



Human Progress: Not Inevitable, Uneven, and Indisputable

We haven't achieved utopia, but a new website documents the enormous progress humanity has made, especially over the last two centuries

By: Marian Tupy - October 30, 2013

The Historical Thesaurus of the Oxford English Dictionary defines progress as “advancement to a further or higher stage, or to further or higher stages successively; growth; development, usually to a better state or condition; improvement... applied especially to manifestations of social and economic change or reform.”

In a world where we are constantly bombarded with bad news, it can sometimes be difficult to think of “progress” and “humanity” in the same sentence. Are there not wars taking place, people going hungry, children at work, women being abused, and mass poverty around the world?

In fact, for most of human history, life was very difficult for most people. People lacked basic medicines and died relatively young. They had no painkillers and people with ailments spent much of their lives in agonizing pain. Entire families lived in bug-infested dwellings that offered neither comfort nor privacy. They worked in the fields from sunrise to sunset, yet hunger and famines were commonplace. Transportation was primitive and most people never traveled beyond their native villages or nearest towns. Ignorance and illiteracy were rife. The “good old days” were, by and large, very bad for the great majority of humankind.

Average global life expectancy at birth hovered around 30 years from the Upper Paleolithic to 1900. Even in the richest countries, like those of Western Europe, life expectancy at the start of the 20th century rarely exceeded 50 years. Incomes were quite stagnant, too. At the beginning of the Christian era, annual incomes per person around the world ranged from \$1,073 to \$1,431. As late as 1820, average global income was only \$1,274 per person. (Angus Maddison, whose income estimates I use here, gives his data in 1990 dollars. I have adjusted Maddison’s figures for inflation.)

Humanity has made enormous progress—especially over the course of the last two centuries. For example, average life expectancy in the world today is 67.9 years. In 2010, global per capita income stood at \$13,037—over 10 times what it was two centuries ago.

It is not only income and life expectancy that are improving. Harvard's Steven Pinker has documented a propitious decline in physical violence. He writes,

Tribal warfare was nine times as deadly as war and genocide in the 20th century. The murder rate in medieval Europe was more than thirty times what it is today. Slavery, sadistic punishments, and

frivolous executions were unexceptionable features of life for millennia, then were suddenly abolished. Wars between developed countries have vanished, and even in the developing world, wars kill a fraction of the numbers they did a few decades ago. Rape, hate crimes, deadly riots, child abuse—all substantially down.

If anything, the speed of human progress seems to be accelerating. As Charles Kenny of the Center for Global Development writes,

4.9 billion people—the considerable majority of the planet – [live]... in countries where GDP has increased more than fivefold over 50 years. Those countries include India, with an economy nearly 10 times larger than it was in 1960, Indonesia (13 times), China (17 times), and Thailand (22 times larger than in 1960). Around 5.1 billion people live in countries where we know incomes have more than doubled since 1960, and 4.1 billion—well more than half the planet—live in countries where average incomes have tripled or more....

According to a 2011 paper by Brookings Institution researchers Laurence Chandy and Geoffrey Gertz, the rise of emerging economies has led to a dramatic fall in global poverty... [The authors] estimate that between 2005 and 2010, the total number of poor people around the world fell by nearly half a billion, from over 1.3 billion in 2005 to under 900 million in 2010. Poverty reduction of this magnitude is unparalleled in history: never before have so many people been lifted out of poverty over such a brief period of time. And using forecasts of per capita consumption growth, they estimate that by 2015 fewer than 600 million people will remain in poverty.

Similarly, the world's daily caloric intake per person, an indirect measure of well-being, has increased from an average of 2,600 in 1990 to 2,840 in 2012. In sub-Saharan Africa, the caloric intake increased from 2,180 to 2,380. To put these figures in perspective, the U.S. Department of Agriculture recommends that moderately active adult men consume between 2,200 and 2,800 calories a day and moderately active women consume between 1,800 and 2,000 calories a day.

The Internet, cell phones, and air travel are connecting ever more people—even in poor countries. More children, including girls, attend schools at all levels of education. There are more women holding political office and more female CEOs. In wealthy countries, the wage gap between genders is declining. Our lives are not only longer, but also healthier. The global prevalence rate of people infected with HIV/AIDS has been stable since 2001 and deaths from the disease are declining due to the increasing availability of anti-retroviral drugs. In wealthy countries, some cancer rates have started to fall. That is quite an accomplishment considering that people are living much longer and the risk of cancer increases with longevity. Our dwellings are larger and, in many ways, of better quality. Workers tend to work fewer hours and suffer from fewer injuries. Shops are bursting with a mindboggling array of goods that are, normally, less expensive and of higher quality than in the past. We enjoy more leisure and travel to more exotic destinations. To top it off, we enjoy more political freedom and economic freedom.

