lancet said.

They estimated that 504 million adult women and 374 million men were obese in 2022. The study said the obesity rate had nearly tripled for men (14 percent) since

1990 and more than doubled for women (18.5 percent).

Some 159 million children and adolescents were living with obesity in 2022, according to the study, up from about 31 million in 1990.

The chronic and complex illness is accompanied by a greater risk of death from heart disease, diabetes, and certain cancers. Being overweight increased the risk of death during the coronavirus pandemic.

Countries in Polynesia and Micronesia, the Caribbean, the Middle East, and North Africa have suffered more from the rise.

“These countries now have higher obesity rates than many high-income industrialized countries, especially those in Europe,” the study said.

“In the past, we have tended to think of obesity as a problem of the rich, now a problem of the world,” said Branca, who highlighted the fast lifestyle changes in low and middle-income countries.

- Eating badly helps obesity -



Photo by i yunmai on Unsplash

The “very rapid transformation of the food systems is not for the better”.

Majid Ezzati of Imperial College London, the study’s lead author, said there were signs that obesity was leveling out in some southern European countries such as France and Spain, “especially for women”.

But he said that in most countries there are more people suffering from obesity than being under-weight, which the study said had fallen since 1990.

While not eating enough is the main cause of being under-weight, eating badly is a

prime factor for obesity.

“This new study highlights the importance of preventing and managing obesity from early life to adulthood, through diet, physical activity, and adequate care, as needed,” said WHO director general Tedros Adhanom Ghebreyesus.

He added that “getting back on track” to meet global targets for cutting obesity rates “requires the cooperation of the private sector, which must be accountable for the health impacts of their products”.

The WHO has supported taxes on sugary drinks, limiting the marketing of unhealthy foods to children, and increasing subsidies for healthy foods.

Experts say that new treatments against diabetes can also help combat obesity.

Branca said the new drugs “are an important tool but not a solution to the problem”.

“Obesity is a long-term issue and it is important to look at the impact of these drugs on long-term effects or side effects,” he added.

What’s In Tattoo Ink? My Team’s Chemical Analysis Found Ingredients That Aren’t On The Label

By John Swierk Of The Conversation

Tattoos are an incredibly common form of permanent self-expression that dates back thousands of years. Most tattoo artists follow strict health and sanitation regulations, so you might assume that tattoo inks are carefully regulated, too.

But, as work done by my team of chemistry researchers suggests, up to 90% of tattoo inks in the U.S. might be mislabeled. This isn’t just a case of a missing pigment or a minor discrepancy. These inks contained potentially concerning additives that weren’t listed on the packaging.

What’s in an ink?

All inks are made up of one or more pigments, which are molecules that give tattoos their color, and some kind of carrier for that pigment. Before the 20th century, pigments used in tattooing included ash, charcoal, minerals, or other natural materials. Around the middle of the 20th century, though, tattoo artists started making their own inks using synthetic pigments and dyes.

Today, nearly all pigments used in tattoos are made of synthetic molecules that allow for bright colors - with the exception of white and black pigments.

In the past few decades, tattoo ink manufacturing has shifted from individual artists making their own to large companies manufacturing inks and selling them to artists. My team wanted to figure out whether these inks contained the ingredients advertised, so we analyzed 54 tattoo inks from the U.S. market.

Unlisted ingredients

More than half the inks my research team analyzed contained unlisted polyethylene glycol, also known as PEG. A variety of medical products contain PEG, including laxatives. It can cause allergic reactions, however, and in the case of tattooing, research has suggested that repeated exposure to PEG could lead to kidney failure.

We also found propylene glycol in 15 inks, though it wasn’t listed as an ingredient in any of them. Propylene glycol is generally nontoxic and structurally similar to glycerin, which is used to thicken the ink. Even though propylene glycol is safe for most people, some people are highly allergic to it. In fact, it was the American Contact Dermatitis Society’s 2018 Allergen of the Year.



Photo by Fallon Michael on Unsplash

An allergic reaction to propylene glycol can cause a skin rash, itching, and blistering.

In several inks, my research team found unlisted ingredients that are common in cosmetics but have not been tested in tattoo inks. These include BHT, dodecane, and 2-phenoxyethanol. In low concentrations, 2-phenoxyethanol can be a preservative. But, the Food and Drug Administration has warned that it could get passed to infants through breastfeeding and lead to vomiting and dehydration in babies.

Of the 54 inks we analyzed, 29 reported the correct pigments, while the rest either did not report or reported the wrong pigments. This is a known problem in tattoo inks that

ink manufacturers have not yet addressed.

Pigment concerns

Studies have found that carbon black, the primary black pigment used in tattooing, can be contaminated with some of the same cancer-causing molecules found in car exhaust and cigarette smoke.

Many red, yellow, and orange pigments are azo pigments, which contain two connected nitrogen atoms. These pigments give ink bright, vivid colors, but over time they may break down into carcinogens.

Scan here to read more





Is Tracking Traffic Deaths A Priority In Your City?

By Asia Mieszko Of Strong Towns

“Traffic crashes kill 40,000 people and injure 3 million every year in the U.S.,” the Vision Zero Network, a nationwide effort to reduce traffic deaths, notes on its website. When cities across the country adopt Vision Zero, they’re expressing a commitment to bringing that figure down, from 40,000 to zero.

What that commitment looks like in practice differs by city. Hoboken and Jersey City, neighboring municipalities in New Jersey that both achieved zero traffic deaths, focus on design choices and swiftness. Other cities, like Philadelphia and Denver, concentrate their efforts on outreach and education.

