THE FUTURE

7th Edition - January 2025

TERMS TO THINK ABOUT

PERSPECTIVE

INTERPRETATION, OPINION

*"This text, this program, are not fact, rather the view of one person. Consequently, they should not automatically be accepted as '**truth**'. Two time Pulitzer Prize winning historian and author, Barbara Tuchman, stated* 'there is no such thing as a neutral or purely objective historian….without an opinion, a historian would simply be a ticking clock..' ***Likewise, the statements of any person in a position of influence and power should bring some level of scrutiny and, if warranted, questions to the conversation.*** *Life's mission should be determining '**truth**'. The challenge is to explain why anyone should believe it."*

CREDIBILITY

BELIEVABILITY

"It's not a given, we acquiesce too quickly. Be respectfully skeptical. Do your homework; check the record and the resume. ***Ask the question*** – 'should I trust this person as a credible source for '***truth***'? *Make it a prerequisite before embracing the claims of anyone who professes to have 'it'."*

Author and Designer of this book: *Stephen Cronin. Contact at stevecronin1949@gmail.com*

Are you ready for what's coming?

"It's about....'DATA' NOW & In the FUTURE"

Data. It's been called as valuable as **oil** was in the late 20th century. I would argue ***its present value is closer to gold during the 1848 California gold rush or lithium today in the 21st century.*** '***Why***', you ask? Because DATA is the resource which fuels technology development today. Technology becomes more powerful, more impactful on everyday life, when it has access to large amounts of data. Data is essentially the lifeblood of technology. ***Data teaches machines, i.e. 'droids, 'bots, and the software of Artificial Intelligence (AI) what to do and how to get better.*** The country which has the most access to data will emerge as the world's dominant power in this century!

Data, sometimes called '***raw information***', is continually being collected by governments and businesses. From the things people do on their mobile phones and tablets and where they travel and hang out to all sorts of cyber activity whether it's shopping on Amazon or hacks into government, company, and personal computer systems is all collected by sensors, cookies, security cameras, facial recognition software, and GPS tracking. ***Governments and businesses analyze the data collected to make accurate decisions and predictions about how they should respond to what someone might do***. Data on baseball players, soccer players, students, shoppers, company employees, tourists, farmers, investors, drivers in cars, food shoppers, and ordinary citizen activities are being collected and analyzed. Predictions based on behavioral data are now made to recommend clothes, music, and books a person might be interested in buying, the best medicines to treat patient diseases or when a nefarious person might commit a crime. Data ***collected and Artificial Intelligence*** (***AI) analysis of data could decide*** the best player to pitch a critical baseball game or ***start in goal for the championship soccer game***. All these predictions and decisions are based on **vast amounts of collected data** and then analyzed by Artificial Intelligence influenced computers and algorithms. "***Good choices begin with good information (data)***."

Governments continually collect data on things affecting their country and citizens like weather, the stock market, sea levels, the economy, crime, the food and water people eat and drink, public school education, the physical health and fitness of children, immigration, international trade, and cyber-espionage and hacks by enemies who try to harm states and the nation. It is believed the **country of China collects more data** on its citizens than any other country in the world. The country of **Singapore might be a close second**. Both countries claim their access to citizen data helps them provide the highest rated schools in the world, the healthiest citizens, and the safest communities with the lowest crime rates in the world.

Kai-Fu Lee is an American educated computer scientist who worked at Apple and Microsoft before becoming the President of Google China. Mr Lee left Google to become the CEO (chief executive officer) of Sinovation Ventures, a leading technology company helping new, emerging high-tech companies in China. **Kai-Fu Lee believes China will become the most powerful technology country** in the world **principally because it has more access to people, business, and technology related data than any other country.** It is a commonly accepted fact today that the more data or '*raw information*' collected, the better decisions or predictions a government can make about its resources and citizens. **What kinds of data are you comfortable with your country's government collecting about you?**

It's not just individuals, businesses, and governments collecting, analyzing, and then learning from the data they collect but the ***machines they deploy continuously collects and learn from DATA***. Most computer scientists today believe machines can collect and analyze data indubitably faster and arguably more accurately than any human being.

Machine learning ***creates*** ***artificial intelligence (AI); that is,*** ***computers and algorithms collect and analyze*** ***data to make 'intelligent' decisions and predictions.*** Many companies are using machine learning to improve

their operations to be more successful. As machines have access to more data, companies improve production systems to better serve their customers and owners / stakeholders. **Amazon** began using machine learning in 1999 to collect data from their warehouse operations to improve production efficiency, that is, to get things moved and shipped faster and less expensively to customers. Often times, data analysis indicated their warehouses would operate more successfully by replacing humans with robots and deploying drone deliveries. **Jeff Bezo**, the founder of Amazon, soon began using artificial intelligence in machine learning algorithms to better serve his Amazon customers by collecting data from his Amazon web site - **amazon.com** -. Amazon algorithms analyzed customer purchasing data to recommend other books, similar to the ones they previously purchased through the Amazon web site, that Amazon customers might be interested in. Amazon today uses artificial intelligence throughout its entire company not only in Amazon factories and their Amazon web site but also new products like its virtual assistant, the **Echo**, which uses artificial intelligence to constantly gather and quickly provide information and services requested by their users.

Elon Musk's Tesla autonomous (driverless) cars is another example of machine learning and AI. Tesla cars have and continue to drive millions of miles collecting data on its surroundings: other cars, pedestrians, animals, traffic lights, road signs, bicyclists, school buses, parking, construction signs and cones, pot holes, etc. All this data collection allows TESLA autos to be "*Autonomous*". ***Autonomous vehicles"*** are capable of driving roadways and interpreting traffic-control devices (signs and lights) and the occasional pedestrian walking across the street without a driver actively operating any of the vehicle controls. The ***data collected by TESLA autos teach computers driving TESLA cars how to respond safely to whatever situation the car encounters*** on the road. As a result, Tesla autonomous cars are safer with fewer accidents than cars operated by humans because of the lessons learned from continuous access to experiential, automobile driving ***data***. Tesla is planning to launch a robotaxi service in California and Texas in 2025. Tesla has started talks with local authorities in Austin, Texas. **Tesla also plans to launch full self-driving, autonomous vehicles in China in the first quarter of 2025**

photo above the interior of a **TESLA** car with autonomous capabilities

Google also has built an autonomous vehicle called ***"Waymo"***. In November 2017, Google announced that it started testing driverless cars without a human being in the driver position; however, there was still a human beig employee in the car. In October 2018, Google announced that its test vehicles had then traveled in automated mode for over 10,000,000 miles, increasing by about 1,000,000 miles per month. More miles driven means more data accessed and more lessons learned by the machines. In December 2018, Waymo became the first to commercialize a **fully autonomous taxi service in the United States in the city of Phoenix, Arizona,** Los Angeles and San Francisco, California, and planned for Austin, Texas.

photo above is an Elon Musk **OPTIMUS ROBOT**

ARTIFICIAL INTELLIGENCE / machine learning is providing DATA for computers to collect and learn faster. AI enables autos to DRIVE safer than humans as well as ROBOTS like ***Elon Musk's OPTIMUS HUMANOID / ROBOT*** to better serve its clients. **Data collection is part of 21st century life**. With increased access to data, ***AI is driving cars and trucks, managing our investments, serving us food in restaurants, cleaning our homes and businesses, running our factories and warehouses, and maybe, fighting our wars.***

Is it possible

'stuff' with AI, i.e. cars, robots, drones, investment software, cows, and more,

can make faster and 'wiser' decisions than a human

because of all the DATA 'AI' has access to?

Artificial Intelligence Must Have DATA

"NO DATA means NO AI"

If It's About Data, Machine Learning & Artificial Intelligence,

IT's ABOUT COMPUTER CHIPS

Potato Chips. Chocolate Chips. Poker Chips
Fish & Chips. Tortilla Chips.
Computer Chips.

In the 21st century, the only chip that matters are the ones you find in computers!

A computer chip is like a
tiny, super-smart brain
made of metal and other materials.

It's really small—about the size of your fingernail—but it can do millions of things every second!

Inside the chip, there are tiny parts
called transistors,
which are like little switches
which turn on and off really fast to do math,
remember things, and make decisions.

The chip is what helps your computer, phone, or even your game console work. Chips are the center of the Artificial Intelligence / machine learning universe of today, the future and all the products connected to 'chips': autonomous cars, robots, medical research, finance / investments, and more. **Jensen Huang,** the computer scientist, billionaire owner, co-founder, & CEO of the **world's most valuable company, *NVIDIA***, recently predicted

"in 10 or 20 years, there will be tens,
if not,
hundreds of BILLIONS
of ROBOTS."

NVIDIA **has developed the chips,**
i.e. the computer brain,
to put inside computers / Robots.

Things like **robots,** mobile phones, automobiles, hot tubs, shoes, web sites, food packaging, a person's heart, home and city security systems, buildings, airports, UBER and taxis, train stations, and school buses have, if not now then in the near future, computer chips in them processing the data collected from cameras, sen-

The World's Most Valuable Company -
1/7/2025 **NVIDIA** - An American Chip Making Company

JENSEN HUANG - the president, co-founder, and chief executive officer (CEO) of Nvidia, the world's largest semiconductor company

CHIPS (continued)

sors, and actuators. Data, collected by governments and companies, are processed through computer chips and the algorithms, and artificial intelligence connected to them to identify problems and predict opportunities. ***More data*** means ***more information and, potentially, wiser decisions.*** For instance, **cows** with embedded computer **chips inside them** will collect, in '*real time*', data to keep cows healthier and, as a result, produce more milk. The chips in cows will collect data from inside the animal to predict when a cow will give birth up to 15 hours be forehand or predict when a cow will be sick so the farmer can take action to prevent the sickness from affecting the animal. An Australian company has created a sensor cows swallow and remain inside the animal for the rest of its life.

Nanotechnology (*tiny computer chips*)
in a person's t-shirt will send
your smartphone or watch
real-time information about
the health of your heart

and how well hydrated you are and, then, passing that data to your home robot to prepare a dinner menu and beverage based on your nutritional needs and the food, beverages, and ingredients available in your ambient refrigerator. Computer scientists are speaking about a smartphone app that will scan food packaging the scan into the oven or microwave to start cooking your dinner. Your home robot will also fill your hot tube with warm water and bubbles just as you walk in the door.

Ambient Intelligence

There is a system of collecting and sending data through the internet has been called an ambient system but better known as

the internet of things (IOT).
This system collects DATA from
everything connected to it like the
t-shirts you're wearing, the web sites you visit,
your phone, your refrigerators and watches,
people walking on city sidewalks, EVEN COWS!!

The IOT is a connection of all physical things that have sensors and computer chips embedded in them that then sends the collected data through the internet to government agencies and businesses. An American insurance company announced it will soon

Internet of Things' (IOT):
Chips are processing DATA that is collected From the IOT!!

only sell
health insurance
after analyzing health data
from a person's smartphone
and
wearable exercise devices like *FITBIT*s
which collects data from
a person's exercise workout.

There's even a company that is weaving a thread like computer chip' into clothing that will alert the person wearing the clothing when they need to take a shower!!! There's a chip in smart toothbrushes that tracks how often a person brushes their teeth and offers a discount on dental insurance to those who diligently brush their teeth multiple times each day. ***A Chinese insurance company is using facial recognition technology to examine a person's face, body fat, etc to determine what a person will pay for their life insurance policy.*** Automobile insurance companies are offering discounts on car insurance if drivers will permit black boxes in their cars containing sensors that will collect data on a driver's driving habits like speed, cornering, and braking. The data is then analyzed by algorithms the insurance company creates to determine a person's driving ability and how much they should be charged for their car insurance.

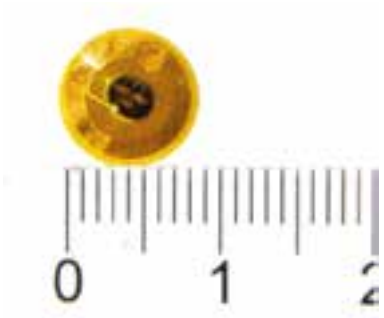
The **ambient** system will enable people to easily turn 'on' or 'off' all the devices in their home through voice commands. You can even schedule a meeting or buy a plane ticket with an app. You won't need to carry your cell phone with you because every glass surface in your home, from your bathroom mirror to your kitchen counter top, could be ambient for checking your calendar, answering e-mail, watching videos, getting the news and weather and anything else we do today now through our phones and tablets! Traffic light sensors will collect data to predict busy traffic times of the day so traffic can be managed more effectively during busy time to reduce traffic jams and congestion. Street cameras will also help police track down and arrest criminals.

"Chips are solving problems before they become problems" according to Mr Huang.

New buildings are incorporating smart chip technology into their design and engineering. Buildings will use sensors to create better environments for renting tenants and workers and, at the same time, monitor their daily activities. An app called Comfy will allow tenants workers to adjust temperatures and light levels in their offices with their smart phones. Furthermore, supervisors can monitor what their workers are doing each day, how much they get done, where they go, and who they hang out with.

So, what about security and privacy? ***There are serious concern***s about protecting all the data being collected and then transmitted to companies and governments. The ***Economist magazine,*** in their September 2019 issue, cited a 2015 story about a pair of TWITTER security researchers who staged a cyber attack on a car being driven in which they were able to turn the stereo and windshield wipers 'on' and 'off', turn off the engine, apply the brakes, and even control the steering wheel. Other security researchers have demonstrated an ability to hack into medical devices like heart pacemakers and insulin pumps. There is even a story about hackers getting access to finger print readers that controlled access to a factory that made expensive, luxury goods and products. The IOT will make 'security' even more important as more and more products are operated and produced by computers which then transfers valuable, personal data through the internet.
Cyber security is now a well paid career in high demand. Stay tuned!!!

RFID Computer Chips



contactless symbol using RFID at store payment terminals

Radio-frequency identification (RFID) uses electromagnetic fields to automatically identify and track computer chips / tags attached to objects. An RFID system consists of a tiny radio transponder, a radio receiver and transmitter. When triggered by an electromagnetic interrogation pulse from a nearby RFID reader device, the tag transmits digital data, usually an identifying inventory number, back to the reader. This number can be used to track inventory goods. RFID computer chips / tags **can be attached to physical money, clothing, and personal possessions, or implanted in animals and people**.

RFID can be used in a variety of applications -

- *Access management*
- *Tracking of goods*
- *Tracking of persons and animals*
- *Toll collection and contactless payment*
- *Machine readable travel documents*
- *Smartdust (for massively distributed sensor networks)*
- *Locating lost airport baggage*
- *Timing sporting events*
- *Tracking and billing processes*
- *Monitoring the physical state of perishable goods*
- *Share business card information, i.e. email address, mobile / business phone #, address, company web site, aspirational quotes, etc.*

RFID chips can communicate information; they do so in response to a signal from an RFID reader. They don't actively broadcast or disseminate information independently. The data on an RFID chip is usually fixed and doesn't change unless the chip is reprogrammed or replaced.

Walmart is testing RFID chips in stores. Walmart stores have their customers install Walmart robot cashier apps on their smart phones, scan each item as they takek them off the shelf, and simply walk out of the store. The RFID scanner shows a picture of everything purchase, the price of each item, and if I want a receipt of my purchases which are connected to my payment method of payment.

And ***what about THEFT***? "*Every check out model tried by Walmart has proven better at reducing theft that a live employee standing at the checkout register. AI high resolution cameras capable of reading barcodes from 100 feet away and invisible RFID scanners make sure any item leaving the store is paid for by the customer*". Similar tests are taking place at Amazon's Whole Foods Stores writes Paul Zane Pilzer.

CHIPS in YOUR Blood

Q - *"Just relax, James.*
You may feel a little..... prick.

James Bond - *"OUCH!!... What is it?"*

Q - *"Cutting edge technology.*
Smart blood.
I' m putting ***microchips*** *into your blood stream.*
Allows us to track your movements in the field.....
You see those readouts on the screen?
We can monitor your vital signs from anywhere on the planet."

James Bond - *"Well that sounds marvelous!"*

FIXING *HUMAN BODIES AND AUTOMOBILES* WITH CHIPS

The *Tesla* Model 3 was having brake problems in 2017 which created critical reviews in ***Consumer Reports Magazine***. The car was taking too long to stop! Consequently, this problem diminished interest in the car and hurt sales for Musk's relatively new car company. That was until Tesla fixed the braking problem by sending an electronic update to the car's computer system that solved the problem! Hit '***send***' and problem solved. ***A software fix was sent electronically to improve a car's stopping distance by 20 feet!***

Imagine,
sending an e-mail or text message to a car
to fix a mechanical problem
rather than
having to bring the car to the dealership
or
your favorite mechanic.

Upon hearing the news of the Tesla computer fix, ***Consumer Reports*** columnist, Jake Fisher, commented

"I've been at Consumer Reports for 19 years and
tested more than 1,000 cars.
I've never seen a car that could improve its performance or fix a problem with an over the air update".

In the past, car companies required their car owners to bring their vehicles to their service centers to fix car problems. In fact, the car company Fiat Chrysler did just that in May of 2018. Fiat recalled more than 5 million of its cars in the United States and Canada to fix a problem that prevented drivers from cancelling cruise control. To fix this problem, Fiat required Fiat car owners to go to their dealerships to leave their recalled Fiats to fix the cruise control malfunction.

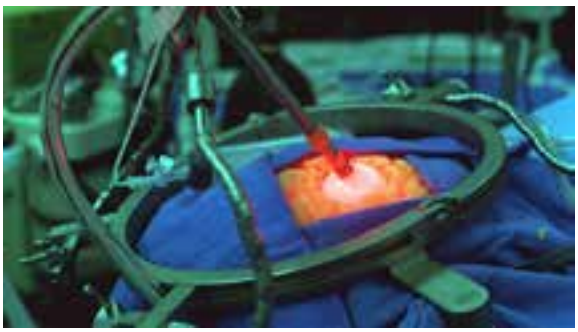
If we can fix a machine by sending an e-mail or text message,
what else can we fix
when 'it' has a problem'?

*'Why Not' neural implants for treating a person's disease and easing their physical or mental pain the same way Tesla fixes car malfunctions? **Elon Musk has. In 2016, Musk co-founded Neuralink with an investment of $100 million dollars**. The company creates a brain-computer interface through electronic implants into a person's brain that would decode brain activity and communicate it to computers. This computer interface has access to the unlimited data of the world wide web that would help a person's brain restore function to conditions like amyotrophic lateral sclerosis (ALS better known as **Lou Gehrig's disease), alzheimer's disease, dementia, and spinal cord injuries**. Musk also hopes the implanted devices will soon cure **paralysis, deafness, blindness, autism, obesity and other disabilities.** One of the company's brain - computer interface devices would work like a sewing machine that could embed threads into a human brain. (wikipedia and WashingtonPost)*

NEURALINK - Placing Computer Chips in Human Brains

Neuralink is a neuro-technology company founded by Elon Musk which connects the human brain to artificial intelligence (AI) through computer chips placed in the brain to facilitate brain communication with AI learning computers.

This technology attempts to improve a person's memory or allow brain functions to communicate with software. Musk adds "*we had monkeys implanted with Neuralink chips in their brains and they were playing video games just by thinking about interacting with the game. In February of 2024, the first human patient implanted with a brain-chip from Neuralink appears to have fully recovered and is able to control a computer mouse using their thoughts, the startup's founder Elon Musk said. Neuralink will help mankind.*" The company also hopes Neuralink devices to treat neurological disorders like **Alzheimer, dementia, and other neurological disorders.**



Conversational AI - ChatGPT

"I think it (ChatGPT) will be more important to doctors than the stethoscope was in the past. No physician who practices high-quality medicine will do so without accessing ChatGPT or some other form of generative AI."

(Doctor Robert Pearl, Stanford University medical school)

ChatGPT is like sitting next to the smartest person in the world **for** *"human like conversations which can answer ANY QUESTION or complete most tasks. This CHATBOT is the artist composing human sounding poems and songs or the class valedictorian to write an A+ essay or the brilliant programmer who writes intricate computer code or explain complex problems, and even pass final exams and tests. This bot can answer anything you'd like answered or write something perfectly like a marketing plan to sell a new product, solving a complex physics problem, and writing a term paper or English composition assignment. ChatGPT is the 'go-to' source for anything you need answered or composed".* (**The Economist Magazine- 2/15/2023**)

ChatGPT (*Chat Generative Pre-trained Transformer)* is a **bot**, more specifically, a chatbot. **A chatbot is a computer program, a software application, that is used to conduct an online conversation** via text or text-to-speech, **as if a person is speaking in a direct conversation with a SUPERSMART, live, human being**. A person asks a question and ***ChatGPT responds WITHIN SECONDS!*** Chatbots are capable of maintaining a conversation with a user in a natural language. The chatbot understands a person's question and intent and then replys based on rules and data written into the computer software of the chatbot. (wikipedia)

ChatGPT was developed by a startup company called OpenAI and launched in ***November 2022***. It quickly attracted attention all over the world for its detailed responses and well expressed answers across many different fields of knowledge. OpenAI's market value was estimated at $29 billion dollars at the time it launched.

Many banks, insurers, telecommuniction companies, e-commerce companies, airlines, hotel chains, retailers, health care providers, government entities and restaurant chains use chatbots to answer simple questions. In the process, companies save millions of dollars by using chatbots to replace human beings. "*Several studies report significant reduction in the cost of customer services,* ***expected to lead to billions of dollars of economic savings***" according to the Wikipedia profile.

Chatbots are not perfect;
they can get things wrong.
Chatbox USERS must realize chatbots deal with
bias, prejudice and misinformation
as it scans the internet for responses to
each user's questions and requests.

Chatbots have also been incorporated into devices not primarily meant for computing, such as toys. ***Hello Barbie*** is an Internet-connected version of the doll that uses a chatbot.

The consulting company Forrester has predicted in 2023 ***25% of all jobs and soon much more will be affected by AI technology.***

"Many teachers believe
ChatGPT could actually help make education better"

reports **Will Douglas Heavan in the April 6, 2023 edition of MIT Technology Review.** Douglas continues in his report that "*advanced chatbots could be used as powerful classroom aids that make lessons more interactive, teach students media literacy, generate personalized lesson plans, save teachers time on admin, and more.* ***ARIZONA STATE UNIVERSITY (ASU) PRESIDENT, MICHAEL CROW, IS MORE EMPHATIC ON THE VALUE OF AI IN SCHOOL CLASSROOMS****. "Let's say you're at* ***ASU now****. You decided to take Biology 100. So in Biology 100, which is science for non-science majors, you take your labs* ***in a virtual reality environment****. You're in this thing where you become an avatar. You're learning biology not by listening to lectures,* ***you learn*** *biology* ***by engaging in this virtual reality****. We're building an AI tool with OpenAI in which you're flying your little robot and now you're next to a messenger ribonucleic acid (MRNA). MRNA is crucial to good health because MRNA cells know what proteins to make, which are essential for everything in your body, from growing muscles to fighting off germs. MRNA is what the COVID vaccine was made of. So you're sitting in class and you're looking at all this in virtual reality and you're flying around it, and you're studying it and you ask your AI bot, 'why are the spikes so long? What are the chemicals on the end of the spikes? And how do they attach? It's going to answer all those questions for you. With all this information, you're going to probably become a master biologist, just by asking this machine (AI BOT) all these questions."*

DeepSeek - is a Chinese artificial intelligence company which develops open-source ***large language models*** (LLMs) like ChatGPT. In January of 2025, DeepSeek's AI Assistant surpassed ChatGPT as the highest-rated free app on the U.S. App Store. The DeepSeek-V3 model uses Nvidia's H800 chips. DeepSeek is gaining recognition for its performance when compared to other LLMs like ChatGPT and is challenging the global dominance of AMERICAN AI models. Pictured in the photo above is **Liang Wenfeng**, the Founder and Chief Operating Officer of DeepSeek.(*wikipedia and Wall Street Journal*)

AI Clothes That Respond To The Clothes Wearer!

Here's something else to ponder about futuristic clothing. Please try to push your imagination out of its familiar boundaries for this idea. How about ***clothing which changes its fabric capabilities based on the temperature of the day?*** For instance, you could change the "capabilities" of your jacket from being light and cool for a warm, summer day to warm and "toasty" for a cold day. It just so happens this is exactly what **Google** computer scientists and **Levi Strauss** clothing designers are **collaborating** to do right now. And, they assure us you can still put these Levi clothes in your washer and dryer.

And, what if clothing could be **made with microscopic, conductive, sensor threads woven into the *fabric which could detect the moods circulating in your mind*?** ***Then, clothes change colors and patterns to express your moods***. Changing your clothes colors could lift your spirits to make you feel better with your favorite colors and patterns when you're feeling sad. Scientists are working on this right now! **The concept is similar to the way light-sensitive eyeglass lenses darken when exposed to sunlight. Dr Liu Xuqing** of the University of Manchester, England, is also experimenting with ways to create antibacterial coatings for fabrics used to make clothes. Dr Liu is testing the process with cotton and polyester. "*One of his thoughts*" according to an article in The Economist Magazine (June 30, 2018), "*is to make conductive threads that could form part of an electric circuit in a person's clothes which would link to sensors that monitor a person's body.*"

And, what **if your clothing could, by its very nature, repel mosquitoes** when you're with friends at a cookout? And, what if the clothes patients wear in the hospital could protect them from contracting a staff infection? What do you think? Is this a possibility too?

AI ROBOTS

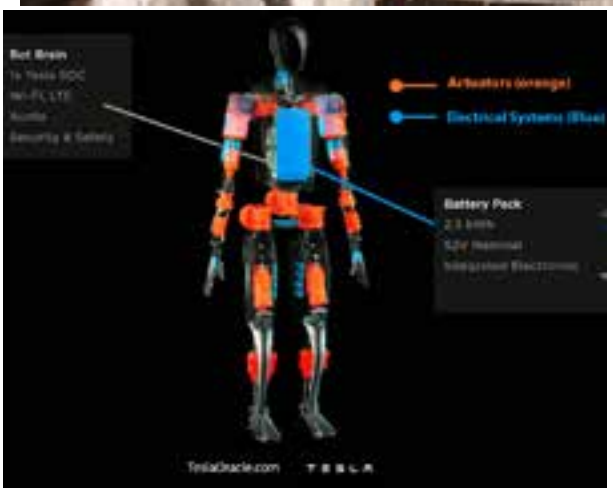
ROBOTS and ANDROIDS.
MAIDS, HOUSEKEEPERS,
FACTORY WORKERS!

EVERYONE - HOMES AND BUSINESSES - WILL HAVE THEM!

Robots will continue to look more human and will become commonplace in everyday life, whether it's self-driving cars, making accurate weather predictions, or as store mannequins who store your personal wardrobe profile to offer wardrobe suggestions at your next store visit. Businesses will "train" AI machines, robots, and androids to handle customer inquiries in stores. They'll play an important role in space exploration too. **Robots will carry out chores like vacuuming and dusting as well as driving trucks, taxis (UBER, LYFT) and delivering the mail and packages!** **Hans Moravec**, an adjunct professor at Carnegie Mellon University, states *"by 2050, robot 'brains' based in computers will execute 100 trillion instructions per second and soon will start rivaling human intelligence."* Since 2004 Moravec has been chief scientist of Seegrid Corporation, founded to commercialize "*tuggers*" and other robots for work in warehouses and factories. *"Robots will have stronger, more dexterous arms and better sensors. Programs will be written to make such robots pick up clutter, store, retrieve and deliver things, take inventory, guard homes, open doors, mow lawns, play games, and so on"* according to Moravec. A 2015 Wired Magazine article went so far to say *"I believe, by 2040, we will achieve the original goal of robots, i.e.*

robots will be freely moving machines with similar intellectual capabilities as humans."
SINGULARITY!

TESLA OPTIMUS HUMANOID ROBOTS



"Optimus is something that anyone can own. People can own one for less than you pay for a car. It will do anything you want - it can be teacher and baby sit your kids, walk your dog, mow your lawn, get your groceries and be your friend, serve you drinks; really anything you can think of. Optimus will be the biggest consumer product of all time" said MUSK .

AI - Robot JOBS

A Burger Joint Where Robots Make Your Food

Creator, a San Francisco restaurant, opened in June 2018 and offers a $6 gourmet burger, cooked and assembled with **no human help.**

The Wall Street Journal: article written by Larissa Zimberoff

U.S. Edition - June 22, 2018 - Today's Paper

"Creator "is a San Francisco burger shop where a robot preps, cooks and assembles your meal. Photo: Ryan Darcy

Artificial Intelligence continues to disrupt the world's workforce, eliminating jobs that once belonged to people! The San Francisco restaurant, Creator, is just one example. This restaurant doesn't look like your typical fast food restaurant but rather a luxury home-goods store. It's key components are ***two 14-foot-long burger-making machines***, each comprised of roughly 7,000 parts, including hundreds of sensors. Buns, tomatoes, onions, pickles, seasonings and sauces are stored in clear tubes, which sit over a copper conveyor belt on a wooden base carved into Zaha-Hadid-style swooping lines. Each machine costs under $1 million and prepares up to 120 burgers an hour. (Alex Vardakostas, owner, engineer, and founder, said he expects to improve the machines' speed over time.)

Customers order through a mobile app, with human *"burger consultants"* on hand to offer assistance. (Initially, these human employees will also guide customers through the app, which won't be available to download at the launch.) All burgers will be cooked medium when the restaurant opens; eventually, patrons will be able to customize their burgers' doneness and seasoning. They'll also have their pick of more than a dozen sauces—sunflower tahini, smoked oyster aioli, ballpark mustard—created with the oversight of local chefs Nick Balla and Tu David Phu and Pilot R + D, a culinary research and development firm.

Creator's **robot** grinds the meat—a blend of pasture-raised chuck and brisket—to order.

Once an order is placed, air pressure pushes a brioche roll from La Boulangerie, a local bakery, through a tube. The robot slices, toasts and butters the bun to order, drops it onto a leaf-shaped tray and dollops it with carefully calibrated amounts of sauce. ***Different components*** slice tomatoes, pickles and onions, shred the lettuce and grate the cheese. The robot also grinds the meat—a blend of pasture-raised chuck and brisket—to order. A specialized mechanical grip packs the patty loosely —so much so that, in human hands, it would break apart before reaching the grill. The light handling keeps the grain of the meat aligned, a texture-enhancing technique borrowed from three-Michelin-star chef Heston Blumenthal. Once the patty is done—***thermal sensors and an algorithm determine the temperature and the cooking time—a robotic arm drops the meat onto the bun***. Patrons pick up their orders at the counter when their names appear on a screen. The process **takes about five minutes.**

*AI **Robots** to Build Houses and Drive Trucks / Taxis / UBER*

Autonomous / Self Driving Vehicles

AI Robots & Drones to Fight Wars and Help Police

Top Photo is a drone / robot used by police in the country of Dubai. Visitors to Dubai and Dubai citizens can ask the robot questions, pay fines and access a variety of police information via purpose-built software. Its facial recognition technology is only 80% accurate but the robot's camera eyes will send live feeds to a command control center for background analysis of suspicious people. ***MIddle 2 photos*** are US Army drones used on the battlefield to detect buried bombs, investigate areas occupied by the enemy or launch missiles against enemies. ***Bottom photos*** are American police officers using drones / robots for surveillance of dangerous places. (CNN Business)

Move Over Taylor Swift, Leonardo daVinci and other renowned artists for *AI Robot Ai-Da*

Top photos: 2022 photo of ***Taylor Swift***; a presumed self-portrait of ***Leonardo da Vinci*** (c. 1510) NOW at the Royal Library of Turin, Italy; ***Bottom photo*** - The robot, known as ***Ai-Da***, **created the painting** in the background **with its own hydraulically powered hands** of renowned mathematician and computer scientist Alan Turing entitled "AI God". Ai-Da's paintings were the first art painted by humanoid robot One of **Ai-Da's painting sold for $1.8 MILLION**.

AI TO CURE DISEASES

Super DATA CENTER in Abilene, Texas

This is the future reality of medicine.

left to right - ***President Donald Trump***; Oralce Corporation Founder and President ***Larry Ellison,*** American businessman and entrepreneur who co-founded software company Oracle Corporation and, as of January 20, 2025, the fourth-wealthiest person in the world, according to Bloomberg Billionaires Index, with an estimated net worth of **$188 billion**. Ellison is also known for his ownership of 98% of Lānaʻi, the sixth-largest island in the Hawaiian Islands. ***Masayoshi Son***, Japanese billionaire technology entrepreneur, investor and philanthropist, a third-generation Zainichi Korean who became a naturalized Japanese citizen in 1990 and the founder, representative director, corporate officer, chairman and CEO of SoftBank Group, and ***Sam Altman,*** AND American entrepreneur and investor, Sam Altman, best known as the chief executive officer of OpenAI; Altman is considered to be one of the leading figures of the AI boom.

The Stargate Project is an American artificial intelligence (AI) plan by companies OpenAI, SoftBank, Oracle, and the investment company, MGX. The leaders of these companies, Larry Ellison (Oracle), Masayoshi Son (Softbank), and Sam Altman (OpenAI), committed $500 billion American dollars to invest in this AMERICAN AI Data Center infrastructure by 2029. It has been planned since 2022 and was formally announced on January 21, 2025 by President Trump, Larry Ellison, Masayoshi Son, and Sam Altman at America's White House. SoftBank's CEO Masayoshi Son will be STARGATE'S CHAIRMAN chairman.

The venture is currently building 10 data centers in Abilene, Texas, and plans to build more data centers in other American states. The new venture says that it will **create more than 100,000 jobs** in the United States.

Larry Ellison contended that

Stargate could lead to the AI-facilitated production of mRNA vaccines against cancer and other diseases which could be designed "robotically," or by leveraging AI, "in about 48 hours."

see page 51 for more information about RNA medicine.

AI Robots Who Are Citizens of Countries

Scan the **QR CODE** ABOVE TO WATCH A REPORTER INTERVIEW SOPHIA

series of photos featuring Sophia, a realistic ***humanoid robot*** capable of displaying humanlike expressions and interactions (including conversations) with people. CLOCKWISE - Sophia discussed a book, is interviewed by reportrers at an AI Conference in 2017, and a photo of the back of her head. Sophia is designed for research, education, and entertainment and helps promote public discussion about AI ethics and the future of robotics. Sophia is described as a *'social humanoid'* robot developed by the Hong Kong-based company **Hanson Robotics**. Sophia was activated on February 14, 2016, and made its first public appearance in mid-March 2016 at South by Southwest (SXSW) in Austin, Texas, United States. Sophia is marketed as a "***social robot***" that can mimic social behavior and induce feelings of love in humans.

Sophia has been covered by media around the globe, and has participated in many high-profile interviews. In ***October 2017, Sophia was granted Saudi Arabian citizenship, becoming the first robot to receive legal personhood in any country.*** ***(wikipedia)***

Will AI Keep Eliminating Jobs Until There Are NO JOBS for Humans?

" NO!! NEVER!!! "

History has always revealed
that far from making working humans obsolete,
technology has long been a
"great job-creating machine."

Lumberjacks, milkmen, movie projectionists, typesetters at printing companies, and video store clerks DID IN FACT disappear because of technological advances.

*But **do not panic.***

*Technology also created a host of **new jobs** that never before existed **like:** computing specialists, data analysts, social media managers, ChatGPT Prompters, digital marketers, energy engineers, software and app developers, cyber security analysts, drone operators, drone maintenance personnel, YouTube content creators and entrepreneurs exploiting new technology...*

How many people are working today with jobs that didn't exist 50 years ago?

A report by the Institute for the Future estimated that less than
85 percent of the jobs that will exist in 2030 haven't been invented yet".
(Source - FEE - Foundation of Economic Education)

THIS IS THE REASON *WHY*
YOU MUST ALWAYS LOOK TO THE FUTURE
TO ANTICIPATE THE SKILLS YOU'LL NEED
TO BE SUCCESSFUL IN THE FUTURE.

Future OPPORTUNITIES are always coming!!

Do you have the "COMPETENCIES" (1)
to take advantage of all the opportunities the FUTURE will offer you?

Do you have the "COMPETENCIES"
to avoid losing a job
that is being replaced by technology?

