

A Whole New World

By

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This is my first sermon of the new year, a year that will include my 60th birthday. It has given me pause to consider some of the major changes since my birth in 1964. The world is so different today that it often seems I'm living in a whole new world. If things were the same today as in 1964, for example, my life would be almost over. The average life expectancy for American males back then was just under 67 years.¹ That would mean I have another five years before retirement and a couple of bonus years to start planning my own funeral. Today the average life expectancy in the U.S. is 79 years, with more people than ever staying active and living healthy well into their eighties and nineties. When I was a kid, I met only one 90-year-old, my great grandmother, who was bedridden in a nursing home. That was the situation for most who lived that long then, few as they were. Today I know several people in their nineties who remain independent, a few of whom still like to ski down Mount Spokane (when there's snow, that is—another change I'll get to later).

That so many are living longer is now the major factor contributing to population growth. In 1964 the global population was just over 3.2 billion, with just over 190 million in the U.S., and another 19 million in Canada. Today there are 39 million in Canada, nearly 336 million in the U.S., and 8.1 billion in the entire world. The human population explosion is one of the major changes that has occurred in my lifetime, and it's a concerning one because it has stressed our societies and, even worse, altered the molecular composition of our entire planet.

Carbon is extremely good at bonding with other kinds of atoms. It is the glue of life that holds us together and gives us form. When we die and decay, those bonds break and are released into the atmosphere or, preferably, sequestered in the ground. Burning or unburied carbon-based structures release their atoms upward, where they are free to make new bonds, including with photons, trapping the light from the Sun, along with its heat, in the atmosphere. Hence, the more carbon in the atmosphere, the hotter it gets, and the hotter it gets the more changes to our climate and the more severe our weather becomes. 2023 was the hottest year on record and 2024 is already shaping up to be even worse. According to the National Oceanic and Atmospheric Administration, the ten hottest years on record have all occurred since 2010, including each of the past nine years.²

Although science has known and been warning us about global warming since before I was born, it has only been within the past three decades that the reality has become so obvious that nobody but the most shameless gas-lighters can deny it. But since I was born, we've altered the molecular nature of our world in other ways too. Most of the carbon-based lifeforms on Earth today are those that suit our human likes and purposes. Historian Yuval Harari says the combined weight of today's large wild animals, "from porcupines and penguins to elephants and whales,"³ is less than a million tons, compared to all us humans weighing in at 300 million tons.⁴ There are less than a quarter million chimpanzees left, our

closest primate cousin, yet there are 21 billion cows, pigs, chickens, and sheep, the animals we like to eat. There are only 200,000 wolves compared to our 400-million pet dogs. The same can be said of the number of big cats, like lions, leopards, and jaguars, compared to our 250 million house cats. And the molecular predominance of the animals we prefer isn't the end of it. MIT physicist Max Tegmark says, "the matter in our machines, roads, buildings, and other engineering projects appears on track to soon overtake all living matter on Earth."⁵ There are only 0.5 billion tons of cows, and 0.4 billion tons of humans compared to 2 billion tons of cars, 15 billion tons of asphalt, 20 billion tons of steel, and 100 billion tons of concrete on the planet today.⁶ Because these things are fundamentally made of hydrogen, nitrogen, sulfur, oxygen, silicate, calcium, iron, and, of course, carbon, their dominance and distribution has shifted a lot since 1964, meaning that the molecular makeup of today's world is far different than it was then. In this sense we really are living in a whole new world.

On July 24th, 1969, at 9:50 A.M. Pacific time, I walked into the living room of my family's small South San Francisco apartment to find my mother watching a special news report on the tiny black and white TV sitting in the corner. "What's going on?" I asked.

"They're coming back from the Moon," she casually replied, so casually that it seemed to me it must have been a routine occurrence. I had no idea I was witnessing a historical moment.

My parents didn't talk much about the important things happening in the world, especially not to us kids. So, at only five-years-old, I remember thinking to myself, with some amazement, "Oh, we can do that? We can go to the moon? I didn't know that." And, for years, I did not know the significance of what I'd seen on that day, that it was a day that changed the world. But I can still see the grayscale images of the space capsule landing in the ocean and its crew being rescued by frogmen leaping from a helicopter.