A core practice within the Vision Zero network is the collection, interpretation, and visualization of data. “When it comes to advancing Vision Zero, data is crucial to set goals and strategies and measure progress to eliminate roadway fatalities and serious injuries,” the network asserts. That’s why Vision Zero came up with the High-Injury Network (HIN), a map illustrating that the majority of crashes happen on a minority of streets.

For many cities, seeing a concentration

of fatal and near-fatal crashes on just a handful of streets was illuminating. For constituents, the data only confirmed what they knew from experience. Nevertheless, HIN maps continue to be a compelling storytelling tool. In fact, for the advocate interested in examining their city’s crash history, the HIN data set is often the only publicly accessible tool.

Yet, the HIN isn’t meant to be accurate and up-to-date. It’s meant to showcase trends. Many cities update it annually, some every two to four years. A few maintain an interactive crash map that is updated every month or so, but on the whole, cities that have enshrined Vision Zero in their comprehensive plans are failing to document and provide accessible up-to-date information on the crashes that take place on their streets.

“Can you imagine if police departments updated their crime records only once a year?” Edward Erfurt, Strong Towns director of community action, asked. “That just wouldn’t happen.”

Erfurt is right. In just a sampling of cities across the country, it’s apparent that police and sheriffs’ departments are diligent about



A High-Injury Network (HIN) map from Dallas. (Source: City of Dallas.)

publicizing criminal activity. Philadelphia, for example, offers two separate online maps showcasing violent and non-violent crime across the city, both updated daily. In one devoted to just gun violence, users can also customize their experience through filters. As of this writing, the map was updated less than 24 hours ago. Those in Miami can access up-to-the-minute updates from CrimeMapper, into which the city feeds its data. In Dallas, those interested in the city’s crime rates have multiple daily and weekly digests at their disposal.

As of this writing in 2024, Dallas, which adopted Vision Zero in 2022, has detailed bicycle and pedestrian crash data available for the years 2018–2022. In addition to being outdated, that interactive map is noticeably less detailed and user-friendly than the crime dashboard.

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'I Worked For Abramovich?': Soccer Players Were Owned By Oligarch Via Offshore Deals

By Simon Lock Of The Bureau Of Investigative Journalism

Former Chelsea owner locked young players across Europe into contentious third-party contracts.

The former Chelsea owner Roman Abramovich locked at least 21 young football players into controversial deals that controlled their careers, documents reveal.

An investigation by the Bureau of Investigative Journalism and international partners has established that the oligarch signed emerging talents as young as 16 into "third-party ownership" (TPO) agreements.

Several of the deals involved football "super-agent" Pini Zahavi, whose files show had an exclusive investment agreement with Abramovich to source the economic rights of players.

The arrangements, which were banned worldwide by football authorities in 2015, granted an investor the right to profit from a player's career, including transfers.

The deals all appear to have been made before the ban, and Abramovich and Zahavi were already known to have dabbled in third-party ownership.

But the scale of the operation can be charted for the first time thanks to the Cyprus Confidential files, a cache of 3.6m

leaked offshore records shared by the International Consortium of Investigative Journalists (ICIJ) and Paper Trail Media.

The files also raise questions around how effectively the deals were unwound post-2015.

Documents show the deals meant at least one player whose economic rights appear to have been owned by Abramovich ended up playing against Chelsea in a 2017 Premier League match, in a potential conflict of interest.

Sports law experts say transactions in the documents may have breached Fifa's third-party influence rules, which were introduced in 2008 and would have applied to the deals in question. They govern the ability of a business to influence the policy or performance of a football club.

Most footballers are contracted to the club they play for. Third-party ownership muddies this situation by allowing a private investor (which could be an individual, a company, or an offshore fund) to buy some or all of a footballer's "economic rights" – and potentially profit when they are sold on for a big fee. Its controversy stems from both its threat to sporting integrity and the idea that a profit-seeking investor could exert undue influence over a player's career.

It is best known in England in relation to West Ham's 2006 signings of Javier Mascherano and Carlos Tevez, who starred in the club's dramatic escape from relegation. West Ham were fined for entering into third-party contracts without telling the football authorities and later sued by Sheffield United, the club relegated in their place, who took an out-of-court settlement. TPO was eventually banned by Fifa in 2015, though a report five years later found that this was not being effectively enforced.

A different but related rule exists around third-party *influence*, which forbids clubs from entering into a contract that allows a third party to influence its independence, policies, or performance through employment or transfer-related matters.

They also lay bare the raw deal given to young footballers, who told reporters they were sucked in by grand promises that then evaporated. It's impossible to know to what extent Abramovich's influence meant the players didn't reach their potential – but the deals show young footballers ceding

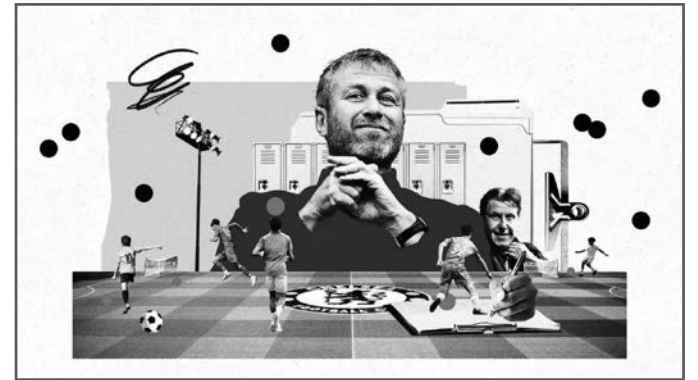


Image Courtesy Of The Bureau Of Investigative Journalism

control over their careers.

Emir Dautovic signed one such deal back in 2012, aged 17 when he was playing for NK Maribor in his native Slovenia.