(1) - "Competencies" *are the skills, attitudes and behaviors fundamental to success. Competency learning should be the primary focus of Education,* ***according to Paul LeBlanc****, former President of Southern New Hampshire University (SNHU), The Chronicle of Higher Education describes LeBlanc as a leading advocate of competency-based learning. For his leadership at SNHU, LeBlanc has been named one of America's Ten Most Innovative College Presidents by Washington Monthly. Forbes has listed him as one of its fifteen "Classroom Revolutionaries" and most influential people in higher education. In 2018, he received the TIAA Institute Theodore M. Hesburgh Award for Leadership Excellence in Higher Education.*

Jobs MOST In Demand

Fast Company is a monthly American business magazine published in print and online that focuses on technology, business, and design. The

New York Post is a daily New York city newspaper. Both publications published articles in **September 2018** anticipating the future's most sought after jobs in the global economy. Many of the jobs mentioned involve ***Technology, Analytics, Marketing, Data Security, & Traditional Trades.*** Here are a few::

1. **Cyber Security:** from ***'Good' Hackers*** whose job is to find weaknesses in the fire walls protecting a company's data to ***Cyber Security Analysts*** who analyze threats and attacks on a company data base, these jobs will continue to be some of the most sought after with the highest paying salaries.

2. **Data Analysts** - using scientific methods, processes, algorithms and systems to extract knowledge, answers, and insights from '**data**'.

3. **Marketing** - collaborating with teams of analysts using '**data**' to identify customer profiles, to determine the products they want to buy, designing and creating an advertising messages, determining the right channel (social media, television, etc) to advertise on, and, finally, analyzing the results of marketing campaigns to make the next advertising / sales / campaign better.

4. **Sales Representative** - simply put, a sales person. Sales people are very important people in most organizations and, as a result, often paid very well. A sales person's job is to ***listen, collect data, and offer advice or a service that can help other*** companies and organizations be more successful. Salespeople are good at meeting people, listening to their needs and challenges, and then suggesting data based solutions for the people, companies, and organizations they speak with for their success.

5. **Brand Manager** - What do ***Nike***, ***Apple*** and the ***Kardashians*** have in common? They're all huge brands that leave consumers wanting more of whatever they're selling. A brand manager has a lot to do with that. ***Good writing***, managing relationships, and ***creative skills*** are important. (per **MediaBistro**)

6. **Engineer** - especially, software and **full stack** developer. Engineers handle all the work of databases, servers, and computer system engineering as well as design rockets, space suits, buildings and bridges. The "full stack" engineer needs to be proficient in multiple programming languages. Design skills are very important too; as well as, global thinking, communication skills (reading, writing, observation, etc), creativity, curiosity and time management skills. **Software, data, AND cloud engineers** are in high demand too.

7. **Registered Nurses and Home Health Care**: whether it's working in hospitals or visiting nurses to homes and nursing homes, the medical and empathy skills of nurses makes their services invaluable according to Forbes Magazine.

8. **Electricians. Plumbers. Carpenters.**

9. **Financial Services Advisors** - bankers, investment advisors, etc who give advice to people on the best ways to budget, spend and invest their ***$*** / income to give them the lifestyle they aspire to.

The most important skills future jobs will require:

critical thinking, data analysis, reading, collaboration, all forms of communication (*writing, speaking, body language, listening, social media management, etc*)***, working VERY hard, and, most importantly, creativity.***

Data Jobs

*It's a 21st century **'Gold Rush'!!*** *But, instead of mining a precious metal, it's a rush to mine **'Data'.*** Companies, organizations, and individuals compete to mine or find data, develop best practices for organizing/segmenting, analyzing and then, exploiting it; in other words, taking advantage of the '*value*' or '*truth*' that good data r eveals.

Companies compete to **recruit people** with the ability to collect, analyze, secure, make sense of, and exploit data. Good analysts use reliable data to help companies understand their customers, keep customers happy, find new customers, solve problems, and be profitable. Data answers questions about '*where*' and *when' to advertise*, and '*what to say*'. *Direct mail? Newspapers? Facebook? Google? YouTube,*? *Spotify*? *What time of the day*? *What week and month*? *15% savings*? *Buy one, get one free*? *Use the color red or black?* **Data answers these questions!**

To hire the best data mining and analytic candidates, companies offer **signing bonuses** to candidates with this type info on their **resumes:**

- customer service or professional office **internship** experience
- **dependability**; meet expectations
- **degrees/certificates** from reputable institutions in computer science, programming, information systems, business or mathematics.
- strong **technology skills**
- excellent judgment and **problem-solving skills**
- ability to repetitively follow a highly technical process with the highest **attention to detail**
- strong quantitative and **analytical skills** focusing on generating outcome based reporting
- Excellent **written and verbal communication skills; story telling / sales / *collaboration* skills.**
- **work with other people on a team** (***collaboration***) to create and execute plans that meet the goals of companies

Sales people will always be in demand and will prosper in the 21st century. ***Guy Kawasaki,*** former Chief Evangelist at **Apple,** present Chief Evangelist of **Canva**, an online graphic design tool, and the author of 15 books including "*Wise Guy: Lessons From A Life*", proclaims the

most valuable skill "*I ever learned was how to sell.*

I encourage everyone to learn how to sell". Whether you realize it or not, the ability to sell will increase your ability to be successful in life. ***You will always be required to sell something, starting with why the company you want to work for should hire you!!!*** Another word for '

'selling' is a form of' storytelling'.

The ability to tell your story, honestly, humbly, and with purpose, and value, is exactly what good sales people do.

A *job interview* or a *networking* opportunity
requires you
to tell your story
in a way
so people become interested in you.

People who can sell can step out of their comfort zone to network, meet new people, listen and observe as well as willingly offer help to a person in need without demanding something in return.

People tell their stories not only
through their words,
but through their body language,
with a smile,
good eye contact,
as well as
the ability to listen,
showing interest
in what the other person has to say,
and,
saying '*thank you*'.

Projecting a '**personal brand**' of good values and experience in something that has economic value accompanied by unselfishness will always help a person's career and their network . A '**personal brand**' of helping someone in need will always pay long term rewards in life, in relationships, and for jobs. . Make sure your brand projects ***empathy and kindness along with a skill, knowledge, and value.***

This is all part of telling your story,
of selling
the value of YOU!

FINANCIAL SERVICE JOBS -
ADVISING PEOPLE ABOUT MONEY

The opportunities for MEN and WOMEN
of all ethnicities, persuasions, and races
in HIGH PAYING FINANCIAL SERVICE JOBS
are abundant!

A financial service person does things like:

- **Help people save and invest their money** - *they give advice on how to save money, invest in stocks, bonds, etc, or put money in retirement accounts so their money grows over time.*
- **Help people with Loans and borrowing**: *-If someone wants to buy a house, a car, or go to col lege, the financial services person might help CLIENTS get a loan or mortgage to borrow money to spend on these choices.*
- **Help people chose the right insurance** *to protect their property (home and auto), their depen dents (life insurance if they die), and health insurance*
- **Help people set up a practical budget** *to helps them spend their money wisely, save more and avoid getting into debt.*

FINANCIAL SERVICES PEOPLE ***help their customers make good decisions about their MONEY,***
so their customers can achieve their financial goals for the lifestyle they aspire to!

MERITOCRACY is a key word in a financial services career - i.e. **people in this job are paid by how good they perform in their job, i.e. if their clients achieve their financial goals!** Required skills include ***HARD WORK / LONG HOURS***, ***CURIOSITY***, **good** ***COMMUNICATION,*** ***CREATIVE thinking*****, great** ***TEAMWORK*** **and the ability to FOLLOW THROUGH /** ***ACCOUNTABILITY.***

Financial Services people are some of the highest paid professionals, and compensation includes a base salary and bonus. Estimates for the average **entry-level** finance **salary** has been $88,160 (2024). More **experienced** Banking & Finance salaries are -

- Investment Banking Analyst. **$130,258 per year.** ...
- Banking Associate. **$120,699** per year. ...
- Equity (investments, stocks, bonds, etc) Analyst. **$203,444** per year. ...
- Investment Banker. **$158,425** per year. ...
- Investment Associate. **$55,366** per year. ...
- Investment Analyst. **$182,615** per year. ...
- Credit Associate or Analyst (i.e. *determines whether or not a customer is a good candidate to offer a credit card, a loan, etc*) **$117,473** per year.

Financial Services jobs include investment banking, and sales and Equity Trading (buying and selling stocks, bonds, commodities, crypto, etc). These jobs requires **great communication skills** and **networking,** i.e. the ability to cultivate relationships. In wealth management, there is an emphasis on long-term relationship-building. Financial Advisors become very involved in supporting their clients' life goals. It's an exciting job PLUS you can make a lot of money.

Many people in financial service feel these jobs allows them to affect their town, state, and the world economy because this type of job affect global growth, the success of companies and the lifestyle of all people. It is **constantly changing and innovating** to meet the needs of a changing world.

Today, **the percentage of women in senior investment banking roles is lower than in other areas of banking. For this reason, investment banks are placing greater *emphasis on recruiting and retaining women.***

Trade Occupations:

Electricians, Plumbers, Carpenters, Robot / Drone Technicians and more

The average hourly rate of an electrician today in Massachusetts (2024) is $39.05.

The average annual salary for a licensed electrician in Massachusetts is $77,409 per year, with a top earner making $104,843 (2024).

The average pay range for a Drone Technician varies greatly (as much as 10 times), which suggests there may be many opportunities for advancement and increased pay based on skill level, location and years of experience.

Drone Up jobs pay as much as $78,959 more than the average Drone Technician salary of $57,556.

Job Title	Annual Salary	Monthly Pay	Weekly Pay	Hourly Wage
Drone Up	$136,515	$11,376	$2,625	$65.63
Electrical Qualifier	$79,363	$6,613	$1,526	$38.16
Drone Inspector	$60,000	$5,000	$1,153	$28.85
Bench Tech	$51,384	$4,282	$988	$24.70
Drone Inspection	$45,040	$3,753	$866	$21.65

Entrepreneurship

Photo above shows Central High School senior and first semester Social Studies 2.0 - Life Skills class student, ***Frankie Noriega (right),*** *network with 2nd semester Life Skills student,* ***Manuel Volquez,*** as junior ***Leiser Bautista*** listens in following Frankie's visit to Mr Cronin's class sharing the story of his new found entrepreneurial success. ***Frankie*** *spoke about lessons learned in the Life Skills class that have helped him achieve early success in his business: "****TIME MANAGEMENT;*** *I had to use my time better. I was wasting too much time playing video games. Secondly, I remember Mr Cronin talking about the importance of my* ***PERSONAL BRAND*** *and how a great BRAND was important for building a great* ***NETWORK****. Most of* ***my new clients come from referrals from people in my NETWORK!****"*

Martha De La Torre ***created a different way*** for people and companies to ***advertise to the Latino community*** ***in the Los Angeles***, California area by launching, in 1988, ***El Clasificado,*** a free, weekly Spanish-language classified print publication that today reaches more than 1.5 million people. In 1998, Marta brought her classified advertising medium from print to the internet when she launched ***ElClasificado.com***, now the largest Spanish language classified marketplace in the U.S. El Clasificado has over $20 million dollars in sales today!

Entrepreneurship is about *people starting businesses!*

Entrepreneurship is the foundation of a healthy economy. The businesses that entrepreneurs start and daily manage provide money for themselves and their loved ones as well as jobs for other people and, subsequently, taxes for cities, states, and the federal government to pay police, fire, school teachers, and the military, as well as keeping the city, state, and country's infrastructure, i.e. computer systems, the roads, airports, and railroads, in good condition.

Starting a business and managing a successful business are **2 different challenges.**

Starting a business happens in a couple of ways.

First, entrepreneurs start businesses through '***invention***'. For example, businesses are ***create***d when someone ***designs*** a new or better product like Earle Dickson did in 1921 with the ***bandaid.*** AND, in 1947, Martin Cooper's launched the first version of a ***mobile phone***. And, how about Albert J. Parkhouse's ***clothes hanger*** in 1903 or William Naismith's new game, ***basketball***, in 1891?

More often, "***entrepreneurship is about 'innovation' "***; in other words, '***change'*** *an existing product or service to something better.* **For example, Central High School senior** and former student in Mr Cronin's *Social Studies 2.0 - Life Skill class,* ***Frankie Noriega***, started a car cleaning company in his senior year of Central high school. The innovation Frankie provided was REMOTE AUTO CLEANING; in other words, instead of a customer bringing their auto to the car wash facility in town for cleaning, Frankie brought his cleaning service to the customer's home!

Here are 2 other entrepreneurial **examples** using **innovation: George Crum and Herman Lay. George Crum** purportedly invented ***potato chips.*** On August 24, 1853, Crum, an African American, was a cook at a resort in upstate New York. One of his customers didn't like his french fries and kept sending them back saying they were too thick. Crum immediately thought about how to address this customer's complaint. Crum quickly ***changed the way he made french fries*** by creating a new batch using potatoes that were sliced paper thin and then fried to a crisp. The previously unhappy customer loved them!!! Problem solved; customer happy. By the way, the customer was none other than American railroad tycoon, Cornelius Vanderbilt, one of the richest people in the world. A ***further innovation*** with potato chips took place during the 1920s when an American businessman from North Carolina, named ***Herman Lay***, began selling potato chips out of the trunk of his car to grocery stores across the south in sealed, wax paper bags to reduce crumbling while keeping the chips fresh and crisp. By 1938, Lay was so successful that his ***Lay's potato chips*** went into mass production and eventually became the first successfully marketed national potato chip brand.

Steve Jobs (APPLE), **Sheila Lirio Marcelo** (CARE.com), **Elon Musk** (TESLA, SPACE X, NEURALINK, xAI), **Mark Zuckerburg** (FACEBOOK/META) and **Garrett Camp and Travis Kalanick** (UBER) are just some of the 21*st* century's entrepreneurs who ***changed the way people do things*** and, in the process, ***started new businesses*** to take advantage of the popularity of their innovations.

Second, ***entrepreneurs need specific qualities and skills*** to be successful. Entrepreneurs need **courage, curiosity, self confidence** and a willingness to push out of their comfort zone to prepare for the challenges of starting a new business. Entrepreneurs also need business skills like **time management, asking lots of questions, collecting and analyzing DATA, storytelling/selling, networking, futuristic** and **critical thinking,** and a continuous **commitment to learning** new things to ensure the success of their new business.

Start a business! Innovate!!!!! Yes, you can!!!!!

Primary 21st century skills!

1. *CREATIVITY - ability to innovate and problem solve; use your imagination; think and then create new ideas & solve problems; ability to ADAPT to changes in your life.*

2. *COMMUNICATION - observation and listening skills; awareness of powerful messages sent by body language; reading, writing, storytelling & presentation skills; how do the people in your network affect the perception others have of your brand?*

3. *CRITICAL THINKING - ability to identify reliable source for 'facts'; ability to organize, segment, make sense of 'data' and then use the data to make logical decisions.*

4. *COLLABORATION - ability to work with machines AND people*

Hope Life Skills teaches general purpose skills like networking, the ability to tell your story, being curios, and a desire to constantly learn. Above all, we try to teach students the need and how to re-invent themselves, to adapt to the changes taking place in the 21st century driven by technology and world events (Harari)

Are you -

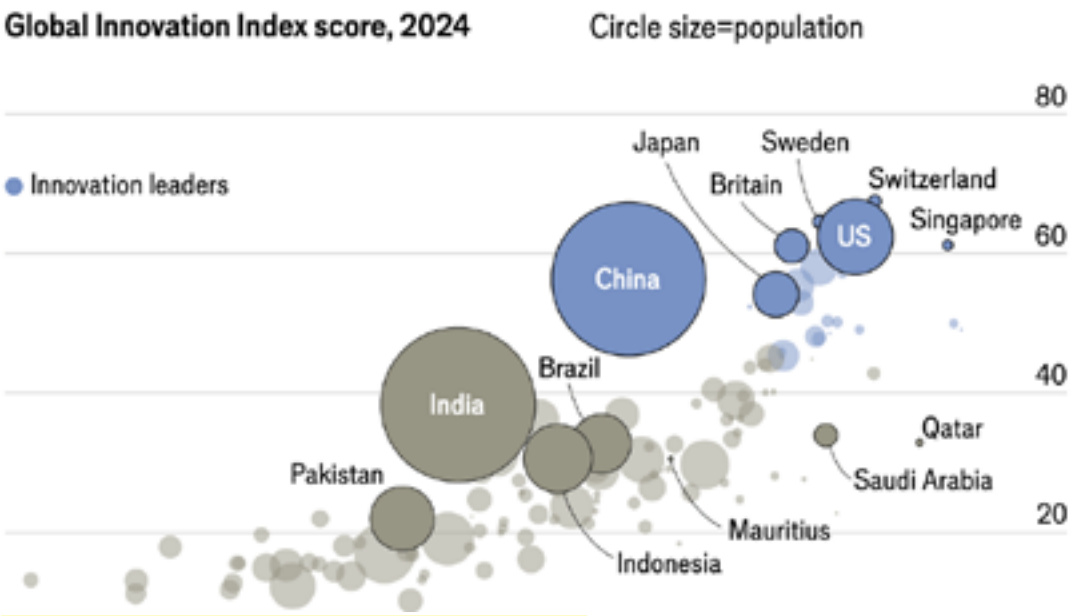
- *DEPENDABLE - fulfilling your responsibilities; always show up on time, all the time!*
- *ORGANIZED - ability to prioritize; to focus on the most important tasks before moving on to tasks of less importance; time management ability.*
- *NETWORKER - constantly meeting new people from different backgrounds and with different interests as yours; the ability to 'tell your story' especially in networking opportunities; and having a very good personal brand which others like and respect.*
- *WILLING TO GO OUT OF YOUR COMFORT ZONE - healthy attitude for 'risk' and 'failure'; don't fear mistakes; realize failure provides lessons to get better!*
- *EMPATHETIC -appreciating and understanding how others feel*

from "*There Is Life After College: What Parents and Students Should Know About Navigating School to Prepare for the Jobs of Tomorrow*" by Jeff J. Selingo; AND - "*21 Lessons for the 21st Century*", by Yuval Noah Harari.

CREATIVE THINKING is a PREMIUM SKILL in the 21*st* century.

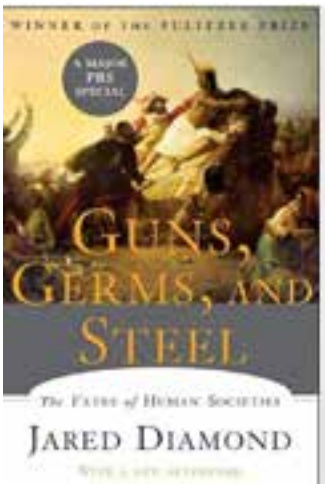
Creativity is more than graphic or performance art. ***Creativity*** is also imagining and creating opportunities and new ways to solve problems or overcome adversity. Furthermore, ***YOU most certainly have creative talent.*** ***And, you are encouraged to fearlessly express it in this class.*** Companies look to hire creative thinkers. ***Creative thinking*** enables YOU to maximize your talents, successfully market your personal brand, network with influential people, solve personal and job challenges, adapt to new situations, and create fulfilling career opportunities.

RANKING OF THE MOST CREATIVE COUNTRIES IN THE WORLD



COUNTRIES which lead the world in INVENTING 'STUFF': **#1 - Switzerland #2 Sweden #3 USA #4.Singapore #5 England #6 South Korea #7 Finland #8 Netherlands #9 Germany #10 Denmark #11. China #12 France #13 Japan #14 Canada #15 Israel. Country with the MOST, the highest number, of new inventions (*stuff*) is the United States of America .** **Please note**, the number of people living in a country (population) affected the ranking of innovation, i.e. the number of people living in a country divided by the total number of applications submitted to the country's government for new products created, the number of scientific books and articles written by engineers / scientists AND the number of high-tech 'stuff' (products) a country exports to other countries like rockets, autos and satellites, computer products, pharmaceuticals (drugs), scientific instruments, and electrical machinery. T his ranking also looked at "inputs", i.e. how much money a country spends on research and development (R&D), the number of engineering college graduates, and venture-capital (investment) deals. The ranking takes into consideration a country's willingness to use new technology, as well as a country's ability to produce new technology 'stuff' like robots, apps, etc. Switzerland filed 5,430 international patent applications in 2022 . That is much less than the number of patents filed by the United States of America. Because Switzerland's GDP and population is less than a tenth of America's size, Switzerland outranks the United States in this metric. The ranking was done by the Global Innovation Index, WIPO, 2024 . ***ASK CHATGPT - WHY are some countries like USA, Sweden, Singapore, etc more innovative than other countries?*** **Please share the bot's answer.**

SUCCESS FOLLOWS SMART



In his Pulitzer Prize winning book, *"GUNS, GERMS, AND STEEL - The Fates of Human Societies"*, AUTHOR JARED DIAMOND seeks to answer the question

WHY some people

from different "*environments*" all over the world and throughout the history of mankind have BEEN

SMARTER THAN OTHERS.

FACT - All people possess a level of intelligence.

FACT - **YOU ARE INTELLIGENT.** Now, use your *intelligence* to be *smart*!

There is a difference between *'intelligence'* and being *'smart'*. Successful people use their natural *intelligence* to become *smart.* Having '*intelligence*' doesn't automatically mean someone is '*smart*'. ***'Smart'* means learning the things that must be done to achieve the goals you have set for yourself**. Being *'smart'* enables a person to achieve the '*success*' they aspire to. **It takes learning how to be *'smart'* to be *'successful'*.** There are millions of '*successful*' people who prove that, regardless of the "*environment*" you grew up in, you can become '*smart*' and then achieve the '*success*' you desire. **Marta Aparicio, Oprah Winfrey, Hafzat Akanni, Ursula Burns, Jason Roias, Raymond Perez, Paul Robeson, Elon Musk, Steve Jobs** and **some person living around 4200 to 4000 BC** in the ancient land of Mesopotamia, now the country of IRAQ, who **invented the first wheel all prove that being '*smart!*' precedes being '*successful*', i.e. you must be '*smart*' to be '*successful*'.**

How does someone become '*SMART*'? Here's one opinion ....

- "*make the most of the **ENVIRONMENT** (communities) you live in. Be **curious.** **Push out of your comfort zone and go to new places, meet new people, and ask questions.** **Smart people keep learning**; they learn new things AS WELL AS better ways to do the thing they already know! **Smart people persevere** in the face of adversity and mistakes. **They know failure / adversity makes them stronger and wiser.** Smart people **move forward** by **making changes from the lessons learned** from failure to achieve a refined image of the success they aspire to. Smart people offer **no excuses!** **They don't blame anyone or anything else for their misfortune or hardship**. They know excuses and alibis project weakness and foster doubt. **Smart people** are **responsible**; they do what they're expected to do! **Smart people** promote and protect their positive **personal brand** by ALWAYS presenting themselves maturely and respectfully **in-person** and **on social media!** Then, they use their brand to build AND nurture **a network** of successful, influential, trustworthy people who help them **create new opportunities** as well as provide advice and support. And finally, and arguably most importantly, smart people **work harder than most**."*

YOU CAN BE SMART!

You can achieve the SUCCESS you hope for!

MOST VALUED SKILLS COMPANIES LOOK FOR IN EMPLOYEES

EDUCATION CAN NEVER STOP

"The days of a steady, stable career are over. The rapid pace of technology makes many jobs and skills go out of date in a few years. You need to be aware of how jobs, careers, and skills are rapidly changing....."

Skills

The new workforce requires employees to learn, unlearn and relearn skills

Security

Facial recognition cameras

connected to the internet of things, in **real time**, will be ***everywhere; omnipresent!*** Cameras in malls, along sidewalks, highways and in buildings will process our facial features and send ***personal DATA*** to algorithms for analysis. For example,

facial photos will be sent to special recognition software to identify a suspicious person or a criminal's location to police. Or, while walking

in a mall,
facial recognition software
will trigger specific advertising videos
to be shown
on mall screens or
even on a person's mobile phone or
smart watch
showing the person's favorite products and
the stores in the mall to find them
with sale prices.

In fact, Apple launched a new **IPHONE** on September 12, 2017, **with facial recognition capabilities** enabling users to view information about people on their mobile screen they've just seen. A **Chinese company, Megvii,** is building a 'brain' for visual computing that allows Chinese users to 'swipe' their faces on their smart phones to authorize payments to companies they're buying things from. **Jet Blue** is taking steps to match passenger faces to passport photos to eliminate boarding passes. Some companies are even

writing algorithms to predict personal behavior
from data they have collected!!!

The September 9th, 2017 issue of ***The Economist Magazine*** speculates stadiums and night clubs may scan faces of customers entering their venues

to predict threats of violence.

And, University of Cambridge in England research has even proved artificial intelligence can reconstruct facial structures of people in disguise. Some airports in the United States were using facial recognition software with selected passengers deemed '***suspicious***'.

THE WALL STREET JOURNAL.

Dec. 15, 2020 7:48 am ET

Russian Hackers (Cyber Terrorists) Break Into United States Federal Agencies

In one of the most sophisticated and perhaps largest cyber terrorist hacks in more than five years, email systems were breached at multiple US Government Departments including Treasury, Commerce, Energy, Homeland Security, and Cyber Security. Other breaches are under investigation.

The **Wall Street Journal** and other media from around the world reported in their December 15th, 2020 editions "*it was a widespread and months long hack of the U.S. government and some of America's biggest corporations enabled by an unlikely source: a little-known Austin, Texas, software company called SolarWinds Corporation that, until this week, was a household name only to computer network administrators in 400 of the Fortune 500 corporations and many government agencies.*

Security investigators say SolarWinds provided the perfect delivery mechanism for a carefully executed intrusion attributed to Russia's foreign-intelligence service.

The hackers targeted software that is foundational to most businesses, but not usually in the spotlight and used principally by technical staff that keep computer networks and software up and running and supposedly SAFE. 'SolarWinds is in the plumbing' said Stephen Elliot, a vice president with the industry research firm International Data Corp.

By building a back door into SolarWinds software, the hackers were able to compromise systems at the Department of Homeland Security, the Treasury and Commerce departments, the Department of Energy, national security agencies, defense contractors, and potentially hundreds of other entities. Also hacked was the Director of CISA, ***the nation's top cyber security official.***

This kind of indirect cyber attack—targeting suppliers as a way to break into their customers—has become an increasing concern to government and cyber security experts. While companies have beefed up their cyber protections, most clients don't closely scrutinize the software that their suppliers deliver. In this incident, the hackers appear to have gained a foothold in their victims' networks by adding "back door" code to SolarWinds Orion software, according to an analysis of the event by Microsoft Corp. Once installed, this software connected to a server controlled by the hackers that allowed them to launch further attacks against SolarWinds customers and to steal data.... As the probe continues into the massive hack—which cast a nearly invisible net across 18,000 companies and government agencies—security specialists are uncovering new evidence that indicates the operation is part of a broader, previously undetected cyber espionage campaign that may stretch back years.... the United States National Security Agency, America's top cyber spy organization said Hackers were finding ways to forge computer credentials to gain wider access across networks and steal protected data stored on in-house servers and cloud data centers."

The attack blended extraordinarily stealthy trade craft, using cyber tools never before seen in a previous attack, with a strategy that zeroed in on a weak link in the software supply chain that all U.S. businesses and government institutions rely on—an approach security experts have long feared but one that has never been used on U.S. targets in such a concerted way.

Just four days before the 21 year old Solar Winds company disclosed the hack, the company announced its CEO (chief executive), Kevin Thompson, would be leaving Solar Winds, effective January 4 2021..."

Wikipedia profiled the attack this way - *" The data breach, considered to likely be the work of Cozy Bear (hackers) backed by the Russian state agency SVR, was reported to be among the worst ever experienced by the United States, due to the high profile of the targets and the long duration the attacker had access. U.S. Senator Richard J. Durbin described it as tantamount to a declaration of war. Other prominent organizations, inside and beyond the U.S., were also exposed to the attack, and some of these may also have suffered data breaches. The cyberattack that led to the federal breaches began no later than March 2020 until their detection by* **FireEye** *Inc., a major U.S.-based cybersecurity firm. The attacker apparently exploited software from at least three U.S. firms: Microsoft, SolarWinds, and VMware.... SolarWinds said that of its 300,000 customers, 33,000 use Orion. Of these, around 18,000 government and private users downloaded compromised versions. .. Possible future uses could include attacks on hard targets like the CIA and NSA, or recruiting spies.... Former Homeland Security Advisor Thomas P. Bossert warned that it could take years to evict the attackers from US networks, leaving them able to continue to monitor, destroy or tamper with data in the meantime...the hackers also breached the United States Department of Energy which oversees the nation's nuclear weapons program, nuclear reactor production for the United States Navy, energy conservation, energy-related research, radioactive waste disposal, and domestic energy production."*

Cyber ***Terrorism***

Annual salaries average MORE THAN $116,000 (2015). **Today, these salaries are MUCH HIGHER!** In 2015, there were about 1,000 of people with a job in cyber data security. Today, government and companies need at least 30,000 of them. Because of the value of data today,

keeping data safe has become the primary goal

of all companies and organizations. Governments are competing with companies to hire cyber security specialist, thus, increasing the salaries for those interested in the work and qualified to do it. What do these people do ? They protect countries, cities and companies from cyber attacks that steal personal information (medical and credit card information) and bank accounts, industrial (machine and software) design patents, and threats to shut down power grids that supply electricity to homes and businesses in cities and states as well as influencing elections! In 2013, the retail company,

Target,
was the victim of a cyber attack
and
lost billions of dollars of market value

when hackers (cyber thieves) were able to gain access to Target's computer systems and installed 'malware' that collected information on Target's customers who had paid for their Target purchases with credit and debit cards. People's names, their credit card information, phone numbers, and email and home addresses, all stolen and used by hackers for their criminal deeds. Likewise, for **Home Depot** whose computer systems were hacked in 2014. And, in **the 2016 United States Presidential Election, the FBI investigated the possibility of Russian hackers affecting U. S. election results by hacking into American voting systems.** In the future, terrorist groups with hacking expertise could shut down power plants, sabotage GPS and air traffic control systems thus jeopardizing air and automobile transportation safety as well steal bank deposits and sensitive government information. ***Data trafficking,*** the sharing, selling, and remixing of people's data without their control or awareness, has threatened people's financial well being, security, freedom, and liberty. Cyber security, according to some experts, is and will continue to be one of the globe's most sought after, high paying careers.

Surveillance - Who's Watching You?

'What if'
the country you lived in
had a rating system
for each citizen
that affected each person's
rights and privileges?

This rating system is like a '*credit rating*' which American banks now use to determine whether someone is 'trustworthy' enough to re-pay a bank loan. However, ***data collection for this new rating system of people*** is more intrusive with personal consequences more far reaching than an American bank's 'credit rating'. For example, governments using this new surveillance system will ***watch everything its citizens do*** from the web sites they visit and whether they pay their bills on time to the restaurants and concerts they go to and the people they hang out with. As a result of the data collection of each person's behavior, the government will give each person a numerical score or rating. Citizens will be given points for good deeds like giving blood, helping the elderly and veterans, paying bills on time, doing exceptional work at school or their job and keeping their property neat and clean. Citizens will have points deducted from their rating for misdeeds like late payment of bills, being late or absent to school, speeding tickets, littering, being disrespectful to a teacher or policewoman or policeman, or being convicted of a crime. Billboards will promote good behavior like re-cycling trash, flushing public toilets, not chewing gum nor wearing inappropriate clothes in public and never offending anyone with insensitive racial or ethnic comments on social media. ***People with good ratings will get discounts on train, plane, UBER, and bus tickets, access to the best doctors, hospitals, and schools, and discounts on parking fees and mortgage rates. People with low ratings will pay higher prices for plane tickets and tickets to popular concerts*** and movies; they will also pay higher mortgage rates to purchase a home. People with bad ratings may not be able to buy airline or high speed trains. Citizens will stay on the ***'bad citizen' list*** until the court the government established to rate citizens decides to take them off the ***'bad citizen' list***. All citizen data will be compiled and stored by the government and protected by the best firewalls and security systems. Citizens can always look up their rating by entering their social security or citizen number into a mini-app running on social medial platforms like Facebook or WeChat. ***The government wants to know and track the trustworthiness of its citizens and companies.***

One country has already started
a 'citizen rating' program in 2018.

Everyone citizen in this country starts out with 1,000 points and then gets awarded additional points for good deeds or points deducted for bad behavior. All of this country's 1.4 billion citizens may have a personal score by 2020.

Do you know which country already has a citizen rating system like this?

SEAWEEDs are routinely eaten today across East Asian countries" according to a special report on ***THE FUTURE OF FOOD*** in the October 2nd, 2021 article in **The Economist Magazine**. *"Kelp is a large ocean-growing seaweed that grows naturally in underwater forests. Recently, companies have started to farm and harvest kelp on the east coast of the US as well as in Europe. Kelp is loaded with minerals and fibre AND a lot more sustainable*," that is, easier and less expensive to grow than more traditional foods in western countries like the United States, Canada, England, and other European countries. **The New York Times** called **kelp** ***the "climate-friendly vegetable you ought to eat."*** "*Kelp is a nutritional powerhouse rich in many vitamins (A, B, especially B12, C, D, E, and K) and minerals (potassium, calcium, magnesium, nitrogen, zinc, copper, chromium, selenium and more),*" according to **Angel Planells**, a Seattle-based registered dietitian nutritionist and national media spokesperson for the Academy of Nutrition & Dietetics. "*Kelp, the sea vegetable, earns its title as a 'superfood' not just because it's packed with vitamins and minerals, but also because it is rich in healthy fats and fiber. Kelp has been studied for its anti-inflammatory properties, its ability to help those with diabetes that struggle with blood glucose levels, and also may aid in weight loss as an obesity treatment* " writes **Emily Shiffe**r in ***Healthy Eating***.

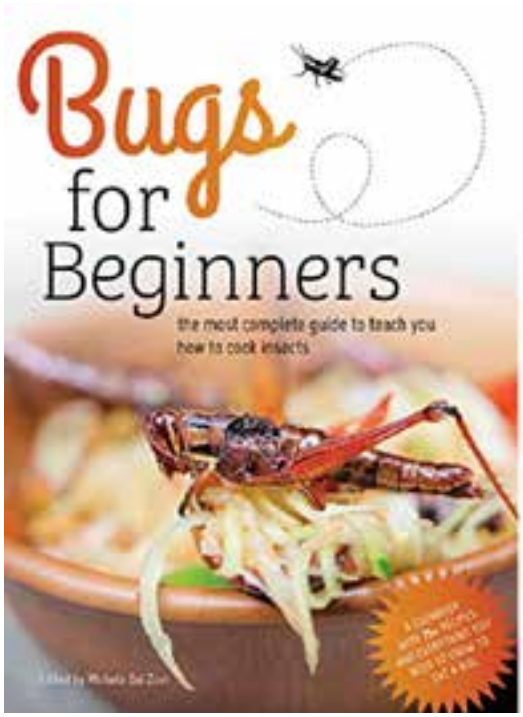
Korean Kelp Chips

"Another food group that is proven good for you and less harmful to the environment is ***INSECTS***! In the same **Economist Magazine** article, the authors write "***around 1,900 species of insects are now being eaten around the world***. *For example, the food from the Oaxaca region in southern*

Mexico, arguably Mexico's most diverse and delicious cuisine, features ***fried grasshoppers*** seasoned with lime, chilies and salt rolled into a fresh corn tortilla. *"Drinkers in Thailand snack on deep-fried,* ***thumb sized beetles****; people working the fields of southern Africa prefer* ***chubby mopane worms****. 2 billion people choose to eat insects on a regular basis".* In a July 4, **2004 edition of National Geographic**, "*Japanese Gourmands, that is, people who love*

food, savor aquatic fly larvae sautéed in sugar and soy sauce. ***De-winged dragonflies boiled in coconut milk with ginger and garlic*** are a delicacy in Bali. ***Grubs*** *are savored in New Guinea and aboriginal Australia* and *during the spring rains* ***in***

Keep this in mind, the hardest insect to eat is... your first one.



ants are everywhere, easy to catch, and actually taste good.
photo by Maciej Forc. Flickr

Ghana, winged termites are collected and fried, roasted, or made into bread. In South Africa these insects are eaten with cornmeal porridge." **National Geographic** author Sharon Guynap continued " *If you think eating insects is gross, you may be in the cultural minority. Throughout history, people have relished insects as food. Today, many cultures still do". 'Ten thousand years ago hunters and gatherers ate bugs to survive. They probably learned what was edible from observing what animals ate',* according to Gene DeFoliart, a professor emeritus of entomology at the University of Wisconsin-Madison. *"Eating insects certainly is an old tradition"* DeFoliart continues. *"The ancient Romans and Greeks dined on insects. Pliny, the first-century Roman scholar and author of 'Historia Naturalis', wrote that 'Roman aristocrats loved to eat beetle larvae reared on flour and wine. Aristotle, the fourth-century Greek philosopher and scientist, described in his writings the ideal time to harvest cicadas: The larva of the cicada* on attaining full size in the ground becomes a nymph; then *it tastes best, before the husk is broken. The Old Testament encouraged Christians and Jews to consume locusts, beetles, and grasshoppers. St. John the Baptist is said to have survived on locusts and honey when he lived in the desert. In the mid-19th century Major Howard Egan, a superintendent of the Pony Express in Nevada, observed a Paiute Indian expedition where the object of the hunt was neither bison nor rabbit, but rather the wingless Mormon cricket.* In *Latin America cicadas, fire-roasted tarantulas, and ants are prevalent in traditional dishes. One of the most famous culinary insects, the agave worm, is eaten on tortillas and placed in bottles of mezcal liquor in Mexico."*

Scientists have also analyzed **empirical data** on *the nutrition value of the foods eaten today* in wealthy, industrialized countries like the **United States**, Canada, and the European Union *and the nutrition of alternative foods like seaweed and insects. Hamburger,* for example, *is roughly 18 percent protein and 18 percent fat while cooked grasshopper contains up to 60 percent protein with just 6 percent fat.* From the **Edible Insects web site** - "*insects are a real animal protein that includes all nine essential amino acids; they're a prebiotic fiber (nutrition for probiotics), very high in antioxidants, a perfect Omega 3:6 balance, high in B12, Calcium, Zinc, Iron, and more. Insects are also a very bio-available food source".* Moreover, fish and insect fatty acids are unsaturated and, as a result, healthier.