Yet progress can sometimes be derailed. Europe, for example, experienced an unprecedented period of peace and rapidly improving standards of living between the conclusion of the Napoleonic Wars in 1815

and the outbreak of World War I in 1914. Between 1820 and 1914, real or inflation-adjusted income per person rose by 127 percent in Western Europe. In Great Britain, for example, life expectancy at birth rose from 41 years in 1818 to 52 years in 1914. In Sweden, the improvement was even more dramatic, with life expectancy rising from 39 years in 1814 to 58 years in 1914.

The period between the start of the 20th century and the outbreak of World War I saw the introduction of such life-changing technologies as the radio, the vacuum cleaner, air conditioning, the neon light, the airplane, sonar, the first plastics, the Model T motorcar and more.

On June 28, 1914, the heir to the throne of the Austro-Hungarian Empire, Archduke Franz Ferdinand, was assassinated in Sarajevo, Bosnia-Herzegovina. The murder led to the outbreak of World War I, in which some 39 million people lost their lives. Incomes in Western Europe fell by 11 percent between 1916 and 1919. Life expectancy in Great Britain, one of the war's main participants, collapsed from 52 years in 1914 to 40 years in 1918.

Other horrors followed. The devastation of World War I undermined the Russian monarchy, leading to the rise of communism and the establishment of the USSR. Globally, well over 100 million people died because of purges and socialist economic mismanagement in communist countries. Defeat in World War I and harsh reparation demands led to resentment in Germany. That contributed to the rise of National Socialism, the outbreak of World War II, and the subsequent Holocaust. Some 73 million people died in World War II. After the war ended, communist dictatorships and free-market democracies fought in a variety of proxy conflicts as part of the Cold War, including the Korean War and the Vietnam War.

In spite of all that suffering, people's lives continued to improve. New technologies were introduced. They included the microwave oven, the mobile phone, the transistor, the video recorder, the credit card, the television, solar cells, optic fiber, microchips, lasers, the calculator, fuel cells, the World Wide Web and the computer. Medical advances included penicillin, cortisone, the pacemaker, artificial hearts, the MRI scan, HIV protease inhibitor, and vaccines for hepatitis, smallpox, and polio.

Over the course of the 20th century, the income of an average Western European rose by 517 percent. In terms of life expectancy, a typical Frenchman could expect to live 34 years longer in 1999 than in 1900.

The United States escaped much of the devastation of the two world wars, but suffered the Great Depression and carried many of the burdens of the Cold War. Between 1929 and 1933, the average U.S. income declined by 31 percent. It was not until 1940 that incomes returned to their pre-Depression levels. Over the course of the 20th century, however, average American income rose by 581 percent and life expectancy by 28 years.

In Asia, average per capita income rose by 473 percent between 1913 and 1999. Chinese incomes rose by 427 percent between 1820 and 1999. Indian incomes rose by 212 percent between 1821 and 1999. In China, life expectancy rose from 32 years in 1924 to 71 years in 1999—an increase of 39 years. In India, life expectancy increased from 24 years in 1901 to 61 years in 1999—an increase of 37 years.

The story of Africa is more complex and disheartening, but still, on balance, positive. Between the time of the European colonization in 1870 and African independence in 1960, a typical inhabitant of the African continent saw his or her income rise by 63 percent. Incomes increased by a further 41 percent between 1960 and 1999. While Africa had underperformed relative to the rest of the world, Africans were better off at the end of the 20th century than they were at the beginning. Moreover, since the start of the new millennium, Africa has been making up for lost time. In the 12 years from 1999 to 2010, African incomes rose by 36 percent.

When it comes to life expectancy, Africa has experienced serious progress. However, increases in life expectancy vary, mostly depending on the harm caused by the spread of AIDS. Life expectancy in South Africa rose from 34 years in 1930 to an all-time high of 62 years in 1990. But by 2011, life expectancy declined to 52 years. Ghana was less affected by the epidemic, which allowed life expectancy in the country to increase from 28 years in 1921 to 64 years in 2011.

The Great Recession reminds us that progress is uneven. In the United States, a country that was both originator and victim of the recession, per capita income, adjusted for inflation and purchasing power parity, decreased by 3.1 percent, from \$46,760 in 2008 to \$45,305 in 2009. This relatively small fall in average income does not make the suffering of millions of Americans, especially those who lost their jobs and homes, any less real. Thankfully, at the time of writing, the economy appears to be on the mend, with average incomes rising of an all-time high of \$49,965 in 2012.

Progress Is Not Inevitable

We must keep human development in proper perspective. The present, for all of its imperfections, is a vast improvement on the past. Understanding and appreciating the progress that humanity has made does not mean that we stop trying to make the future even better than the present. That said, we should avoid making two mistakes.