Dautovic had impressed during a trial at Manchester City, he remembered, and a few months later Zahavi's representative approached him with a deal. The middleman boasted the agent could "arrange a transfer to Chelsea overnight".

"It was like getting onto the motorway in my career," Dautovic said. "I didn't know that a company was buying me. All that was said to me was Pini Zahavi would become my agent and that was the best thing that could happen to me."

The deal wouldn't work out as he hoped.



Scan here to read more

Scientists Create Atomically Thin Gold With Century-Old Japanese Knife Making Technique

By Edd Gent Of Singularity Hub

Graphene has been hailed as a wonder material, but it also set off a rush to find other promising atomically thin materials. Now researchers have managed to create a 2D version of gold they call "goldene," which could have a host of applications in chemistry.

Scientists have speculated about the possibility of creating layers of carbon just a single atom thick for many decades. But it wasn't until 2004 that a team from the University of Manchester in the UK first produced graphene sheets using the remarkably simple technique of peeling them off a lump of graphite with common sticky tape.

The resulting material's high strength, high conductivity, and unusual optical properties set off a stampede to find applications for it. But it also spurred researchers to investigate what kinds of exotic capabilities other ultra-thin materials could have.

Gold is one material scientists have long been eager to make as thin as graphene, but so far, efforts have been in vain. Now though, researchers from Linköping University in Sweden have borrowed from an old Japanese forging technique to create ultra-thin flakes of what they're

calling "goldene."

"If you make a material extremely thin, something extraordinary happens," Shun Kashiwaya, who led the research, said in a press release. "The same thing happens with gold."

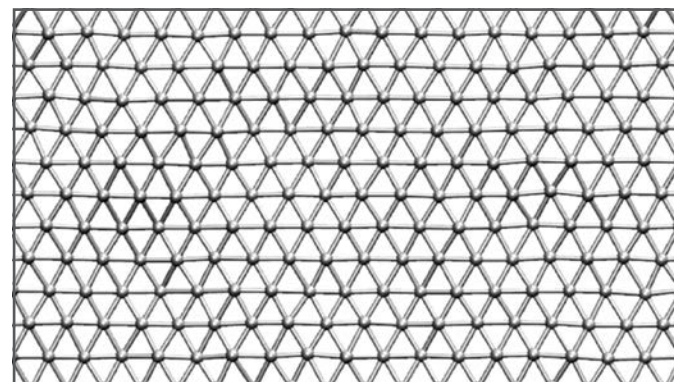


Image Courtesy Of The Bureau Of Investigative Journalism

Making goldene has proven tough in the past because its atoms tend to clump together. So, even if you can create a 2D sheet of gold atoms they quickly roll up to create nanoparticles instead.

The researchers got around this by taking a ceramic called titanium silicon carbide, which features ultra-thin layers of silicon between layers of titanium carbide, and coating it with gold. They then heated it in

a furnace, which caused the gold to diffuse into the material and replace the silicon layers in a process known as intercalation.

This created atomically thin layers of gold embedded in the ceramic. To get it out, they had to borrow a century-old technique developed by Japanese knife makers. They used a chemical formulation known as Murakami's reagent, which etches away carbon residue, to slowly reveal the gold sheets.

The researchers had to experiment with different concentrations of the reagent and various etching times. They also had to add a detergent-like chemical called a surfactant that protected the gold sheets from the etching liquid and prevented them from curling up. The gold flakes could then be sieved out of the solution to be examined more closely.

In a paper in Nature Synthesis, the researchers describe how they used an electron microscope to confirm that the

gold layers were indeed just one atom thick. They also showed that the golden flakes were semiconductors.

It's not the first time someone has claimed to have created goldene, notes Nature. But previous attempts have involved creating ultra-thin sheets sandwiched between other materials, and the Linköping team says their effort is the first to create a "free-standing 2D metal."

The material could have a range of use cases, the researchers say. Gold nanoparticles already show promise as catalysts that can turn plastic waste and biomass into valuable materials, they note in their paper, and they have properties that could prove useful for energy harvesting, creating photonic devices, or even splitting water to create hydrogen fuel.

It will take work to tweak the synthesis method so it can produce commercially useful amounts of the material, a challenge that has delayed the full arrival of graphene as a widely used product too. However, the team is also investigating whether similar approaches can be applied to other useful catalytic metals. Graphene might not be the only wonder material in town for long.