AS IMPORTANTLY,

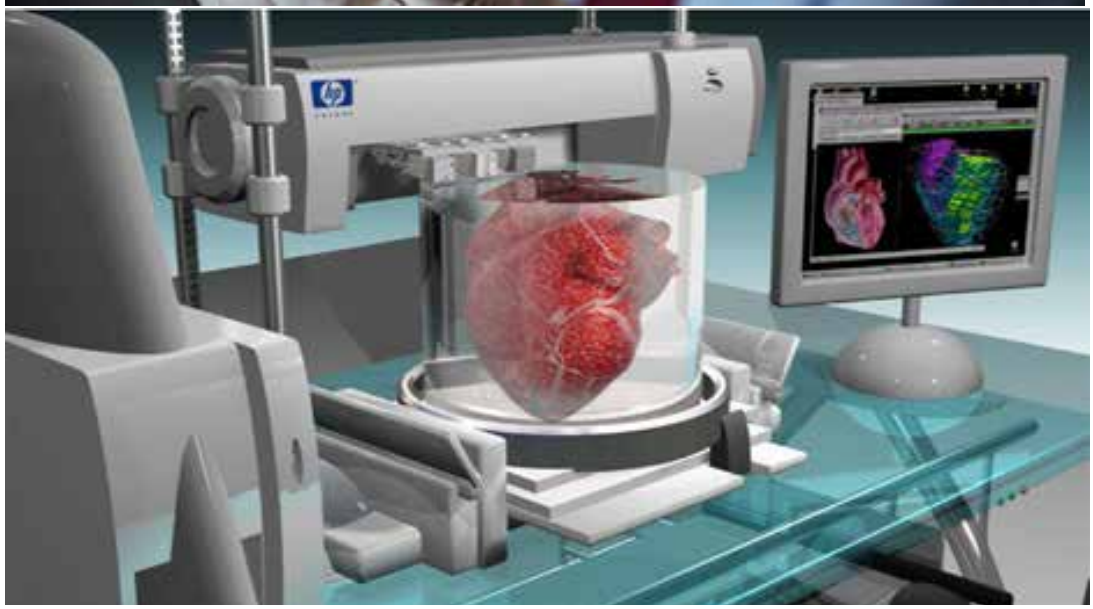
insect farming and ***seaweed agriculture*** are ***less harmful to the environment THAN*** modern day ***farming of cattle, soybean*** and other products found in supermarkets and on American dinner tables.

3D Manufacturing

Design and manufacture your own wardrobe.

You'll design your clothes yourself on your home computer then print the clothes you've designed on your home 3D printer. From shoes to prom dresses and tuxedos, you'll design and produce clothes on your home 3D printer!!! Or, you'll purchase designs of famous designers to be made on your home 3D printer. If the clothes you design become popular, you'll be selling the computer programs (code) of your designs on Amazon or you'll create your own web site displaying clothes you've designed for people to buy. After your customers buy the computer program of the clothes you've designed, you will send your customers your clothes design in an **email** through **Blockchain,** the most secure system for sending electronic information. Your email will contain the attachment containing the code of the clothing you've designed. Your customer will then be able to print your design of their new clothes on their 3D home printer. Prices for home 3D printers have become very affordable as more and more people buy them.

3D Bio-Printing



Top photo shows a technician holding

a human ear created in a 3d print lab made from a person's DNA.

The bottom photo shows a human heart being printed in another 3D lab which also reproduces other body parts. ***(3D) bioprinting*** combines human and animal cells, growth factors, and biomaterials to produce human body parts with imitation tissue characteristics. The 3D printing process uses printer heads which go back and forth laying one layer of material on top on another to make the organ or ligament to be implanted in a human body. ***What else will 3D printers make?***

How about 3D printing a house? It's already happening.

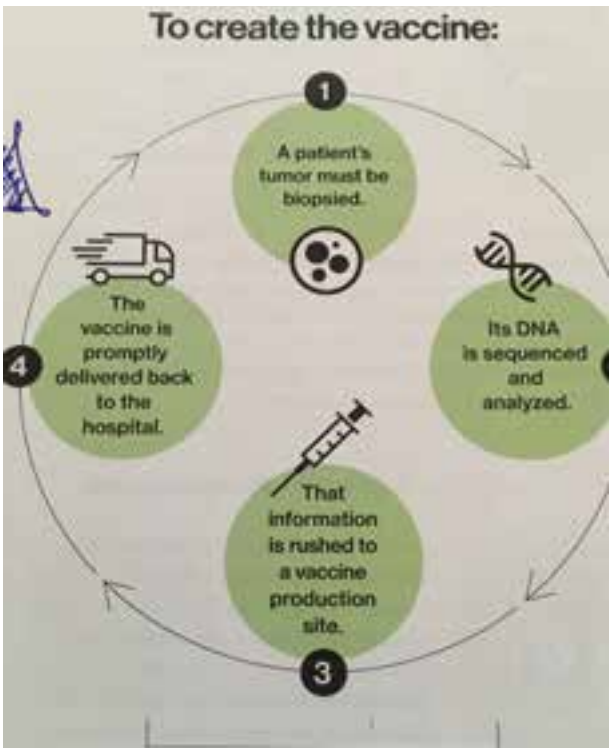
3D Home Construction

Building homes using 3D technology? Yes. Cars and other products too. The term "3D printing or manufacturing" can refer to a variety of processes using a variety of materials (**plastics, concrete, epoxy, even skin)** in which the material is "*joined or solidified under computer control with materials being mixed together (such as liquids or powder grains being fused together), and then applied in the* ***construction process layer by layer***." A startup company called *Mighty Buildings* is automating up to 80% of the home building process using 3D printing/manfacturing. The company claims it can build a home with **95% fewer labor hours and twice as fast as** traditional construction. The company can print more of the building structure than previously possible, including overhangs and roof structures. Robots help add interior and exterior finishes, while humans are left to do the detail work that's still beyond the grasp of production-scale automation. The innovative approach and **efficiencies** in terms of both time (a **studio unit can be printed in under 24 hours**) and money (the **homes evidently cost up to 45% less than comparable wood-built houses**) has attracted investment and accolades. A Vancouver company is hoping to change the local construction framing industry even more with new technology that can ***"print"*** **steel** studs which also accelerates the building process. "*The end goal is that I don't want to see anything built out of wood anymore*", a company spokesperson said. The 3D home building process is completely mechanical - with a **building's frame designed on a computer,** then having individual **modular parts, studs and panels manufactured by specialized 3D printers.** The parts are then **shipped to the construction site and assembled,** with minimal on-site cutting, drilling or modifications.

Personalized Medicine

What if we could **cure diseases by creating a unique medicine for each, sick person to treat the disease that is making them sick?**

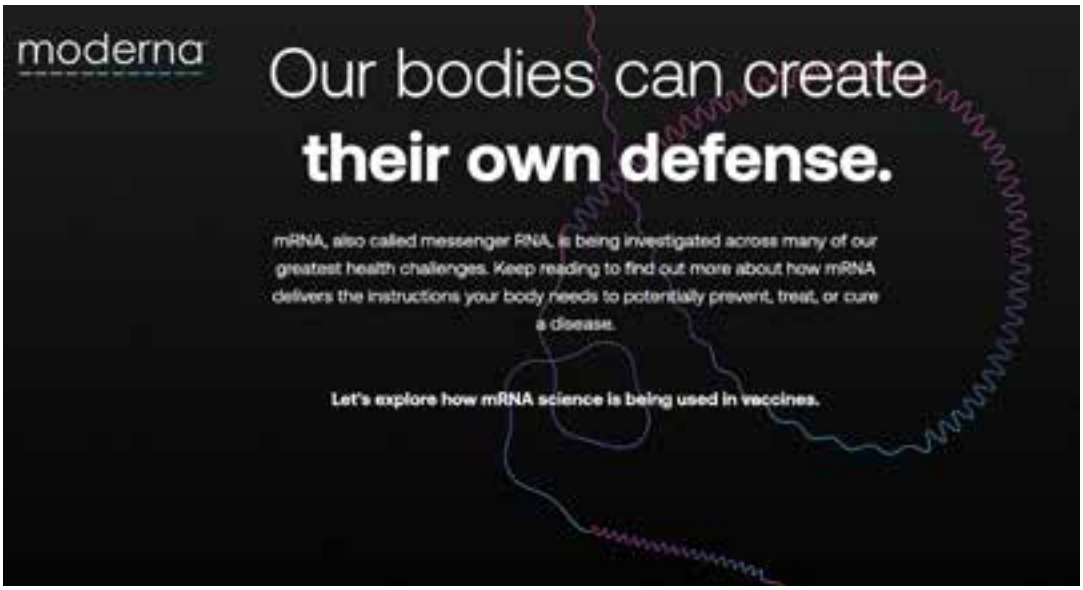
What if **we could cure huaman diseases by using each person's natural immune system** to attack and destroy cell mutations in cancers and degenerative diseases like dementia and parkinsons?



Personal, genetic data collection, analysis, and ongoing testing will soon enable scientists to make and sell ***personalized cancer vaccines to trigger a person's immune system to "identify, attack, and destroy a cancer tumor."*** Research into this treatment began in 2008, five years after the Human Genome Project was completed. The most recent data findings have been extremely encouraging.

A startup company in Germany called BioNTech has created and tested a vaccine containing copies of mutations found in cancer cells which could activate a person's immune system to produce special cells which would find, attack, and destroy all cancer cells containing the malignant mutations. BioNTech has joined another company called Genentech to create a process to produce thousands of personally customized attack vaccines. The companies process for producing special attack cells take samples from a person's cancer tumor (biopsy), analyze the tumor's DNA, then produce a personalized vaccine based on their study of the tumor's DNA. ***The personalized vaccine is then injected into the patient to find, attack, and destroy the malignant tumor.***

Stay tuned for the ultimate victory over cancer scientists expect.



Messenger RNA, or ***mRNA***, is a molecule that tells the body how to make harmless proteins from a virus or other microbea which are then able to trigger the body's immune system to produce antibodies and cells to help protect a person from getting infected if and when a real virus enters the body. Researchers found a way to introduce and protect an mRNA message with the code for a portion of the spike protein on the SARS-CoV-2 virus's surface. The vaccine provides just enough mRNA to make just enough of the spike protein for a person's immune system to generate antibodies that protect them if they are later exposed to the virus. The mRNA in the vaccine is soon destroyed by the cell – just as any other mRNA would be. The mRNA cannot get into the cell nucleus and it cannot affect a person's DNA. In the case of **COVID vaccines**, the mRNA instructs the body to make the spike protein that SARS-CoV-2 VIRUS uses to enter cells. This protein, then, stimulates the body to mass produce antibodies to the virus.

If there is anything positive to come out of the coronavirus pandemic response has been mRNA. It's the ***key ingredient*** in the Pfizer and Moderna COVID-19 vaccines. But mRNA itself is not a new invention from the lab. It evolved billions of years ago and is naturally found in every cell in your body. Scientists think RNA originated in the earliest life forms, even before DNA existed, according to Penny Riggs writing in a Hawaiin periodical in 2021.

FURTHERMORE, mRNA technology will probably produce a new business model establishing new companies creating ***"similar mRNA proteins capable of treating a wide variety of different disorders including",*** according to Bloomberg Business***, "heart disease, cancer, and rare genetic conditions.*** mRNA could be used to *"prompt cells in the body to produce any protein to reverse disease or growth agents to repair damaged tissue."* Clearly, obstacles to success exist. For example, teaching the immune system to differentiate between tumors and healthy cells is just one. Stay tuned.

Changing Genes?

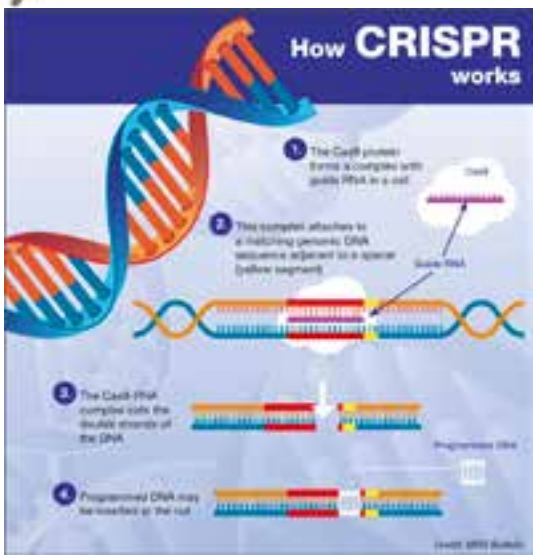
CRISPR genome editing

is a biomedical engineering tool enabling doctors to alter the genes of plants, animals, and humans.

This means doctors NOW have the ability to change the genetic instructions found inside the TRILLIONS of cells in the body of person or animal that they were born with. Cells determine physical traits like height, skin color, eyesight, and predisposition to certain diseases. As a result,

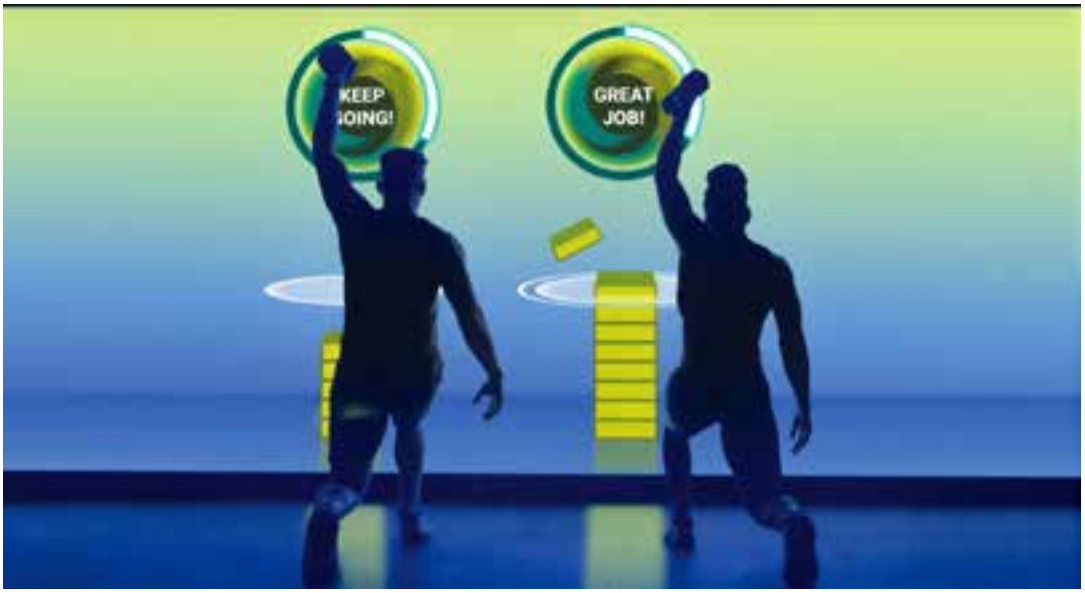
doctors and scientists can NOW change the qualities of insects, like the mosquito above, by changing chromosomes in insects' DNA.

DNA 's function is to store hereditary information. A person's genetic code is stored in the DNA. Chromosomes can be found in the nucleus of the cell. Scientists can make female mosquitoes sterile OR give mosquitoes resistance to the parasite responsible for malaria by changing the mosquito DNA. If scientists decide to change mosquitoes' DNA to make females sterile, female mosquitoes will no longer have babies. As a result, without the ability to reproduce, mosquitoes will become EXTINCT. No Mosquitos means these insects can no longer pass along terrible diseases like malaria which kill millions of people in poor countries throughout the world. Altering an insects DNA is an alternative to using toxic pesticides to kill bugs like mosquitos which, besides killing the mosquitos, also pollute water and causes cancer in humans. If we can change the DNA of insects,



we can change the DNA of humans and potentially eliminate birth defects and diseases like cancer, ALS, MS, and even old age.

Gyms and Fitness Centers of the FUTURE



The future fitness club or gym of the future is now here in some parts of the world. Lumin Fitness in Las Colinas, Texas is one of them and it's no ordinary gym. Wall-to-wall LED screens, algorithms, and motion tracking sensors allow Lumin Fitness to offer supervised workouts with

NO HUMAN TRAINERS NOR COACHES. JUST VIRTUAL COACHES DRIVEN BY AI

written by talented computer programers and a reliable, continually tested, data base the programmer base their code on. **VIRTUAL AI COACHES,** designed to guide gym goers through different workouts on tall LED screens that line the walls of the company's studio in Texas. Although AI is becoming more widespread with fitness, AI generally associated in products like smart mirrors, training apps, and smart cameras. Lumin Fitness's founders claim it's the first gym to integrate AI into a gym.

A darkened studio space can accommodate up to 14 people at once, either completing a solo workout program or participating in a high-intensity training class where a group performs movements likensquats, dumbbell presses, and sit-ups. Each member works out within a designated station facing wall-to-wall LED screens. These tall screens mask sensors that track both the motions of the exerciser and the gym's specially built equipment, including dumbbells, medicine balls, and skipping ropes, using a combination of **algorithms and machine-learning models.**

Once members arrive for a workout, they're given the opportunity to pick their AI coach through the gym's smartphone app. The choice depends on whether they feel more motivated by a male or female voice and a stricter, more cheerful, or laid-back personality, although they can switch their coach at any point. The trainers' audio advice is delivered over headphones and accompanied by the member's choice of music, such as rock or country.

During warmup and cool-down sections before and after workouts, the LED screens display a faceless humanoid figure completing the motions as a visual aid to help the client follow along. Once the workout has begun, the screens depict simple motivational games, encouraging participants to fill up a virtual basket of balls by completing a sit-up, for example, or building a virtual block tower every time they finish a burpee.

AI trainers encourage people to start working out with a more personalized approach to fitness that cuts out interactions with expert human trainers who could leave exercisers feeling inadequate, intimidated or unmotivated. **The recent rise of AI-powered therapy and companion bots show some people feel more comfortable interacting with machines than they might with fellow humans,** he points out.

THIS ARTICLE based on information FROM **MIT TECHNOLOGY MAGAZINE**, OCTOBER 15, 2023 written by Rhiannon Williams.

Aging - "*No Mas*!"

MR Cronin

teaching SOCIAL STUDIES 2.0 - A Life Skills class in 2075 when he is 126 years old. Is this possible?

According to some scientists today, '***yes***'. But, '*is it probable*' you ask. These same scientists say '***yes***'! A team of eminent *"geroscientists,"* or doctors who study aging, includes Dr. Nir Barzilai, director of the Institute for Aging Research at Albert Einstein College of Medicine in The Bronx, and Steven N. Austad, who heads the biology department at the University of Alabama at Birmingham. These prominent doctors are studying specific genes and one or more drugs that will slow the rate of aging and the debilitating ailments and diseases which typically are the causes of death in older people. Dr Barzilai and his colleagues have identified and are studying specific genes which can ultimately enable men and women to live 20 to 30 years longer than the normal life expectancy. By studying genes that extend a healthy life, "*it should be possible to devise drugs that mimic the genes' effects*," and, consequently, enable people to live longer Dr Barzilai said. Two such gene-affecting drugs that show early promise against age-related diseases are already being tested. One of these age altering drugs is **metformin.** There is already evidence suggesting that metformin protects people against specific diseases like cardiovascular (heart), cancer, and cognitive diseases (dementia) which are all associated with the ultimate cause of death with old people. Other advantages of using metformin is cost; only two to five cents per pill!!! Metformin is also taken orally with six decades of safe use with people now using it to treat Type 2 diabetes and other diseases. Dr. Barzilai said, "*Our goal is to establish the principle of using a drug or two in combination to extend a healthy life.*" It will be a combination of drugs which will delay the onset of terminal diseases which will ultimately and significantly extend life. Now, **how about reversing the aging process?** ***Some scientists say 'yes'.*** Researchers at the Salk Institute for Biological Studies in San Diego, California have "*reversed the aging of mice*". These researchers are optimistic about doing the same for people.

Photo Credit: Tim Flach Getty Images

Transportation

High speed trains floating on magnets or electromagnetic fields within a vacuum tube at speeds of close to

1,000 miles per hour

traveling from Los Angeles, California to New York City in less than 1 hour!
No motors. No engines. No fossil fuels

like gasoline or diesel. No wind or draft the train has to push through. Just the empty, pristine environment of a vacuum tube. This

high speed transportation system in a hyperloop. The vacuum tubes

the trains travel in are mostly buried underground. They will speed across the continental United States, from the west coast of America to the east coast of America in minutes, not multiple hours or days. The only thing a passenger feels in the hyperloop is the acceleration taking off and the de-acceleration slowing down; nothing to feel when traveling at the normal traveling high speed. Other countries are also planning on building hyperloops, partly, to relieve the long delays from the traffic jams in the world's expanding cities . One scientist has proposed a justifiable charge of only $50 for the trip. One of Elon Musk's many companies is called **THE BORING COMPANY**, which plans to build a hyperloop to connect Washington, DC to New York City; travel time 21 minutes rather than 5 hours by car or 3 hours by Amtrak Acela trains traveling in the hyperloop from D.C. to New York!!!

The photo below shows an actual hyperloop, built by Elon Musk's Boring company, just outside LosAngeles, California. **On December 18, 2018, Musk opened a 1.14 mile test track in Hawthorne, California,** which will eventually go directly underground to LosAngeles. Musk's Boring Company tunnels will ultimately send autonomous electric cars equipped with retractable guide wheels, seen on the car below, ***zipping through those tunnels at speeds up to 150 mph.*** **The Boring Company** goal is sending one car per second through the tunnels. The Boring Company is already working with officials in Chicago on an airport express route, with officials in Los Angeles on an underground shortcut to Dodger Stadium, and with officials in Maryland on a Baltimore-to-D.C. transit tunnel. *"Finally, finally, finally"* Musk added *"it's something that'll solve the traffic problems"* in our cities.

Electric Vehicles (EVs) - cars, trucks, planes & more

Elon Musk *(top photo)* **standing next to his *TESLA electric vehicle (EV)* *at a TESLA electric charging station*** *(below)*

EV cars do not use gasoline; EVS are powered by electricity from the batteries UNDERNEATH the body of the car. The batteries get their power by plugging the cars into an electric outlet at charging stations along the highway (*as shown in the photo directly above*) or at someone's home or a nearby hotel. While most gasoline powered cars can travel over 400 miles on a tank of gas, the newest Tesla automobiles can travel more than 300 miles per electric charge. But EV driving range is increasing rapidly. Tesla electric cars are also quiet; you can barely hear them as they move.

How long does it take to charge your electric car?

The time to fully charge a Tesla depends on the model, the battery size, and the type of charger used. While charging speeds continue to get faster, in a 2023 study, TESLA ***Superchargers*** are the fastest charging option when you're away from home, allowing you to charge your vehicle up to 200 miles in only 15 minutes. **TESLA OWNS** and operates over **50,000 global Superchargers** that are accessible on a 24/7 basis located on major highways and offer convenient amenities. Slower charging stations are available and can take up to 40 minutes to reach 80% of a battery's full power. **The average cost of charging an EV at a commercial charger,** from almost empty to almost full, is **between $10 and $30. The Tesla Model X** costs about **$17.55 to fully charge,** which comes out to about 5 cents per mile. It will cost around **$10.49 to charge** a **Tesla Model 3.**

Other companies like Volvo (owned by Ford in America), Ford, Nissan (Japan), Baidu (China), Nio (China), BYD (China), and Chevrolet also make electric cars. It is estimated that 1 in 250 cars on the road are electric, which equals a global market share of around 2.2% for electric vehicles. (*Jan 8, 2024*) However, more automobile companies are make more electric cars.

The country of CHINA has stated most cars on Chinese roads MUST BE ELECTRIC by 2030.

BRITAIN (*England*) **and FRANCE have stated they will ban the sales of all diesel and gasoline powered cars starting in 2040**; this means all new cars in their countries **MUST BE ELECTRIC or MAGNETIC by 2040!!** And, *IN YOUR FUTURE*, ships, drones and aircraft may be electric too!!!!

Think about all the NEW JOBS: design, engineering, AI (*artificial intelligence*), and computer science *created by Tesla and other EV companies!*!

Autonomous (self driving) vehicles:
cars and trucks

Safer,
Quieter.
AUTONOMOUS VEHICLES,
also known as AVs,
self-driving cars AND robotaxis,
all capable of traveling
from one place to another
with little to NO human input!

Self driving vehicles are

operated by powerful computers,
NOT PEOPLE,
with Artificial Intelligent software
using vast amounts of data
collected from years of 'driving situations'.

Self Driving, Autonomous cars
NEED DATA TO BE SAFE!

As of April 2024, Google's self driving test car, Waymo, has been offering ride services and collecting DATA in Phoenix, Arizona and San Francisco and Los Angeles, California. In July 2021, DeepRoute.ai, a self driving technology company, started offering self-driving taxi rides in Shenzhen, China.

BENEFITS: Those '***driving situations***' include knowing how to respond to traffic lights and stop signs, when and how to change lanes on a highway, braking at intersections and stopping for the occasional dog or cat crossing the street. These **AV computers act like a human brain** possessing all the information the sensors on the car '*see*' to ensure driving safety for passengers, the vehicle and all the property and people sharing the road. .

FACT - **AUTONOMOUS VEHICLES ARE SAFER THAN HUMAN DRIVEN VEHICLES**. According to a December 21, 2023 report, driverless cars were involved in FEWER injury crashes at a rate 6.8 times LOWER than vehicles driven by humans. That's an 85% reduction! Waymo's driverless cars were 6.7 times less likely than human drivers to be involved a crash resulting in an injury, or an 85% reduction over the human benchmark, and 2.3 times less likely to be in a police-reported crash, or a 57% reduction. (Google)

DANGERS - yes. **Lithium-ion batteries** may explode if they catch fire, and the fire can spread to other vehicle systems. AND, you can't put out a lithium-ion battery fire with water or a fire extinguisher, which makes it challenging to contain these fires. **AND, HACKERS!!!**

ELON MUSK'S FULLY AUTONOMOUS VEHICLEs - HUMAN DRIVERS UNNECESSARY - NO BRAKES; NO PEDALS

Tesla RoboTaxi - rent the ride or buy the car - $29,000 autonomous (self driving) 2 seat vehicle

Tesla RoboVan sits up to 20 people

It was publicized as

"*WE ROBOT",*

***a much awaited 2024* event**

hosted by Elon Musk

to introduce

his latest tech services:

1. ***RoboTaxi***
2. ***RoboVan***
3. ***Optimus Humanoids***

See page 18 for Humanoid info

Inside the RoboTaxi and the ROBOVAN

World's Most Popular Electric Car

This electric car is made by a company called BYD — an acronym for "Build Your Dreams" — and BYD is competing to sell more electric cars world wide than Elon Musk's Tesla electric car!

BYD, a **company started in Communist China started by Mr Wang Chuanfu and controlled by the Communist Chinese government,** started making cars in January 2003 after buying another car company called Qinchuan Automobile Company. BYD makes passenger cars, buses, trucks, electric bicycles, forklifts and electric vehicle batteries. BYD's passenger cars include battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). They did make '*internal combustion engine vehicles*' (**gasoline**) cars until March 2022. (Insider Inc and Wikipedia). ***American investor, Warren Buffet,*** has invested in BYD.

BYD overtook Tesla in June 2022 as the world's largest electric vehicle manufacturer claiming it had sold about 641,000 EVs (including BEVs and PHEVs) in the first half of 2022. It's already the top-selling EV brand in China selling over 900,000 in 2022 — more than Tesla sold in 2022. Most BYDs are sold in Mainland China, although the company is rapidly expanding into foreign markets in the European Union, Southeast Asia, Oceania and Latin America. BYD has expanded its operations all over the world with operations to Norway, Denmark, England, Thailand, and Australia. BYD has a small commercial vehicle business in the United States. (Insider -May 17, 2022).

An BYD electric battery company, *FinDreams Battery,* is the world's third largest producer of electric vehicle batteries with a global market share of ***12%*** in the first half of 2022 and a focus on **lithium** iron phosphate **batteries**. (wikipedia)

BYD's prices are perceived as INEXPENSIVE when compared to other higher price EVs sold by TESLA and BMW. BYD recenetly launched an ***$9,700 (US dollars)*** hatchback at an auto show in the metropolis of Shanghai, China. The hatchback is called *Seagull* and considered "*ridiculously cheap*" when compared to the price of a ***Tesla Model 3 with a starting price of $40,000.*** (per Insider Tim Levin)

Despite selling BYDs in countries in Europe and Southeast Asia in 2022, BYD doesn't seem to have plans to enter America's EV passenger car market, says BYD founder Wang Chuanfu (Bloomberg). Stay tuned; this author believes Mr Wang and the Chinese are now thinking of ways to sell BYDs in America to compete with more expensive American made cars made by Ford, Chevy, etc!!

The Communist China car company, BYD, makes one of the world's best electric cars. (*per Elon Musk among many others*)

The photo above is a BYD car called the "*Seagull*" which sells for $9,700 (dollars) in China. America's government politicians will apparently place a TARIFF (an extra tax) on BYDs sold in America raising the cost of buying a BYD *Seagull* in America to over $25,000.

比 亚 迪 汽 车

Middle and Bottom photos: **BYD BRAND LOGO; BYD American Headquarters in Los Angeles, California**

Flying Cars

Gideon Lichfield, MIT Technology Review Magazine's editor in chief, wrote in the February 2019 digital issue of the magazine about

the emergence of "flying cars"
in cities throughout the world.

Lichfield claimed "*20 small, airborne vehicles will be sold to fly in many parts of the world within a few years. Some will be drone-like, with four to 18 rotors keeping them aloft.*"

Large, international, aeronautical *companies like* Europe's *Airbus* and the United States' *Boeing* have "*flying car" projects under way* while a number of smaller companies will be competing too. Germany's *Volocopter* plans to start trials of *a flying taxi in Singapore*. *Uber* claims it will start test runs in *2020 for a flying taxi service between Frisco, Texas, and the Dallas–Fort Worth, Texas.* The Chinese company *Ehang* is launching a *flying car service in* the rich, Arabic country of the *United Arab Emirates* within the city limits of their *5.5 million person metropolis of Dubai.* This flying car service will take a single occupant from the roof of one Dubai skyscraper to the roof of another.

A few flying car models, like the Aeromobil and the Terrafugia Transition, will be *cars you could drive on the highway*. *Most* flying cars, however, will be only for *flying.* Most will have wings that generate lift, like ordinary planes. A few will have multiple rotors, like drones. While initially drivers of flying cars will need to be certified pilots, *future 'flying cars' will probably be autonomous,* that is, self driving by a computer system in the car. *Autonomous flying a car* is *safer* with less dangers *than autonomous driving a car*: there are fewer obstacles flying in the sky and radar can detect other flying objects with simple radar; a self-driving car, however, needs multiple sensors and heavily trained algorithms to recognize people, other vehicles, animals, traffic signals and other potential dangers. An automated air traffic management system is also needed to be in constant communication with every flying car to prevent collisions and have human operators ready on the ground to take over by remote control in an emergency. Still, existing laws and public fears will mean there will be laws to have pilots available, at least for a while, as a backup to an autonomous flying system.

The recent descriptions of *flying cars vary* from a *single-seat, multi-copter drone-type aircraft to road-style cars that turn into light aircraft and small flying boats that hover above the water.*

It would appear that almost any small flying vehicle capable of transporting a person is now referred to as a 'flying car'. However, 'flying cars' are really just a small aircraft.

"How safe" you ask?

The likely answer now is *"not very"* as most early development technology is. But, companies are working hard to make their aircraft *"safe enough"* so regulators and governments will permit them to fly. One of the biggest concerns is what to do when things go wrong. With a normal car, you can push the brakes to slow down and the car usually stops. But a flying car- it could just fall out of the sky, killing, not only its occupants, but bystanders too.

Places where *demand will be high for flying cars should be large cities* where automobile traffic jams and delays are now high. Out in rural areas away from big cities or travel between cities probably won't make economic sense. Futurists predict *departure and destination points for flying cars* in large metropolitan areas will be on *the tops of buildings* which will also bring building owners some extra revenue by offering battery chargers, battery-swapping stations, and renting landing and takeoff places.

What about *the cost of using a flying car? What about from getting* from one destination in a city like Shanghai, China with

26 million people or New York City with a population of 10 million people - what will it cost going from one location in the city to another location in each city? Futurists speculate a trip of a few miles might cost passengers as little as ***$40 or $50 which is a little more expensive than a ground taxi*** but worth the price when you can get to your destination more quickly. In a 2016 research study, Uber projected that certain routes will be much cheaper than a traditional taxi or Lyft ride AND several times faster because you won't have to deal with city car traffic that is too slow for the busy business man or woman. "***Time is money***" so the saying goes!!! Getting stuck in city car traffic often means missing important means which often means missed opportunities like a job interview or closing a big business deal for making money.

Here's ***an example supporting the prime advantage of using 'flying cars' to get from one location to another, faster, than the traditional, human driven taxi in most large cities***. It currently takes ***23 minutes to drive 19kilometers in an autonomous or human driven car*** from offices in the center of the Australian city of Brisbane with a population of 2.5 million people to the Brisbane airport, even when traffic is freely flowing. ***If you use a flying taxi*** from the center of the city Brisbane office roof (where there are pads on some roof roofs to accommodate a flying car), the ***trip would only take 8 minutes!!!!***

Most importantly, effective ***cybersecurity is going to be essential. Hacking*** remains a real problem today. If technologists believe the flying car industry will be likely autonomously driven, a flying car's computer must be secure. Hackers Charlie Miller and Chris Valasek pulled off a demonstration in 2015 that shook the auto industry by remotely hacking a Jeep Cherokee. The hackers announced they could disable or slam on the Jeep's brakes, even turn the steering wheel and cause the Jeep to accelerate. To trigger almost all those attacks, Miller and Valasek hacked into the vehicles' computer that manipulates the car's computer which controls the car's automated features. They also hacked a Prius' collision avoidance system to apply the car's brakes as well as a Jeep's cruise control to accelerate the Jeep's speed too. To turn the Jeep's steering wheel, they tricked the autonomous driven Jeep into thinking the car was parking itself—even if the Jeep was moving at 80 miles per hour. What does this vulnerability to hacking mean for flying cars and flying taxis in highly populated, metropolitan areas where many think the flying cars will be in demand? Cars dropping from the sky or crashing into buildings?