First, we should correctly identify, preserve, and expand those policies and institutions that have made human progress possible. If we misidentify the causes of human progress, we could put the well-being of future generations at risk. One way of avoiding serious policy mistakes in the future is to avoid concentrating power in a single pair of hands or in the hands of a small elite. Instead, we should trust in the choices made by free-acting individuals. No doubt, some of those individual choices will turn out to be bad, but the aggregate wisdom of millions of free-acting individuals is more likely to be correct than incorrect.

Second, we should beware of utopian idealism. Utopians compare the present with what might be called the future perfect, not the past imperfect. Instead of seeing the present as a vast improvement on the past, they see the present as failing to live up to some sort of an imagined utopia. Unfortunately, the world will never be a perfect place because the human beings who inhabit it are themselves imperfect. Today, it is difficult to imagine the emergence of a powerful new utopian movement. But few people in 1900 foresaw the destruction brought on by communism and Nazism. We cannot rule out that utopian demagogues akin to Lenin, Stalin, Hitler, Mao Zedong, or Pol Pot will emerge in the future.

When it comes to global standards of living, human history resembles a hockey stick resting on its side, with a long straight shaft and an upward facing blade. For most of our existence, progress was painfully slow (resembling that long straight shaft). At the start of the 19th century, however, the speed of human progress rapidly accelerated (resembling that upward facing blade). What was responsible for that acceleration? Many books have been written on this subject and it is beyond the scope of this essay to provide a full answer. That said, few scholars deny the central role played by two forces that are routinely demonized: industrialization and globalization.

Industrial Revolution

First, let us look at the industrial revolution. According to the Encyclopedia Britannica, the industrial revolution was “the process of change from an agrarian, handicraft economy to one dominated by industry and machine manufacture.” It started in Great Britain in the 18th century and then spread to other parts of the world.

The technological changes included the following: the use of new basic materials, chiefly iron and steel, the use of new energy sources, including both fuels and motive power, such as coal, the steam engine, electricity, petroleum, and the internal-combustion engine, the invention of new machines, such as the spinning jenny and the power loom that permitted increased production with a smaller expenditure of human energy, a new organization of work known as the factory system, which entailed increased division of labor and specialization of function.... These technological changes made possible a tremendously increased use of natural resources and the mass production of manufactured goods.... There were also many new developments in nonindustrial spheres, including the following: agricultural improvements that made possible the provision of food for a larger nonagricultural population, economic changes that resulted in a wider distribution of wealth, the decline of land as a source of wealth in the face of rising industrial production, and increased international trade, political changes reflecting the shift in economic power, as well as new state policies corresponding to the needs of an industrialized society, sweeping social changes, including the growth of cities, the development of working-class movements, and the emergence of new patterns of authority, and cultural transformations of a broad order.

The Industrial Revolution had many contemporary critics. Observers like Charles Dickens commented on the squalor of 19th-century cities and the backbreaking labor of the people, including children, in the factories in much the same way that our journalists today comment on the squalor of the rapidly industrializing Indian cities and backbreaking labor of people, including children, in Bangladeshi factories.

But things should be kept in a proper perspective. Life on an 18th-century farm was extremely difficult, and the city offered the former country dwellers higher wages and new opportunities. In time, sanitation, healthcare and other benefits of civilized life caught up with the cities’ rising population, giving us the modern metropolis. In a similar vein, legislation caught up with rising standards of living and codified in law what was happening already in practice—as productivity increased and wages rose, fewer children were needed to supplement their parents’ incomes. Increased productivity of workers

led to greater competition for workers, and factory owners started taking better care of their employees. Working conditions improved and work injuries declined.

Another major criticism of the industrial revolution concerns the spoliation of the environment and exploitation of natural resources. Who can forget William Blake's condemnation of industrialization in his 1808 poem Jerusalem?

And did those feet in ancient time
Walk upon England's mountains green?
And was the holy Lamb of God
And did the Countenance Divine
Shine forth upon our clouded hills?
And was Jerusalem builded here
Among these dark Satanic mills?

Blake's "satanic mills" refer to factories that in his view pockmarked the bucolic face of the English countryside. As was the case with other writers of the Romantic era, Blake's description of pre-industrial society was highly idealized. The reality, alas, was much less appealing. Most pre-industrial societies, Great Britain included, were heavily dependent on agricultural output. Agricultural production was labor intensive, but productivity was very low. Before the arrival of machines powered by steam and combustion engines, agriculture depended on much less efficient human and animal labor. People and animals had to be fed, which meant that most of the calories produced on the farm were immediately consumed by the laborers. Prior to the industrial revolution, there were no synthetic fertilizers, such as nitrogen, and crop yields were much lower than what they are today. As a consequence, more land was required to feed people and pack animals. Land clearing was usually accomplished by burning of forests. Yet more trees were cut down to heat houses and cook food. Environmental damage aside, a major reason for switching from wood to coal was the simple fact that there were very few trees left. Thanks to the use of fossil fuels, global forest coverage has stabilized and is expanding in the world's richest and most industrialized countries.

