Ode to E Pluribus Unum for Sunday October 23 2022

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The Horsehead Nebula Region without Stars

Image Credit & Copyright: George Chatzifrantzis

The famous Horsehead Nebula in Orion is not alone. A deep exposure shows that the dark familiar shaped indentation, visible just right of center, is part of a vast complex of absorbing dust and glowing gas. The featured spectacular picture details an intricate

tapestry of gaseous wisps and dust-laden filaments that were created and sculpted over eons by stellar winds and ancient supernovas.

The Flame Nebula is visible in orange just to the Horsehead's left. To highlight the dust and gas, most of the stars have been digitally removed, although a notable exception is Alnitak, just above the Flame Nebula, which is the rightmost star in Orion's famous belt of three aligned stars.

The Horsehead Nebula lies 1,500 light years distant towards the constellation of Orion.

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The Sound of Silence for Those on the Firing Line

https://youtu.be/SOMrOKHMMPU

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Oceanographic Magazine Photographers of 2022

Wipeout
Ben Thouard, First Place

https://oceanographicmagazine.com/winners-gallery/

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A Glimpse Inside a Gecko's Hand

The winner of the 2022 Nikon Small World photo contest.

Look at others:

https://bit.ly/3MG0iZX

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Wildlife Photographer of the Year Winners

House of bears. Kolyuchin Island
Dmitry Kokh

male Leiaster leachi sea star
Tony Wu

https://n.pr/3eJWdY8

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Busch Light's Turkey Broth 'Beer' Is Made For Dogs

The brew is packed with holiday flavors like turkey, sweet potato, and ginger.
by Danielle Harling

busch light turkey beer for dogs
Anheuser-Busch

Dogs are really living their best lives this year, and we're not mad at 'em. They've got their own ice cream, doughnuts, and even boozy Halloween costumes. And just in time for the holidays, Busch Light has announced a turkey broth "beer" that's made just for our furry friends.

Food & Wine reports that the "beer" is completely non-alcoholic and is instead packed with pooch-friendly ingredients. Essentially Thanksgiving in a can, Busch Light Turkey Brew is made with bone-in turkey, sweet potato, sweet basil, peppermint leaves, turmeric, ginger, and water.

No strangers to drinks for pups, Busch Light previously released a pork bone broth-based Dog Brew. According to Krystyn Stowe, head of marketing for Busch Family

Brands at Anheuser-Busch, it was the popularity of that release that inspired them to introduce Busch Light Turkey Brew.

"Our fans' reaction to Busch Dog Brew's release in 2020 inspired us to keep the momentum going and release our newest flavor for pups to enjoy just in time for the holidays," said Stowe in a statement.

Busch Light has even created a FAQ page for their latest offering. On the FAQ page, they stress that dogs should never drink real beer and also that although Busch Light Turkey Brew is made for a "dog's refined palate," humans can drink it too.

Busch Light Turkey Brew, which is available in four-packs, can be purchased on Anheuser-Busch's Shop Beer Gear website for $15 per pack.

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Why Did T. Rex Have Such Tiny Arms?

By JoAnna Wendel

Tyrannosaurus rex and many of its theropod cousins had large bodies but tiny arms. What gives?

https://bit.ly/3Tm0D6E

Hey there, chewing your and your buddies' arms off during a feeding frenzy may not be a great survival strategy

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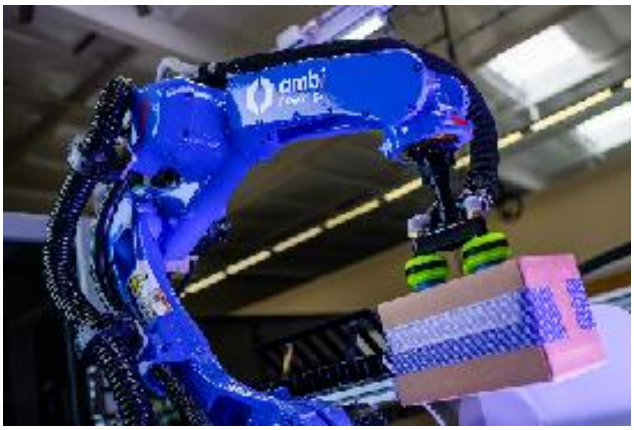
Robotically sorted packages