The biggest hurdle for flying cars, especially in large cities, will be government regulations. If flying cars are to be licensed to fly under the same rules as planes, flying cars may appear in a few test cities sooner rather than later. Managing flying cars will certainly require a new set of standards and safeguards before they take flight.

How long before flying taxis are a common sight in major cities?

In 1940, vehicle manufacturer ***Henry Ford predicted*** that; "*Mark my word: a combination airplane and motorcar is coming. You may smile, but it will come.*" The Alef Model A, a fully-electric, street-legal flying car that can carry two passengers and their luggage, can travel a distance of 200 miles on the road and 110 miles in flight after charging. The Model A is expected to enter production in 2025. Alef is also developing additional models, including a four-person sedan, "Model Z," slated to debut in 2035, with a starting price of $35K. The company claims it will have an over 300-mile flying range with an over 220-mile driving range.

Elon Musk: Space X

SpaceX is an American spacecraft manufacturer, launch service provider, defense contractor and satellite communications company headquartered in Hawthorne, California. The company was founded in 2002 by **Elon Musk** with

the Space X goal of reducing the cost of transportation in space by using re-usable rockets for a cost effective (less expensive) way for space travel and to eventually establish a sustainable colony on Mars.

Space X currently operates the Falcon 9 and Falcon Heavy rockets along with the Dragon and Starship spacecrafts. In May 2020, SpaceX successfully launched two NASA astronauts (Doug Hurley and Bob Behnken) into orbit on a Dragon spacecraft making SpaceX the first private company to send astronauts to the *International Space Station* and marking the first space ship with a crew launched from American soil in 9 years. (wikipedia)

SpaceX started launching Starlink satellites in 2019 to provide internet access to regions of the world with limited or no access to the world wide web. As of early March 2024, Space X launched and deployed in space 6,000 mass-produced small satellites in low Earth orbit for streaming, online gaming, video calls and communication with ground receivers.

Left photo: Starship is a two-stage super heavy lift launch vehicle developed by SpaceX. It is the largest and most powerful rocket ever flown. **Starship** is intended to be fully **reusable**, allowing both stages to be recovered after a mission. **Right photo**: Starlink satellite.

ELON MUSK'S PLAN to colonize MARS

Mars in its true color as captured by the Hope orbiter.

ENRICO FERMI, the SMART, famous Italian 20*th* century physicist, once asked "*Where is everyone*? when musing about the possibility of extraterrestrial life.

"Mathematically it seemed logical there were other civilizations"
beyond planet Earth.

ELON MUSK has gone further stating the urgency of extraterrestrial exploration for the purpose of colonization. **Walter Issacson** writes in his Elon Musk biography that Musk believes

colonization is critical for the survival of the human civilization. Earth is too fragile; it may someday be destroyed by an asteroid, climate change or nuclear war.

"My mission in life is to make mankind a multi-planetary civilization."

Elon Musk envisions the beginning of a Mars colony around 2044. Musk would ensure Martian colonization through a continuous re-supply of critical resources like water and food by his Space X rockets until human Martian inhabitants can be self sufficient through a process called in **situ** resource utilization (ISRU), the practice of collecting, processing, storing and then using materials found or produced on 'nearby' astronomical objects or planets (the Moon, Mars, asteroids, etc.) that replace materials that would otherwise be brought from Earth.

Mars is known as a desert planet, a rocky surface like that of Earth's hot deserts. The atmosphere of Mars consists of about 96% carbon dioxide, 1.93% argon (used in fluorescent tubes and low-energy light bulbs) and 1.89% nitrogen along with traces of oxygen and water. Water in its liquid form cannot exist on the surface of Mars due to low atmospheric pressure. Two large polar ice caps exist and, if melted, would be enough to cover the entire surface of the planet with a depth of 36 ft of water. Large quantities of ice are thought to be found on the planet. While Mars does not have enough natural oxygen to support human life directly, technological solutions presently exist to produce oxygen in **situ** (CHATgpt).

ALL ABOARD!!!.

Mega Cities

Mega-cities are described as cities of more than 10 to 20 million people.

Many countries believe their well planned and organized mega-cities will help them compete successfully against other countries in today's global marketplace. **Mega-cities are** attempting to avoid overcrowding by using larger amounts of land than a typical big city. **Some mega-cities will have the same amount of land as the entire state of Rhode Island. The largest mega-cities could possibly be as large as 42,000 square miles, i.e. about the size of the European country of Holland**! Future mega-cities may combine multiple large cities to create one **mega-city cluster** with populations over **100 million.** **While many c**ity planners recognize the challenges of mega-cities, others see advantages and opportunities. **If planned properly,** mega- cities can attract and retain '*the* smartest, most creative, collaborative, empathetic, and highly skilled people as well as the successful companies they own or work at. They also believe mega-cities will create new businesses like banks, entertainment options and schools to support and entertain mega-city citizens. **Good pay** is essential, followed by safe, comfortable, and **AFFORDABLE housing**. Connectivity is important; this means dependable, fast and CLEAN **transportation, especially trains**, for people to get to and from their jobs **Easy-to-access wireless internet** is a must to communicate and share knowledge, ideas and information quickly. Mega-city citizens may give up part of their privacy as government surveillance of internet activities increases to ensure safety. For those countries that create successful mega-cities, the belief is economies will grow, jobs will be plentiful, and life for its citizens will be good.

China is one country embarking on the creation of many mega-cities. The Chinese are focusing on a mega-city model which **clusters** several smaller cities around one giant urban center or hub. One such cluster will be the Chinese city of Shanghai. To illustrate the importance of transportation, a train ride from the Chinese city of Wuxi, about 150 kilometers from Shanghai, once took 2 hours; today, the Chinese bullet train from Wuxi takes only 29 minutes to get to Shanghai. Living in Wuxi also enables lower paid workers to find less expensive homes and apartments than the very expensive housing of Shanghai. The Shanghai mega-city population may reach 150 million.

The **Shanghai Maglev Train** travels at a top speed of 270 miles per hour!!! The Shanghai Maglev train uses two sets of **magnets**, one set to repel and push the train up off the track as in levitation; the other set of magnets moves the 'floating train' ahead at great speed taking advantage of the lack of friction. This train will eventually connect the Chinese city of Hangzhou to Shanghai. Hangzhou, part of the **Shanghai mega-city cluster,** is 105 miles from Shanghai**. The Chinese are also developing high speed electric trains.**

China's mega city clusters in brown. Note the location of the Shanghai cluster on the east coast of China and the listed population of 152 million people. Map from The Economist Magazine, June 2018.

One of the United States of America's mega-city clusters is called Silicon Valley, California,

encompasses the cities of **Palo Alto, San Francisco, San Jose, Cupertino, Campbell** and more. ***Silicon Valley*** is ***home to world class companies*** like ***Apple, Tesla, Google, Adobe, Netflix, Ebay, Intel, Facebook, Oracle, and Visa and universities like Stanford, Santa Clara, San Jose and California Berkley!!*** Affordable housing, affordable higher education (college), effective public school secondary education, fresh water, and high speed transportation are just a few of the challenges facing Silicon Valley's mega-city cluster. The populations of America's mega-city clusters are much lower than China's mega-city clusters. The country of China's total population is 1.25 BILLION; the United States of America's population is 350 MILLION.

Universal Basic Income (**UBI**). It's a term that ***means***

guaranteed money for every person, every month of their lives, funded by the government.

It's a concept which has been discussed by governments throughout the world for hundreds of years.

Some governments have actually tested the idea.

1795 was possibly the earliest test for UBI in the English city of Speenhamland. **Recently**, the countries of Finland, Canada, Scotland and Iran as well as a few American cities like Oakland and Stockton, California have tested the plan. The goal of UBI is to give money to **all citizens** in a town or country! UBI is not only for poor people who can't get a job **and** people who have a job but don't earn enough money to pay their **cost of living** (food and rent). It's **also** for people who have jobs with very good compensation. UBI programs also intend to assist workers who hate their present job and, if given extra money, they would go back to school to learn new skills for a job they really enjoy.

UBI is different from traditional government assistance programs that give food stamps, rent subsides and other assistance to those people who have proven to be poor. ***UBI is a fixed amount of money every adult, rich or poor, working or unemployed, gets***. It's a monthly government payment, perhaps $1,000 or more a month. Depending on the community, UBI may replace ALL other government assistance programs. Helping poor people has been one reason for public assistance. But some progressive thinkers believe UBI will be MORE necessary in the 21st century because more people will lose jobs to the AI driven machines used in many jobs that were formerly filled by human beings. **Elon Musk** see the merits of a UBI program. **Sir Richard Branson** of Virgin likewise supports UBI claiming "*the sense of self esteem that UBI could provide people*" will help people feel better about themselves and, as a result, the more willing they will be to seek fulfilling jobs and, thus, contribute to the economy of their country. Venture capitalist, **Andrew Yang,** believes UBI will increase entrepreneurship as well as lowering crime and incarceration and the costs associated with them.

A most critical issue to enable communities and countries from launching UBI is cost' in other words, how to pay for this!

Economic journalist, Annie Lowrey, calculates an American UBI program would cost the United States government $3.9 trillion a year. This is almost 3 times more than what the US government spends on public assistance programs in 2016. Lowrey, predicts the United States of America would have to enact new taxes on income (personal earnings), carbon (emissions from cars and factories), and estates (inheritances) as well as increasing existing '***sin***' taxes on tobacco, gambling, soda, etc. Andrew Yang suggests

a new Value Added Tax (VAT) -

essentially "*a consumption tax*". Businesses and consumers would pay this specific tax to fund UBI. This is not a sales tax; it is an extra tax to support the UBI program. **For example**, a retailer sells a phone to a consumer for $5 plus a 50-cent VAT, 20 cents of which is paid to the government. Companies making mobile phones would pay the VAT tax on the metals they purchase to make the phone. The company selling the metals would charge the manufacturer of the mobile phones $1 for the metals plus a 10-cent VAT; the metal seller then pays the 10% VAT to the government to support the UBI program.

Digital Money!!

Paper currency and coins. No Mas!!! No More!!!!

You know, the one, five, ten, and twenty dollar bills we've used or accepted in the past? Even the quarters, nickels, dimes, and pennies we've accepted for change after a purchase at a store? No More! Whether it's a hamburger or pizza, concerts or videos, shoes or jewelry, you name it. If you want to buy something, digital currency, also called **crypto-currency**, will be the only way to purchase or sell something.

There are some digital or **crypto-curriencies** already being used for buying and selling stuff in a number of countries throughout the world.

The most famous is called Bitcoin.

Bitcoin is a digital currency not controlled by a country like the American government prints and controls the dollars and coins we use in our country. Bitcoin is NOT tangible money; in other words, there are no physical bitcoin bills or coins. It's digital. All

purchases using bitcoins take place and recorded on a super, secure network on the internet called BLOCKCHAIN.

Bitcoin was invented in 2008 by a mysterious and unknown person or group of computer programmers using the name ***Satoshi Nakamoto*** in 2009. There are companies in most countries that sell Bitcoins in exchange for the currency in the country you live. For example, you can buy bitcoins in America buy using American dollars. In the United States, a company called **Coin base** will link to your bank account or credit card and then sell you the coins for dollars. In 2011, the value of one bitcoin was equal to $0.30 (cents). In first half of 2018, bitcoin's vaue fluctuated between $11,480 per bitocin and $5,848 per bitcoin. On 1 July 2018, bitcoin's value was $6,343 per bitcoin. Bitcoin's value was and continues to be volatile. One of the attractions of **Bitcoin** is the

anonymity of the purchases. Whether it's pizzas or furniture, no one can find out who is doing the buying and selling of goods when using bitcoins.

Bitcoins are created as a reward for a process known as ***Bitcoin mining***. Bitcoin mining is competition based on speed and accuracy. Miners build and maintain a gigantic public log containing a record of every bitcoin transaction in history. Every time somebody wants to send bitcoins to somebody else, the transfer has to be checked to make sure the sender isn't transferring money she doesn't have. If the transfer checks out, miners add it to the official Bitcoin record or ledger. Finally, to protect that ledger from getting hacked, miners seal it behind layers and layers of computational work—too much for a would-be fraudster to possibly complete. **The first miner to finish checking the legitimacy of a new batch of bitcoin transactions and finish the computational work required to seal to protect those transactions in the ledger is awarded bitcoins.** In 2013, the reward was 25 Bitcoins; in 2017, the reward was 12.5 bitcoins. The reward is halved every four years. There is generally a new bitcoin winner about every 10 minutes, and will remain so until 21 million Bitcoins have been awarded in the world. At that point, no new Bitcoins will be created. This **cap on awarding bitcoins is expected to be reached in 2140**. By 2023, about 19 million Bitcoin had been distributed.

Crypto currency has its highly respected *critics and skeptics* like Warren Buffet (Berkshire Hathaway) and Jamie Dimon (Chairman & CEO JP Morgan).

"*Crypto like bitcoin; I've always said it's a fraud*,"

the JPMorgan CEO told Bloomberg TV in 2024

However, other successful people, companies, organizations, even countries, continue to buy and even explore ways to launch their own digital currencies. Stay tuned.

ic Ocean Map | Arctic Circle and Ice

Russia, Norway, Canada, Denmark (*which controls Greenland*) ***and The United States of America border the Arctic Ocean.*** ***The next war*** may be fought over control and access to the Arctic Ocean and the minerals lying at the bottom of this ocean. This part of the world has become more valuable now that **global warming** is melting the ice cap at the top of the earth. **NO ICE** allows ships to travel from the Atlantic Ocean to the Pacific Ocean faster and less expensively than going through the longer route at the Panama Canal in Central America. Traveling across the top of the world is a FASTER WAY TO SHIP THINGS. Furthermore, **beneath the Arctic Ocean lies** an abundance of **valuable natural resources** that countries want and need… iron ore, copper, nickel, zinc, phosphates, diamonds, rare earth metals, as well as potential for manganese nodules and polymetallic nodules which are rich in metals like cobalt, nickel, and copper. AND, CHINA IS WATCHING.

21st Century World *SuperPower*

By 2050,
China, colored blue on the map above,
will arguably be the
most influential country on the planet.

More people live here than any other country in the world except India, **1.4 BILLION!!** Its schools have some of the top student test scores on the international PISA test, much higher than the United States. It has the world's fastest growing economy. This country is one of two countries in the world **investing the most in AI, artificial intelligence, education and training** with a goal of having the **world's premier AI innovation center** by 2030. ***They believe collaboration between humans and machines will become the most effective and popular production and service model***. The technology companies in this country, like **Huawei** and **Lenovo,** have become world leaders in telecommunications and personal computing. The supercomputers made in this country are consistently ranked among the world's most powerful. Another of its companies, **Alibaba,** is the world's largest retailer, one of the largest international Internet and AI companies, and one of the biggest investment corporations in the world. **Alibaba** is like America's Amazon but bigger! Its online sales and profits surpass all American retailers (including Walmart, Amazon and eBay). Alibaba also created the online shopping holiday, "***Singles' Day",*** which has become the world's biggest online and offline shopping day, with one day sales reaching over $25.4 billion. Recently, Alibaba has outperformed major **cloud storage** companies like Amazon, Microsoft and Google sales revenue growth. This country is expanding its use of factory robots; from 2008 to 2011, the use of robots in ITS factories rose by **136%**. One of its companies, **BYD,** arguably makes the best, least expensive EV. This country has the largest military. It has the largest number of foreign countries trading with it. Most of its citizens have jobs; less than 4% unemployment. Despite the fact that all companies are strictly controlled by the government, foreign countries from all over the world continue to invest in its companies. The business magazine, *Forbes*, reported that five of the world's ten largest public companies are located in this country. The world's largest bank by total assets is located here. This country has **the world's second-highest number of billionaires.** According to Wikipedia, in 2019,

this country overtook the United States as
the home of the highest number of
rich people in the world,

according to the global wealth report by Credit Suisse bank. In other words, as of 2019, 100 million of its citizens are in the top 10% of the wealthiest individuals in the world—those who have a net personal wealth of at least $110,000. As of October 2020, this country has the world's highest number of billionaires with nearly 878, increasing at the rate of roughly five per week. According to the Hurun Global Rich List 2020, this country is home to five of the world's top ten cities (Beijing, Shanghai, Hong Kong, Shenzhen, and Guangzhou in the 1st, 3rd, 4th, 5th, and 10th spots, respectively). Its government has a significant **mercantile (*business focus*) model** protecting its companies from international competition in the global marketplace. The government makes significant investments in their schools, transportation systems (*airports, trains, highways, ports*), military, cyber security, and **entrepreneurship** to ensure the country's long term success in a highly competitive, ever changing, 21*st* century, global economy. The country is the world's largest exporter of products AND the second-largest importer of foreign made products and natural resources. According to the Economist Magazine in 2021, "*this country is the largest goods trading partner of 64 countries compared to only 38 national trading partners with the United States*".

CHINA
has arguably a more efficient
government
than the United States.

The US seemingly struggles
to get things done
because of partisan politics,
i.e. Democrats and Republicans,
always arguing, never compromising,
which prevents passage of laws
to help *ALL* AMERICAN CITIZENS.
China
has ONE political party,
the Community Party,
and things get done.

With a ***population of 25 million as of 2019, this country's largest city***, the skyline pictured above, is the third most populous city proper in the world. This city is a global center for finance (banking and investments), research, technology, manufacturing, and transportation, and the city is the world's busiest container port.

A 1,000-bed hospital was built in just 10 days to handle the coronavirus epidemic in Wuhan, China.

Construction began January 24, 2020 with a crew of 7,000 people working around the clock. Chinese state media carried live video of the construction site and showed the sheer scale and speed of the project.

The communist party is the ONLY POLITICAL PARTY WITH INFLUENCE AND POWER IN THIS COUNTRY. It makes all government decisions. Because there is no political party to oppose it, the communist party wins all elections. The level of **public support for this country's government and its management of the nation is claimed to be high, supposedly 80–95% of its citizens expressing satisfaction** with the central government. **Censorship of political speech and information**, most notably the Internet, is routinely used to prevent criticism, dissent, and opposition to the communist government. The citizens of this country DO NOT HAVE ACCESS to all the web sites and programming ON THE INTERNET that American citizens have access to. The communist government suppresses protests and demonstrations that it considers a potential threat to the "*stability*" of the country.

This country monitors EVERYTHING its citizens do

from web sites they visit, the products they buy, the concerts they attend, the videos they watch, books they read, the churches and clubs they belong to, the clothes they wear, and how quickly they pay their bills! ALL INFORMATION IS **CENSORED** in this country.

The country is regularly **accused of human rights abuses**, including violent police crackdowns and religious suppression, and anything else the leaders believe could threaten '*order*' in the country. In 2005, *Reporters Without Borders* ranked this country 159th out of 167 countries in its Annual World Press Freedom Index, indicating a very low level of press freedom. An estimated 3,388,400 people are incarcerated, or 0.25% of the population. ***State-sponsored slavery*** is part of the prison system, and there are over a thousand slave labour prisons and camps. Prisoners are not paid for work they do in the communities near the prisons; prisoners need their families to send money to them. Prisoners who refuse to work are said to be beaten, and some, beaten to death. The government responds to its critics by arguing **the laws it institutes and enforces protects its citizens**, and ensures the safety of business development and individual property for its law abiding citizens. Without laws and enforcement, the government claims there would be chaos threatening progress and economic and social stability. This country contends economic success is a prerequisite for granting human rights and improving standards of living. **Achieving economic success for country and citizens is the highest priority of the government.** If the country is successful in the global economy, great schools, safe, clean neighborhoods, job security, free universal health care, and affordable housing will be assured.

National flag of the *People's Republic of China*

Photo above shows the world's leading currency, the United States dollar, and a sampling of the most popular cryptocurrencies like Bitcoin and Ethereum. ***The People's Republic of China is attempting to create an alternative to the United States dollar*** and the two **crypto-currencies (digital money)** considered to be the most reliable - **Bitcoin** and **Ethereum**. Ethereum is supported by the reputable online wallet Coinbase.

BLOCKCHAIN is a type of server that follows the instructions of a particular code so information is processed and stored in multiple places at the same time. The result is what is transmitted on BLOCKCHAIN, like digital currencies, cannot be counterfeited or stolen. This makes cryptocurrencies safe from hacking and theft because the money can be secure without the need to trust a third party middleman like a government or bank. BLOCKCHAIN is the technology required for cryptocurrency transactions.

This China is testing
a digital currency
as a potential alternative to
the United States dollar
as the world's most accepted currency
for payments of products and materials
between countries.

The leaders of this country contend that those who criticize their government policies should keep in mind the benefits the country's present communist government practices have created since 1970. As a result of the country's strict laws, this country has created a high level of economic development that has created a dramatic rise in its citizens' standard of living, improvements in workplace safety, higher literacy rates, high achieving schools, and a much longer life expectancy. ***The leaders of this country respectfully suggest world events should not be viewed through an American and western European perspective. The world is full of diverse, legitimate opinions on what is truly happening in the world.*** (source: wikipedia)

Xi Jinping is the General Secretary of the Communist Party in this country and, as such, the most powerful government leader in this country.

The ***world's and this country's fastest train*** charges $8 per person, per ride. This "Maglev" train runs the nearly 19 miles from the world's largest airport, the Pudong International Airport in this country, to the Longyang metro station on the outskirts of the world's largest city. The train, which takes just over 7 minutes to go 19 miles, uses ***magnets***, i.e. ***magnetic levitation*** (maglev) technology, as it travels up to ***267 miles per hour***!!!! . As a result, most of the train's passengers since its 2004 debut have been travelers on their way to and from the Pudong International airport.

Basketball is the most popular sport in this country. Some 300 million people play basketball in this country. **Jimmer Fredette**, shown in the photo above dribbling the ball, is an American and former NCAA Divsion 1 college basketball star at Brigham Young University in Utah and one of many Americans playing in this country's professional basketball league. Fredette is one of the most popular players in the country's professional league. The most famous basketball player born in this country is Yao Ming. Yao was a great player who played in America's NBA for the Houston Rockets and became an elected member to the NBA's Basketball Hall of Fame. America's NBA (National Basketball Association) has grown to become this country's most popular international sports league. The NBA has more than 150 million followers on social media.

The image above shows the logo of the ***Industrial and Commercial Bank***, a multinational banking company in this country. ***Like most businesses in this country, the government owns and controls the activities of this bank***. According to Wikipedia, as of 2006, ICBC had 2.5 million corporate customers and 150 million individual customers. Goldman Sachs, a privately owned, large American investment bank, invested $2.6 billion in ICBC and, as a result, owns 5.75% of the stock in ICBC. According to a 2020 ranking by Fortune Magazine, **3 out of the top 5 most valuable companies in the world are owned by the government**. The #1 ranked company was ICBC.

#1 - **ICBC** - (this country)
#2 - **China Construction Bank** (this country)
#3 - **JP Morgan Investment Bank** (United States)
#4 - **Berkshire Hathaway** (United States)
#5. **Agricultural Bank of China** (this country)
#8 - **Bank of America** (United States)
#9 - **Apple** (United States)
#13 - **Google Alphabet** (United States)
#40 - **CVS Health** (United States)

one of ICBC's banks located in this country's largest ***city of 25 million***. See the ICBC logo lit on the building.

The ***BYD Han*** is a midsize car manufactured in this country available as an **all-electric car** AND as a plug-in hybrid. **BYD sells more electric cars than TESLA (2023)**. **Warren Buffet**, the CEO of the investment firm, Berkshire Hathaway, owns 8.2% of the stock in BYD Han automobile company. **Buffet has invested more of his money in BYD than the American automaker, General Motors!!!!**

photo above shows the **principal owner** of this company called ***Alibaba***, ***Jack Ma***. Alibaba is a multinational **technology company** specializing in **e-commerce** platforms like the American companies Amazon and EBay. Founded on June, 28*th*, 1999 in this country, Alibaba owns other companies offering electronic payment services, other search engines for shopping and cloud computing operating in many other countries around the world. According to the same FORTUNE MAGAZINE survey which ranked ICBC as the #1 valued company in the world, FORTUNE MAGAZINE ranked ***Alibaba as the 31st most valuable company in the world.***

photo above shows fast food in this country being paid for using ***Alipay***, a third-party mobile and online payment platform. Alipay was **established by the Alibaba Group and its *founder Jack Ma*** in this country in February 2004. In 2015, Alipay moved its headquarters to its largest city of 25 million people. ***Alipay surpassed PayPal,*** the American owned and operated mobile payment service, as the world's largest mobile payment platform in 2013. As of March 2018, Alipay had **870 million users**. It is the world's number one mobile payment service organization. **55% of consumers in China use Alipay** and its use in this country continues to grow. **Alipay was introduced in South Korea** in 2015 and is now accepted as a means of payment at many companies in South Korea. Alipay users can also receive an instant tax refund in South Korea. In 2019, ***taxis and Starbucks in the city of Seoul, South Korea,*** **will accept payments using Alipay**. ***Alipay has also partnered with an American company called First Data*** allowing payments for point of sale purchases with more than 4,000,000 businesses **in the United States**.

founded in 1987 by Ren Zhengfei, a former Chief in the Chinese army, ***Huawei offers telecommunications networks***, providing operational and consulting services and equipment **to 170 companies all over the world**. Huawei has over 194,000 employees as of December 2019. ***Huawei is the largest telecommunications equipment manufacturer in the world and overtook Apple in 2018 as the second-largest manufacturer of smartphones*** in the world behind Samsung Electronics.

"If someone wants to see
the FUTURE,
look to this country!"

Mark Schneider, the boss of the world's biggest food company in 2021, Nestle, recently made this statement to his Nestle's executive team.

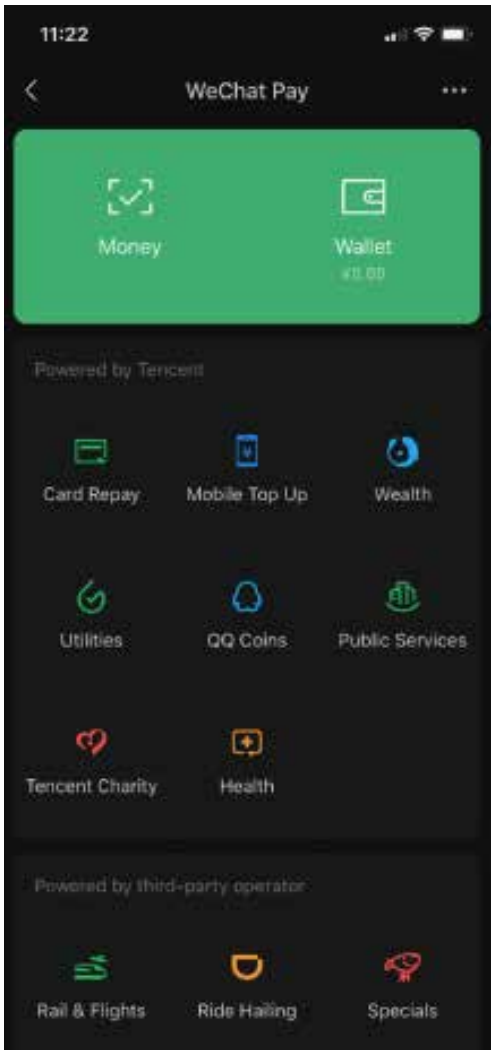
Every year,
more and more people
all over the world
are *shopping online*.

It's irrefutable. The data support this claim. The top 3 e-commerce companies in America are Amazon, Shopify, and EBay. The top 3 e-commerce companies in the country of this profile are ***Alibaba***, ***JD.com***, and ***Pinduoduo***. These companies account for 90% of ALL digital merchandise sales in this country. In America, Amazon, Shopify, and EBay account for less than 50%. And, because Alibaba, JD.com, and Pinduoduo's dominate e-commerce in this country, the communist government leaders of this country are investigating Alibaba, possibly to force them to be a smaller company so new companies will emerge to compete in the country's economy. This country realizes the advantages of free market competition. More competition means investors use their wealth to start new companies which then compete with the established companies. When companies compete, they invest in technology, hire smart people, and offer consumers competitive pricing to secure market share in the economy.

There are companies in this country today investing in new technology to improve customer capabilities. New platforms, new apps, help companies like ***Taobao, Douyin*** (called ***TikTok*** in America), and ***Xiaohongshu.*** enable their customers to create short promotional videos, instant messaging, live streaming, and social networking on multi-channels to promote their services and products. Here's one more important data point. ***Mobile technology is playing an increasing role in the economy of every country in the world***.

"90% of all e commerce sales
in this country
are made on mobile devices"

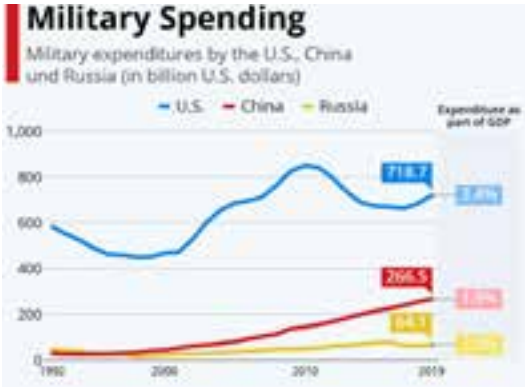
according to the January 2, 2021 issue of ***The Economist*** magazine. "*In the United States, 43% of e commerce sales are made on mobile devices.*"



WeChat is a multi-purpose messaging, social media and mobile payment ***app*** developed by the ***Tencent*** company. **ALL OF THIS ON ONE APP!!!** ***WeChat provides*** text messaging, hold-to-talk voice messaging, broadcast (one-to-many) messaging, video conferencing, video games, sharing of photographs and videos, and location sharing. Released in 2011, it became the world's largest standalone mobile app in 2018 with over ***1 billion monthly active users***.

To Understand China Today, read the period of Chinese History Named "The Century of Humiliation"

China has significantly more soldiers, sailors, and pilots than the United States, more than 2.8 million troops in the various services of the military. The **United States military has the second largest military in the world**; the only other countries with more than a million active duty troops are China's neighbors—Russia, India and North Korea. "*China has the largest navy in the world, with a battle force of approximately 350 ships and submarines*" a United States report stated. The U.S. Navy's current battle force is composed of 295 ships. The United States has larger and more sophisticated ships than China. America is ahead of China in the quality and quantity of long-range attack submarines, even if China now has a respectable force of shorter-range and mostly nonnuclear-powered attack subs itself. Many of China's new ships are well-equipped with launch tubes and modern missiles. **China is also creating new islands atop reefs in the South China Sea** through a vast **land reclamation program** that began in 2014-2015, to enhance its physical presence and **project power and strength** in the waters off its mainland coast **to America and America's nearby ally, Nationalist China, on the island of Taiwan**.



Graph showing the amount of money America, China, and Russia has been spending on their militaries from 1992 to the 2020. Notice the rate of increases in military spending by China. **China is ranked number one in cyber security followed by the Netherlands and France, then the United States and Canada.**

Researchers conclude the United States still leads in cyber offense (attack) capabilities and cyber intelligence as of 2024. **Microsoft has blamed a Chinese cyber-espionage group for attacks on its mail server software in 2021**. Microsoft claimed the hackers belonged to a Chinese government backed group, which was a "*highly skilled and sophisticated actor*". Microsoft's inadequate security protocols allowed the hackers to remotely access Microsoft e mail in-boxes. ***Approximately 30% of all cyber crime attacks worldwide are launched from China***. Russia leads the world in cyber crime and sponsors as many as 30 highly capable cyber crime hacker groups.

Rank	Country	Spending (US$ bn)	Spending (PPP)	% of GDP	% of Global Spending
	World total	1,817	2860.3	2.2	100%
1	United States	732.0	732.0	3.4	24.7%
2	China[n]	261.0	444.0	1.9	14.9%
3	India	71.1	209.0	2.4	7.7%
4	Russian Federation	65.1	181.3	3.9	3.4%
5	Saudi Arabia[626]	61.9	134.2	8.0	4.3%
6	France	50.1	61.2	1.9	2%
7	Germany	49.3	60.1	1.2	2%
8	United Kingdom	48.7	50.9	1.7	1.8%
9	Japan	47.6	49.1	0.9	1.8%
10	South Korea	43.9	62.3	2.7	2.1%
11	Australia	27.5	28.8	2.0	0.8%
12	Brazil	26.9	46.9	1.5	1.8%
13	Italy	26.6	37.3	1.4	1.2%
14	Canada	22.2	28.0	1.3	0.8%
15	Israel	20.5	25.0	5.3	0.8%

Graph ranks military spending by the top 15 countries in the world. In 2019, Peter Robertson, a professor from the University of Western Australia, argued that using conventional currency conversion as opposed to more accurate "purchasing power parity" (PPP) exchange rates dramatically understated China's military capabilities and that China's real military spending was equivalent to US spending of $455 billion, calculated from a PPP perspective. PPP is a measurement of prices in different countries that uses the prices of specific goods to compare the real or absolute purchasing power of the countries' currencies. In the case of China and the United States, comparing what the American dollar can buy in America and what the Chinese dollar, called the yuan, can buy in China.

THE WALL STREET JOURNAL

China Limits Online VideoGames to Three Hours a Week for Young People

New regulation will ban minors from playing videogames entirely between Monday and Thursday

By Reporter Keith Zhai - Updated Aug. 31, 2021 12:13 am ET

SINGAPORE—China has a new rule for the country's hundreds of millions of young gamers: No online videogames during the school week, and one hour a day on Fridays, weekends and public holidays.

China on Monday issued strict new measures aimed at curbing what authorities describe as youth videogame addiction, which they blame for a host of societal ills, including distracting young people from school and family responsibilities.

The new regulation, unveiled by the National Press and Publication Administration, will ban minors, defined as those under 18 years of age, from playing online videogames entirely between Monday and Thursday. On the other three days of the week, and on public holidays, they will be only permitted to play between 8 p.m. and 9 p.m. The government announcement said all online videogames will be required to connect to an *"anti-addiction"* system operated by the National Press and Publication Administration. The regulation, which takes effect on Wednesday, will require all users to register using their real names and government-issued identification documents.

In restricting online videogame play for younger people, the government is seeking to "*effectively protect the physical and mental health of minors*," China's state-run Xinhua News Agency said Monday.

The People's Daily, the Communist Party's principal newspaper, said in a commentary that there was no room for compromise and negotiation on the new measures. In regulating the videogame industry, the commentary read, "*the signal sent by this move is very clear—the government can be 'ruthless*.'"

RARE EARTH MINERALS

Throughout the history of mankind, there have been specific natural resources that have had exceptional, extraordinary value.

In the 19*th* century, it was GOLD. The 20***th*** century had oil, aka BLACK GOLD. And, now, its RARE EARTH MINERALS.

RARE EARTH MINERALS
ARE VALUABLE
WITH
LIMITED ACCESS
with
rapidly increasing
GLOBAL DEMAND.