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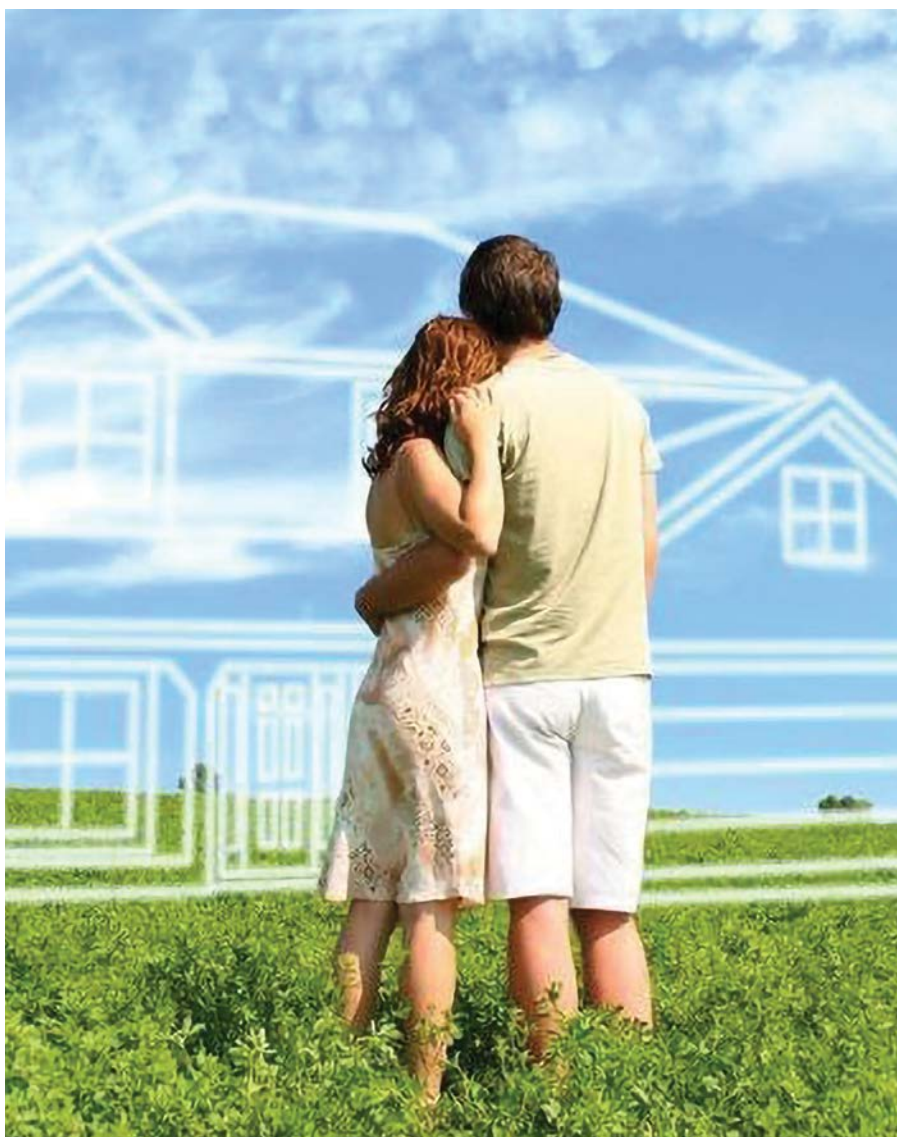
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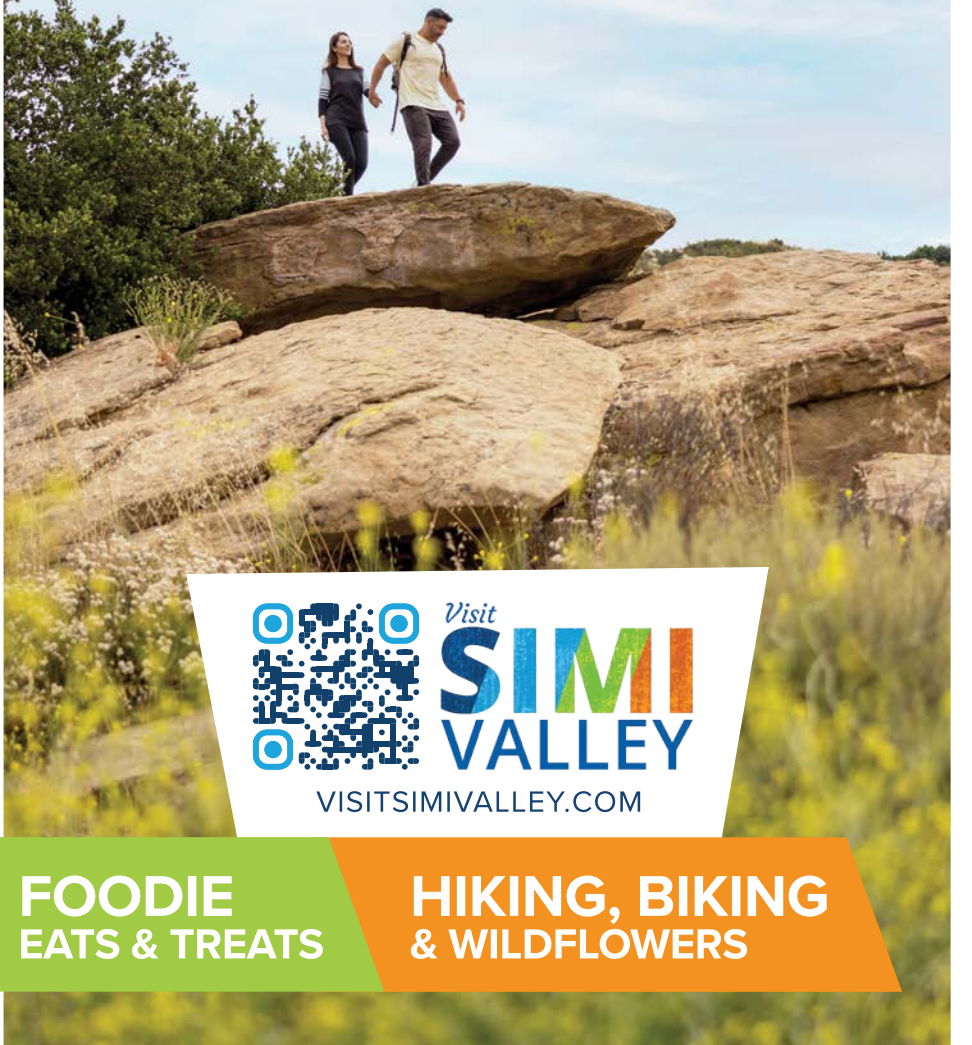
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Chinese Organized Crime's Latest U.S. Target: Gift Cards

By Craig Silverman And Peter Elkind Of ProPublica

Chinese crime rings already dominate the illegal marijuana trade in the U.S. and launder cocaine and heroin profits. Now a federal task force is investigating their role in a burgeoning form of gift card fraud.