Until recently, progress in the space program was slow going and there had been nothing happen more impressive than the first Moon landing. There were half a dozen other Moon landings, the installation of a few orbital space stations, the most impressive of which is the ISS, and NASA's lackluster space shuttle program that resulted in the loss of two crews among its 135 missions. There was nothing leading us to the future long imagined by science fiction. Not the future of flying cars and robotic housekeepers depicted in *The Jetsons* animated series. Not the future of space travel and intelligent computers Hollywood director Stanley Kubrick predicted would exist by 2001. And certainly not the space exploring future of *Star Trek* that ignited the positive futuristic longings of my generation.

But change occurs exponentially, the impacts of which are sudden and surprising. It advances slowly, its progress remains almost imperceptible until, before our eyes, the world has suddenly changed. We often think of these sudden changes as mere fads that we can choose to ignore and have nothing to do with, but, before we know it, they have radically altered our world and the way we live, leaving us no choice but to get onboard or get left

behind. To understand the meaning of exponential change, based on continued doubling of advances, imagine taking 30 steps. You'll end up going about 60 feet. But if you take 30 exponential steps, doubling your distance with each step, you'd travel around the planet 26 times.

That's why today, all the things I've mentioned that were once only imagined in science fiction are real and on the cusp of becoming as ubiquitous as smart phones and the Internet have become within just the past three decades. Hundreds of driverless cars, for instance, have already been taxiing passengers in San Francisco since 2022, without the presence of a human safety driver. A few less are also operating in other states, like Texas and Arizona. Even more amazing is that a flying car designed by a California startup company was certified by the Federal Aviation Administration only six months ago.

Some might think it's still going to take many years before we're zipping over traffic jams and being chauffeured about by artificial intelligence, but, again, technology improves exponentially and before we know it, we'll hardly remember what it like was like to drive our own vehicles or be stuck in rush-hour traffic. When I attended Singularity University in 2018, geared toward technology executives, I saw a memorable comparison of two photographs: The first was of a busy New York City intersection in 1908, the year the Model-T Ford was introduced. It was crammed with horses and horse-drawn carriages with only a couple of Model-Ts in the picture. The second, taken less than ten years later, was the opposite. The intersection was jammed with cars and only a couple of horses. That's how fast things change, and today they are likely to change even faster.

I was fortunate to have been born nine years after the Polio vaccine was discovered, and only three years before its oral version was available. My generation was spared the terrible effects of that crippling disease, just as millions before me were spared from other diseases, thanks to the discovery of vaccine science, also a relatively short time ago. When I came along, corded phones were also ubiquitous, although the monthly bill associated with them could be a lot for the average working-class family. No one could afford to make many long-distance calls, including to someone living only in the next county over. When I was in college, eighteen years later, there was only one phone in each wing of my dormitory, and it was very seldom used for this reason. At the time, I knew only one student who had a computer, which was more a novelty than of much practical use. But by the time I entered the work force, computers were everywhere, even without the Internet, which, again, changed everything within less than another decade. Another decade and cellphones would change the world, then smart phones, and now AI is here, which may be as revolutionary, some say, as was the discovery of fire.

During his presentation at SU, Pascal Finette, the University's Chair for Entrepreneurship & Open Innovation at the time, said that if we could somehow bring someone like Jane Austin, who was born about 200 years ago, to the modern age, she'd probably go crazy because of

all the changes—phones, cars, computers, Kindle, the internet. But if you brought someone like Mona Lisa, born 200 years before Austin into her time, she'd probably fit right in because not much had changed. He said it would take someone born 13,000 years B.C. to have the same mind-blowing experience in Austin's world as Austin would have in ours.

But if you're paying attention to what's happening, you too will be blown away by the changes. The most mind-blowing change for me is that I can now have an intelligent and helpful conversation with an AI. There is currently a lot of fear about AI, as there always is regarding new technologies, and almost anything new for that matter, and a lot of criticism coming from some who have never used it. Artificial intelligence is not self-aware, at least not yet, and it sometimes invents facts that aren't true. So, if you're conducting research and need to be accurate, you better do your own homework. But AI, like all tools, is here to assist us in our own creativity. We can turn to it for advice, counseling, suggestions, and even to philosophize about the meaning of things.