TODAY, rare earth minerals like

metals
COBALT and LITHIUM
and
elements such as
SCANDIUM, LANTHANUM,

yttrium, lanthanum, cerium and others are playing an increasingly important role in the GLOBAL ECONOMY of the 21st century. Products like

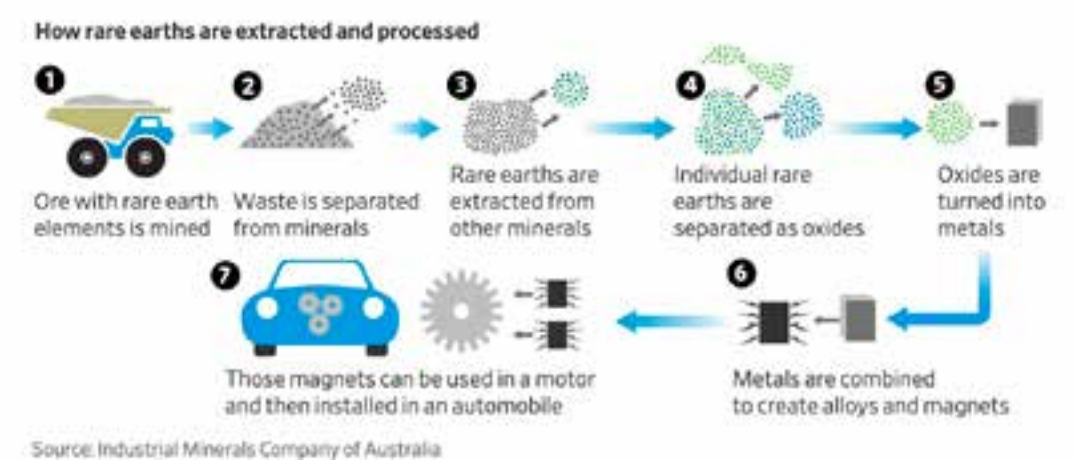
electric vehicles (EV),
wind turbines,
laser guided missiles,
smart phones,
flat screen televisions,
magnets,
and
batteries
depend upon rare minerals
in the production process.

Photo is a mining operation in the **Democratic Republic of the Congo (DRC).** The DRC is considered the wealthiest country in the world, with an estimated US$24 trillion in untapped mineral resources. Copper, gold, diamonds, cobalt, uranium, and coltan are just some of the valuable minerals beneath the soil in the Congo. The **relationship between China and the DR Congo** has significantly increased due to massive growth in the DRC's exports of raw materials like cobalt to China. In January 2021, the Chinese government agreed to forgive US$28 million the Congo owed China. China then pledged US$17 million in aid to Congo, mainly for development projects. At the same time, the Democratic Republic of the Congo joined ***China's Belt and Road Initiative*** which provided China a vital supply line of vital minerals in return for investments in Congo's infrastructure.

China mines over *70%* of the world's rare earths and is responsible for *90%* of the complex production process of turning these minerals into **magnets, computer chips** and other high demand products according to a April 11, 2021 Wall Street Journal article. *"For these rare minerals to go from a hole in the ground to produce magnets, you need vast skills and expertise, which barely exist out of China,"* said Constantine Karayannopoulos, chief executive of Neo Performance Materials ULC, one of a few Western companies able to process rare earths and make magnets.

This expertise gives Chinese government sponsored companies a great advantage over companies in America and other countries throughout the world. China's expertise and other issues drive the sale of electric vehicles and wind turbines, the demand for batteries made with rare earth compounds increases even faster.

Western companies like the United States are years behind China establishing mining of rare minerals in the United States but also establishing treaties with the few countries that have rare minerals to export them to America. The United States needs not only the rare minerals but also the supply lines and production infrastructure to turn these rare minerals into the batteries, magnets, and missile systems to survive and process in the global marketplace of the 21***st*** century.



mining and then processing rare minerals into valuable products creates not only economic but also strategic advantages to China as they compete in the global marketplace.

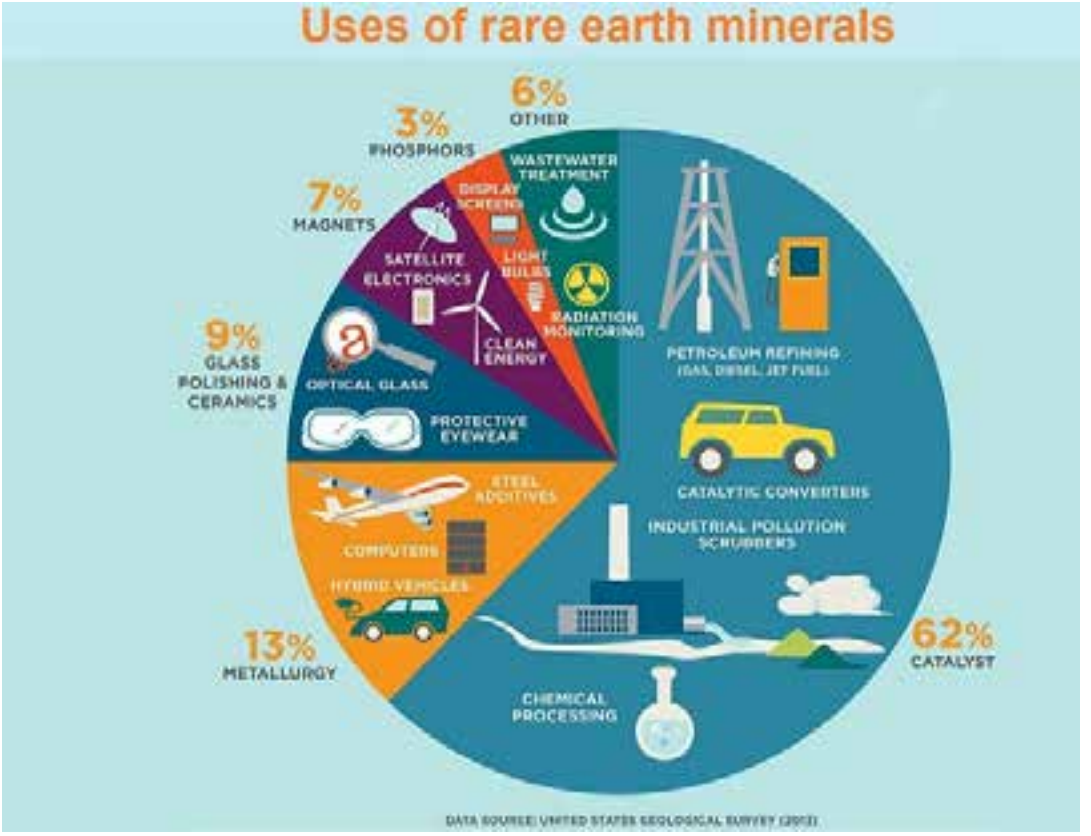
Many rechargeable **batteries** are made with rare earth compounds. Demand for the batteries is being driven by the worldwide popularity of portable electronic devices such as **cell phones, readers, portable computers,** and **cameras.**

The value in these rare minerals rests in specific qualities and capabilities like fluorescence, conductivity, and magnetic properties which makes them very useful especially when mixed in small quantities with more common metals like iron. According to a *Geoscience News and Information* publication, these minerals are so rare, countries compete to control supply lines to ensure their delivery to their country. China has established many exclusive supply lines from the mining of a rare mineral in a foreign like the Republic of the Congo on the African continent to delivery to China.

Several pounds of rare earth compounds are in **batteries** that power every **electric vehicle and hybrid-electric vehicle.** As concerns for clean energy, energy independence

China controls more than
80%
of rare earth mineral
global supply,
accessibility,
and
production!!

Countries like
the United States
and
its "*Western*" allies like
England, France, etc
and



USA Pacific area allies like Taiwan, Japan, South Korea, Australia, etc are ANXIOUS

about China's dominant access and production know-how with rare earth minerals. Furthermore, China has protected their advantage by creating dependable and often exclusive supply chains with many rare mineral rich foreign countries (like the Congo) as well as building internal national security systems. According to a June 2020 article in the *Wall Street Journa*l,

China sees its dominance in strategic rare-earth minerals as leverage used against America and its allies including over trade

(*i.e. export and import of products like electric cars, computers, batteries, micro-chips, etc*)

according to a new report by U.S.-based researchers. "*China's rare earths positioning both implicates and threatens the entire global system..... They (*China*) see controlling this type of [industry] as a path to win (*world dominance*) without fighting (* a war)."

America's Defense Department is trying desperately to catch up to China by investing in its supply chain for importing rare earth minerals as well as announcing grants to companies to develop a rare mineral facility at the only ***United States ONLY rare-earth mineral mine***, ***Mountain Pass*** in ***California,*** as well as a new rare mineral processing plant in Texas.

The United States Congress claims it will spend more money on securing and processing rare earth minerals.

While opportunities for future success are exciting to think about,

there are
responsibilities
which
always accompany success;

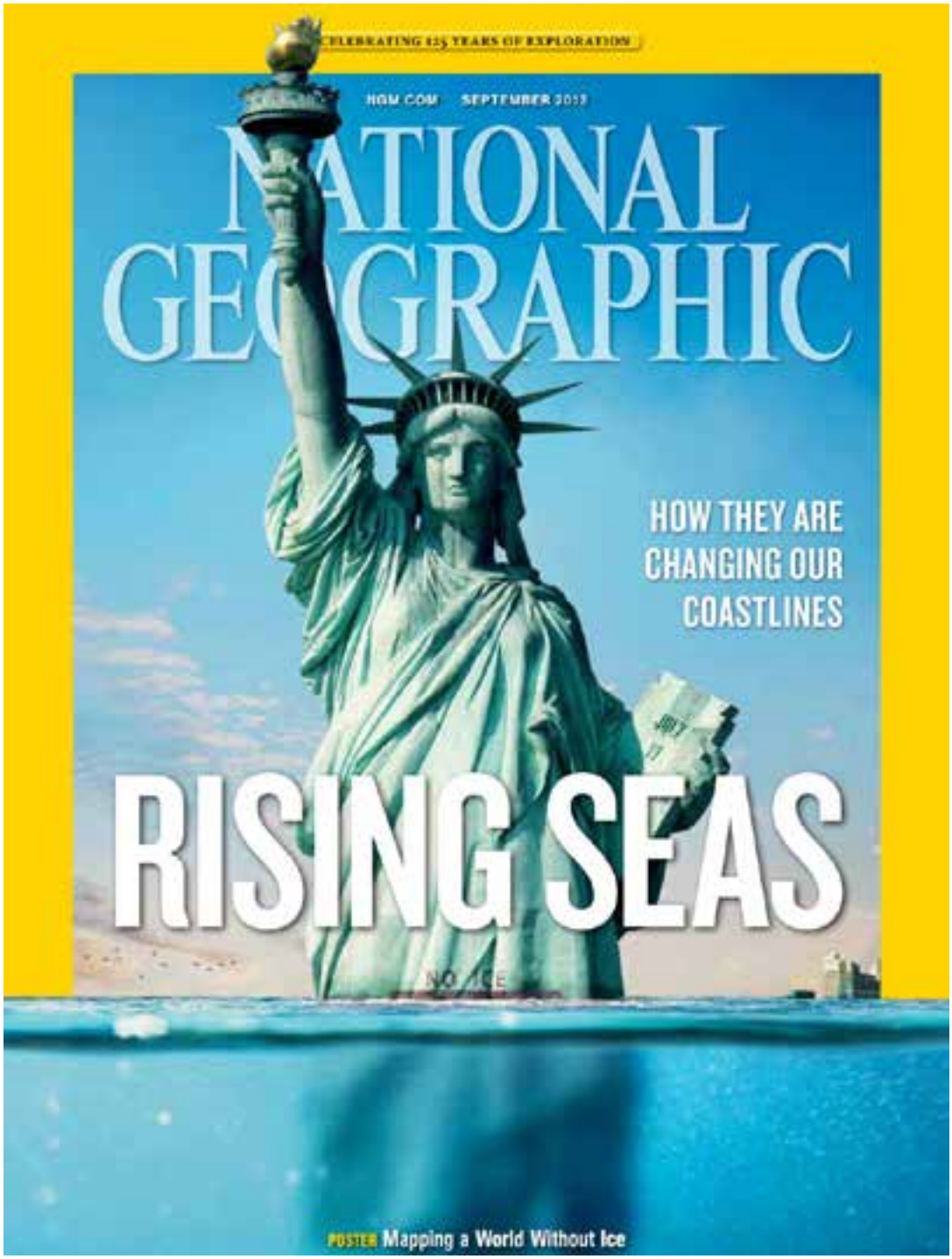
exciting and fulfilling responsibilities to family, loved ones, to the company you own or the company you work for, to your employees or colleagues you work with. What about them? And, what about on a global scale? What about the planet, Earth, we inhabit? Do you have a responsibility to it?

Responsibility to the changing planet brings new opportunities, new jobs, for talented, curious people. Engineers. Computer programmers. Analysts. . Robot mechanics. Meteorologists. Financial advisors.

Artists. Designers. Oceanographers. Marketers. Cyber Security and Sales people. Futurists. And,
jobs which have
yet to be created!

All awaiting the curious and those willing to go out of their comfort zone, today and in the future.

there is a lot of ***data scientists are collecting and analyzing rising temperatures on Earth and the impact hotter temperatures are and will have on ocean levels t***hroughout the world. Some scientists contend, if global temperatures continue to rise, glaciers will continue to melt in the Arctic Ocean and Antarctica dumping more water into the oceans and cause **ocean levels to rise and come farther onto coastal lands.** The map of North America above shows the present coast line and future coast lines **when** oceans rise significantly. Notice the cities of **Boston, New York, Houston, Philadelphia, Washington D.C.** and the area of southern **Florida; all under water!**



"***Providence, Rhode Island***, *has witnessed sea levels rise about 10 inches since 1929. We're expecting about a foot increase in the next 20 years and 2 to 3 feet by 2050. 7 feet* ***by 2100! At 7 feet, certain areas of Warwick, RI are gone, underwater, as well as the downtown area of Providence.*** *Even a foot increase takes out the Providence Place Park boardwalks. Climate change is the single biggest issue that the coastal environment will be facing over the next several decades."* **Grover Fugate, Executive Director, RI Coastal Resources Management Council. Providence Business News. February 15 - 21, 2016**

The top picture shows the tall, white obelisk known as **Washington's Monument**, the **Reflection Pool** leading up to the **Lincoln Memorial** and the **White House** in the background as it appears today. The bottom photo depicts a climatologist's prediction of the what could happen to this area in Washington, D.C. if the planet, Earth, continues to get warmer and

glaciers melt causing sea levels to rise.

As glaciers and polar ice caps melt, more water would flow into the oceans to raise sea levels and move ocean waters farther onto coastal lands. In this bottom picture, waters could envelope the White House, pass the Washington Monument, cover the Reflection Pool and right up to the steps of the Lincoln Memorial. Many significant events have taken place in American history around the **Reflection Pool** and in front of the **Lincoln Memorial**. The *"March on Washington"* in 1963 brought 250,000 people to this site (National Mall) and is where Martin Luther King Jr gave his famous ***"I Have a Dream"*** speech. 2015 was the hottest year on record. As of October 2015, the Earth had warmed by more than 1.7 degrees Fahrenheit since 1880, when records begin on a global scale. Scientists believe most of the warming since 1950 was caused by the human release of '**greenhouse' gases**. The greenhouse gases being released by human activity are often called **"carbon emissions"**mostly from the burning of fossil fuels (**coal, oil, natural gas**) in power plants producing electricity and from cars, trucks and buses using gasoline and diesel. Cows emit emissions of methane, a powerful greenhouse gas that causes warming. As beef consumption rises as the world's population grows and economic development makes people richer and better able to buy beef, more beef means more cows and more methane emissions. Another major creator of carbon emissions is the destruction of forests. Billions of tons of carbon emissions are stored in trees and plants, When forests are cleared, trees and plants are burned sending carbon they've stored into the air as carbon dioxide. If emissions continue unchecked, some scientists say global warming could ultimately increase the Earth's temperature by 8 degrees Fahrenheit. Long term, scientists fear the effects of **warmer temperatures will** destabilize governments, produce waves of refugees, precipitate the sixth mass extinction of plants and animals in Earth's history and cause seas to rise high enough to

flood most of the world's coastal cities.

All of this could take hundreds or even thousands of years to play out. But today, many scientists believe this is the future of the earth's climate if we don't stop using fossil fuels to produce electricity and fuel for cars and trucks. Countries with cold climates and large permafrost areas like Canada and Russia could see some economic benefits as global warming makes agriculture possible where long cold winters previously prevented it.

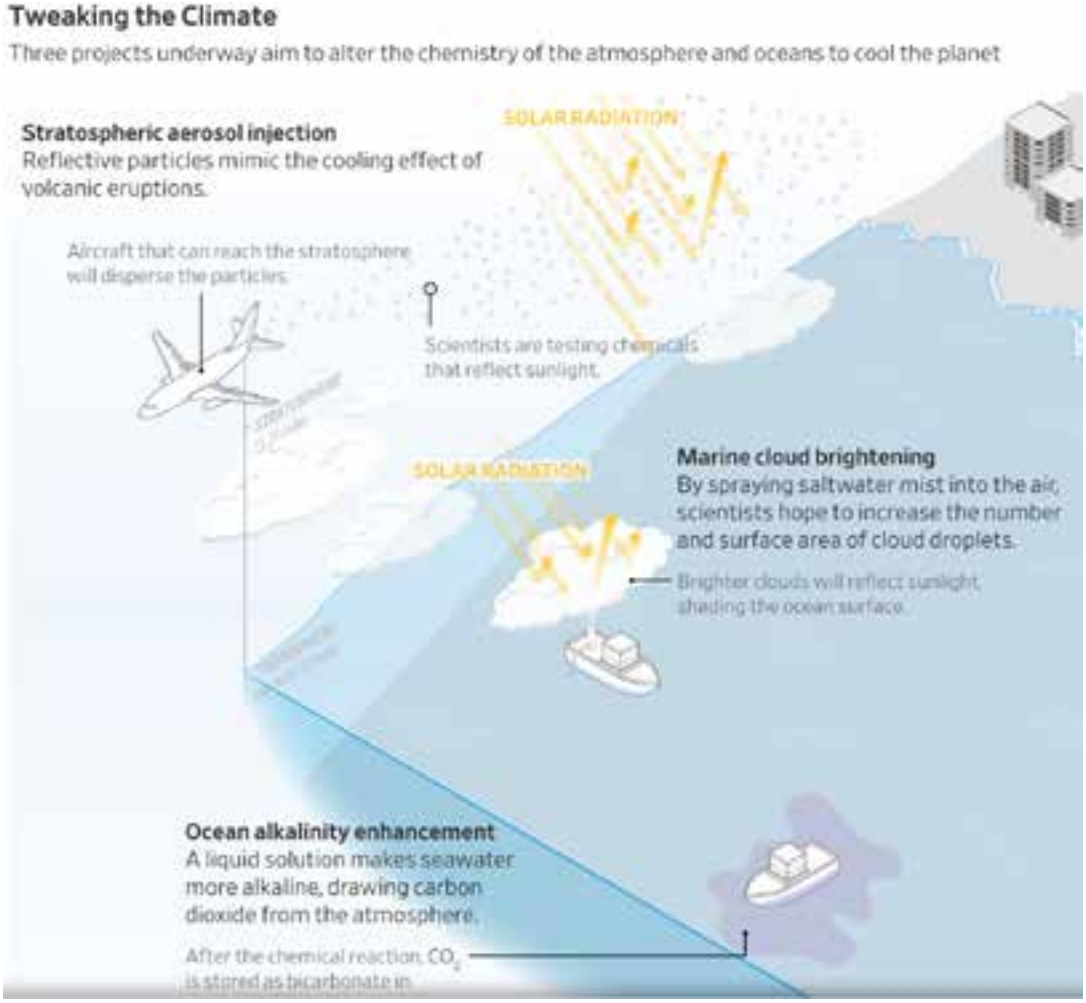
New Ways to Keep the Planet Cooler and Stop Flooding

Scientists and leaders of nations are trying everything possible to lower the temperatures of planet earth. Everything from tax credits for buying electric cars to building wind turbines (windmills), world leaders keep experimenting with different ways to stop the Earth from getting warmer causing sea levels to rise flooding seacoast cities and homes, erratic weather patterns of monsoon rains and unusual blizzard snow storms.

The latest experiment is injecting specially created particles into the sky which will reflect sunlight from entering the earth's atmosphere.

The research project, known as marine **cloud brightening**, is led by Southern Cross University as part of the $64.55 million, or 100 million Australian dollars, Reef Restoration and Adaptation Program. The program is funded by the partnership between the Australian government's Reef Trust and the Great Barrier Reef Foundation and includes conservation organizations and several academic institutions.

Experiments aimed at cooling the atmosphere by **reflecting sunlight** away from Earth are an attempt to mimic **what happens when a volcano erupts**. In 1991, Mount Pinatubo, an active volcano in the Philippines, spewed sulfur and ash into the upper atmosphere, lowering the Earth's temperature by almost 1 degree Fahrenheit for an entire year. But, until a few years ago, many scientists opposed human interventions, because of the unknown impact on the planet Earth. "*It very easily becomes an excuse for not doing all the things that we already can do and that we know will work,*" said Dan Jørgensen, Denmark's minister for global climate policy. "*When we start interfering with nature, we risk it also having many very negative consequences that we cannot control and that we cannot foresee.*"



In Israel, a similar startup called Stardust Solutions has begun testing a system to disperse a cloud of tiny reflective particles about 60,000 feet in altitude, reflecting sunlight away from Earth to cool the atmosphere in a concept known as solar radiation management, or SRM. Yanai Yedvab, Stardust chief executive and a former deputy chief scientist at the Israel Atomic Energy Commission, wouldn't disclose the composition of the proprietary particles.

In Massachusetts, researchers at the Woods Hole Oceanographic Institution on Cape Cod plan to pour 6,000 gallons of a liquid solution of sodium hydroxide, a component of lye, into the ocean 10 miles south of Martha's Vineyard this summer. They hope the chemical base will act like a big tablet of Tums, lowering the acidity of a patch of surface water and absorbing 20 metric tons of carbon dioxide from the atmosphere, storing it safely in the ocean. (Wall Street Journal,Eric Niiler, Feb. 14, 2024 5:30 am ET)

Water

The *Economist Magazine* published a story on the world's water supply in its March 2nd, 2019 edition with opening statement - "***Climate Change and Population Growth Make The World's Water Woes More Urgent!....***

The problem
with climate change
will not be too much water but
too little clean water".

The city of Capetown, South Africa, almost ran out of water in 2018 after a 3 year drought bringing the city the ignominious distinction of being the first among the world's large cities to run out of water. At one point, Capetown government leaders discussed the feasibility of towing **an iceberg from Antarctica** to provide the city with drinking water! In 2014, Sal Paulo, Brazil faced the same problem. While over 70% of the earth's surface is covered by water, 97% of it is salt water thus unable to be used for humanity's greatest needs, i.e. drinking and farming. Another 2% of the earth's water is frozen at the north and south poles. Furthermore, large sources of fresh water, like the Ganges River in India, are polluted. Rubbish litters the river's edge. Companies empty their by-products into the river. And, most alarmingly, **open, human defecation** routinely occurs further jeopardizing the purity of this great river's water. The problem, according to Asit Biswas, a water expert at the Lee Kuan Yew School of Public Policy in Singapore, "*is not scarcity, drought, lack of money or a number of other convenient excuses.* ***The problem everywhere is the people in charge, i.e. bad management!"*** Israel is noted as the model for sensible and effective water management; India, unfortunately, the worst.

Less than 1% of the earth's water is available
for drinking and irrigating farms.
Most of the fresh water is found underground.

The most significant demand for clean water is farming, mostly for irrigation. Five countries use the most fresh water from underground sources: America, China, Iran, Pakistan, and India. As a result, "*a third of the world's biggest sources for groundwater are in danger of drying out*" according to the Economist Magazine study.

The three major causes for the earth running out of fresh water are: **more people in the world; more people making more money, as a result, fewer poor**; and **climate change.** Climate change disrupts weather patterns. Air temperatures and ocean temperatures are getting warmer. As a result, sea levels are rising threatening to flood long standing neighborhoods and farms throughout the world. "*Wet places will become wetter and dry places drier.*" In other words, there will be more extreme weather events, i.e. more intense hurricanes, tsunamis, blizzards, droughts, heat waves, etc.

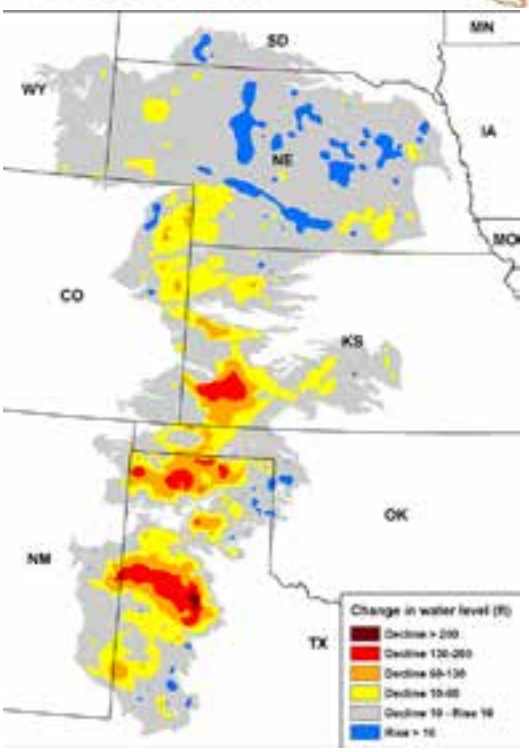
Many countries and cities are turning to alternative sources for fresh water. 8 countries, Singapore, Qatar, Malta, Kuwait, Bahamas, Bahrain, Maldives and Antigua, take more water from the ocean than fresh water sources. The process of ***turning salt water from the sea into freshwater suitable for drinking and farming is called desalination.***

Countries like ***Israel and Singapore*** go one step further to ensure their citizens have enough water for drinking and farming. Both countries ***drink their treated sewage*****!** Singapore has 4 **NEWATER plants** to treat their sewage with ultraviolet disinfection. Their sewage treatment facilities provide 30% of the entire country's water supply. The rest of Singapore's water supply comes

Israeli Desalination plant

from water imported from the neighboring country of Malaysia, collecting urban rainwater, and seawater desalination. The country of Israel has 5 desalination plants. Israel also treats and re-uses 86% of its waste water.

Most **Americans** receive their water from the cities and town offices where they live. Americans pay their city or town hundreds, and in some cases, thousands of dollars a year for their water and sewage services. By 2018, 87% of the American population received their fresh water from their city, town or county owned water departments. The ***Ogallala Aquifer,*** found throughout several mid western states of America, is **one of the world's largest aquifers.** An aquifer is an underground layer of rock, sand, gravel, and soil filled with moving water. Water travels between



spaces in the aquifers. Aquifers can range from a few square miles to thousands of miles in size/length. The Ogallala supplies drinking water to 82% of the of American citizens living in the mid western states of South Dakota, Nebraska, Wyoming, Colorado, Kansas, Oklahoma, New Mexico, and Texas. Scientists are concerned about the Ogallala's longevity. Water levels in the aquifer are dropping precipitously in each of Ogallala's states. In Texas alone, water levels are dropping an average of 1 foot a year to as much as 3 feet per year in some places! If the water of the Ogallala is depleted by overuse and mismanagement as some critics say is happening today, it would take nature 6,000 years to replenish the aquifer water by natural rainfall.

Most ***Rhode Islanders*** receive their water from their cities and towns which, in turn, draw their water from the ***Situate Reservoir***. The Scituate Reservoir is the ***largest inland body of water in the state of Rhode Island and supplies drinking water to more than 60 percent of the state population, including Providence.*** The Scituate Reservoir is operated by Providence Water Supply Board. Residents who get their water from the Situate Reservoir pay hundreds of dollars, if not more, each year to their cities and town governments for their water.

With many countries and states within countries having difficulty consistently providing clean water to their citizens,

governments are outsourcing
their responsibility
for clean water
to private companies.

Regulating water use to prevent overuse and finding enough tax revenue to find new water sources as well as maintain sewerage treatment and water distribution infrastructure has proven too much to bear for governments.

Private companies
are being hired to
operate city, state, or national
water delivery and sewerage treatment facilities
as well as
provide clean water
from private water sources.

If countries "*cannot or will not deliver clean water to their citizens who desperately need it, private companies will, FOR A PRICE"* writes Laurence Smith in "*The World in 2050*". . Siemens, Veolia Environmental Services, and Thames Water are just a few companies doing this now. *"In return for new infrastructure, companies must charge fees for the water in order to recoup money spent and make profits for their investors"*. It's business 101. Laurence quotes Maude Barlow, author of "*Blue Gold and Blue Covenant*" - "*Powerful corporate water cartels have emerged to seize control of every aspect of water for its own profit. Corporations deliver clean drinking water and take away wastewater. More importantly, corporations want governments to de-regulate water and allow the marketplace to set water policy"* and prices.

Water will be
a commodity in the 21st century
potentially demanding the
value and relative pricing
as oil in the 20th century!

photo of a sewage treatment facility in Portugal owned and operated by Veolia. Veolia is the water division of the French company, Veolia Environment, and the world's largest supplier of water services.

photo from the James Bond movie "Quantum of Solace". Bond attempts to thwart the scheme of the ***Quantum*** company trying to buy Bolivia's primary water sources in order to corner the country's water market and charge the Bolivian government exorbitant prices for their water.

Thames Water is a monopoly, private utility company responsible for the public water supply and waste water treatment in large parts of Greater London, Luton, the Thames Valley, Surrey, Gloucestershire, Wiltshire, Kent, and some other areas of the United Kingdom. ***Thames Water*** is the UK's largest water and wastewater services company

5 million to 14 million tons of plastic waste flows from rivers and coastal areas into our oceans all over the world. By ***2050, there will be more plastic in the oceans than there are fish*** **(by weight).** Sunlight, wind, waves and heat break down plastics into smaller bits that look like food to all types of ocean creatures from shrimp, fish and plankton to birds and turtles. The plastic clogs the digestive systems of sea creatures, often diminishing their urge to eat and thus reducing their growth, reproduction systems and their live expectancy. Of the 5 to 14 million tons of plastic waste flowing into our oceans, 236,000 tons are micro-plastics – tiny pieces of broken-down plastic smaller than your little fingernail.

"*The average* ***working life of a plastic bag is only 15 minutes!"*** Too many plastic bags end up in the rivers of the world, mostly but not exclusively, from poor east Asian countries and, then, into our oceans. Almost 7 billion tons of plastic become waste every year. Ocean ***plastic ends up killing millions of marine animals each year.*** Different marine animals, from whales to plankton, eat micro-plastics, some bits as small as 1/5 of an inch across.

Activists around the world are lobbying for bans on the most polluting plastics — i.e. straws, and the bottles, bags, and containers that markets put our food and drink in. **Photo above** shows men in boats navigating through some of the ***"garbage patches"*** of plastic debris that have collected in our oceans. Plastic products can take hundreds of years to decompose, and they put marine life at serious risk of injury and death. Fish and birds often mistake plastic for food. Researchers are now beginning to find plastic embedded into the tissue of marine life. Plastic has been found in more than 60% of all seabirds and in 100% of sea turtles species. Scientists are trying to determine the impact, if any, on humans consuming plastic infested fish.

The map above shows **an ocean dump** called the ***Great Pacific Garbage Patch. It is one of five major garbage patches drifting in the oceans*** north and south of the Equator (0 latitude). Much of this waste starts in rivers and flows into the ocean. These areas of plastic garbage continue to increase in size. Plastic waste of every description, from toothbrushes to tires to unidentifiable fragments too numerous to count, litter the oceans for hundreds of miles without end. In the Pacific Ocean, there is even a floating island formed by dozens of plastic buoys used in oyster aquaculture that had solid areas you could walk on. **Is there a business opportunity here to make money and save the oceans?**

Photo of sperm whales stranded on shores of Germany in Europe. Necropsies (animal autopsies) of 13 of those whales revealed the animals' stomachs were filled with plastic debris. One whale ingested a 13-meter-long fishing net. Another ***whale had a 70 centimeter piece of plastic from a car and other pieces of plastic litter in its stomach.*** Whales probably assumed they were eating food, such as squid, their main diet, which they consume by sucking their prey into their mouths.

According to research published in **2018,**

up to *60% of the plastic debris destroying our oceans* comes from five countries: China, Indonesia, Philippines, Vietnam, and Thailand.

Americans are doing their best to change their dysfunctional relationship with **plastic**. Collectively,

***Americans* generate approximately *33 million tons of plastic trash each year*,**

but less than 10 percent of that actually gets recycled. And, even if you want to recycle plastic, the different kinds of plastic—polyethylene, polypropylene, polystyrene, and so forth—lead to confusion about how and what plastics can successfully be accepted by recycling programs. This is a common problem with food containers: what recycling bin should the yogurt container go? And that ketchup bottle? What about straws? —can the lid go in the blue bin, too? It's too confusing.

"I think the public cares, but they have no idea what the numbers at the bottom of plastics mean," says Mitch Hedlund, executive director of Recycle Across America, an advocacy group that has created a standardized labeling system for recycling bins. "*There is a lack of national awareness to help the public know the difference between plastics—what is recyclable and what's not and what bin it should be put it.*"

So what's an ecologically minded person to do? Ideally, **the less plastic you can use, the better.** And, when it comes to the old "*paper or plastic?*" question at the store, there's no debate: "*Paper and cardboard!*," Hedlund says. That's because paper can be easily remade, and more people understand how to properly recycle it. (Though, as Hedlund points out, paper should be kept separate from other recycling to avoid touching food residue and other contaminants.) Ask yourself - **what can Hope High students do at Hope High School?**

Consuming less overall, ***choosing paper instead of plastic bags* when given the option**, and making recycling easier may sound like simple solutions for the plastic problem, and that's exactly the point. "*We're in a great position to make a change,*" said Hedlund. "*But we need everybody to start unifying around common-sense solutions.*" Eventually, she explains, a critical mass of people changing their habits will create needed change.

Momentum is building in the **war against single-use plastics**. In the past week, a slew of major companies—including SeaWorld parks, American Express, cruise company Royal Caribbean, IKEA, A&W Canada and Burger King United Kingdom—**have pledged to eliminate items such as plastic drinking straws, stirrers, lids, and bags to protect our oceans and their inhabitants (fish, birds, etc)**.

A&W Canada became the first fast food chain

in North America to eliminate plastic straws from its restaurants in January 2019 and offer paper straws as an option. The company said the move will prevent 82 million plastic straws from ending up in landfills every year, CBC reported. (EcoWatch)

Space Trash

Imagine this piece of trash falling from the sky through the windshield of your car or the roof of your home.

It could!

The term "***space debris***" or "***space trash***" refers to the natural debris found in the solar system. Items like large rocks called asteroids and comets, and even smaller pieces called meteoroids which break off from asteroids and comets, litter our solar system and

threaten to collide with planet Earth.

The term also includes parts of old satellites and smaller spent rockets breaking apart in space and falling to the earth. Making matters worse, five satellites have collided in space since December of 2016 creating even more trash and an eventual collision with the earth (Wikipedia). "***Space junk***" is a threat to active satellites and spaceships. Although most debris burns up in the atmosphere before reaching the Earth, larger objects can reach the Earth intact. According to NASA, an average of one piece of debris has fallen back to Earth each day for the past 50 years! Incredibly, despite their size, there has been no significant property damage from "***space debris***".

In 1969 five sailors on a Japanese ship were injured by 'space debris'. In 1997 an Oklahoma woman, Lottie Williams, was uninjured when she was hit in the shoulder by a 3.9 inch × 5.1 inch piece of blackened, metallic material confirmed as part of the propellant tank of a Delta II rocket which launched a U.S. Air Force satellite the year before. On 12 January 2001, a Star 48 Payload Assist Module (PAM-D) rocket upper stage (in the photo above) re-entered the earth's atmosphere after a "*orbital decay*" and crashed into the Saudi Arabian desert. It was identified as the upper-stage rocket for NAVSTAR 32, a satellite launched in 1993.(Wikipedia).

After a large space station panel from the International Space station

fell to the Earth in 2025 and flattened an unoccupied, volunteer fire station in southwest Rehoboth, **Massachusetts,**

demolishing two of the town's fire trucks, NASA (National Aeronautics and Space Administration), an independent agency of the United States government responsible for the civilian space program as well as aeronautics and aerospace research,

accepted bids from leading space travel companies like Elon Musks' Space X company,

Richard Branson's **Virgin Galactic** company, and Russia's **Gagarin Space Cleaners** to protect the Earth by

clearing debris from the near universe around the Earth.

CLEAN ENERGY IN THE NEAR FUTURE: *FUSION ENERGY*

A photo, provided by the Lawrence Livermore National Laboratory in California and home to **world's largest laser,** shows the fusion equipment which uses the power of 192 laser beams to make a tiny hydrogen fuel pellet crash and then implode.