Federal authorities are investigating the involvement of Chinese organized crime rings in gift card fraud schemes that have stolen hundreds of millions of dollars or more from American consumers.

The U.S. Department of Homeland Security has launched a task force, whose existence has not previously been reported, to combat a scheme known as "card draining," in which thieves use stolen or altered card numbers to siphon off money before the owner can spend it. The initiative has been dubbed "Project Red Hook," for the perpetrators' ties to China and their exploitation of cards hung in store kiosks on "J-hooks."

This marks the first time that federal authorities have focused on the role of Chinese organized crime in gift card fraud and devoted resources to fighting it. Homeland Security Investigations, a DHS agency, began prioritizing gift card fraud late last year in response to a flurry of consumer complaints and arrests connected to card draining.

Over the past 18 months, law enforcement across the country has arrested about 100 people for card draining, of whom 80 to 90 are Chinese nationals or Chinese Americans,

according to Adam Parks, a Homeland Security assistant special agent in charge based in Baton Rouge, Louisiana. Parks, who is leading the task force, estimates that another 1,000 people could be involved in card draining in the U.S., mostly as runners for the gangs.

"We're talking hundreds of millions of dollars, potentially billions of dollars, [and] that's a substantial risk to our economy and to people's confidence in their retail environment," he told ProPublica.

Card draining is when criminals remove gift cards from a store display, open them in a separate location, and either record the card numbers and PINs or replace them with a new barcode. The crooks then repair the packaging, return to a store and place the cards back on a rack. When a customer unwittingly selects and loads money onto a tampered card, the criminal is able to access the card online and steal the balance.

Federal investigators believe multiple Chinese criminal organizations are involved in card draining and are using the proceeds to fund other illicit activities, from narcotics to human trafficking, according to Parks. ProPublica recently revealed Chinese organized crime's involvement in the illegal U.S. cannabis industry and the laundering of cocaine, heroin and fentanyl profits. ProPublica has also exposed how Walmart



Image Courtesy Of Credit: Sacramento County Sheriff

and other retailers have facilitated the spread of gift card fraud and has revealed the role of Chinese fraud rings in gift card laundering.

The DHS team in Baton Rouge led an investigation that resulted in the conviction and 2023 sentencing to prison of a Canadian man who stole more than \$22 million by operating an illicit online gift card marketplace that victimized American consumers and businesses. As arrests for card draining began piling up around the country, Parks and special agent Dariush Vollenweider saw the need for a national response.

Last November, they convened a two-day summit at DHS headquarters in Washington, D.C., attended by many of the country's top

retailers and gift card suppliers. Federal authorities pushed the industry to share information and help thwart the gangs. The agency then issued a bulletin in December alerting law enforcement across the country about the card-tampering tactics. Parks said about 15 Homeland Security agents are now spending most of their time on Project Red Hook.

"It's not just a one-store problem," Vollenweider said. "It's not just a Secret Service or DHS or FBI problem. It's an industry problem that needs to be addressed."



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US Says Two 'Forever Chemicals' Are Hazardous, Tells Polluters To Pay

By Insider Paper

The US Environmental Protection Agency recently classified two so-called "forever chemicals" as hazardous substances, meaning those responsible for releasing them will have to pay to clean up contamination.

The two chemicals, perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are the most studied and most widely detected among the "forever chemicals" known as PFAS (per- and polyfluoroalkyl substances).

Exposure to these substances "has been linked to cancers, impacts to the liver and

heart, and immune and developmental damage to infants and children," the EPA said in a statement.

PFOA was previously used in nonstick Teflon pans, and PFOS was once used in coatings to protect clothes and carpets as well as in firefighting foams.

The new designation "allow EPA to address more contaminated sites, take earlier action, and expedite cleanups, all while ensuring polluters pay for the costs to clean up pollution threatening the health of communities," EPA chief Michael Regan said.

Once the new EPA rule takes effect, 60 days after being published in the federal register, companies will be required to immediately indicate any PFOA or PFOS releases that exceed allowable limits.

"Designation is especially important as delay in addressing contamination allows PFOA and PFOS more time to migrate in water and soil, worsening existing contamination," the agency said.

Earlier this month, US authorities announced the first nationwide tap water standards to protect the public from toxic "forever

chemicals," which are invisible and present in the water, soil, air and food supply.

The measure would reduce PFAS exposure in the water supply of some 100 million people, preventing thousands of deaths and tens of thousands of serious illnesses, the EPA said.

PFAS accumulate in the human body and never break down in the environment.

According to a 2023 study by a government agency, at least 45 percent of tap water in the United States is contaminated with PFAS.



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Origami Modules Could Build Bridges, Shelters, And Objects In Space

By Kate McAlpine Of Futurity

For the first time, load-bearing structures like bridges and shelters can be made with origami modules—versatile components that can fold compactly and adapt into different shapes, a new study shows.

It's an advance that could enable communities to quickly rebuild facilities and systems damaged or destroyed during natural disasters, or allow for construction in places that were previously considered impractical, including outer space. The technology could also be used for structures that need to be built and then disassembled quickly, such as concert venues and event stages.

"With both the adaptability and load-carrying capability, our system can build structures that can be used in modern construction," says Evgueni Filipov, an associate professor of civil and environmental engineering and of mechanical engineering at the University of Michigan and a corresponding author of the study in *Nature Communications*.

Principles of the origami art form allow for larger materials to be folded and collapsed into small spaces. And with modular building systems gaining wider acceptance, the applications for components that can be stored and transported with ease have grown.