Source: Ambi Robotics

The awkwardly named Ambisort A-Series V3 doesn't need coffee in the mornings, bathroom breaks or relentless corporate agitprop about why it shouldn't join a labor union. The elaborate contraption takes up 375 square feet of warehouse space and features a blue articulated arm equipped with a five-camera vision system and three kinds of suction cups, which it uses to pull an assortment of envelopes, plastic bags or lightweight boxes from a bin. Then the arm hands off each parcel to a second robot, a sort of forked tray, which passes over a gantry of mail sacks and selects the right one to drop it in, sorting the parcels by Zip code.

The Ambisort can plow through about 400 parcels per hour; humans do the same work at about one-third the pace and usually make more mistakes. Ambi Robotics, the company that developed the system and the accompanying machine-learning algorithms that allow the robot to recognize each parcel and select the right way to grasp it, has deployed 80 of these systems and plans to surpass 100 in the field next year. On Monday, Ambi is announcing that it raised $32 million from Tiger Global, Bow Capital and the UK's Ahren Innovation Capital. Pitney Bowes, the postage meter maker turned e-commerce logistics firm with 55 warehouses around the country, is another investor in the round as well as a customer.

Ambi is one of several companies pushing warehouse automation past the storage and retrieval systems pioneered by Kiva Robotics, a company Amazon.com Inc. acquired in 2012 and made the heart of its robotics efforts. Companies like Dexterity Inc. (which spun out of Stanford University), RightHand Robotics (Harvard, Yale and MIT) and Osaro Inc. are developing robots to speed up the process of getting products from warehouse shelves and onto delivery trucks.

The goal isn't necessarily to replace human workers or to drive down costs but to allow logistics companies to keep pace with the projected growth of e-commerce. The industry holds about 14% of retail today in the US and is likely to grow much larger in the decades ahead. This month, Amazon said it would hire 150,000 employees in the US for the holidays — same as last year, despite lackluster projections for an inflation-

wracked holiday shopping season. In a tight labor market, hiring all those seasonal workers is an expensive proposition; if and when the company's retail unit starts growing again, finding even more workers each year could get even more daunting.

Amazon isn't a customer of Ambi, but the Seattle giant partly inspired the startups's creation. In March 2018, a University of California, Berkeley, professor named Ken Goldberg and one of his graduate students, Jeff Mahler, were invited to Jeff Bezos' MARS conference, a private event showcasing advancements in space and robotics. In a tent outside of the Palm Springs, California, hotel where the confab was held, the researchers demoed an Ambisort predecessor to Bezos himself, who was so delighted with its ability to identify and correctly grasp a variety of items — including a shoe — that he returned with colleagues to see it again the next day. Recognizing an opportunity, Goldberg and Mahler enlisted three co-founders, also from UC Berkeley's Automation Lab (mechanical engineers Stephen McKinley and David Gealy and software engineer Matt Matl), and established the company a few weeks later.

The heart of Ambi's technology isn't really the robot itself, but the artificial intelligence behind it. As a graduate student, Mahler developed something called DexNet — a computer simulation that takes the laws of physics and vast amounts of data about three-dimensional objects and trains an algorithm on the best way to pick up any item. Mahler calls it "turning robot grasping into something like a game of Atari." The research led to AMBI OS, software which turns the surprisingly complex human ability to identify and lift a box into an act that can be reliably duplicated by a machine.

Now that they've cracked the science and raised additional money — bringing the total invested capital to $67 million — Ambi's biggest challenge may be convincing skeptical workers that it's not out to take their jobs. Jim Liefer, Ambi's chief executive officer, said the robot is meant to mitigate only the "mundane, repetitive work" in so-called sortation centers, the facilities that sit between storage facilities and last-mile delivery vans. "It's a far better role for those people to operate a robot, rather than having to interact with those parcels all the time," he said. —Brad Stone

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Are Humans Limited to 150 Friends?

"Dunbar's number" implies that our relationship threshold is limited to 150 people. But is this true?

https://bit.ly/3DleaG1

Not according to my sister who invited only 400 of her closest friends to her wedding. Castro and the Rooskies prevented my attending, but I wasn't one of the 400 anyway.