Fusion** energy science creates powerful, clean energy just like the sun does*, i.e. energy that is created when the nuclei part of atoms *'crash'* into each other. Fusion energy occurs when atom nuclei *'crash'* together at incredibly high speeds to create a new element (often helium) in the same way that stars create energy. In that explosive *'crash'*, the two ***hydrogen atoms slightly decrease in size but that is then converted into a powerful *'energy'* force according to Einstein's famous equation, **$E=mc^2$.** Because the speed of light is very, very fast — 300,000,000 (million) meters per second — the tiny amount of atom mass lost in the *'nuclei crash'* results in much more energy. ***Fusion reactions***, unlike the chemical reactions when burning coal or natural gas that causes pollution, ***do not release greenhouse gases*** that cause climate change. For this reason, fusion power could help meet the world's energy needs without contributing to the warming of our planet.

Stars are made up of ***hydrogen.*** Hydrogen is the simplest and most abundant element in the universe. Hydrogen was first created during the ***'big bang'*** when our universe was created. The center of a star is so hot and so dense it creates immense pressure forcing hydrogen atoms to come together, and, in the process, creates clean, powerful, energy. Scientists, in fusion energy laboratories, are fundamentally attempting to replicate what the sun and stars do naturally.

Scientists have been chasing 'fusion energy' since the 1950s. The United States, Russia and especially some European nations have allocated billions in government dollars trying to master the 'fusion energy' process in the belief, that if they could, it would be a significant opportunity for the world. TAE Technologies (pronounced T-A-E), founded in 1998 to develop **commercial** fusion power with the cleanest energy, is a large privately owned fusion energy company.

One of the benefits of fusion energy is *on-demand energy*: i.e. you can create and use it when you need it. The source for fusion energy is hydrogen and ***hydrogen is everywhere!*** **For example,** if you ***take the top inch of water in the Boston Harbor, this would provide enough hydrogen to provide enough power/electricity for metropolitan Boston, Massachusetts and its 4,900,000 (million) peoples' energy needs for 50 years*****!!** ***Or,*** **a pickup truck's worth of fusion fuel has the same energy as 10 million barrels of gasoline!!!!** By 2033, you could be reading a story on your phone that is charged by fusion power. Since fusion creates electricity, it could be used by our existing electric company infrastructures. People apparently will not be able to create fusion power for just one home like solar panels do; the fusion energy minimum is now about 1,000 homes. The goal for CLEAN fusion energy is large scale commercial AND home electricity but it is still years away. ***The challenge is for engineers to design systems that can take fusion produced 'energy' from an atom nuclei 'crash' to create electricity*** to power homes and offices (e.g. lights, heat, air conditioning, microwaves, computers, basketball and soccer scoreboards, ***Fenway Park in Boston***, etc). Stay tuned. (MIT 2020; SCience and Fusion Center - Dennis Whyte)

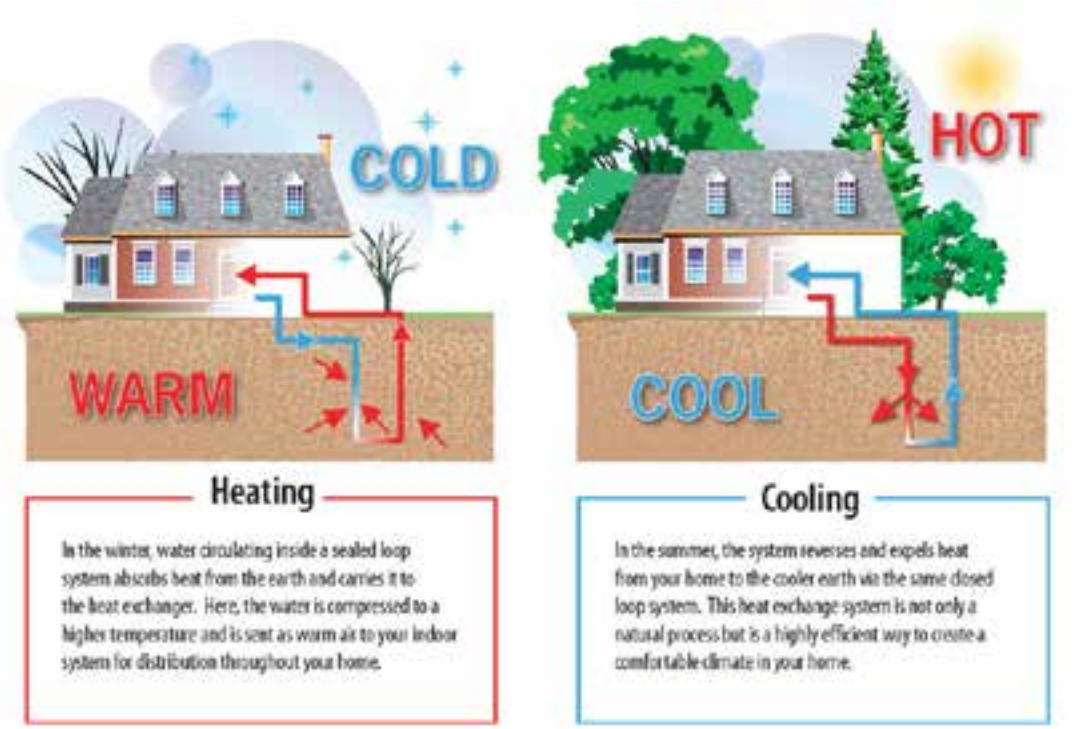
Alternative Energy

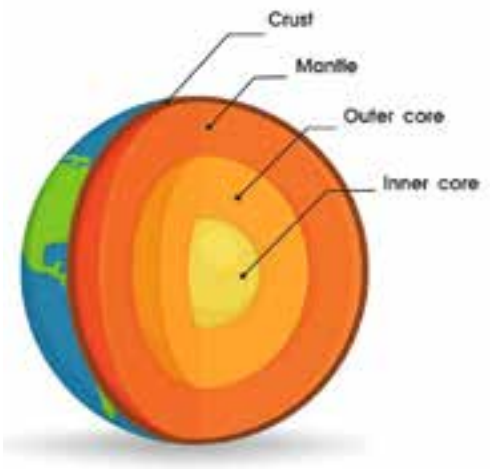
"Imagine,
a highway lined with trees
that glow and light up a road
the way traditional street lights do!"

In November of 2017, scientist Michael Strano, a chemical engineering professor at MIT (Massachusetts Institute of Technology in Boston, Massachusetts) and his team announced they've figured out a way to get plants and shrubs to give off light, lots of light! They described a process of ***putting NANOPARTICLES into plants*** and then, taking photosynthesized particles ***in the plant to turn the particles into light***. The nanoparticles enter a leaf through the plants pores. Once inside the plant, scientists get the particles to activate stored chemicals in the plants to turn into light, *"making the whole plant glow"*. The glow or light in the early experiments lasted for about 3 hours. Scientists believe they can eventually give plants the ability to glow for a plant's entire life and to glow for a much longer period every day. The challenge is the brightness that a plant, tree or shrub can glow. Eventually, scientists believe they can get plants and shrubs to easily light streets in the future the way street lights have been lighting up streets and roads in the 20th (1900s) and early 21st (2000s) century. ***Stay tuned!!!***

Geothermal Energy

A cleaner, cheaper way to heat a home in the cold of the winter and cool it during the heat of the summer by using the capabilities of the Earth below the surface!





Instead of relying on fossil fuels like oil, natural gas, coal and wood, homes using geothermal energy use the Earth's natural heat source from below the surface. **The key piece of equipment** in a geothermal system is the **geothermal heat pump.** This device is the brain of the operation. The pump uses a loop system of pipes buried underground to exchange heat with the Earth. During winter, when it's cold outside, the geothermal system takes the heat from inside the Earth and bring it into your home. The Earth's inner core acts as a giant heat source, ensuring a consistent and efficient supply of heat. The **inner core or center of the planet Earth** is extremely hot, with temperatures reaching up to about **9,932 degrees Fahrenheit.** "***Planet Earth has a molten red-hot lava core. It is a giant nuclear heater***" writes Paul Zane Pilzer, author of The New Roaring Twenties" 2020s. The Earth's surface is protected from the extreme heat of the inner core by the many layers that make up the Earth's structure. Conversely, in the summer, when it gets really hot outside, the geothermal system inside the house takes heat from inside a house and sends it back into the Earth. This helps to keep your home cool without relying on traditional air conditioning systems using fossil fuel created electricity. The geothermal pump can either be a closed loop of pipes, where a mixture of water and antifreeze circulates, or an open loop of pipes, which uses water from a well. **In summary,** during the heat of the summer, the geothermal heat pump system sucks heat out of a home and pushes it through the pipes into the earth. In the winter, the geothermal heat pump brings heat in from below the surface of the earth. **A geothermal heat pump** is a **versatile, clean, energy-efficient system** that uses the Earth's natural capabilities below the surface to provide both heating and cooling for homes throughout the year.

Clean Energy -

Solar Impulse, an electric aircraft circumnavigating the globe in 2016-17, is a single-seat plane powered by solar cells and capable of taking off under its own power. The design allows the aircraft to remain airborne for several days Solar Impulse 2 was converted for unmanned flights to "run applications" that cannot currently be performed by satellites for communication, measurements and observations for agriculture, infrastructure planning and other purposes

wind turbines, or windmills, located off the coast of Texas in the Gulf of Mexico and off the coast of Cape Cod, Massachusetts, in the Atlantic Ocean generating energy to create electric power

As oceans rise, greenhouse gases raise global air temperatures for longer periods of times, aquifers, reservoirs, rivers, and lakes shrink or run dry, polar ice caps and glaciers in Alaska, Russia, Greenland, Antarctica, Canada, Montana, and other areas in far northern and southern landscapes melt, and as a result, fresh water becomes more scarce, as well as hurricane, typhoon, tsunami, drought, and tornado disruptions become more frequent and intense, scientists and government leaders look to the sun, wind, ocean tides, geothermal, hydrogen, and other clean energy sources to replace oil, coal, natural gas, and other dirty, carbon based sources for electricity for factories, homes, offices, schools, sports arenas, street lights, and automobiles. Scientists and government leaders ask '***what is the best energy alternative***'? Even cleaner energy sources like nuclear, hydroelectric, and biomass fueled power plants create problems "***by reducing both water quality and its quantity***" writes author Laurence C. Smith in his fascinating book "***The World in 2050***". *"Water is used to make steam in a power plant to turn a turbine to produce electricity and get rid of excess heat. The single greatest demand for water in the energy producing sector is for the cooling of the power plant. After cooling the power plant, the water recycled back into a river is hotter than the water originally taken into the power plant from the river. Warmer water holds less oxygen which then slows the swimming speed of fish and interferes with their reproduction. A nuclear power plant uses 785 gallons of water to produce one megawatt hour of electricity while a natural gas plant only uses 195 gallons of water to produce one megawatt hour of electricity".*

What are the best practices to follow
as man balances
the environmental issues
carbon based fuel (coal, oil, natural gas, etc) sources of energy create
and
keeping electricity affordable for all?

The Itaipu Dam is a hydroelectric dam on the Paraná River located on the border between Brazil and Paraguay in South America. Electricity is 55% cheaper when made by the Itaipu Dam than the other types of power plants in the area. Only the Three Gorges Dam in China produces more hydroelectric energy than Itaipu.- Wikipedia

Carbon free "*wind and solar are the fastest growing energy sectors in 2020*" according to energy futurist Smith. Hydropower from rivers and dams generates 16% of the world's electricity in 2020. Wind and solar combined only produce 1% of the world's electricity in 2020. There are some exceptions. The country of **Denmark and the Canadian province (state) of Prince Edward Island get 20% of their electricity from the wind**. European Union countries collectively get 4% of their power from the wind. Presently, carbon based energy production remains less expensive than solar, wind, or hydro alternatives. Which is why, unfortunately, many energy observers believe

oil and other carbon based fuels,
will remain
the dominant sources
for creating electricity in the 21st century.

image of a *Tesla PowerPack*. Tesla built and installed the world's largest **lithium**-ion battery in Hornsdale, South Australia, using Tesla PowerPack batteries. Since then, the facility saved nearly $40 million in electricity costs its first year alone and helped stabilize the region's unreliable electric grid.

Batteries **are becoming an increasingly important component of 21st century energy**. One of Elon Musk's many business ventures is focused on batteries. Tesla now makes ***Powerwall batteries*** for homes and ***PowerPack batteries*** for businesses. And, there are other companies focusing on batteries like the Japanese company, Panasonic. Batteries to power electric cars. Batteries for electricity in homes, factories, schools, and stadiums. Batteries to provide electricity to entire cities! For example, a Tesla ***Powerwall*** stores and uses electricity generated from a solar panel or a residential wind turbine to give a homeowner abundant electricity day and night, and reduces a home's dependence on buying fossil fuel produced electricity. With a home ***Powerwall***, a home can store solar energy generated during the day for use at anytime. During the day, the sun shines on your solar panels, charging your battery. At night, your home draws electricity from your battery, providing your home with clean, sustainable electricity, 24/7. Clean, accessible, relatively inexpensive, electricity.

image of a Tesla PowerWall in the basement of a homeowner. Note the Tesla *PowerWall* on the basement floor and its connection to the "***SOLAR INVERTER***" which sends solar energy to be saved in the *PowerWall*

One problem - *what to do with lithium-ion batteries when they wear out*? Solving this problem is becoming more immediate since British and French governments announced they are prohibiting the sale of gasoline and diesel-powered cars by 2040 and Swedish carmaker Volvo has promised to only sell electric or hybrid vehicles as of 2019. **The answer** - Tesla, Nissan, Toyota, and other car manufacturers say they have solutions, i.e "*proven capabilities to recycle spent batteries.* ***Stay tuned.***

Here Comes the SUN!

Two Tesla Powerwall 2 devices "stacked" together in a perron's home in New York

solar panels on a solar farm in the European country of Portugal

According to an Economist Magazine 2024 article ,

by the mid-2030s,
solar cells could be
the single largest source
of electric power on earth!!

"*Solar is on track to provide more electricity than all the world's nuclear power plants in 2026, than wind turbines in 2027, than hydro dams in 2028, than natural gas power plants in 2030 and coal fired pants in 2032*"

A primary concern is storage,

that is, solar energy needs a place to store the power it's collecting from the sun. ***The best place now for storage is batteries***.

Elon Musk makes **Tesla Powerwall batteries** for homes to store energy collected from solar panels on their roofs; as a result, they don't have to pay for electricity from a local energy company. **FREE ELECTRICITY!** Tesla Powerwall batteries also provide backup power when electricity is interrupted during storm outages. Moreover, according to Musk -"*If you wanted to*

power the entire U.S. with electricity , it would only take a small corner of Nevada or Texas, about 100 miles by 100 miles, to place solar panels...

What a source of power! .....Solar power is the last energy resource that isn't owned yet - nobody taxes the sun yet!" And, the more solar panels are being made, the less expensive they are.

Another concern of American politicians is CHINA.

As Musk is producing thousands of batteries in his Giga battery factory in Reno, Nevada, United States of America, most of the world's solar panels and the materials and the precious minerals to make them, like **purified silicon** and **lithium,** come from **China**, America's international rival. And, Chinese solar panels are less expensive to buy than most solar panels made throughout the world.

Electric, SOLAR POWERED, Aircraft

Electric aircraft, that is, airplanes, blimps, airships, and possibly flying cars, will use batteries to store energy collected from the sun. They will soon be flying the skies.

Solar-powered aircraft do not require traditional, fossil based jet / aircraft fuels that pollute the earth. The advantage of solar power is that it is free (*no charge to buy*) and emission less (*no air pollution*) thus more environmentally friendly than using jet fuel. ***A solar plane never needs re-fueling,*** and, in theory, it can stay in the air when the sun is shining and when the sun isn't shinning. Perpetual flight, i.e. staying in flight constantly without stopping, is possible if the power collected from the sun is stored in batteries that charge and power the aircraft at night. These solar powered aircraft are NOW able to operate at altitudes 12 to 62 miles and ***stay in the air for months at a time without refueling.*** In 2016, CNN reported on a weird-looking plane, covered with more than 17,000 solar panels, which showed the world the future of solar based flight. With the wingspan of a Boeing 747 and ***weighing only as much as an SUV automobile,*** ***this electric aircraft*** circumnavigated the Earth using the power from the sun and without using a drop of traditional aircraft, fossil based fuel.

Solar Airship One is another example. It is being developed by Euro Airship and is planning to launch a would tour in 2026 and fly over 25 countries in 20 days and never stopping for more fuel. ***This aircraft will be autonomous, i.e. NO PILOTS ON BOARD,*** and use electric power from the sun stored on aircraft batteries which allow the aircraft to keep moving at night when the sun isn't shining. These kinds of electric, solar powered projects are attracting interest from government and military. The US Navy has invested $5 million in an electric powered aircraft project to patrol the oceans of the earth for the security of the United States.

Pandemics

The World's Greatest Threat

above -*2020 British newspaper story on the coronavirus. pandemic*
below -*official takes a person's temperature during 2020 screening of the coronavirus pandemic*

1950s North Carolina newspaper headline about the polio outbreak in America.

A **PANDEMIC** is a ***widespread, infectious disease*** that spreads across multiple countries, even worldwide. A widespread disease with a number of infected people that is not growing quickly is not a pandemic. A seasonal flu, for instance, is not generally considered a pandemic.

There have been a number of pandemic diseases throughout the history of the world like **smallpox**, **tuberculosis, HIV/AIDS, cholera**, **typhus**, the **flu** (*influenza*), **measles, leprosy, yellow fever** (especially during the '*American Revolution*'), **polio, malaria**, and the **plague**. One of the most devastating pandemics was the **Black Death plague** (1331 to 1353) which killed an estimated 33% to 66% of the people living in Europe and 75–200 million people worldwide. The **Spanish flu** (1918 - 1919) lasted 18 months and claimed the lives of 675,000 Americans and approximately 75 million people world wide. **Smallpox**, unknown on the American continents prior to the arrival of European explorers, decimated Native American tribes beginning in 16th century. 80% to 90% of some North American tribes, like the Wampanoags in southeastern Massachusetts and Rhode Island, were killed by smallpox in the 1660s and 1700s.

The coronavirus pandemic of 2020 was first identified in the city of Wuhan China in late **December 2019** and soon spread as an acute respiratory disease referred to as **Coronavirus 2019 or COVID-19**. More than 170 countries and territories were affected with major outbreaks in central China, Italy, South Korea, and Iran. On March 11, 2020, the World Health Organization (WHO) called the spread of COVID-19 a '*pandemic*'. Borders between countries were closed preventing people from traveling from one country to another to stop the spread of the virus between countries. Professional sports leagues in the United States of America like Major League Baseball and the National Basketball Association (NBA) cancelled games. NCAA college basketball cancelled "*March Madness*", otherwise called, the college basketball national championship tournament. Schools, health clubs, restaurants, and many businesses within countries were also closed to prevent the spread of this new virus while scientists worked on developing and distributing testing kits to identify carriers of the virus as well as an vaccine to administer to those affected by the virus. Less than three months after the first known Covid-19 death in the U.S., more Americans have died of this disease than fell in battle during the Vietnam War.

Compared to past pandemics, Covid-19 was relatively mild. Many of those infected with Covid 19 appeared asymptomatic; in other words, showing no visible signs of the virus. Only a very small percentage of cases required hospitalization, and, most who were hospitalized, recovered rather than died. Compared with the 1918 Spanish flu, smallpox, or Black Death pandemics that preceded it, the Covid-19 pandemic was MUCH LESS DEADLY.

One of the concerns today is the potential danger of terrorists hacking the genetic code of a virus and turning it into a weapon.

Weaponizing disease has been practiced before. Ancient ***Hittites***, from an area today of modern day Turkey, seem to have driven virus infected people into enemy lands in 1000 B.C. In 1346, **Mongols catapulted the bodies of people who died of**

the plague into the Crimean city of Caffa before their attack. In the 20th century during World War 2, both Axis (***Germany, Japan, Italy***) and Allied (***US, England, Russia, France, et more***) governments developed biological weapons. Japan used viruses as a weapon against China during World War 2. The Japanese dropped ceramic bombs carrying bubonic-plague carrying fleas on the Chinese city of Ningbo during the war. In the post-Covid future, some countries and terrorist groups may seek to create virus plagues as weapons. All **countries today will need to defend themselves against potential weaponized virus attacks**. The ability to recognize new diseases and quickly and rapidly develop treatments and vaccines will become a critical mission of national defense programs.

In a 2015 TED Talk, Bill Gates warned the world is not prepared for an epidemic, pandemic, or virus outbreak.

Bill Gates, the world's second richest person, is the founder of Microsoft and the head of the Gates Foundation which gives millions of dollars to fund multiple efforts to fight dangers and challenges facing the world's population. Mr Gates

warned Americans and the world of this most grave danger.

Mr Gates was speaking about the world's reaction to a recent **Ebola virus** outbreak in 2014 in Africa. He said during his TED TALK

"*if anything kills over 10 million people in the next few decades, it's most likely to be a highly infectious virus rather than a war.*

Not missiles, but microbes!...

We've actually invested very little in a system to stop a epidemic.

We're not ready for the next epidemic.... "

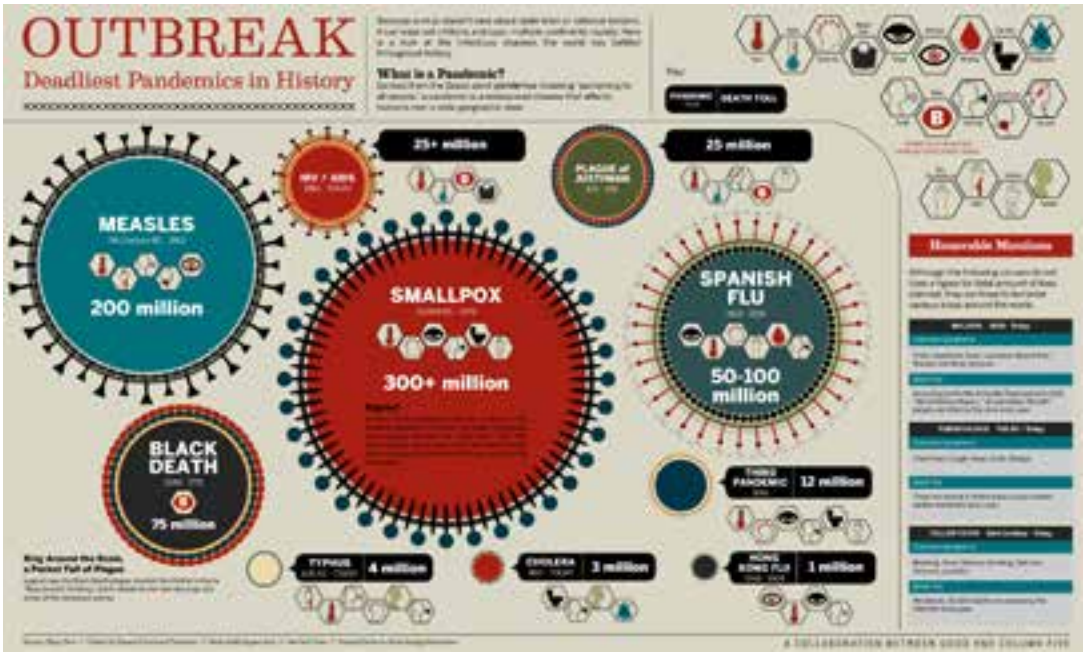


PHOTO ABOVE: Bill Gates presenting his warning about the next pandemic to threaten mankind at TED 2015

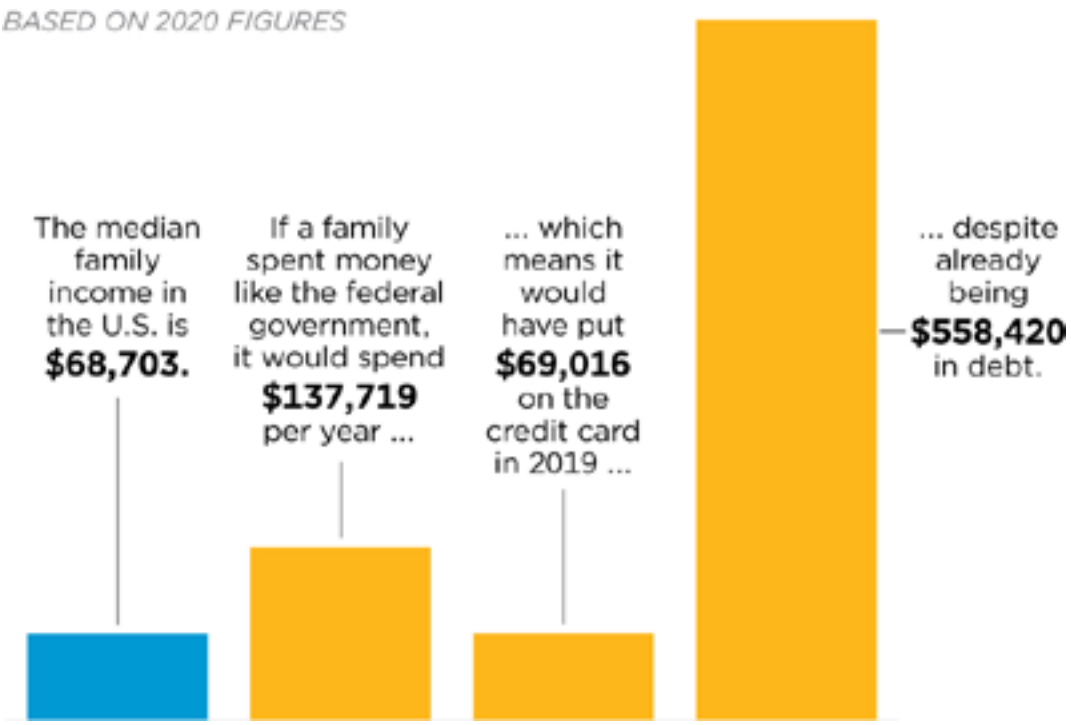
A Fiscal ***Disease:*** - DEBT

American FEDERAL POLITICIANS' Spend More Money Than America Collects in Taxes

"The accumulation of debt is
the
natural disease of governments.

It is not easy to conceive of anything more likely than this
to lead to
great convulsive revolutions of empires."

Alexander Hamilton's warning about a mounting debt's disastrous effect on the United States.
James Madison concurred with this opinion.



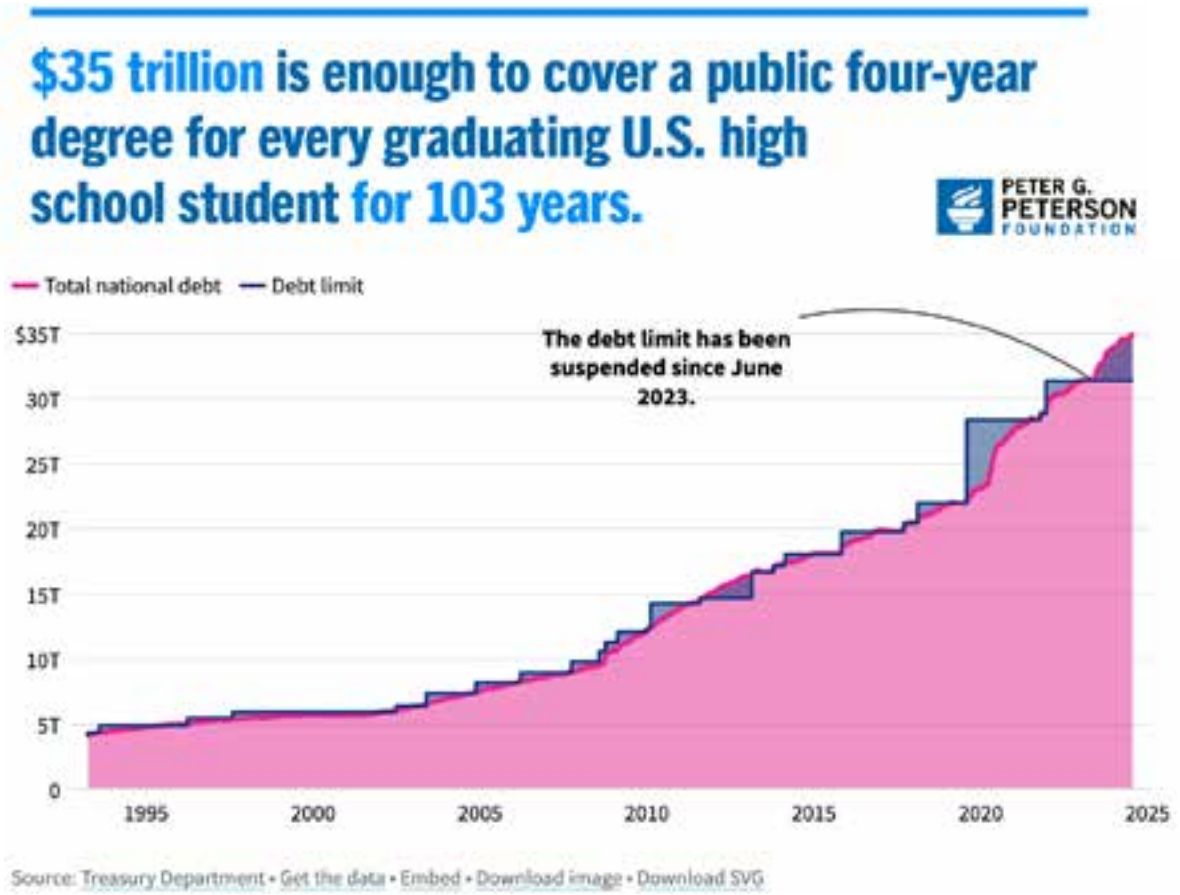
From America's beginning in 1789 to 1989,

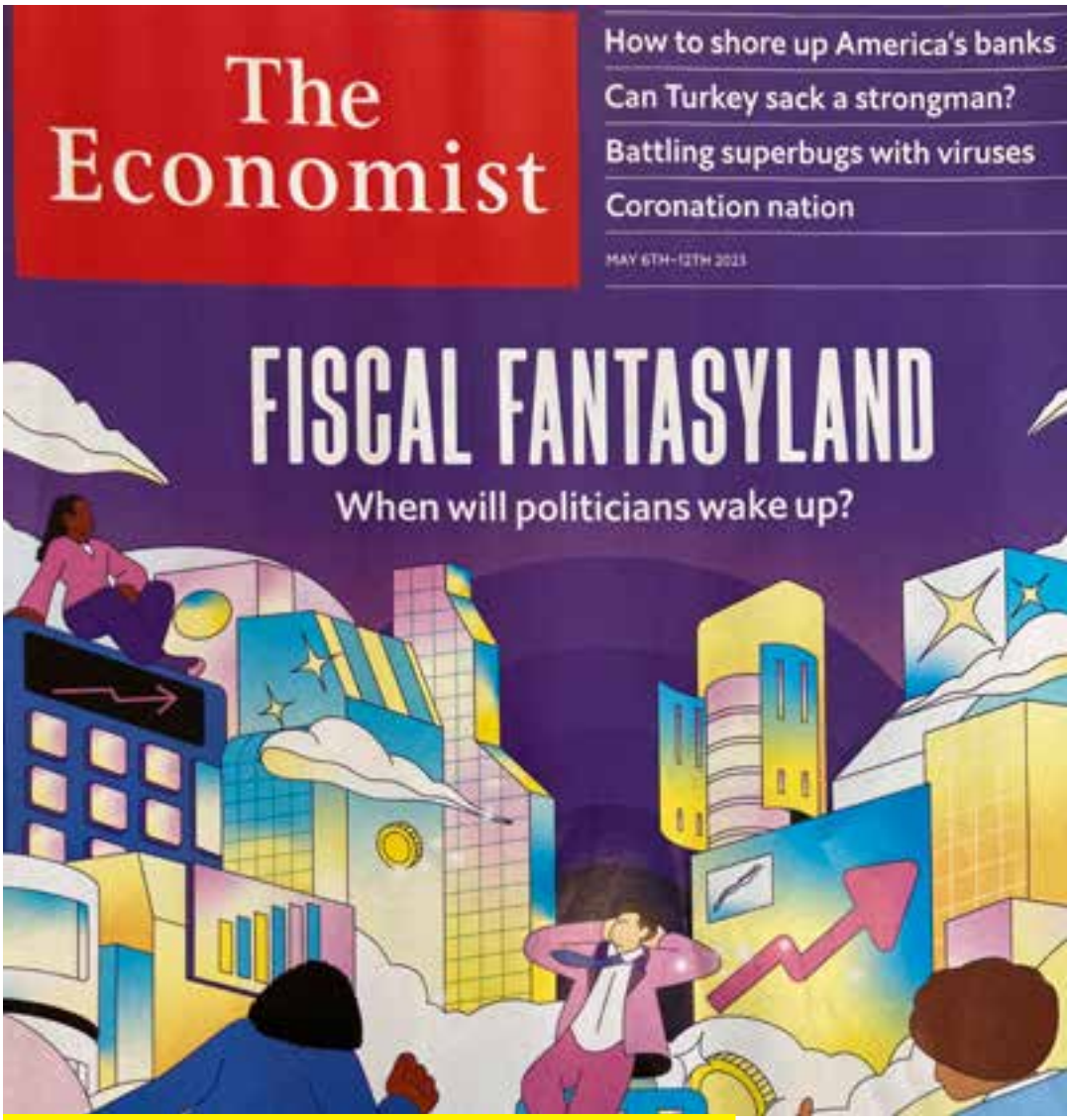
the U.S. government borrowed $2.9 trillion to pay the country's bills.

Because the concern over so much borrowing, an infamous "***debt clock***" was installed near New York's Times Square in 1989 to keep track of how much American FEDERAL politicians (SENATORS, REPRESENTATIVES, PRESIDENTS) were borrowing to pay the country's bills.

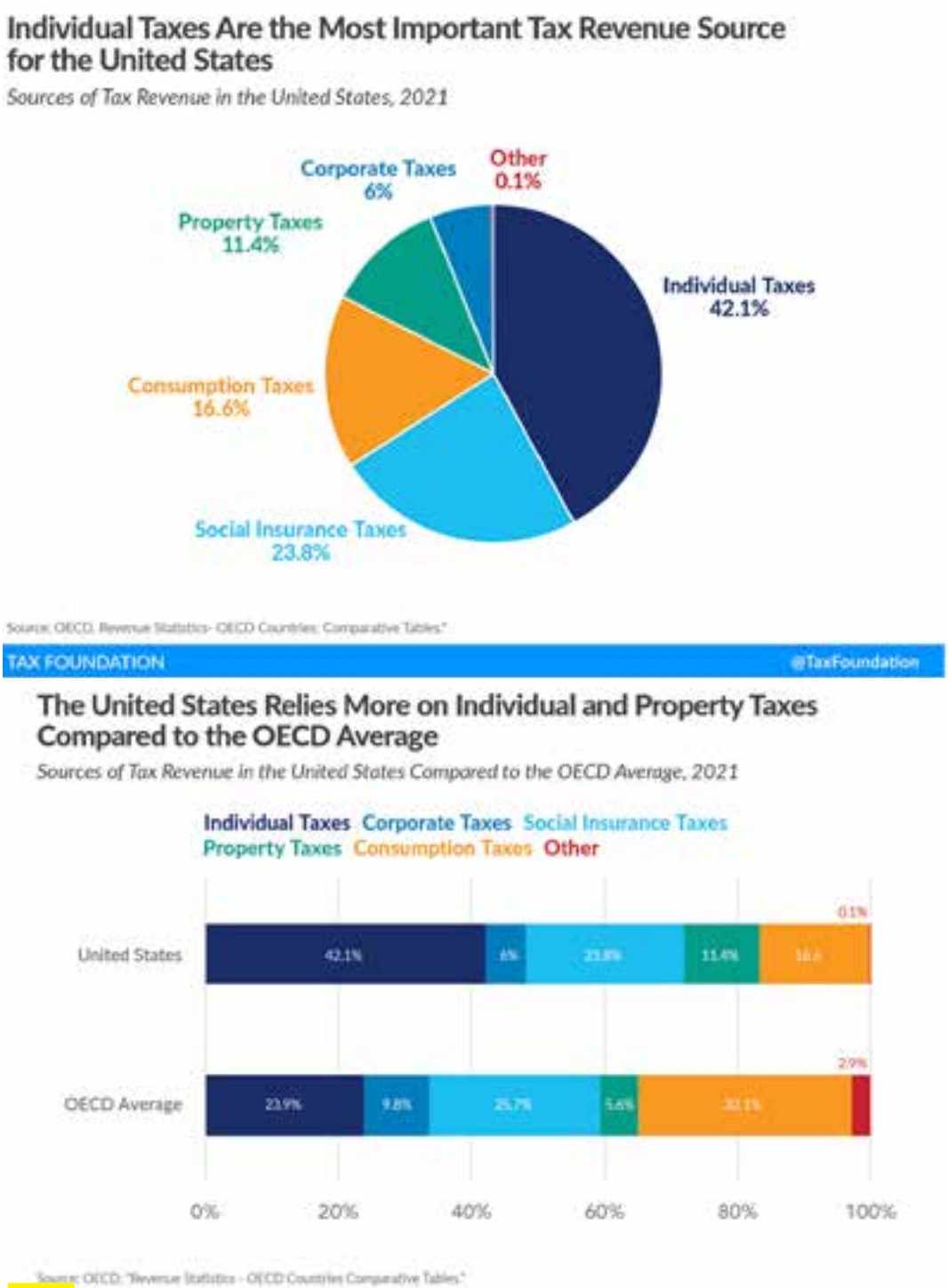
2004 photo of America's debt clock

Since 1989, America has borrowed another $33 trillion!





