

Zero to One

(Excerpt from *The Bitcoin Standard* by Saifedean Ammous)

Pages 96–104

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of Keynes without understanding the kind of morality he wanted to see in a society he increasingly believed he could shape according to his will.

Innovations: “Zero to One” versus “One to Many”

The impact of sound money on time preference and future orientation can be seen in more than just the level of savings, but also in the type of projects in which a society invests. Under a sound money regime, similar to what the world had in the late nineteenth century, individuals are far more likely to engage in long-term investments and to have large amounts of capital available to finance the sort of projects that will require a long time to pay off. As a result, some of the most important innovations in human history were born in the golden era at the end of the nineteenth century.

In their seminal work, *The History of Science and Technology*, Bunch and Hellemans compile a list of the 8,583 most important innovations and inventions in the history of science and technology. Physicist Jonathan Huebner analyzed all these events along with the years in which they happened and global population at that year, and measured the rate of occurrence of these events per year per capita since the Dark Ages. Huebner found that while the total number of innovations rose in the twentieth century, the number of innovations per capita peaked in the nineteenth century.

A closer look at the innovations of the pre-1914 world lends support to Huebner's data. It is no exaggeration to say that our modern world was invented in the gold standard years preceding World War I. The twentieth century was the century that refined, improved, optimized, economized, and popularized the inventions of the nineteenth century. The wonders of the twentieth century's improvements make it easy to forget that the actual inventions—the transformative world-changing innovations—almost all came in the golden era.

In his popular book, *Zero to One*, Peter Thiel discusses the impact of the visionaries who create a new world by producing the first successful example of a new technology. The move from having “zero to one” successful example of a technology, as he terms it, is the hardest and most significant step in an invention, whereas the

move from “one to many” is a matter of scaling, marketing, and optimization. Those of us who are enamored with the concept of progress might find it hard to swallow the fact that the world of sound money pre-1914 was the world of zero to one, whereas the post-1914 world of government-produced money is the world of moving from one to many. There is nothing wrong with the move from one to many, but it certainly gives us plenty of food for thought to consider why we do not have many more zero-to-one transformations under our modern monetary system.

The majority of the technology we use in our modern life was invented in the nineteenth century, under the gold standard, financed with the ever-growing stock of capital accumulated by savers storing their wealth in a sound money and store of value which did not depreciate quickly. A summary of some of the most important innovations of the period is provided here:

- Hot and cold running water, indoor toilets, widespread indoor plumbing, waste-water treatment, central heating: These inventions, taken for granted today by anyone living in a civilized society, are the difference between life and death for most of us. They have been the main factor in the elimination of most infectious diseases across the globe, and allowed for the growth of urban areas without the ever-present scourge of diseases.
- Electricity, internal combustion engine, mass production: Our modern industrial society was built around the growth in utilization of hydrocarbon energy, without which none of the trappings of modern civilization would be possible. These foundational technologies of energy and industry were invented in the nineteenth century.
- Automobile, airplane, city subway, electric elevator: We have la belle époque to thank for our cities' streets not being littered with horse manure, and for our ability to travel around the world. The automobile was invented by Karl Benz in 1885, the airplane by the Wright brothers in 1906, the subway by Charles Pearson in 1843, and the electric elevator by Elisha Otis in 1852.
- Heart surgery; organ transplant; appendectomy; baby incubator; radiation therapy; anesthetics, aspirin, blood types and blood transfusions, vitamins, electrocardiograph, stethoscope: Surgery and modern medicine owe their most significant advances to la belle époque as well. The introduction of modern sanitation and reliable hydrocarbon energy allowed doctors to transform the way they cared for their patients after centuries of largely counterproductive measures.
- Petroleum-derived chemicals, stainless steel, nitrogen-based fertilizers: The industrial substances and materials which make our modern life possible derive from the transformative innovations of la belle époque, which allowed for mass industrialization, as well as mass agriculture. Plastics, and everything that comes from them, are a product of the utilization of petroleum-derived chemicals.
- Telephone, wireless telegraphy, voice recording, color photography, movies: While we like to think of our modern era as being the era of mass telecommunication, in reality, most of what we have achieved in the twentieth century was to improve on the innovations of the nineteenth. The first computer was the Babbage computer, designed in 1833 by Charles Babbage, but completed by his son Henry in 1888. It might be an exaggeration to say that the Internet and all it contains are bells and whistles added onto

the invention of the telegraph in 1843, but it does contain a kernel of truth. It was the telegraph which fundamentally transformed human society by allowing for communication without the need for the physical transport of letters or messengers. That was telecommunication's zero-to-one moment, and everything that followed, for all its wonders, has been a one-to-many improvement.