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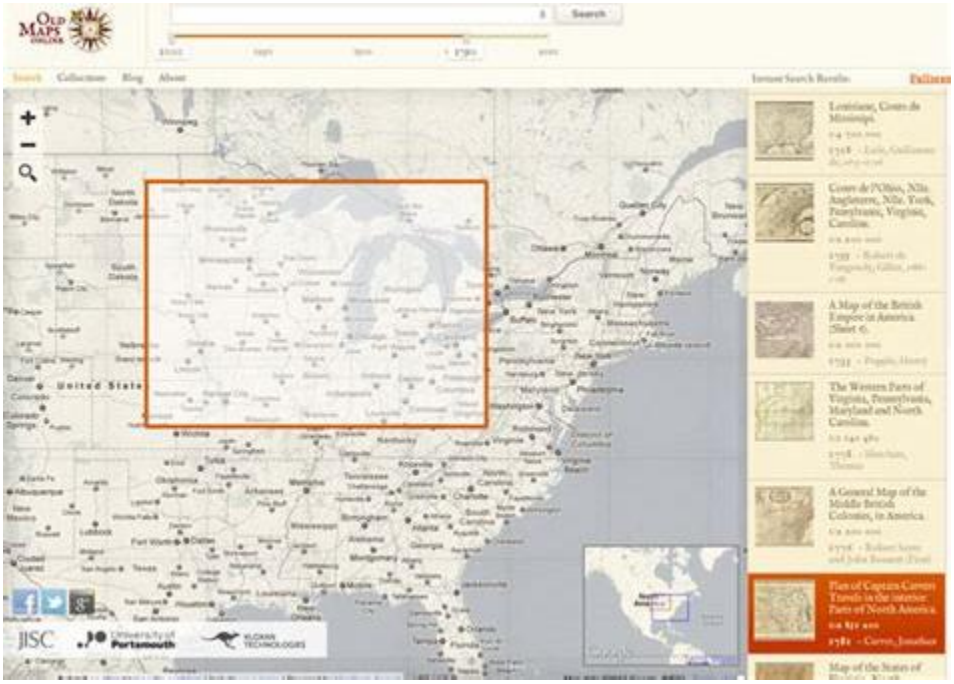
Old Maps Online



https://www.oldmapsonline.org/?utm_source=join1440&utm_medium=email&utm_placement=newsletter

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Bach’s Toccata & Fugue in D Minor Takes a Lot of Brass

Oklahoma State Trumpet Ensemble https://youtu.be/YNLv2exFwqc?t=2

Canadian Brass https://youtu.be/_Cst9lV5PPg

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World's Top 10 Street Photographers 2022

https://bit.ly/3gljQq9

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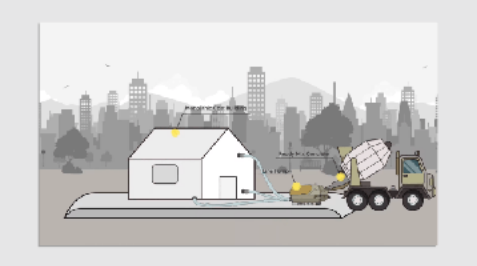
From Tent to House in Fifteen Minutes



A New York startup called Automatic Construction has developed an ingenious technique that lets its workers blow up a house and pump concrete inside its walls.

https://bit.ly/3CQSgKx

You might want it to cure a bit before moving in.