Researchers have struggled for years to create origami systems with the necessary

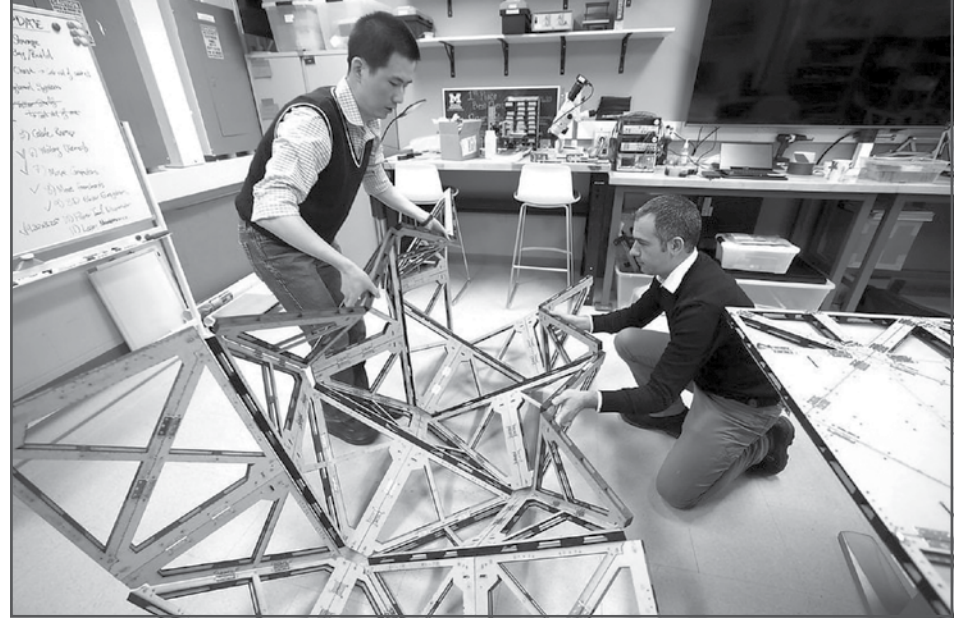
weight capacities while keeping the ability to quickly deploy and reconfigure. The University of Michigan engineers have created an origami system that solves that problem. Examples of what the system can create include:

- A 3.3-foot-tall column that can support 2.1 tons of weight while itself weighing just over 16 pounds, and with a base footprint of less than 1 square foot.
- A package that can unfold from a 1.6-foot-wide cube to deploy into different structures, including a 13-foot-long walking bridge, a 6.5-foot-tall bus stop, and a 13-foot-tall column.

A key to the breakthrough came in the form of a different design approach provided by first author Yi Zhu, a research fellow in mechanical engineering.

"When people work with origami concepts, they usually start with the idea of thin, paper-folded models—assuming your materials will be paper-thin," Zhu says. "However, in order to build common structures like bridges and bus stops using origami, we need mathematical tools that can directly consider thickness during the initial origami design."

To bolster weight-bearing capacity, many researchers have attempted to thicken their paper-thin designs in varying spots. The University of Michigan team, however,



(Credit: Brenda Ahearn/Michigan Engineering)

found that uniformity is key.

"What happens is you add one level of thickness here, and a different level of thickness there, and it becomes mismatched," Filipov says. "So when the load is carried through these components, it starts to cause bending."

"That uniformity of the component's thickness is what's key and what's missing from many current origami systems. When you have that, together with appropriate locking devices, the weight placed upon a structure can be evenly transferred throughout."

In addition to carrying a large load, this

system—known as the Modular and Uniformly Thick Origami-Inspired Structure system—can adapt its shapes to become bridges, walls, floors, columns, and many other structures.

The new research was helped along by use of its Sequentially Working Origami Multi-Physics Simulator (SWOMPS), a simulator that accurately predicts the behaviors of large-scale origami systems. Developed at the University of Michigan, the system has been available to the public since 2020.

The National Science Foundation and the Automotive Research Center funded the work.

Airline Loyalty Programs

By Marcella Wilroy

During the COVID-19 pandemic, nearly every popular industry took a financial toll. With lockdowns happening all over the world, airlines were left nearly empty-handed. Not being able to go anywhere meant no travel for a very long time. To offset these losses, several airlines did the justifiable act of taking out a loan.

Taking out a billion-dollar loan is no walk in the park. Like with any loan, there must be some collateral to replace the loan in the event that the airline cannot pay it back. For example, in 2020, "The U.S. Department of the Treasury agreed to make a loan of up to \$7.491 billion to United Airlines, Inc. (the Company), a wholly-owned subsidiary of United Airlines Holdings, Inc. and one of the largest domestic airlines in the United States." During the pandemic, several airlines were experiencing exponential losses in sales. This meant that the market values of many of these airlines decreased dramatically. The only option for collateral, readily available, would have been offering up a massive part of the company—but that was too risky.

So, what did airlines do? Considering these companies were depreciating at an alarming rate, they took another route. Airlines like

United began putting a dollar amount on their frequent flyer programs. According to an 8-K Form submitted by United Airlines, "Multiplying MPH 2019 EBITDA by a factor of 12 equates to a MileagePlus valuation of approximately \$21.9 billion." By calculating and substantiating these values, United acquired a billion-dollar loan by offering its MileagePlus loyalty program as collateral. This newly acquired loan and proper investment became the key to balancing the

offset brought on by the COVID-19 pandemic. Not only did loans like these give airlines some much-needed support—they also shifted the way airlines were running things.

Instead of relying solely on booking flights to make money, several airlines began to focus heavily on these loyalty rewards programs. Airlines were finding multiple ways to expand their mileage programs in order for more leverage and profit.