Artistic Flourishing

The contributions of sound money to human flourishing are not restricted to scientific and technological advance; they can also be vividly seen in the art world. It is no coincidence that Florentine and Venetian artists were the leaders of the Renaissance, as these were the two cities which led Europe in the adoption of sound money. The Baroque, Neoclassical, Romantic, Realistic, and post-Impressionistic schools were all financed by wealthy patrons holding sound money, with a very low time preference and the patience to wait for years, or even decades, for the completion of masterpieces meant to survive for centuries. The astonishing domes of Europe's churches, built and decorated over decades of inspired meticulous work by incomparable architects and artists like Filippo Brunelleschi and Michelangelo, were all financed with sound money by patrons with very low time preference.

The only way to impress these patrons was to build artwork that would last long enough to immortalize their names as the owners of great collections and patrons of great artists. This is why Florence's Medicis are perhaps better remembered for their patronage of the arts than for their innovations in banking and finance, though the latter may be far more consequential.

Similarly, the musical works of Bach, Mozart, Beethoven, and the composers of the Renaissance, Classical, and Romantic eras put to shame today's animalistic noises recorded in batches of a few minutes, churned out by the ton by studios profiting from selling to man the titillation of his basest instincts. Whereas the music of the golden era spoke to man's soul and awakened him to think of higher callings than the mundane grind of daily life, today's musical noises speak to man's most base animalistic instincts, distracting him from the realities of life by inviting him to indulge in immediate sensory pleasures with no concern for long-term consequences or anything more profound. It was hard money that financed Bach's Brandenburg Concertos while easy money financed Miley Cyrus's twerks.

In times of sound money and low time preference, artists worked on perfecting their craft so they could produce valuable works in the long run. They spent years learning the intricate details and techniques of their work, perfecting it and excelling in developing it beyond the capabilities of others, to the astonishment of their patrons and the general public. Nobody stood a chance of being called an artist without years of hard work on developing their craft. Artists did not condescendingly lecture the public on what art is and why their lazy productions that took a day to make are profound. Bach never claimed to be a genius or spoke at length about how his music was better than that of others; he instead spent his life perfecting his craft. Michelangelo spent four years hanging from the ceiling of the Sistine Chapel working for most of the day with little food in order to paint his masterpiece. He even wrote a poem to describe the ordeal:

I've grown a goitre by dwelling in this den—
As cats from stagnant streams in Lombardy,
Or in what other land they hap to be—
Which drives the belly close beneath the chin:
My beard turns up to heaven; my nape falls in,
Fixed on my spine: my breast-bone visibly
Grows like a harp: a rich embroidery
Bedews my face from brush-drops thick and thin.

My loins into my paunch like levers grind:
My buttock like a crupper bears my weight;
My feet unguided wander to and fro;
In front my skin grows loose and long; behind,
By bending it becomes more taut and strait;
Crosswise I strain me like a Syrian bow:
Whence false and quaint, I know,
Must be the fruit of squinting brain and eye;
For ill can aim the gun that bends awry.
Come then, Giovanni, try
To succour my dead pictures and my fame;
Since foul I fare and painting is my shame.

Only with such meticulous and dedicated effort over many decades did these geniuses succeed in producing these masterpieces, immortalizing their names as the masters of their craft. In the era of unsound money, no artist has the low time preference to work as hard or as long as Michelangelo or Bach to learn their craft properly or spend any significant amount of time perfecting it. A stroll through a modern art gallery shows artistic works whose production requires no more effort or talent than can be mustered by a bored 6-year-old. Modern artists have replaced craft and long hours of practice with pretentiousness, shock value, indignation, and existential angst as ways to cow audiences into appreciating their art, and often added some pretense to political ideals, usually of the puerile Marxist variety, to pretend-play profundity. To the extent that anything good can be said about modern "art," it is that it is clever, in the manner of a prank or practical joke. There is nothing beautiful or admirable about the output or the process of most modern art, because it was produced in a matter of hours by lazy talentless hacks who never bothered to practice their craft. Only cheap pretentiousness, obscenity, and shock value attract attention to the naked emperor of modern art, and only long pretentious diatribes shaming others for not understanding the work give it value.

As government money has replaced sound money, patrons with low time preference and refined tastes have been replaced by government bureaucrats with political agendas as crude as their artistic taste. Naturally, then, neither beauty nor longevity matters anymore, replaced with political prattling and the ability to impress bureaucrats who control the major funding sources to the large galleries and museums, which have become a government-protected monopoly on artistic taste and standards for artistic education. Free competition between artists and donors is now replaced with central planning by unaccountable bureaucrats, with predictably disastrous results. In free markets, the winners are always the ones who provide the goods deemed best by the public. When government is in charge of deciding winners and losers, the sort of people who have nothing better to do with their life than work as government bureaucrats are the arbiters of taste and beauty. Instead of art's success being determined by the people who have succeeded in attaining wealth through several generations of intelligence and low time preference, it is instead determined by the people with the opportunism to rise in the political and bureaucratic system best. A passing familiarity with this kind of political and bureaucratic system is enough to explain to anyone how we can end up with the monstrosities of today's art.