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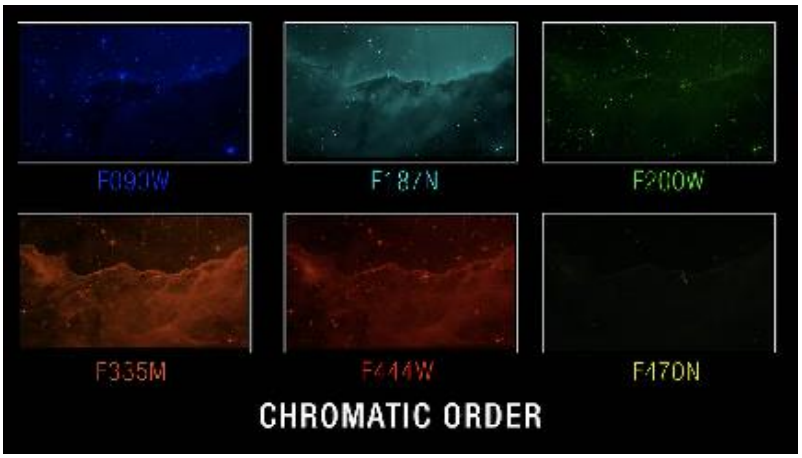
The Art Behind NASA's Scientific Space Photos

Welcome to the aesthetics of space photography



https://www.theverge.com/2022/10/10/23393194/nasa-image-processing-jwst-astrophotography

If you're not dazzled by NASA's wonderful artwork, this will give you a new perspective.

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Peter Brock's World

https://youtu.be/NtpG-_Mbcv0?t=1

https://youtu.be/kTsose391yw?t=3

Just let this one run through the whole bunch

A friend of several of us Odesters, Peter's been an original from day one.

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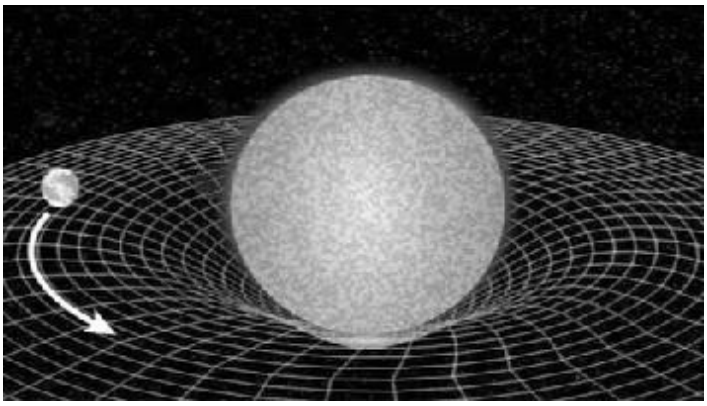
Playing with Space-Time Interactions



How do celestial bodies warp the fabric of the universe and interact with each other? Try this out for size.

https://lab.nationalmedals.org/gravity.php

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Snap a Photo of a Room and Let an AI Redesign it for You.

https://bit.ly/3TbP9C3

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Ghost Riders In The Sky Three Octaves Below Absolute Zero

https://youtu.be/y5qZrrovpuw

"Ghost Riders In The Sky" was a song written by Stan Jones in the late 1940s and successfully recorded by Vaughn Monroe, Burl Ives, Peggy Lee and Bing Crosby in 1950, all of whom enjoyed massive hit versions that year.

This video by Geoff Castellucci and friends gets to the bottom of the tale.

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Warner's 1933 Human Waterfall

https://youtu.be/FRqcZcrgPaU

I guess Harry couldn't wait for Ester Williams to grow up.

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The Transformative Power of Classical Music | Benjamin Zander

Since 1979, Benjamin Zander has been the conductor of the Boston Philharmonic. He is known around the world as both a guest conductor and a speaker on leadership -- and he's been known to do both in a single performance. He uses music to help people open their minds and create joyful harmonies that bring out the best in themselves and their colleagues.

https://youtu.be/r9LCwI5iErE?t=1

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Italy's Stromboli Volcano Erupts

https://youtu.be/Ahs4fRO-WjU?t=1

It's impossible for me to hear the name Stromboli without thinking of Ingrid Bergman in the motion picture of that name