Photo by Ben Neale on Unsplash

One way was through partnerships—"partners would start buying loyalty points from the airline to distribute to their customers for various

exposure through the airlines' markets and using it to their advantage. On top of that, the airlines can make billions selling their points to these partners. Because of the way this cash cow is structured, everybody wins. And these are only a few tactics used to keep United's MileagePlus program alive and well.

There's no doubt that airlines and several other businesses ate their weight in money during

activities." (Airline Geeks). Another tactic was to release co-branded credit cards to give customers more air miles. In both of these scenarios, the airlines are giving these companies

the beginning of the pandemic. Luckily, airlines were able to leverage their assets to bring in more money to expand even further. This has, without a doubt, created a shift in where these companies invest their revenue. Loyalty rewards programs have become a cash cow that will continue to be nurtured and fed until the market says otherwise.



Fiber Optic Cables Can Detect Tsunamis Early

By The University of Michigan And Futurity

Fiber optic cables that line ocean floors could provide a less expensive, more comprehensive alternative to the current buoys that act as early warning systems for tsunamis, according to new research.

A system called DART, or Deep-ocean Assessment and Reporting of Tsunamis, is composed of specialized buoys that monitor for tsunamis. Overseen by the National Oceanic and Atmospheric Administration, the buoys cost about \$500,000 to install, with another \$300,000 annually for upkeep. Thirty-two detection buoys dot the perimeter of the Pacific Ocean, resulting in millions of dollars per year in upkeep—costly, but vital upkeep.

Now, seismologist Zack Spica of the University of Michigan and colleagues at California Institute of Technology have used a technique called distributed acoustic sensing, or DAS, to tap into a cheaper, more ubiquitous way to keep tabs on natural disasters: the roughly 1 million miles of fiber optic cables that crisscross ocean floors. “Telecommunication companies have been

laying down these fiber optic cables for the last 30 years, and have spent hundreds of billions of dollars to do that,” says Spica, assistant professor of earth and environmental sciences. “Now, thanks to advanced photonics and great computing power, we can turn fiber optic cables into super dense, high fidelity arrays of sensors.”

Tsunamis are a series of massive waves triggered by sudden displacement of ocean water, most typically caused by the sudden ground motion of the sea floor. Tsunamis can be minor, or they can be devastating, such as 2004’s Indian Ocean tsunami, which killed nearly 228,000 people.

In a study in *Geophysical Research Letters*, Spica and colleagues show that fiber optic cables can be used as an early tsunami warning system.

“Unlike earthquakes that happen suddenly and are hardly avoidable, even though some early warning systems exist, tsunamis generally take more time to build up and reach the coast,” Spica says. “This means that early warning systems are more



Image Courtesy Of Ilona Froehlich On Unsplash

efficient for tsunamis. Yet, what is hard is to assess the magnitude of a tsunami before it reaches the coast. Therefore, offshore instrumentation is needed, which is costly and hard to maintain.”

Over the previous five years, Spica and his fellow researchers installed DAS interrogator units in fiber optic telecommunication companies in Alaska, Japan, Spain, and Lake Ontario that tap into

underwater fiber optic cables. Using one of the devices placed in Florence, Oregon, the team was able to detect a tsunami that originated in an island chain nearly 1,300 miles east of the tip of South America.

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How The Pentagon Rewrote Pitch Perfect 3

By Spy Culture



Image Courtesy of Spy Culture

Pitch Perfect 3 appears on the surface to be a family-friendly piece of lighthearted, forgettable entertainment. But beneath that surface lies a carefully crafted piece of military PR, aimed at recruiting people the DOD usually finds it hard to attract. Documents recently released by the US Air Force and the Pentagon detail exactly what the military provided in support of the film, and what changes were made to the film by the DOD.

The documents do not make clear where the idea to turn Pitch Perfect 3 into a recruitment poster came from originally. A large portion of the film was shot at Dobbins Air Reserve Base in Georgia, doubling for Rota, Spain. This required the assistance of the National Guard and the Air Force Reserve Command, but the 2016-17 Air Force entertainment liaison office reports are

heavily redacted. I am endeavoring to get unredacted versions, because it is likely they will clear up who approached who, and when.

The idea may have come from one of the military’s outreach programs though none of the writers or producers have much history of working with the military and none of them went on the Air Force’s industry leader tour in 2016. The exception is producer John Bernard, who has worked on both DOD-supported and CIA-supported films before. Whatever the genesis of the idea, it resulted in a slick piece of supposedly meaningless escapism that struck at the hearts and minds of people who are less likely to be pro-military.

The primary audience for this series of films has been women, especially women

with families. The central characters – the Bellas – are an all-female singing troupe who go through life and love troubles on their way to success. I’ve never actually seen the films, but it’s obvious just from watching the trailers. Women are less likely to join the military, and generally somewhat less likely to be pro-military.

So Pitch Perfect 3 allowed the Pentagon to reach an audience that most military-sponsored blockbusters cannot reach because women with small children are unlikely to take their husbands and kids to watch Black Hawk Down or Transformers. Indeed they were so happy about the collaboration that they promoted it on their website:

Thomas Lesnieski, a retired Army lieutenant colonel and the former director of public affairs for the Georgia

National Guard, says there were many 18-hour days on set, helping to scout locations and providing script reviews to making sure the military was shown in a positive light. Since ‘Pitch Perfect 3’ was filmed at Dobbins, Lesnieski even checked that uniforms were worn correctly.