In their fiat-fueled ever-growing realm of control, almost all modern governments dedicate budgets to finance art and artists in various media. But as time has gone by, bizarre and barely believable stories have emerged about covert government meddling in arts for political agendas. While the Soviets funded and directed communist "art" to achieve political and propaganda goals, it has recently emerged that the CIA retorted by financing and promoting the work of abstract expressionist mattress and cardboard molesters such as Mark Rothko and Jackson Pollock to serve as an American counter. Only with unsound money could we have reached this artistic calamity where the two largest economic, military, and political behemoths in the world were actively promoting and funding tasteless trash picked by people whose artistic tastes qualify them for careers in Washington and Moscow spy

agencies and bureaucracies.

As the Medicis have been replaced with the artistic equivalents of DMV workers, the result is an art world teeming with visually repulsive garbage produced in a matter of minutes by lazy talentless hacks looking for a quick paycheck by scamming the world's aspirants to artistic class with concocted nonsensical stories about it symbolizing anything more than the utter depravity of the scoundrel pretending to be an artist who made it. Mark Rothko's "art" took mere hours to produce, but was sold to gullible collectors holding millions of today's unsound money, clearly solidifying modern art as the most lucrative get-rich-quick scam of our age. No talent, hard work, or effort is required on the part of a modern artist, just a straight face and a snobby attitude when recounting to the nouveau riche why the splatter of paint on a canvas is anything more than a hideous thoughtless splatter of paint, and how their inability to understand the work of art unexplained can be easily remedied with a fat check.

What is astounding is not just the preponderance of garbage like Rothko's in the modern art world; it is the conspicuous absence of great masterpieces that can compare with the great works of the past. One cannot help but notice that there aren't too many Sistine Chapels being constructed today anywhere; nor are there many masterpieces to compare with the great paintings of Leonardo, Rafael, Rembrandt, Caravaggio, or Vermeer. This is even more astonishing when one realizes that advances in technology and industrialization would make producing such artwork far easier to accomplish than it was in the golden era.

The Sistine Chapel will leave its viewer in awe, and any further explanation of its content, method, and history will transform the awe into it. Before they became famous, even the most pretentious of art critics could have passed by a Rothko painting neglected on a sidewalk and not even noticed it, let alone bothered to pick it up and take it home. Only after a circle jerk of critics have spent endless hours pontificating to promote this work will the hangers-on and aspirant nouveau riche begin to pretend there is deeper meaning to it and spend modern unsound money on it.

Several stories have surfaced over the years of pranksters leaving random objects in modern art museums, only for modern art lovers to swarm around them in admiration, illustrating the utter vacuity of our era's artistic tastes. But there is perhaps no more fitting tribute to the value of modern art than the many janitors at art exhibits worldwide who, demonstrating admirable perceptiveness and dedication to their job, have repeatedly thrown expensive modern art installations into the dustbins to which they belong. Some of the most iconic "artists" of our era, such as Damien Hirst, Gustav Metzger, Tracey Emin, and Italian duo Sara Goldschmied and Eleonora Chiari, have received this critical appraisal by janitors more discerning than the insecure nouveau riche who spent millions of dollars on what the janitors threw away.

A case can be made for ignoring all this worthless scribbling as just a government-funded embarrassment to our era and looking beyond it for what is worthwhile. Nobody, after all, would judge a country like America by the behavior of its incompetent DMV employees napping on their shifts as they take out their frustrations on their hapless customers, and perhaps we shouldn't judge our era by the work of government workers spinning stories about piles of worthless cardboard as if they were artistic achievements. But even then, we find less and less that can hold a candle to the past. In *From Dawn to Decadence*, a devastating critique of modern "demotic" culture, Jacques Barzun concludes: "All that the 20C has contributed and created since is refinement by ANALYSIS or criticism by pastiche and parody." Barzun's work has resonated with many of this generation because it contains a large degree of depressing truth: once one overcomes one's inherent bias to believe in the inevitability of progress, there is no escaping the conclusion that ours is a generation that is inferior to its ancestors in culture and refinement, in the same way the Roman subjects of Diocletian, living off his inflationary spending and drunk on the barbaric spectacles of the Colosseum, could not hold a candle to the great Romans of Caesar's era, who had to earn their aureus coins with sober hard work.

Footnotes:

17 Huebner, Jonathan. "A Possible Declining Trend for Worldwide Innovation." *Technological Forecasting and Social Change*, vol. 72, no. 8, Elsevier, Oct. 2005, pp. 980–6.

18 Symonds, John Addington. *The Sonnets of Michael Angelo Buonarroti*. London, Smith Elder & Co., 1904.

19 Saunders, Frances Stonor. *The Cultural Cold War: The CIA and the World of Arts and Letters*. New York, The New Press, 2000.