Founded in England in 1843, the Economist Magazine, with over 1.6 million subscribers world wide, is a British weekly magazine publishing articles on current affairs, international business, politics, technology, and culture. ***This Economist issue focuses a "big and enduring problem"***. i.e. the borrowing of money by the American political leader who run the United States government. ***United States of America political leaders spend more money*** on "*swelling handouts and government interest payments* "(the money the American government has to borrow to pay its' bills) ***than the government collects in taxes and fees.*** China, England, Germany and other countries face the same dilemma. Almost 10% of all the money the federal government of America spends on the military, education, social security, green energy tax cuts, and other government programs is paid to countries and organizations/banks America borrows money from. American political leaders running the United States government have ***borrowed $1.2 trillion—4% of total U.S. debt—from JAPAN***. America government leaders have borrowed ***$980.8 billion—3.2% of the total U.S. debt from CHINA***! American political leaders ***also borrow money from the Social Security Fund that is set up to pay American senior citizens their retirement payments each month; American citizens paid into this FUND when they were working.*** The U.S. national debt, the money it owes to the countries and institutions it borrows money from was ***$31.41 TRILLION in January 2023.*** "***Politicians need to get real, fast! Public debt is in danger of becoming unmanageable"*** writes The Economist.



The OECD (Organization for Economic Co-operation and Development) is an organization of 38 countries founded in 1961 to promote trade among countries and stimulate economic growth. OECD member countries include: United States of America, France, Australia, Colombia, Japan, South Korea, Iceland, Mexico, Canada, Turkey, Germany, and more. Most OECD member countries have *'successful'* economies supported by successful, highly profitable companies like Microsoft, Google, Nividia, Apple, Meta (Facebook), Tesla, BYD, Alibaba, Lego, BMW, Mercedes, BP, Rolls Royce, and more. The collective populations of OECD is 1.38 billion people with an average life expectancy of 80 years and a current median age of 40, against a global average of 30 years old.

Glossary / Definition of Terms

WHAT IS A / CONSUMPTION / SALES TAX?

A sales tax is **an extra charge on stuff you buy** like ***cars, cigarettes, gasoline, clothing, restaurant food, TVs and other appliances, toys, books, furniture, and other goods.*** Many governments exempt goods like groceries.

In the United States, retail sales taxes are a significant source of money / revenue for states, cities and towns. All United States of America states **EXCEPT Alaska, Delaware, Montana, New Hampshire, and Oregon** collect statewide sales taxes. Of these, Alaska allows cities and towns to charge local sales taxes.

As of 2024, local sales taxes were collected in 38 states. In some cases, local sales tax rates can rival or even exceed state rates.

WHAT ARE INDIVIDUAL TAXES? is a charge on the wages, salaries, dividends, interest, and other income a person earns.

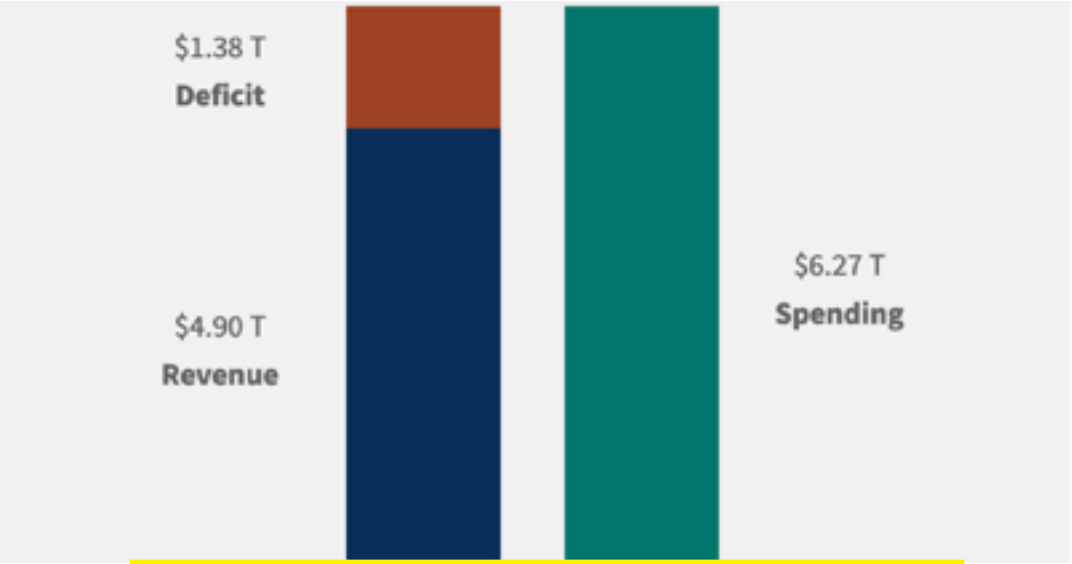
WHAT ARE CORPORATE TAXES? is a charge on the money businesses make after expenses are subtracted from revenues (money charged for products and services sold)

WHAT ARE PROPERTY TAXES? quarterly, semiannual or annual charge levied by a local government and paid by the owners of real estate / property / homes / buildings owned by individual or companies.

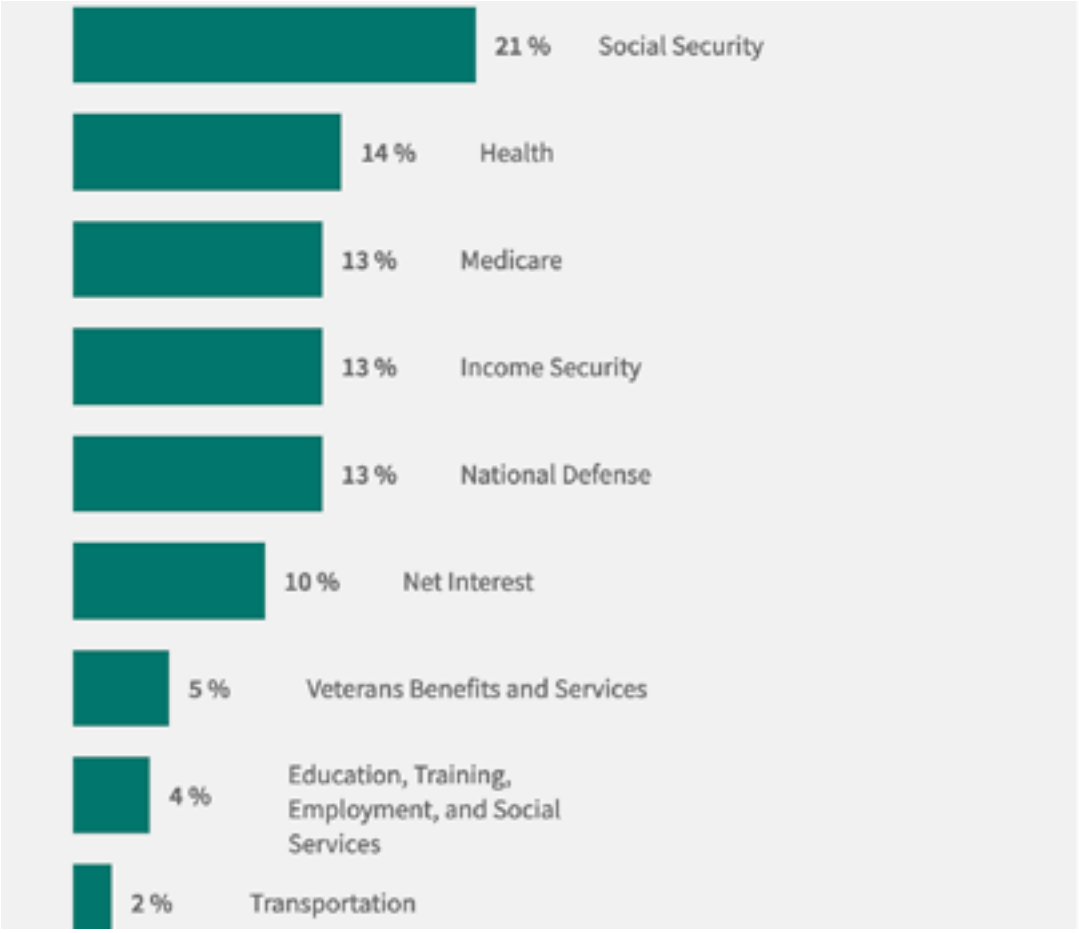
WHAT ARE SOCIAL INSURANCE TAXES? money deducted by the FEDERAL government in Washington, DC from a person's pay check for a special savings account to be paid to people when they retire.

The United States Federal Government in Washington, DC Budget

How much money the Federal Government in Washington, DC SPENT (green), how much money the Federal Government COLLECTED IN TAXES (revenue in blue), and how much money the Federal Government in Washington, DC HAD TO BORROW to pay its bills (red).

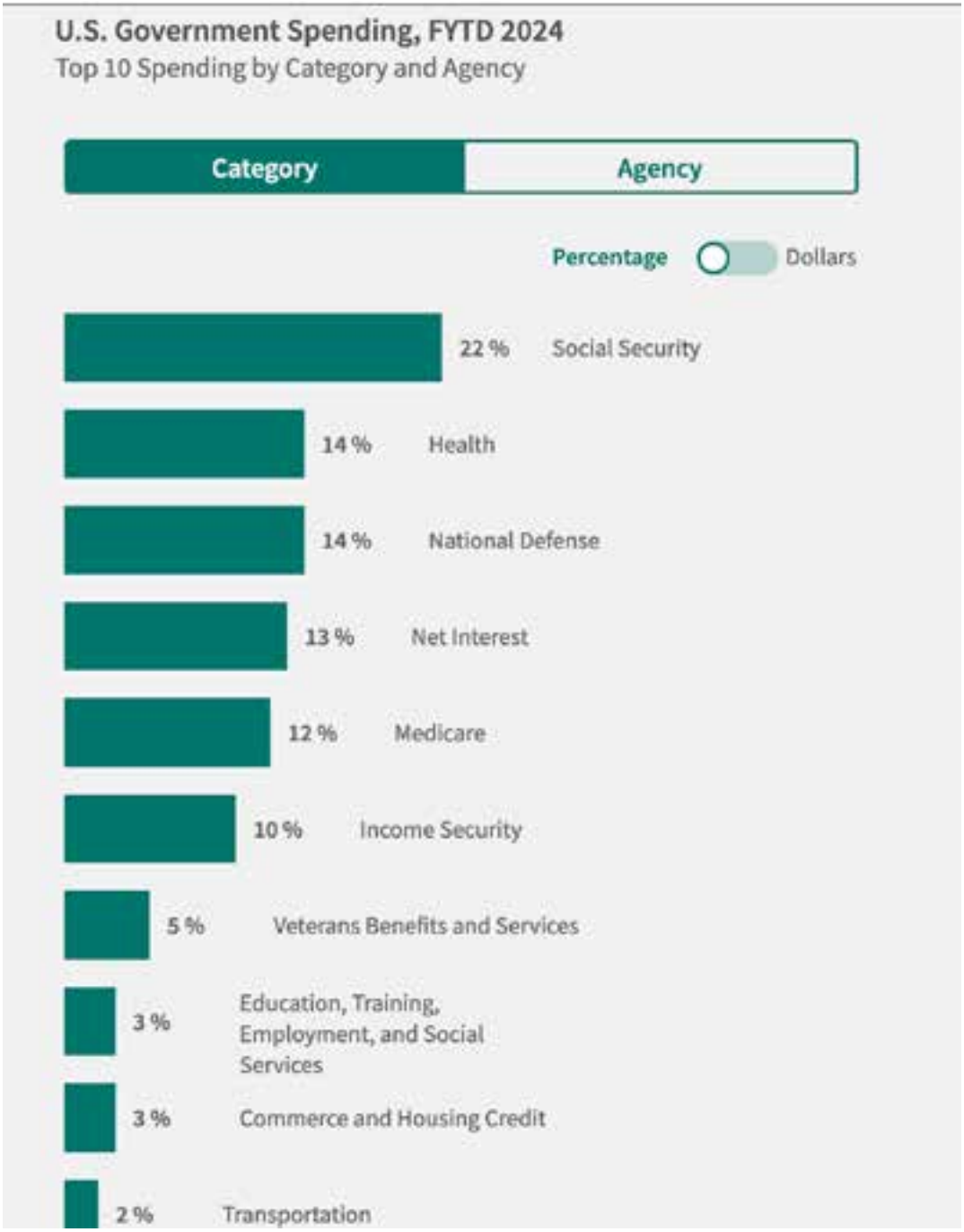


United States Federal Government Spending by Category in 2023

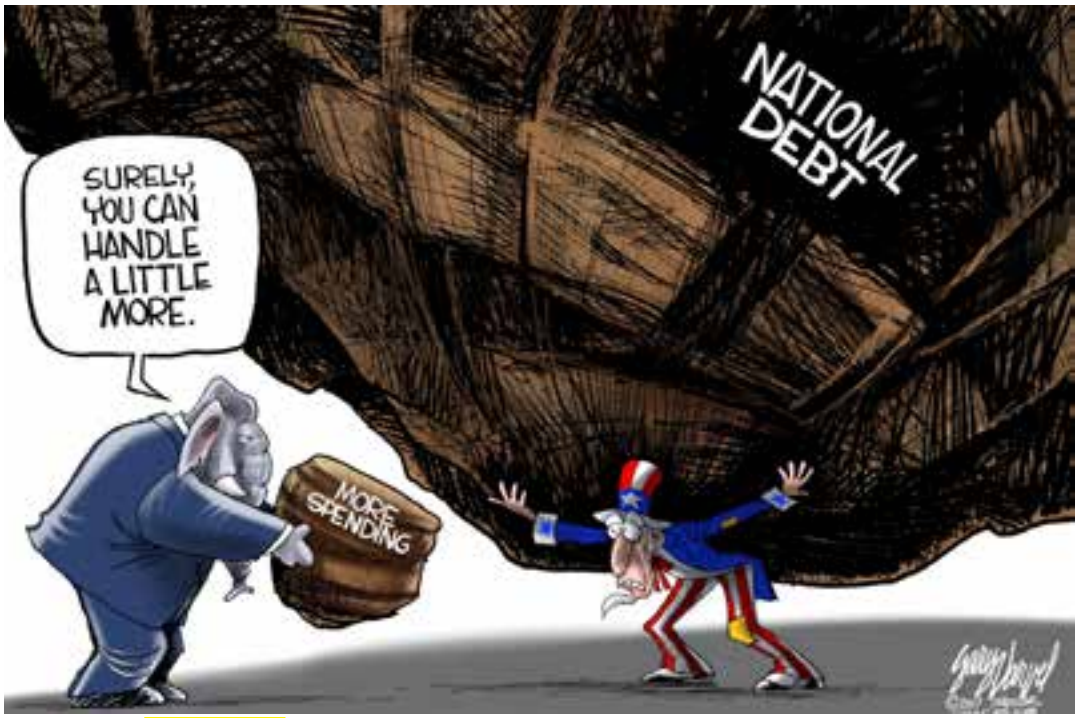


The U.S. national debt consists of both debt to be repaid to private individuals, companies, and other government agencies like the Social Security Savings Fund which pays monthly benefits to all Americans receiving Social Security.

When government politicians decide to borrow more money by selling securities, the government increases what it owes to its borrowers; i.e. the national debt, the total amount of money that the U.S. government owes to its creditors. ***In 2024, America's national debt, or the total amount of money it owes its lenders is 34.47 trillion U.S. dollars. As of March 2024, it costs America $433 billion a year in INTEREST CHARGES for borrowing on its debt.***



America Must **Borrow Money** *Every Year to Pay America's Bills*



BECAUSE **America's POLITICIANS CHOOSE TO BORROW MONEY**
RATHER THAN ONLY SPENDING THE AMOUNT OF MONEY THE GOVERNMENT COLLECTS IN TAXES AND FEES,
the United States government must BORROW money to pay its bills.

Here's how the government borrows:

The Treasury Division of the federal government sells IOUs (called securities) which essentially means the government promises to pay the lender back the amount it borrows PLUS INTEREST CHARGES. **Interest charges are extra money that must be paid just for borrowing money; interest payments have nothing to do with repaying the actual amount of money borrow.** There are different types of IOU / security promises. Some government securities promise to pay back lenders in a few days to 1 year. Other securities are promised to be paid back in 2 to 10 years and others 20 to 30 years.

America borrows money from foreign countries like China and Japan AS WELL AS borrowing from itself by borrowing money from the Social Security Savings account, Medicare, etc. The American government also borrows by selling securities from as well as private banks and investors. America promises to repay by a specific date AND WITH INTEREST.

The government sells its IOUs (securities) in an AUCTION. The interest charges are determined by the demand for these securities; in other words, how many foreign countries, private banks, investment companies or government agencies who want to buy the government IOUs . If there's high demand, the interest rate tends to be lower; if the demand is low, interest payments are higher.

The money from the sale of government Treasury securities are used to pay **government** ***bills like paying the salaries of men and women in the army, navy and other military branches, salaries for Congress men and women, National Parks service, construction and highway maintenance equipment, buildings, and livestock, to research, education, and training. and for other federal programs and obligations including Social Security benefits and Medicare.***

WHAT IF FOREIGN COUNTRIES LIKE CHINA AND JAPAN DECIDE TO STOP LENDING MONEY TO AMERICA'S FEDERAL GOVERNMENT?

America's total debt in 2024 was $36 trillion. **$26.64 trillion of America's total debt has been borrowed from banks, insurance companies, state and local governments, and foreign countries like China and Japan.** Of

America's total debt of about $36 TRILLION (2024),

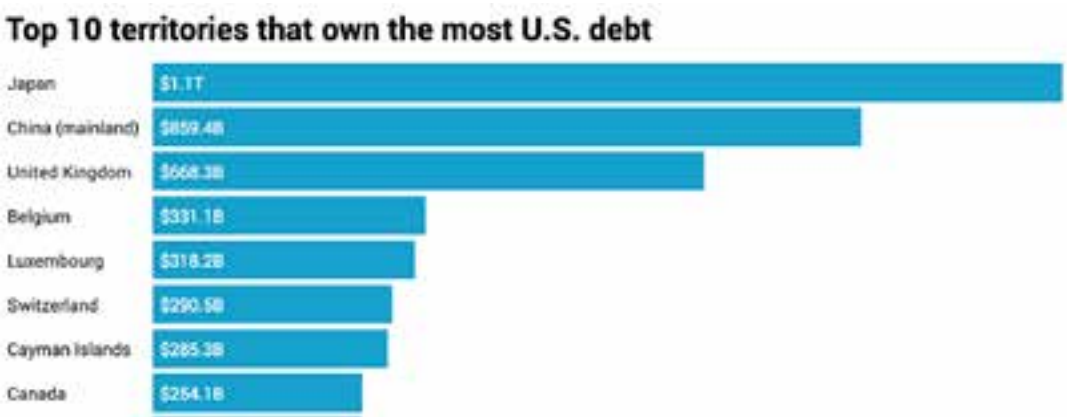
23% is borrowed from FOREIGN COUNTRIES (2024)

$8 trillion dollars is borrowed from federal government agencies

like the Social Security Savings account, the US Defense department and

the United States Post office.

INDEPENDENT INVESTORS and COMPANIES LOAN THE REST!



This interest payment on the money the US federal government borrows from all these sources is paid by using tax revenues and by issuing new debt (securities) to refinance existing debt when it matures.

The United States federal government has a limit on the amount of debt (securities) it can sell in auction. This is called the **Debt Ceiling**, in other words, a limit to how much money the federal government can borrow. When the Debt Ceiling limit is reached, Congress must vote to borrow more money to raise the Debt Ceiling so the federal government can pay its bills. If the Congress does not vote in favor of raising the Debt Ceiling, it can't pay all its bills. Some federal agencies could be closed like the Post Office OR the government may not be able to pay its Social Security benefits to retirees.

Most states, like Rhode Island and Massachusetts, have a balanced budget REQUIREMENT law.

Do you think America's federal government should have a balanced budget requirement too except during times of national challenges like war?

What If the United States Currency IS NO LONGER

THE WORLD RESERVE CURRENCY?

A 'reserve currency' is ***the money ($) that countries around the world keep in large amounts to use for international buying and selling and to help keep their own economies stable. Imagine it like super-popular MONEY that everyone trusts and is accepted everywhere.***

The ***"Dollar" i****s America's national currency. The* ***"Pound"*** *is the national currency in the United Kingdom (England, Scotland, Wales, Northern Island, etc.) The* ***"Yen"*** *is the national currency of Japan. The* ***"Yuan"*** *is the national currency in Mainland China.* ***The American dollar has been perceived, since 1944, as the most valuable, trusted, and reliable CURRENCY and is associated with the American economy, the largest economy in the world.*** *AS A RESULT,* **the United States dollar is recognized as the world's RESERVE CURRENCY** *and held in large quantities by foreign governments, their central banks, and other financial institutions for their international exchanges.* ***For example,*** *if you go to Japan, you'd usually need to trade your money for yen to buy things. But countries don't want to deal with constantly switching currencies when they trade large amounts of money, so they use a common, trusted currency—like the U.S. dollar, which is the world's main reserve currency. Other countries in the world today keep large amounts of dollars because they know it will be accepted almost anywhere in the world.*

Countries use ***reserve currencies*** *to pay off debts, buy things from other countries, or help stabilize their own currency if their currency's value is perceived by others to lose its value. One of the benefits of a country being PERCEIVED as an 'empire' is the acceptance of the empire's currency (money) all over the world. A country's currency becomes a* ***'reserve currency'*** *when most other countries in the world prefer to accept and use that currency to pay bills and put into savings accounts just like they would with their own money.*

When a country's currency, like the American dollar, is the world's reserve currency, it adds to the country's influence and power in the world. AND, ***BEING THE WORLD'S RESERVE CURRENCY HAS SPECIFIC BENEFITS LIKE OTHER COUNTRIES BEING WILLING TO LEND YOU MONEY!*** *Prior to the US dollar being the world's reserve currency, the* **British Pound** *was the world's reserve currency from the 1800s until the early 1900s.*

WHAT IF OTHER COUNTRIES IN THE WORLD LOSE CONFIDENCE IN THE UNITED STATES DOLLAR AND PREFER ANOTHER COUNTRY'S CURRENCY TO REPLACE THE UNITED STATES DOLLAR AS THE WORLD'S RESERVE CURRENCY?

why *would other countries lose confidence in the value of the United States dollar?*

Debt, **the amount of money America borrows each year to pay its bills,** *is one reason. Investors, business leaders and economists speculate that other countries could lose faith in the value of the United States dollar IF AMERICA'S DEBT CONTINUES TO RISE. United States politicians are borrowing too much money to spend on government programs each year.* **On August 1, 2023, Fitch Ratings, one of America's three major credit rating agencies, announced that it lowered the United States *credit rating* from AAA to AA+** because of America's rising debt and also the lack of collaboration and compromise among Democrats and Republicans in Congress to solve America's problems. *As of February 16, 2024, the US government has borrowed $34.27 **Trillion dollars**! Interest costs, the cost to just borrow money, is close to $1 TRILLION in 2024. This is more than the government spends on most other programs in the federal budget.* ***Furthermore,*** *AMERICA'S ENEMIES, ESPECIALLY CHINA AND RUSSIA, ARE TRYING TO REPLACE THE AMERICAN DOLLAR AS THE WORLD'S RESERVE CURRENCY (The Economist Magazine May 2024).*

If other countries lose confidence in the United States currency and refuse to lend America money,

(China, Japan, England, Belgium, etc),

where will American Federal politicians get the money to pay America' s bills?

United States Federal Government Debt as a % of GDP

What is GDP?

GDP or gross domestic product is
the value of a country's output, i.e.
all the services provided & sold (e.g haircuts, investing advice, car cleaning, etc),
all products made, grown & sold (e.g. cars, homes, mobile phones, hamburgers, sushi, strawberries, etc)
in a country during a specific period of time, usually a year.

PRODUCTS like cars, software, cell phones, ice cream, and solar panels **and** ***SERVICES like a massage, lawn care, dog walking, or haircutting;*** **all of the stuff that someone makes, provides, and sells which someone else buys or pays for, are all part of a country's GDP.** In 2019, the ***United States of America's GDP*****, i.e. the value of its economy, was** ***$21.44 trillion***. The U.S. has had ***the world's largest economy*** since 1871. **China**'s GDP in 2019 was $14.14 trillion. The Chinese are now competing with the United States for the world's largest economy. **India** is the fastest-growing trillion-dollar economy in the world and the fifth-largest overall, with a GDP of $2.94 trillion. India became the fifth-largest economy in 2019, overtaking the **United Kingdom (England)** and **France.** ***The United States money problem NOW is US government owes MORE MONEY to the people and other countries the United States leaders borrows from (Japan's government, China's government, the United States Social Security savings account fund, American banks, and American citizens who purchase US bonds, etc), THAN its GDP, i.e. the value of all money THE UNITED STATES creates!***

(from ChatGPT) - Imagine you and your friend both have part-time jobs. You decide to save your money, while your friend spends all of theirs and even borrows some extra money.

Now, let's compare your financial situation to a country's economy using a concept called the ***"debt-to-GDP ratio.***"

Debt is the total amount of money a person, state, city, company or country owes. It's like the total debt your friend has from spending and borrowing.

GDP (Gross Domestic Product) is the total value of all the goods and services produced in a country in a year. It's like the total amount of money you and your friend earn from your part-time jobs combined.

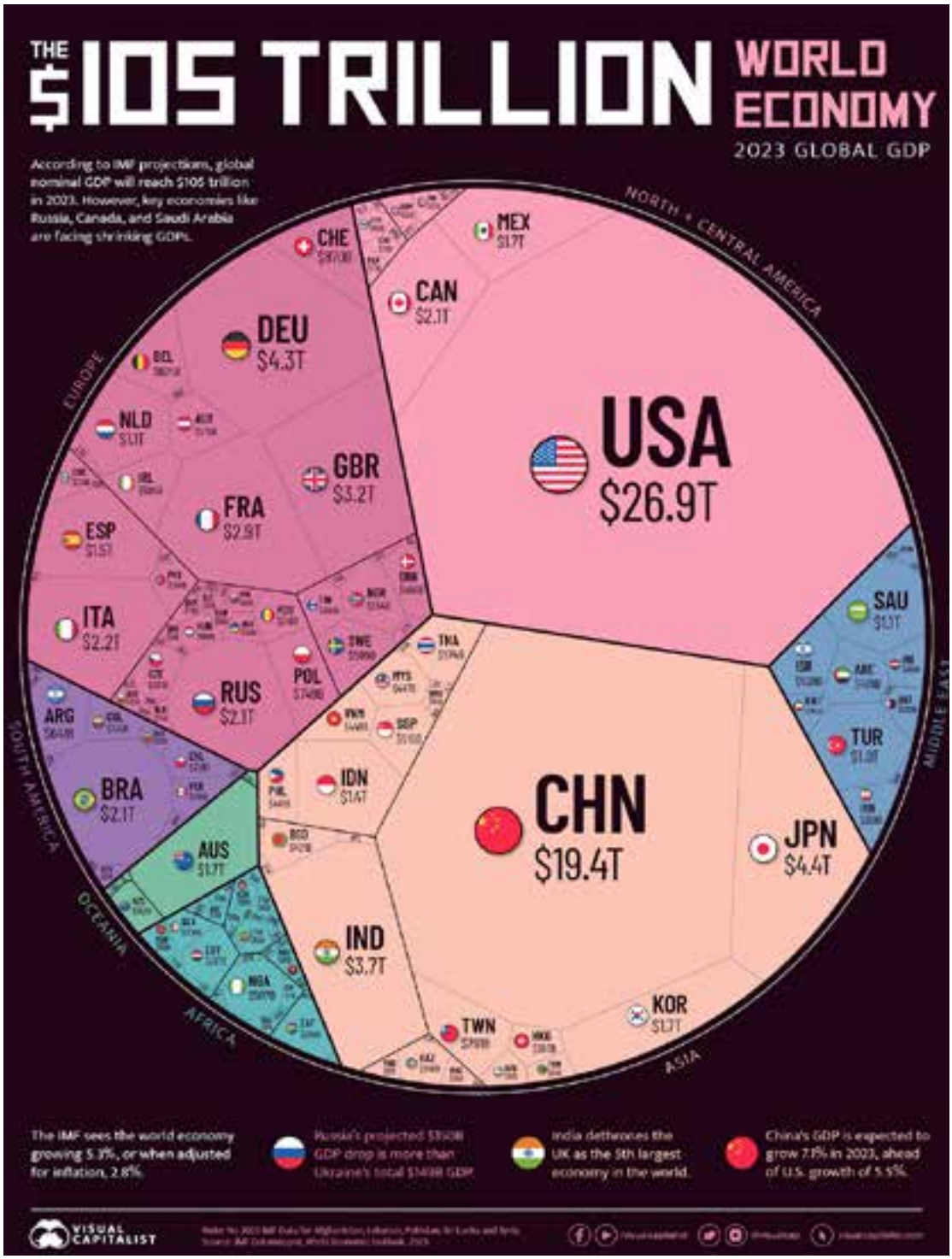
The debt-to-GDP ratio is a way to see how much debt a country has in relation to its income or economic output.

Let's say your friend has a total debt of $500, but earns $5,000 from their part-time job in a year. If you friend was a country, you divide $500 by $5000 = 0.10. In other words, the debt to GDP ratio is 0.10 OR 10%

For a country, a high debt-to-GDP ratio can indicate
the country may have trouble paying back its debt because its debt is
a large portion of its income.
On the other hand, a low debt-to-GDP ratio suggests
the country's debt is manageable relative to its income.

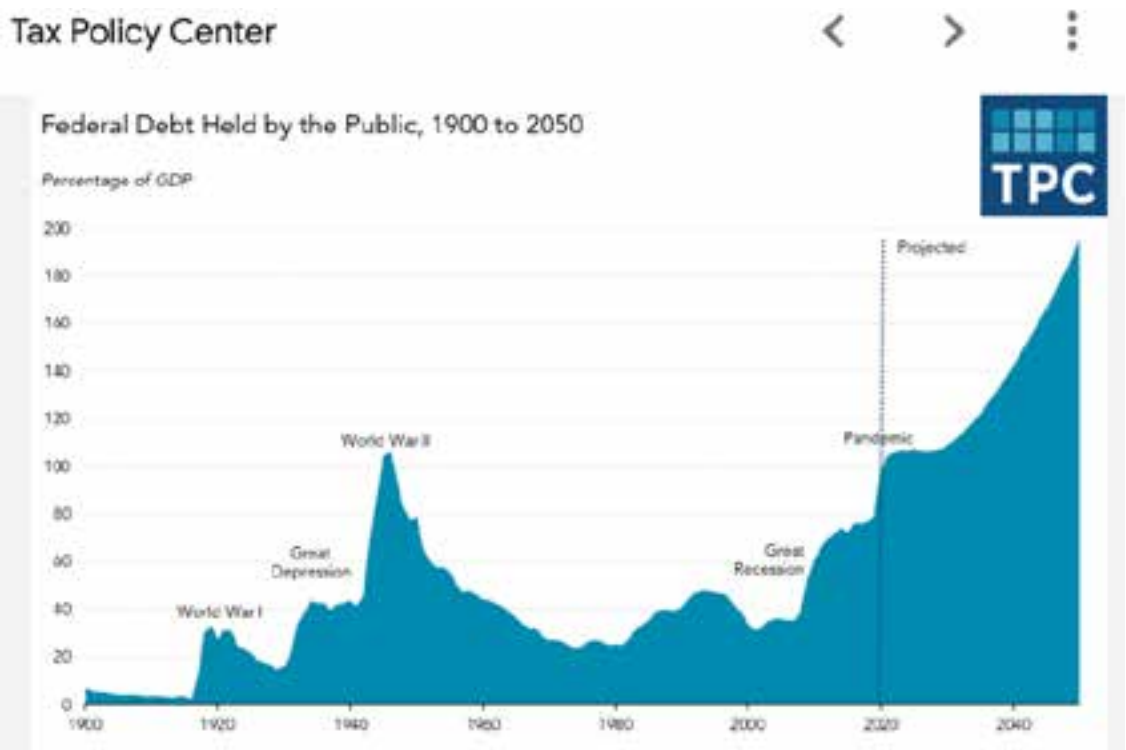
Just like people like you might worry if your debts (*your bills/how much $ you owe*) gets too high compared to your income (*how much money/ $ you earn*), countries also worry about their debt-to-GDP ratio. If it gets too high, it can be harder for the country to borrow money in the future or to pay back what they owe, which can lead to economic problems.

In summary, **the debt-to-GDP ratio is a tool used to understand how much debt a country has compared to the value of all the goods and services it produces in a year.**


THE $105 TRILLION WORLD ECONOMY
2023 GLOBAL GDP
According to IMF projections, global nominal GDP will reach $105 trillion in 2023. However, key economies like Russia, Canada, and Saudi Arabia are facing shrinking GDPs.
NORTH + CENTRAL AMERICA
EUROPE
MIDDLE EAST
SOUTH AMERICA
OCEANIA
AFRICA
ASIA
USA $26.9T
CHN $19.4T
DEU $4.3T
JPN $4.4T
IND $3.7T
GBR $3.2T
FRA $2.9T
CAN $2.1T
MEX $1.7T
SAU $1.1T
TUR $1.0T
KOR $1.7T
TWN
IDN $1.4T
AUS $1.7T
BRA $2.1T
RUS $2.1T
ITA $2.2T
ESP $1.5T
NLD $1.1T
CHE
POL $748B
ARG
The IMF sees the world economy growing 3.0%, or when adjusted for inflation, 2.8%.
Russia's projected $810B GDP drop is more than Ukraine's total $348B GDP.
India dethrones the UK as the 5th largest economy in the world.
China's GDP is expected to grow 7.0% in 2023, ahead of U.S. growth of 1.5%.
VISUAL CAPITALIST

GDP Forecast

Would you run your PERSONAL or FAMILY BUDGET LIKE AMERICA'S FEDERAL GOVERNMENT BUDGET??



THE UNITED STATES FEDERAL GOVERNMENT has a DEBT PROBLEM;

in other words,

government leaders keep spending more money than the government collects in taxes and fees.

As a result, the United States of America FEDERAL government is **forced to BORROW MONEY** from other countries like Japan and China AND from America's Social Security SAVINGS ACCOUNT **to pay its bills**.

ONE SOLUTION is collect MORE money in taxes & fees from American citizens and businesses **OR** spend less money.