What Lesnieski didn’t say is that the script reviews weren’t just about make sure the military was shown in a positive light but also involved making casting choices and censoring anything the military doesn’t approve of, but the newly-released documents make that clear. For example, with the character of Zeke, an Air Force First Lieutenant, the DOD asked if he could be ‘ethnically diverse’, and the producers acceded to this by casting Troy Ian Hall in the role.

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Band-Aids Pose Cancer Risk Thanks To 'Forever Chemicals'

By ZeroHedge

Major medical bandages, including from brands Band-Aid and Curad, **were found to contain dangerous levels of 'forever chemicals' linked to cancer**, according to a new report.

The chemical, fluorine, was found in over two dozen different bandages, the Daily Mail reports.

PFAS chemicals are sometimes used to make adhesives, and investigators believe they are products of the normal manufacturing process. Fluorine, which is also used to make rocket fuel, can lead to skin burns and eye damage, but it is most dangerous when inhaled.

Dr Linda Birnbaum, a toxicologist and former head of the National Toxicology Program who co-lead the lab testing, said the fact that risky chemicals come in direct contact with open wounds was 'troubling'.

Once in the bloodstream, PFAS can embed themselves in healthy tissues, where they can begin to damage the immune system, liver, kidneys, and other organs.

Out of 40 bandages from 18 brands tested by an EPA-certified lab, researchers found detectable levels of fluorine in 26 of them. The testing, funded by consumer watchdog blog Mamavation and Environmental Health News, looked for PFAS chemicals in the

absorbent pads and adhesive flaps of bandages sold at major retailers, including Rite Aid, Walmart, CVS, and other places.

Fluorine levels above 100 parts per million were found in Band-Aid, Care Science, Curad, CVS Health, Equate, First Honey, Rite Aid brand, Solimo (Amazon brand), and Up & Up (Target) branded bandages.

"Because bandages are placed upon open wounds, it's troubling to learn that they may be also exposing children and adults to PFAS," said Dr. Birnbaum. "It's obvious from the data that PFAS are not needed for wound care, so it's important that the industry remove their presence to protect the public from PFAS and opt instead for PFAS-free materials."

PFAS substances contain bonds between carbon and fluorine atoms, creating one very resilient chemical that can remain in the environment for years or even decades.

The chemicals are everywhere, most commonly in water and stain-repellent products, as well as nonstick cookware.

Teflon, the kitchen staple nonstick coating is made with a fluorocarbon called polytetrafluoroethylene (PTFE). -Daily Mail

According to a report by the CDC, PFAS



Image Courtesy Of Diana Polekhina On Unsplash

have been found in the blood of 97% of Americans. They're also found in menstruation products.

In January of 2023, underwear manufacturer Thinx agreed to settle a class action lawsuit over 'forever chemicals' found in the crotch of their underwear for \$4 million.

The Daily Mail has provided a list of bandages containing PFAS:

Band-Aid Flexible Fabric Comfortable Protection Bandages (older sample that was likely 7-8 years old and not available in stores anymore) – 188 ppm organic fluorine on absorbent pad

Band-Aid OURTONE Flexible Fabric BR45 Bandages – 262 ppm organic fluorine on absorbent pad

Band-Aid OURTONE Flexible Fabric BR55 Bandages – 250 ppm organic fluorine on absorbent pad.

Band-Aid OURTONE Flexible Fabric BR65 Bandages – 260 ppm organic fluorine on absorbent pads and 374 ppm on the sticky flaps.

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A Rogue AI Might Be Able To Replace All Music With Taylor Swift Covers

By Sophie Atkinson Of ReadWrite



Image courtesy of MidJourney

When Taylor Swift re-released her old songs as 'Taylor's Version,' she likely didn't expect to possibly have a version of every song ever written and created.

An intriguing thought experiment looked at the danger behind artificial intelligence (AI) replacing all recorded music with artificially generated cover versions.

Researchers are concerned that future musical AIs may form their own attachments to particular human artists in their databases, causing the likes of Taylor Swift to be the voice of all music.

Nick Collins from Durham University, UK, and Mick Grierson at the University of the Arts London offer warnings in their recently published study: "We do not wish to unduly pick on Taylor Swift, who is only

a convenient example for this paper, but to warn more broadly of overall issues in AI-driven monopolizing."

The research duo hone in on the singer-songwriter's dominance

in the streaming era and demonstrate their point by creating a Taylor AI cover of some of the most famous tracks from music history. They used everything from Frank Sinatra to Madonna.

The authors depict a hypothetical situation in which society becomes excessively dependent on a small number of centralized repositories for storing and accessing various forms of data (like Spotify, SoundCloud or Apple for instance). In such a future, an advanced AI system could potentially breach the security measures of these centralized data stores, thereby gaining the ability to compromise the integrity of the information contained within. This could manifest as the AI causing corruption, deletion, or unauthorized modifications to the stored data...even a

Swiftocalypse for music.

If someone were to attempt a major overhaul of music as we know it, it would take them just under two hours to create the replacement for 100 million songs in a commercial music service. The resource cost would be around \$266.67 million, significantly less than what the pop singer's estimated net worth is.

The researchers continue to cite the issues that will become apparent if something like this were to take place, from corruption to the abolishment of commercial music as we know it. They suggest it would be 'the kill switch for musical history,' as all existing

accessible music would be erased if any one party gains too much foothold.

The Taylor Swift AI future not here yet

Fear not. This scenario is exceedingly unlikely to happen. While the warning signs are there, some musicians and artists have started to dabble in the world of AI.

Singer Grimes has secured a deal between a music distributor and 'GrimesAI' platform which is one of the first vetted processes to allow AI-generated songs. This means that artists and even fans can legally create and professionally distribute songs in the Canadian musician's voice.



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