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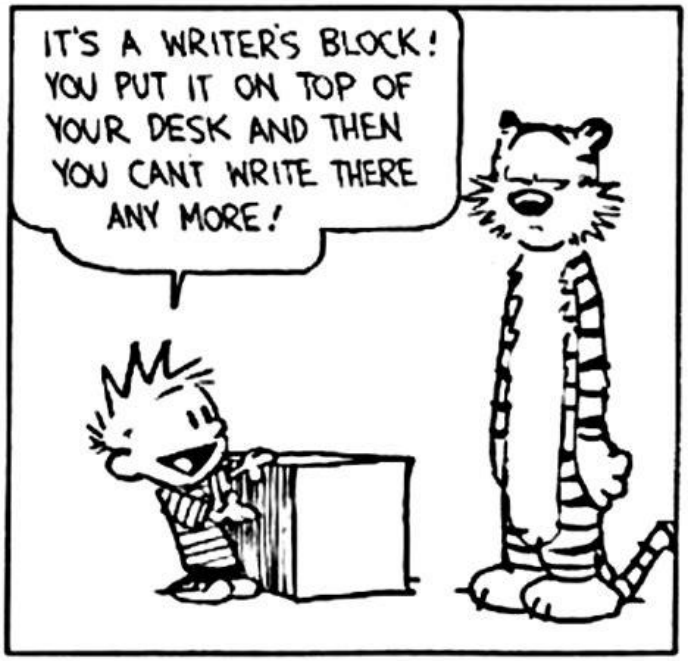
5000 Years of Writers Block: Don't Want it, Don't Write



https://bit.ly/3fTtf8l

I figured I was within one week of finishing Phantoms from Vietnam when the wheels of the effort came off…for almost three months. At the end of the hiatus my central character, Gordon, told me I had missed the whole point of the book. In fact he told me I had to do a lot of rewriting or he would 'take a hike.' When I agreed he kicked me in the tail and two weeks later the first draft was done.

My suggestion is, "Listen to your characters and do what they tell you."

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RangerBot: Programmed to Kill

A new generation of sea star-murdering robots is set to deploy.

Crown-of-thorns starfish eat coral, and their booming population is causing major problems in Australia's Great Barrier Reef.
Photo by Georgette Douwma/Minden Pictures

https://hakaimagazine.com/news/rangerbot-programmed-to-kill/

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Pillars of Fire as Seen by JWST in Near IR

https://bit.ly/3yUr0Ip

You may want to save this file forever. It is truly magnificent.

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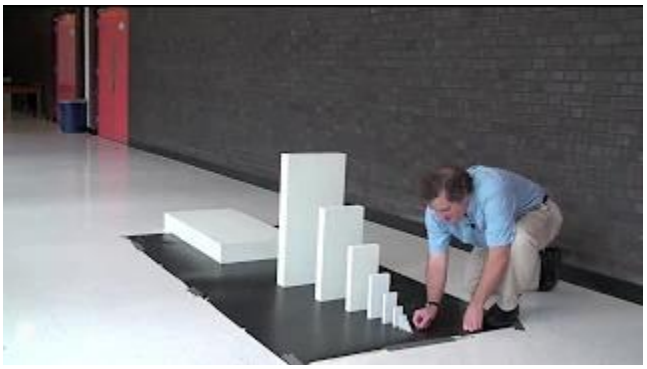
The Amazing Power of Dominos



https://www.youtube.com/watch?v=5JCm5FY-dEY

If you've been itching to knock over the Empire State Building, here's your chance

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How do AI and Machine Learning Differ

The terms "artificial intelligence" and "machine learning" are often used interchangeably, but one is more specific than the other.

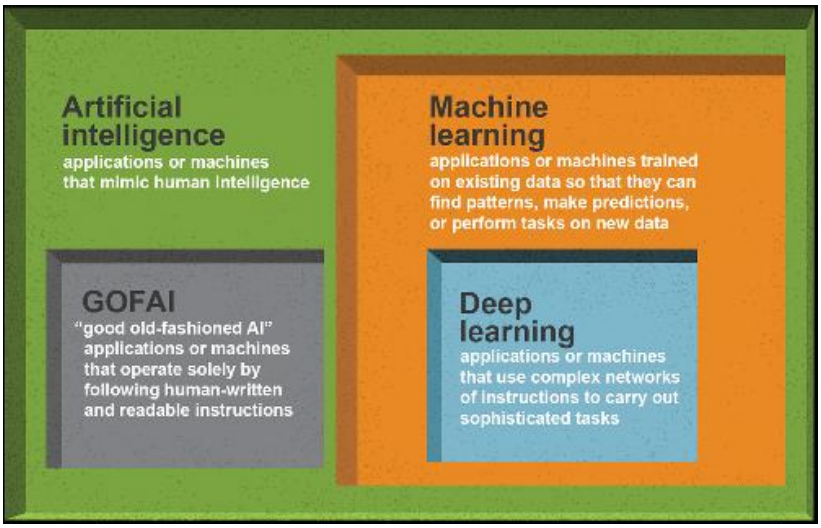

Diagram explaining the difference between categories of artificial intelligence
Credit: Lance Hayashida for Caltech Science Exchange