*Would **YOU** be in favor of requiring the US **federal government** to have an*

ANNUAL BALANCED BUDGET

unless there is a war, pandemic or some other catastrophe requiring more money than initially planned (budgeted)?

yes or no

State Fiscal Stability: A State's Ability to Pay Its Bills

Source: US News &World Report (2021)

The *fiscal* stability (the ability to pay one's bills) of a state or city government is vital to both each state or city's goals and responsibilities. The ability of each state or city government to pay its police, fire, public safety workers, teachers, and government employees, to ***maintain infra-strastructure*** like roads, bridges, airports, school buildings, trains, parks and beaches, rivers and streams, securing its data base of important information, and pay the retirement pensions promised all government workers (police, fire, teachers, state employees) is critical to its success. ***The mechanism for paying its bills comes from its ability to collect enough taxes from its citizens and the companies which reside in their state***. Most ***importantly, citizens and companies must also be fiscally healthy,*** i.e. **PEOPLE** must have a source of money, i.e. a job, pension, trust fund, or inheritance AND **COMPANIES** need to make a profit, i.e. they must have enough customers to buy their products (e.g. clothes at the Mall, cars from a car dealership, food at Caserta's Pizza on Federal Hill, etc) or pay for their services (Santos Landscaping, Wayland Square Cobbler, Sanchez Wealth Management, Signature Printing, etc) ***in order for the state to collect taxes***! If citizens don't have jobs and companies are not profitable, the state or city government has no tax revenue to collect. ***When a state or city no longer can collect enough taxes*** or borrow enough money to pay its bills, it declares ***bankruptcy*** forcing a higher authority like a state when a city declares bankruptcy to take over the fiscal affairs of the city. ***Detroit, Michigan*** was the largest American city to declare bankruptcy in 2013. ***Central Falls, Rhode Island***, declared bankruptcy in 2011. Unfortunately for Central Falls, their bankruptcy forced the state of Rhode Island to over the fiscal affairs of the city and enact massive cutbacks, including closing a community center, reducing library funds, laying off city workers, and greatly reducing pension payments for police and fire. Here's a list compiled by US News & World Report magazine listing the best and worst states for their ability to pay their bills, i.e. their fiscal responsibilities. ***Alaska is the highest ranked state for the best fiscal stability, i.e. the ability to collect enough taxes to pay its bills. It's followed by South Dakota, Tennessee, Idaho and Utah to round out the top five. Illinois is the WORST!***

RANK	STATE	LONG-TERM	SHORT-TERM
1	Alaska	41	1
2	South Dakota	3	5
3	Tennessee	1	11
4	Idaho	6	7
5	Utah	7	8
6	Washington	2	19
7	North Carolina	5	16
8	Florida	11	9
9	Wisconsin	4	34
10	Texas	19	6
42	Massachusetts	34	48
44	Rhode Island	44	41
45	Colorado	42	46
46	Hawaii	43	45
47	Pennsylvania	46	43
48	Kentucky	48	47
49	New Jersey	49	49
50	Illinois	50	50

Leadership -

The World's Greatest Need

More challenging than pollution, pandemics, and terrorist threats to the future of the world and its residents, will always be finding effective leaders to navigate the challenges and create new opportunities to mitigate these perils.

Throughout history and certainly in our future, numerous threats jeopardize the world's people. Economic depressions. Tsunamis. Meteors. Gang terror. Drought. Clean water. Global warming and consequential rising sea levels displacing coastal populations. Earthquakes. Partisan politics. Partisan media and press. Fake news. Drought. Failing public schools. Carbon emissions and the resulting air pollution. Systemic poverty. War and the maniacal, selfish despots who instigate them.

Effective leadership is the constant antidote for protecting nations, states, and cities by rallying people to collaborate and compromise to find remedies and create opportunities from their crises.

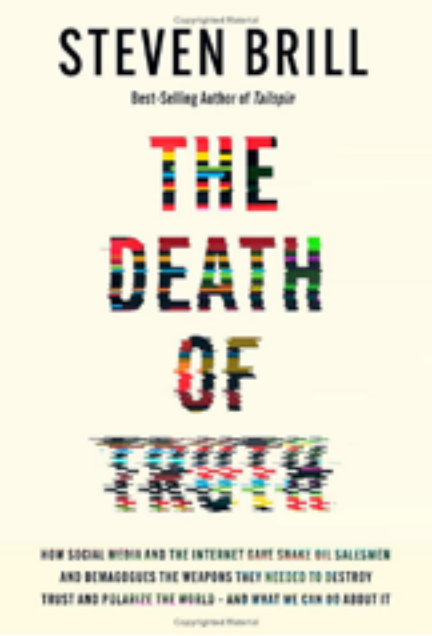
"A leader's most important skill is getting people to work together, to collaborate, to compromise, in order to solve problems and create opportunities for the entire community not just one group".

For as often as the world benefits from the great leadership of a **Winston Churchill** (England), **Nelson Mandella** (South Africa), **Mohandas Ghandi** (India), **Joan of Arc** (France), **Margaret Thatcher** (England), **Golda Meir** (Israel), **Martin Luther King Jr** (United States), **Jacinda Ardern** (New Zealand), **George Washington** (United States), **Ellen Johnson Sirleaf** (Liberia), and **Massasoit** (southeastern New England Wampanoag Indian Nation) during dangerous times, the world is threatened by infamous, self serving, maniacal, demagogues like **Adolf Hitler** (Nazi Germany), **Pol Pot** (Cambodia), **Josef Stalin** (Soviet Union-Russia), **Empress Wu Zetian** (China), **Queen Isabella** (Spain), **Idi Amin** (Uganda), **King Leopold** the 2nd (Belgium), and **Queen Ranavalona I** of Madagascar to name a few.

The world always needs great leaders who embrace ***leadership's true mission of selfless service to the ALL the people they lead***.

Former South African President Nelson Mandela (left) and Frederik Willem de Klerk, South Africa's last head of state from the era of white only, **minority rule and former leader of South Africa's National Party that wrongly imprisoned Mr Mandela in 1964 for more than 20 years!** . The National Party propagated the racist policy of **APARTHEID** which dictated that South Africa to be completely dominated politically, socially, and economically by South Africa's minority white population. Non whites had inferior education options, restrictions on owning property, the use of public facilities, entrance to certain social events and public spaces., Black South Africans could not vote in national elections. **Remarkably**, upon Mandela's release from prison in 1990 and his election to the Presidency of South Africa in 1994, Mandela essentially forgave the National Party for his imprisonment by reaching out to deKlerk to help him unite black and white people of the country for a peaceful transition to a united South Africa giving equal rights to all its citizens. ***Mandela chose forgiveness rather than vengeance, peace rather than war, unity rather than divisiveness, collaboration rather than exclusion***, to ensure long lasting success for all people of the Republic of South Africa.

Truth



Do you ever wonder when someone or a media outlet with influence and power claims they're saying 'the truth' but you suspect they aren't?

'*THE TRUTH*'
is defined as
something that can be proven by
indisputable evidence, i.e FACTS!!

The **AI** bot, ChatGPT, says "*if you say 'The sky is blue', and you can look up and see that it's blue, that's 'THE TRUTH" and a 'FACT'.* **The OPPOSITE OF 'TRUTH' IS '*UNTRUTH*' OR '*MISINFORMATION*'; these statements DO NOT have indisputable evidence to support their claims of being '*truthful*'.**

So, what is '*fact*'? *'Fact'* , by definition, is indisputable, undeniable information supported by unquestionable, unbiased evidence to prove the claim of '*truth*'. Unfortunately, an increasing number of people in positions of power and influence are making statements on various social media and traditional media (cable and traditional TV) that have been proven to be '*misinformation*' or '*opinion*'. **For example, American political leaders in 2002 publicly claimed *"weapons of mass destruction" were hidden in the country of IRAQ*** by the Iraqi leader, Saddam Hussein, and threatened America and its allies. These statements led to the United States military and its allies (e.g. England) to attack Iraq on March 20, 2003 at 9:34 pm EST. However, the claims of hidden *weapons of mass destruction* in Irag were later **proven false**. 4,507 United States soldiers died in the attack on Iraq (wikipedia). AND, a **social media site, WTOE 5 News, reported in 2016 "*POPE FRANCIS ENDORSES DONALD TRUMP*"** and was soon copied and posted by popular fake news publisher, Ending the Fed. By November 8, the story picked up 960,000 Facebook engagements. Pope Francis soon after said "*I never say a word about electoral (***political***) campaigns*". Pope Francis also spoke out against the dangers of **fake news** on December 7, 2016 in an interview with the ***Belgian Catholic Weekly***, calling ***fake news*** a "*sickness*." These are just 2 examples; there have been many more.

Author Steven Brill, in his popular book **"*The Death of Truth",*** writes about dangers to people, their communities, organizations, and countries when *'untruths', 'misinformation'* AND *opinions* are accepted as *'truth'* or *'fact'*. *"A diminishing belief in the 'truth' and a rising belief in 'alternative facts' (*i.e. mis-truths or opinions*) cause people to lose 'trust' in their institutions, in political leaders, in scientists, in doctors, and their own ability to solve community problems..... **If different people believe in different versions of the 'truth', then there is no real 'truth'** shared by all. 'Mis-truths' replace the (*real*) 'truth'..... 'TRUTHs' have lost their power and influence to bring people together as a community, as a country and a global (*society*). (*Unfortunately today*), power (*its influence and control*) comes, not through ideas debated respectfully, but from those who generate the most distrust for their own purposes. ....."*

My advice as your hopefully trusted teacher is '***TRUST YOUR INSTINCTS***' when you hear or read suspicious statements that claim to be '*fact*' or '*the truth*' that you feel may not be. Ask your questions about claims made by 'influencers' or 'leaders' as well as news reports or social media posts that seem doubtful. ***THEN, do your research to find FACTS that address the doubts you have about any suspicious claims of 'the truth'.*** To do this,

find trusted sources of information
with reputations for reporting 'FACTS'
that are supported by undeniable evidence,
NOT BIASED, PARTISAN STATEMENTS
before deciding what is the '*truth*'.

*A GREAT THREAT TO AMERICA*N SAFETY AND SUCCESS IS POLITICIAN & MEDIA PARTISANSHIP

***PARTISANSHIP occurs* when**

influential people like politicians and

influential sources of information like

the media and press

only speak about

one point of view

without respecting & sharing

opposing points of view.

The New York Times

FOX NEWS

'Partisanship' divides people.

It causes people to argue

and, as a result,

refuse to collaborate

to find compromises

to solve problems.

Photo above shows the WORST example of PARTISANSHIP as **Democratic leader and Speaker of the House of Representatives, Nancy Pelosi, (in the white coat to the right)**, stands and rips up a copy of **Republican President Donald Trump**'s *State of the Union* message showing her toxic, destructive '**animus**' for the President as soon as he completed his 2020 message to the people of the United States and members of the Congress. The consequences of this partisanship further divided an already divided nation.

Sometimes media or political groups

twist facts

to make their side look better,

which can confuse people.

Imagine if someone said, "*We lost the game because the other team cheated,*" but it wasn't true. That could cause unnecessary anger. If people only listen to one side of a story, they might not learn the full truth. It's like only hearing your best friend's version of an argument and never asking the other person what happened.

George Washington. Abraham Lincoln, Nelson Mandela, President Bill Clinton, Speaker of the House Tip O'Neill, President **Ronald Reagan** always placed their primary loyalty to the safety and welfare of their country and its citizens NOT their political parties. All the right things to do like "*respecting', showing empathy while 'collaborating* for *compromise for the good of all not just the few* ' become ignored by POLITICIAN partisanship. Spock, from the starship *Enterprise*, reminded his leader, Captain James T. Kirk, of the Starship Enterprise, - "*the needs of the many always outweigh the needs of the few, or the one.*"

Photo above - the ***BEST example*** of two politicians from different political parties put aside their political party ideologies to collaborate and find common grade for the good of the entire nation not simply the interests of their political parties -- **Democratic Speaker of the House of Representatives, Tip O'Neill** (right) and **Republican President of the United States, Ronald Reagan, in a 1986 photograph. These men consistently compromised and worked together for the good of all Americans.**

America needs

non-partisan 'media'

as well as political leaders who

collaborate and compromise

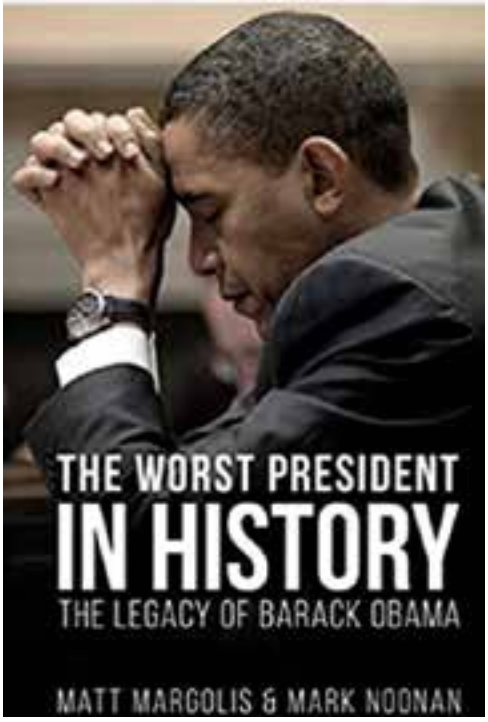
for the good of ALL AMERICANS

NOT JUST for their supporters.

There have always been influential voices in the media and politics who speak falsely under the guise of '*protectors of the truth*' to legitimize their **partisan ideas** they profess as the 'TRUTH'. Partisans abandon empathy, objectivity, and facts by surrendering to their own or a narrow constituency's **partisan benefits.**


NEW YORK POST
LATE CITY FINAL
nypost.com
$2.00
JOE'S TRAIN WRECK
Gas hits brutal $6 a gallon
Border crisis gets worse
Ministry of Truth collapses
Market drops 1,164, worst day in two years
Baby formula disaster


News > World > Americas
'Concrete evidence of collusion between Trump team and Russia' handed to official investigation
Charlotte England


THE WORST PRESIDENT IN HISTORY
THE LEGACY OF BARACK OBAMA
MATT MARGOLIS & MARK NOONAN

Preface

Think about this today -

The world has always been changing. Just think about the beginning of the 20th century; you know, the century before the one we're in now. At the beginning of the 20th century (1900 - 1920), there was no Instagram. No mobile phones. No internet. Radio stations didn't exist. No television stations either. Satellites? Forget it. Automobiles were just being invented and every car was black! Now fast forward to your birthday and think about all the changes which have taken place since then. Incredible! There seems to be a new app, a mobile phone upgrade, a flying car, something new every month.

***Technology is driving a lot of the changes*.**

So my question to you is

what are you doing
about
this phenomenon?

How are you preparing for a future where you can be the successful person you want to be, doing something you like to do and making enough money doing it? What are you doing, NOW?

Please, pick a date when your future will begin. Whether it's the next minute, next day, next week, or next year. Choose the date, right now, as the start of your future.

Now that you've acknowledged the start

Dameion Royes - Fashion Designer, entrepreneur, and change agent, pushing out of his comfort zone guiding his company into the future.

of your future,

what are you doing
to ensure
your future will be
what you hope it will be
starting on that day?

Write down **what** you will be doing on the date your future begins to make sure you get the future you want!

Don't be discouraged if you're having a hard time answering this question. Most high school students aren't sure. Those who are sure often end up changing their minds multiple times in the near future.

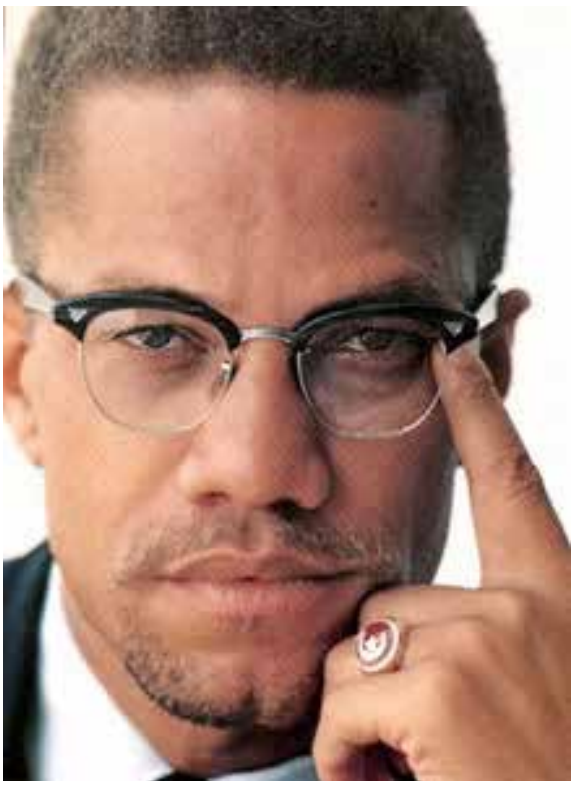
Start with curiosity.

That's right; just be curious. Just wonder what something could be. Then, try to

get comfortable asking questions. First, to yourself. Then, as your confidence increases, ask questions to smart people. Ask about their jobs. Their interests. How they found something they like to do. And, how they got good at it.

Malcolm X suggested a person in search of a dream who aspires to be successful should commit themselves to some form of

"education!



Malcolm X

It's the passport to the future; tomorrow belongs to those who prepare for it today".

This Hope Life Skills class will be part of the education Malcolm X is referencing. We'll do this by

introducing you to
lots of interesting,
smart,
successful people,
with interesting stories about
their lives,
their jobs,

and how they found something they like to do and make enough money doing it. We'll also visit the interesting places where some of these people work. We'll talk to smart people about technology.

Your challenge during all of this will be to

listen. Observe. Wonder.
Imagine.

And, find courage to ask questions; any question that is important to you. Really; that's all I hope you'll do.

Questions are important. Throughout life! In fact, I contend

questions
are more important
than answers.

And, in this 21st century, you'll be expected to ask

questions,
not just to people, but

the machines
and software,
operated by
artificial intelligence,
you'll be working
and
collaborating with.

That's right, machines; i.e. robots, androids, and computer programs. **We'll work together in this class on building your confidence** so you feel more comfortable pushing out of your comfort zone to ask questions. Once you develop a little confidence, questions get easier to ask. Then, your confidence will automatically get stronger. You feel you're making progress on your goals. You feel better about your search and quest for future success.

This does not mean life will be perfect or you won't have other challenges. You'll face challenges all your life. But, with a little confidence, you'll feel you're better able to handle life's challenges so you can be the successful person you want to be.

I understand if you sometimes want to procrastinate; you know, delay thoughts about the future. This process is hard; some may add 'intimidating' when thinking about planning for something as confusing as the future. But planing for the future can be exciting too! Just thinking about potential opportunities for success can give energy and purpose to your life. Regardless of your hope for the future, whether you want your life just like it is now or better than today, our Life Skills class will focus on making sure your vision, your aspirations, your wishes for the

future will happen.

This is why ***I am encouraging you to start thinking about tomorrow, today.***

Jack Welch, the former CEO (the company leader) of General Electric and arguably the most successful business leader of the 20th century, believed the best leaders and the most successful people

"looked around corners"
into the future.

In other words, the best leaders, the most successful people, are always curious about the future! Consequently, the most successful people start early, pro-actively, preparing in advance to take advantage of opportunities they believe could ensure their future success. By being proactive or acting early, your opportunities for lifetime success increase.

Well, how do you anticipate the future? How does one know how to act pro-actively, in advance of things happening? First suggestion - find a smart person you can trust; a mentor.

At the same time,

don't '*just worry*'.
It's more important to '*act*'

not worry! **Dan Pink** wrote a best selling graphic novel called "*The Adventures of Johnny Bunko: The Last Career Guide You'll Ever Need*"; a two page sample is shown at the bottom of this page about our ever changing lives, the world of work and keys to a satisfying, fulfilling future. Pink claims no plan can completely guarantee a successful tomorrow. Pink suggests developing basic life skills complemented by hard work, perseverance, academic and experiential learning, getting out of your comfort zone to ask questions, and get an internship to find

something you enjoy doing that leads to your future success. It's worth listing the **key elements for success** again:

- **Life skills:** (e.g. **networking**, personal **brand** development, collaboration, **risk** and **change management**, empathy, dependability, honesty, **humility**, etc)
- **insatiable curiosity** - constant desire to learn and asking questions for answers important to YOU
- **academic and/or experiential learning:** e.g. internships, college, job training, apprenticeships, etc. **Continuous learning by living**!

Former Secretary of State, Condeleza Rice

- **risk taking** - requires **stepping out of your comfort zone** and being able to accept the occasional mistake or failure as a valuable learning opportunity which makes you wiser, stronger and more confident!
- **perseverance** - never give up!
- **hard work** - all the time!

Fashion Designer Dameion Royes

So

what's a high school student
at any high school
to do
to make sure
a successful, fulfilling job
with a lifestyle they aspire to
is in their future?

The **objective of this textbook** on "***The Future***" is to help you answer this question.

A DAY IN YOUR FUTURE

"Hello, Lisbet! Welcome to ***Mr Cronin's Superstore."*** ***Sensors at the entrance of the store recognize Lisbet's image from a data base that activates an audio welcome to Lisbet in her favorite 'Lionel Messi' voice as she walks into the store to get a shopping cart.*** Lisbet still enjoys going to the market and the food shopping experience rather than simply ordering her food from her WeChat app for same day delivery.

As the cart handlebar completes a scan of Lisbet's face and fingerprints, it immediately matches the results with the Artificial Intelligence ('AI') profile of Lisbet and then quickly displays a list of the groceries she needs. ***AI has been collecting and analyzing Lisbet's food shopping data for years, updating her shopping profile and storing the data in the cloud.*** Based on the data collected from the last time Lisbet shopped PLUS what's she's been using and now missing in her ambient (**IOT – Internet of Things**) refrigerator and cupboards at home, a list of items for her to buy appears on her mobile phone. Then, from her carriage handlebar, comes this message - *"Let me know, Lisbet, if you'd like to add or subtract anything for this list. Based on what's on your list and in your refrigerator, it looks like your diet will be needing some fiber and calcium. Shall I add some milk and some almonds for a delicious spinach salad with salmon, strawberries, and asparagus I know you like?"* Lisbet smiles and responds *"sure!"*. Lisbet then proceeds to make a few adjustments to the list based on the fact she'll be hosting a dinner for three former classmates from her college, Loyola University in Baltimore, Maryland, where she majored in " AI Marketing" and "Business". One of her classmates is from Florence, Italy and the other from the North End of Boston, so Lisbet will be making a few pasta dishes. *"I always make my own sauce, so let's add tomatoes, garlic, cheese, lean beef and, of course, pasta for a few recipes I have in mind"* she speaks to her shopping cart handlebar. Instantly, the items appear on her revised list as well as the isle number in the store where each item can be found. *"Will do, Lisbet"* her cart responds to her additions.

Her autonomous shopping cart proceeds a few feet ahead of Lisbet and pauses as she checks out some ripe eggplants she considers adding to the dinner she'll prepare for her visiting Loyola classmates. As Lisbet places each item into her cart, cameras on the carts side bars

Lisbet shopping with her smart shopping cart

"An autonomous, self driving (no human driver) car is a data center on wheels."

Lisbet riding home in an **autonomous (self driving), electric automobile** after leaving **Mr Cronin's Superstore** Sensors in the car know the person in the car is Lisbet. Thus, the car knows exactly where she lives.

quote - Simon Bolton, CIO Jaguar Land Rover.. ***Waymo***, formerly known as the Google Self-Driving Car Project, is an American autonomous driving technology company headquartered in Mountain View, California. It is part of Alphabet Inc. In October 2020, Waymo became the first company to offer service to the public without safety drivers in the vehicle. Waymo currently operates commercial robotaxi services in Phoenix, Arizona, Los Angeles, and San Francisco, with new services planned in Austin, Texas.

recognize each item and sensors weigh the vegetables and fruits at the bottom of the cart before producing an item cost and the accruing total cost.

As Lisbet rounds the corner onto another isle, a well-dressed man raises his eyes from his mobile device to greet her. From her AI Marketing classes, Lisbet realizes the important sales and marketing role the store concierge plays in a store. ***Lisbet also realizes the access the concierges has to her data profile .*** *"Hello Lisbet"* the concierge says as Lisbet approaches. *"We've just received some deliciously, elegant Napa wines. I understand your sister's birthday will soon be here and I want to offer you a 15% discount on your first purchase of any one of our Napa Valley vineyard selections. I know you and your sister like Christian Brothers wines. Would you like a tasting of one of the most popular varieties?"* ***Lisbet just smiles and says "yes".*** The concierge knows her passion for Christian Brothers wines from her data profile. Lisbet accepts the tasting from a delicate wine glass. *"It's wonderful"* Lisbet tells the concierge. *"I know she'll love it. Thank you so much. I'll take two bottles."* The concierge responds *"that's great, Lisbet. You can continue shopping while I gift wrap the bottles and bring them to you in a few minutes."*

The concierge then places ***each bottle on a table for a nearby android to place in a box and then gift wrap*** in beautifully designed wrapping paper with the Mr Cronin Superstore logo prominently yet elegantly displayed. ***Whenever Lisbet goes shopping at Mr Cronin's Superstore, she always wonders if this concierge is a real person or an android.***

When the bottles are delivered to her, seemingly within one minute, Lisbet notices the colorful instructions on the wrapping paper encouraging her to scan her smart phone over the Mr Cronin Superstore logo for a video about a popular pasta recipe from the famous Italian chef, **Giada Pamela De Laurentiis**. Ms De Laurentiis is an Italian-born American chef, writer, television personality, and the host of the current Food Network television program "**Giada at Home**". Lisbet has watched her guest appearances on NBC's Today show and has used some of her recipes in the past.

Lisbet finishes her shopping and glances at her smart phone to review the itemized list of her purchases and total cost. She then says "*ok*" for her smart phone to instantly approve ***the purchase. No need for cash or credit card***. In fact, there's no store cashier or check out area in the store. Lisbet's phone utilizes ***her WeChat Wallet app which links to her bank and withdraws the money from Lisbet's account to pay the bill.*** If Lisbet forgets to use the app, the store would then automatically withdraw the money from her account by the end of the day. Lisbet has 3o days to dispute any charge. The app works everywhere, from stores like ***Mr Cronin's Superstore*** to restaurants and concert venues. Stores like the app because there is no processing charge like the credit card companies charge them which the stores end up adding to their customers' bill. Customers like the app because of its ease and better security than credit cards.

Once Lisbet removes ALL her purchases from the cart and places them in her UBER autonomous, electric car, the cart guides itself back to the rack at the front of the store to await the next customer to interact with. In Lisbet's future, it will be ***illegal for anyone to drive cars***. Too dangerous; data has proven autonomous vehicles are MUCH safer AND less expensive to own and use. Research has shown only a few people miss owning a car because autonomous vehicles are easier and offer a more relaxing and productive ride; you can do other 'stuff' while riding an autonomous vehicle. Most people and businesses will prefer autonomous services like **UBER, GOOGLE, TESLA, LIFT**, and Chinese autonomous vehicle competitors **DIDI** and **BAIDU** as well as hyper fast public transportation. Finally, ***Lisbet's home will feature ap-***

pliances, security devices, lights, and other features which connect to the Internet of Things (IOT). The Artificial Intelligence in Lisbet's home will turn on her air conditioning or heating system to the temperature she likes as well as the lights on the first floor 10 minutes before her autonomous UBER ride turns into her driveway after work. Her coffee maker will have a warm coffee prepared to her liking minutes before she wakes up in the morning. All of these things and more will happen in Lisbet's future because of the significant amount of data collected about Lisbet and her habits.

Similar data will be collected on all people because everything people use and do will be collected by sensors which are connected to the **Internet of Things (IOT)**. Personal data will be continually collected, protected, and analyzed, according to the government, to make peoples' lives easier and safer.

The second question is - 'is AI's impact on our world good for the people who live on it'?

So, what do you think? I'm asking for your opinion on the following question -

The **mirror in Lisbet's bathroom** will have many personalized features to offer. The mirror will display Lisbet's weight after stepping on a scale embedded in the bathroom floor tile directly below the mirror. 'AI' will also use the data collected about Lisbet to offer 'AI' based social recognition software to detect her mood as she looks into the mirror and plays specific music she likes. The mirror will give Lisbet access to her favorite station to get the weather report and the local and national news. Lisbet's mirror will also display the text messages received while she was sleeping. The mirror will give her traffic information and post her schedule for the day.

I'm Asking for Your Opinion

ARE THERE 'BENEFITS'
from technology
watching, collecting and analyzing
people's activities (DATA)?

AS A RESULT, a**utonomous autos** have fewer car accidents and, as a result, fewer motor vehicle injuries and deaths while autonomous car riders relax in their autonomous cars playing video games or checking their Instagram / Snapchat account. ***OR, keeping people and their neighborhoods safer because street cameras, sensors, monitoring of internet activity and android police watching and analyzing everything people do for the purpose of stopping crimes before they happen;*** OR, being able to buy less expensive appliances, clothes, and food prepared in android factories and farms; OR, having '**bots**' diagnosis diseases and viruses which assist doctors accelerating the treatment and eventual cure of sickness; OR, '**bots** to tell you what companies and stocks you should invest in to create more personal wealth for your retirement; OR, genetic engineering of plants that resist different diseases and use less insecticides and water to grow them; OR, using Alexi, Siri, Erika and other automated, AI driven personal assistants to keep you more organized and entertained; OR, personalized advertisements and notifications on your smart phones, tablets, and watches about sales and discounts available on your favorite products and services; ***OR, using AMBIENT TECHNOLOGY. Ambient technology is technology that's all around you, working quietly in the background without you even needing to think about it. For example, when a t-shirt, watch, or jewelry informs people, in real time (instantly), about the health of the person wearing the t-shirt, watch, or jewelry OR devices that act based on your location, like a door unlocking automatically when you approach your home, lights turning off when you leave or refrigerators alert you when you need milk....***

Is this SURVEILLANCE, DATA COLLECTION & ANALYSIS acceptable to you?

PLEASE TELL ME WHAT YOU THINK?

Activity

START THIS ASSIGNMENT BY READING THE STORY OF "LIBSET" starting on page 128 before responding to the following directions:

1. identify **2** specific '***take aways' (reactions)*** i.e. surprises, questions, challenges, '*what if's*, etc from the ***LISBET*** story you read starting on page 128.-

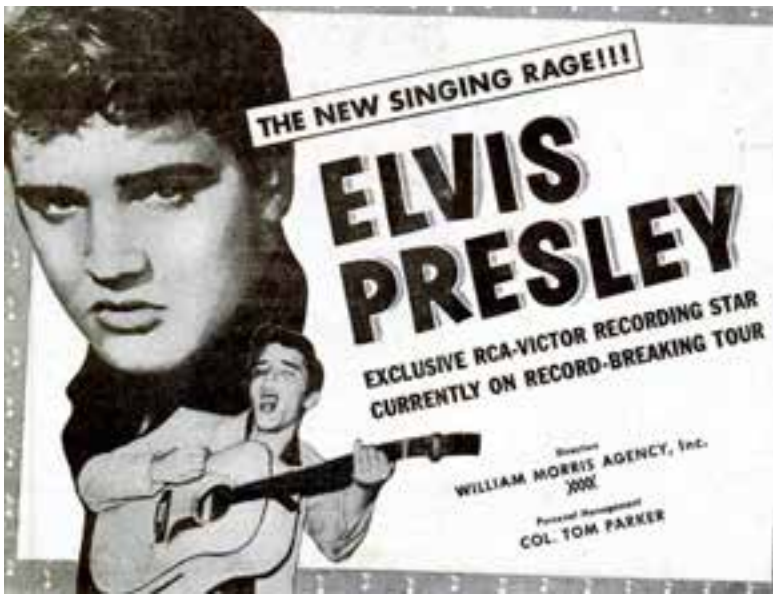
   - _____
     _____
   - _____
     _____

2. **THEN, IMAGINE** yourself living in the future described in the ***LISBET*** story with all these technological advancements and inventions. Using the creative thinking abilities you possess with your courage to share your creative thoughts / ideas, **IMAGINE** **a future job / career you might have or a company you imagine you might run or create** in the future **AND describe** a product / service this job / company will offer / sell & why customers will be interested in purchasing / using / enjoying this product or service.

- **DESCRIBE the PRODUCT or SERVICE your job or company will produce and sell:** _____
  _____
  _____
  _____

- **EXPLAIN** WHY PEOPLE WILL WANT TO PURCHASE /USE / ENJOY THE PRODUCTS OR SERVICES YOUR JOB / COMPANY OFFERS - _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____
  _____

FAMOUS CREATIONS / INVENTIONS which people used / purchased / enjoyed



clockwise starting mid center top: **television** in 1927 - only 1% of homes in America had TVs in 1950; the super drug - **penicillin** curing terrible diseases like throat infections, meningitis, syphilis and other bacterial infections in 1928; **the scarf** in 1350 BC and popularized in 1800 AD by Queen Elizabeth of England; famous ***company BRAND logos*** (***NIKE, FEDEX; PEUGOT autos/motorcycles/ bicycles; DISNEY; STARBUCKS; APPLE; PEPSI***) **the wheel** in 3000 BC; **Elvis** Presley music and his new entertainment style in the 1950s; **basketball** (James Naismith) in 1891 - the NBA was created in 1949.

Activity

Are You Ready for Your FUTURE?

#1. Explain what you hope you will be doing (*job/career/lifestyle/the place in the world you hope to be doing all this, etc*) in **8 years**! Please make sure your statement is well written with perfect spelling, good grammar and capitalization, and no run on sentences. Thank you. Send your statement to **stevecronin1949@gmail.com**

#2. Please state ***what you are doing NOW, TODAY,*** to identify a **JOB / CAREER** you'll be interested in which will provide you enough **MONEY** to live the **LIFESTYLE** (*having things you want in life which may include owning a house, owning a car, being able to buy new clothes, having a savings account, investing for the future, taking a vacation each year, having and taking care of a pet, and more)* **you desire**. ONLY STATE THE THINGS YOU ARE REALLY DOING NOW TO FIND THE FULFILLING JOB / CAREER WHICH WILL SUPPORT THE LIFESTYLE YOU HOPE FR; please do not say things you are not doing NOW. Be candid and honest. If you don't know what you could be doing NOW to help you find a fulfilling, well paid job / career in your future, state "*I don't know what I should be doing NOW and would appreciate help*". If you are taking steps to identify a future career / job which will provide the money to give you the lifestyle you hope for, please be specific describing the actions you are NOW TAKING. Finally, please make sure your statement is well written with perfect spelling, good grammar and capitalization, and no run on sentences. Thank you. Send your statement to **stevecronin1949@gmail.com**

#3. Please describe how **your BRAND** is being **perceived today by teachers, coaches / work managers, and peers**. I am not interested in the BRAND perception you hope for or want; instead, share the **BRAND perception** teachers, coaches / work managers and peers **ACTUALLY have of your BRAND**. **FURTHERMORE,** explain **how you know** this BRAND PERCEPTION others have of you is **accurate.** Thank you. Finally, please make sure your statement is well written with perfect spelling, good grammar and capitalization, and no run on sentences. Thank you. Send your statement to **stevecronin1949@gmail.com**

***YOU** ARE INTELLIGENT. YOU CAN BECOME SMART. HENCE, YOU CAN BE SUCCESSFUL!!!!*

SEGURO.

What He's Saying About "The Future"

" 'The Future' is an eyebrow raising, jaw dropping, mind boggling, "No Way!!!" declaring, curiosity igniting, imagination arousing, creativity inflaming, 'aburrido' extinguishing, jump up and down causing, collaboration rallying, and confidence building experience."

"The mission of this book is to provoke 'thought' and the 'by-products' from it: wonder, imagination, doubt, questioning, criticism, reflection, analysis, research, inquiry, collaboration, evaluation, opinion, judgement, suggestion, exhilaration, action, initiation, and creativity!"

"The Future" is a must read for high school students preparing for the AI influenced, global marketplace they will soon find themselves competing in."

"It's a book which causes one to ask - 'what am I learning today which is truly relevant to the success and fulfillment I aspire to in my future?' "

" 'The Future' inspires 'what if' thinking and what a person has to do to exploit the possibilities."

"Each year, the Social Studies 2.0 - Life Skills class begins there, "The Future", before moving to the 'past' to cull and analyze events in order to ensure relevance to what we're doing in the 'present'."