AI is improving at such a rate that it's impossible to know what will happen next. Most recently it has learned to interpret and respond to visual images as well as it does language, which allows it to interact intelligently with the world around it. This means intelligent machines are here, including humanoid robots we can interact with and that will help free up our time by taking on many of our routine tasks.

I'm also extremely excited about what's finally happening with space exploration. We have reusable rockets and are planning to return to the Moon and go to Mars within the next decade. There's also serious talk about building orbital space cities. Before long, vacationing in space, or on the Moon, and, eventually, trips to other planets, will be as normal to us as paying to get a seat inside an aluminum can and using jet fuel to blast us across the sky has become.

There are a couple of other major changes I want to mention that have occurred in my lifetime. Firstly, the human population explosion is ending. The only reason it continues to increase at all is because those of us living longer are outpacing the number of kids being born. I won't go into all the reasons this is so, but would suggest you read *Empty Planet*, the 2019 book by Darrell Bricker and John Ibbitson. In it they say, "The great defining event of the twenty-first century—one of the great defining events in human history—will occur in three decades, give or take, when the global population starts to decline. Once that decline begins, it will never end. We do not face the challenge of a population bomb but of a population bust—a relentless, generation-after-generation culling of the human herd. Nothing like this has ever happened before."⁷ This shift from population growth to decline is one of the most important of my lifetime and will have positive impacts for the planet, thank goodness, but is also going to result in dramatic changes to our local and global economies. It's going to be a bumpy ride.

The other major change I've seen is the emerging global community, largely because our communications technologies have enabled us to better interact across great distances. This, I believe, is why so many nations in the world are now turning to despots and dictators, rather than to democracy and freedom, because nothing yet has emerged to replace our more familiar and comfortable nationalistic identities. Eight years ago, too many voted to "Make America Great Again," not to make the world great together. This is so because we are naturally inclined to fear the unknown and untested. We fear entering into a whole new world, even though the world around us is always changing. When we're afraid, we want to control what others think and do, which also explains the rise in authoritarianism and intolerance by people on both the right and left of things. Finally, our species is partly defined by its negativity bias, the instinct and inclination to be on the lookout for danger, that's grounded in our ancient biology. So, even though good things are happening around us, we focus on the bad things, or reject positive changes because we're naturally afraid of any changes.

During his introduction to Singularity University, facilitator Jeffrey Rogers said, "Another important thing about the future: tomorrow will not be like today. And each tomorrow will become more radically different than the tomorrow before it." That's the world we're now in, the world I was born into 64 years ago, the world all of us here were born into, a world of exponential and extraordinary transformation. Alan Watts once said, "The only way to make sense out of change is to plunge into it, move with it and join the dance." This is how I've tried to live my life, even in the face of adversity, uncertainty, and change—as a freeform dance that requires me to move with the groove, and it is this attitude that has allowed me to remain a relatively happy and positive person who is excited about life and the future. I am enthusiastic about the future, my future, our future, and wonder what life will be like in another 60 years. Who knows, with all the changes in medicine and longevity science, I may still be around to see it. I hope so.

¹ <https://countryeconomy.com/demography/life-expectancy/usa?year=1964>

² <https://www.ncei.noaa.gov/access/monitoring/monthly-report/global/202213/supplemental/page-1>

³ Harari, Yuval Noah, *Sapiens: A Brief History of Humankind*, Harper Collins Publishers, New York, NY, 2015, (Kindle version), loc., 5435.

⁴ Ibid.

⁵ Tegmark, Max, *Life 3.0*, Alfred A. Knopf, New York, NY, 2017, p. 258.

⁶ Ibid.

⁷ Briçker, Darrell; Ibbitson, John. *Empty Planet: The Shock of Global Population Decline* (p. 2). Crown/Archetype. Kindle Edition.