Artificial intelligence (AI) is the broader of the two terms. It originated in the 1950s and can be used to describe any application or machine that mimics human intelligence. This includes both simple programs, such as a virtual checkers player, and sophisticated machines, such as self-driving cars. Some in the field distinguish between AI tools that exist today and general artificial intelligence—thinking, autonomous agents—that do not yet exist.

Machine learning describes a subset of artificial intelligence. This term arose in the 1970s. Machine learning is distinguished by a machine or program that is fed and

trained on existing data and then is able to find patterns, make predictions, or perform tasks when it encounters data it has never seen before.

Machine learning can be thought of as the process of converting data and experience into new knowledge, usually in the form of a mathematical model. Once it is created, this model can then be used to perform other tasks. This allows for the design of applications that would be too complex or time consuming to develop without computer assistance. For example, a machine learning system may be trained on millions of examples of labeled tumors in MRI images. On the basis of these examples, the system recognizes patterns of characteristics that constitute a tumor. This serves as a model that can then determine if tumors are present in new MRI images. These systems are often able to outperform experts.

Machine learning is a powerful tool that increasingly is incorporated into more computer applications. Its ubiquity makes it harder to spot AI applications that are not trained on data but that rely on human-written and readable rules and facts. Applications that use artificial intelligence but do not learn from or produce new results based on exposure to data are sometimes referred to as "good old-fashioned AI" or "GOFAI." And some are still in operation. For example, a simple chatbot may address questions solely by supplying pre-written answers that contain relevant keywords.

Finally, deep learning is a subset of machine learning. Deep learning uses machine learning algorithms but structures the algorithms in layers to create "artificial neural networks." These networks are modeled after the human brain and have been effective in many situations. Deep learning applications are most likely to provide an experience that feels like interacting with a real human.

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Mathematicians Discover the Fibonacci Numbers Hiding in Strange Spaces

Recent explorations of unique geometric worlds reveal perplexing patterns, including the Fibonacci sequence and the golden ratio.

https://bit.ly/3VQ1TAi

I've found some in my bread box pretending to be mold. What's the big deal?

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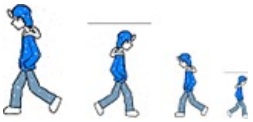
My Walking Thoughts



For Sunday October 23 2022

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Dealing with Plastics

When I became editor of MSW Management in 1992, the first person (literally) from the waste management industry with whom I became acquainted was N.C. Vasuki, head of the DSWA--Delaware Solid Waste Association--and the first member of the magazine's Editorial Advisory Board. We have maintained our friendship since then, well after we both retired from our posts.

In addition to his daytime job, N.C. has twice been the president of SWANA-the Solid Waste Association of North America and once ISWA, the International Solid Waste Association, and in 'retirement' has consulted with waste agencies all over the globe.

Above all (and that itself covers a lot of territory) N.C. is an innovator who pushed for advancements in areas few people even knew there was a problem—landfill air and water quality issues principally, in regard to which he was the pioneer in the use of polypropylene (PP discussed in last week's Ode) in landfill construction.

As he explained:

Glad to see you mention PE and PP in the ode - most useful plastics. As I was growing up in India during the 1950's, ICI was the big company pushing "Polythene" or PE.

My father, a coffee agronomist, was very pleased to see PE becoming available for packaging fertilizers! chemicals etc. These plastics improved the quality of life so much!

Polypropylene (PP) was quite interesting to me. Mr. Earp Jennings, Chairman of DSWA Board worked for Hercules company in Delaware. He constructed the first PP plant in the USA…Louisiana.

In the late 1990's we tried a PP geomembrane as a landfill cell cap. It showed no loss of flexibility after 10 years of use. So, we had Geosyntec design what was then the largest geomembrane cap for a landfill in the world--45+ acres in size. It was guaranteed to last at least 20+ Years. It was also designed to withstand 85+ mph hurricane winds. It was covered over by a new geomembrane about five years ago.

Montell Inc (Italian Montedison) had taken over the PP business from Hercules

In 2003, I was invited for the 40-year celebration of the invention of PP by Guilio Natta and Kar Ziegler (Germany) they shared the Nobel prize in 1963. The Italians were very pleased that DSWA was willing to take measured risks for large scale use pf PP in landfill and construction business. In those days, DSWA stuck its neck out to try new ways to improve landfill design and operation.

The best use for film plastics of all kinds is to ship them as high calorific fuel and eliminate them completely. Currently, our society is only interested in woke ways to solve the plastics problem

This is prefatory to a letter he sent to Plastics Magazine, asking for my opinion.

I am in absolute concurrence, feeling as always anything that can be done to keep legislators out of serious environmental concerns is to the good.

Allow me to go a little farther in this discussion by pointing out that *the single greatest source of greenhouse gas come from fugitive landfill gas emissions,* the assessment of which has been accomplished by broad area monitoring flights by NASA's Dragon Lady U-2. These flights have proceeded from efforts by the second person I met from the industry and another of my Editorial Advisory Board members, Dr. Eugene Tseng, the founder of UCLA Extension's Recycling and MSW Management Program. Eugene, works in collaboration with Dr. Nhut Ho, founding director of the NASA Autonomy Research Center for STEAHM on advanced methods for reducing landfill gas emissions.

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Here is N.C.'s suggestion for dealing with plastics

Plastics are here to stay in our daily life and that is an indisputable fact.

The clamor to ban plastics of one type or another to save the global environment remains unabated and the word circularity claims to offer a real solution. Micro plastics are another problem and myriad claims of its impact on all life on this earth are a daily concern. So, we the people, want

our Congress and the governments to create new laws, taxes, restrictions and dictats.

The USA was once renowned for its ability to come up with pragmatic solutions without depending on governments and the Congress.

Alas, even the brilliant plastics industry is begging the Congress to provide direction instead of using its own talent to come up with pragmatic solutions. We tend to forget simple ways to mitigate the plastics issue.

Having spent five decades in environmental management including 30 + years in solid waste business, I suggest the following response to resolve the plastics problem.

1. The resin making companies could create a Plastics Extended Producer Responsibility organization (PEPR) to respond with practical ways to collect all plastics (bottles, rigid and flexible containers, all sorts of film plastics, industrial plastics etc.) It is not practical to impose EPR on thousands of packaging firms. That creates more noise than real solutions.

2. The local governments and solid waste collection and disposal companies would be responsible for the collection program. The plastics fraction (from Materials recovery facilities – MRF) would be compacted into secure bales. The PEPR would arrange for the payment and transportation the bales to specific locations where the resins are manufactured.

3. PEPR would decide how the plastics are separated for repurposing the plastics and also select what fraction of the plastics could be used for ‘Advanced Recycling”. PEPR would also determine what fraction of the plastics are best used as fuel for energy production.

4.PEPR would raise the price of resins sold. We, the people or consumers, will pay a higher price for goods we demand, purchase and discard!

5. We avoid government taxes, grants, zoning problems etc. Remember any tax is our money passing through government hands and not something government is giving free. The PEPR would make the business decision and not the governments.

6. In the August 18 issue of “Plastics News” there was an apt cartoon that spoke well for one of the nagging problems – we want plastics recycling but not in my backyard!

7. Resin makers have vast facilities and it would make sense to use a fraction of their landholdings for final processing of all plastics for reuse, remanufacturing, repurposing, and energy recovery. The zoning issue would be resolved.

In this world, simple solutions work and complex solutions cost more and have a greater tendency to fail. So, let us work to avoid government intrusion as much as possible.

N.C. Vasuki P.E. Board Certified Environmental Engineer

CEO (retired) Delaware Solid Waste Authority – DSWA
Past President – International Solid Waste Association – ISWA
Past President – Solid Waste Association of North America - SWANA