Globalization

Second, let us consider globalization, which the Organization for Economic Cooperation and Development (OECD) defines as "an increasing internationalization of markets for goods and services, the means of production, financial systems, competition, corporations, technology and industries. Amongst other things this gives rise to increased mobility of capital, faster propagation of technological innovations and an increasing interdependency and uniformity of national markets."

Contrary to the common misperception, globalization is not a new phenomenon. The trade links between the Sumer and Indus Valley civilizations go back to the third millennium BC. Later, there was the Silk Road between Europe and Asia, and European voyages into India and the Americas. Clearly, trade has been fundamental to the process of globalization from antiquity. But why do people trade?

Trade delivers goods and services to people who value them most. An additional ton of corn produced in Kansas may be of little importance to the people in the American Midwest, but it can be crucial to the people living in the drought-stricken East Africa. Trade, to use economic jargon, improves efficiency in the allocation of scarce resources. Another reason for trade is the principle of comparative advantage. As the Nobel Prize-winning economist Paul Samuelson noted,

The gains from trade follow from allowing an economy to specialize. If a country is relatively better at making wine than wool, it makes sense to put more resources into wine, and to export some of the wine to pay for imports of wool. This is even true if that country is the world's best wool producer, since the country will have more of both wool and wine than it would have without trade. A country does not have to be best at anything to gain from trade. The gains follow from specializing in those activities which, at world prices, the country is relatively better at, even though it may not have an absolute advantage in them. Because it is relative advantage that matters, it is meaningless to say a country has a comparative advantage in nothing. The term is one of the most misunderstood ideas in economics, and is often wrongly assumed to mean an absolute advantage compared with other countries.

Moreover, trade allows consumers to benefit from more efficient production methods. For example, without large markets for goods and services, large production runs would not be economical. Large production runs are instrumental to reducing product costs. For example, early cars had to be individually hand crafted. The Model T assembly line revolutionized car manufacturing and allowed the Ford Motor Company to slash the price of the Model T from \$850 in 1909 to \$260 in the 1920s in nominal dollars (in 2013 dollars, the drop would be from \$20,000 to about \$4,000). Lower production costs, in other words, lead to cheaper goods and services, and that raises real living standards.

Besides better resource allocation, and greater specialization and economies of scale, trade encourages technological and cultural exchanges between previously disconnected civilizations. It is for those reasons that great commercial cities like Florence and Venice during the Renaissance, and London and New York today, also tend to be centers of cultural life and technological progress.

The development of the steam engine and the opening of the Suez Canal in the 19th century made seafaring faster and cheaper. The volume of traded goods greatly increased. Through the process of price convergence, prices fell and consumers benefited. The gold standard and the invention of the telegraph – and later telephone – also allowed for massive transfers of capital. Attracted by higher profits, capital flowed from more developed to less developed countries, thus stimulating global economic development. As the British economist John Maynard Keynes recalled, before World War I,

The inhabitant of London could order by telephone, sipping his morning tea in bed, the various products of the whole earth... He could at the same moment and by the same means adventure his wealth in the natural resources and new enterprises of any quarter of the world, and share, without exertion or even trouble, in their prospective fruits and advantages... He could secure ... cheap and comfortable means of transit to any country or climate without passport or other formality.

This earlier era of globalization ended with the outbreak of World War I and the concomitant disruption of world trade. By some estimates, globalization did not reach its pre-World War I levels until the 1970s

or even 1980s. In fact, it was the 1980s that marked the beginning of the period of globalization that we live in today. Spurred by economic deregulation within countries, trade liberalization between countries, privatization of state-owned companies, further improvements in transport and the arrival of the Internet, globalization got a new lease on life. As important—and in keeping with the dramatic decreases in violence and conflict noted above—past episodes of often-violent colonization and mercantilist economics has been mostly replaced by positive-sum exchanges among countries and individuals.

The World Is Getting Better, But There Is an Abundance of Skepticism

As we can see, Europe and America, and, later, other regions of the world, experienced previously unimaginable improvements in standards of living. The process of rapid improvement that started in the early 1800s continues to this day. Accordingly, historical evidence makes a potent case for optimism. Yet optimism about the current state and future well-being of humankind is difficult to come by. As author Matt Ridley writes in his book, *The Rational Optimist*,

If... you say catastrophe is imminent, you may expect a McArthur genius award or even the Nobel Peace Prize. The bookshops are groaning under ziggurats of pessimism. The airwaves are crammed with doom. In my own adult lifetime, I have listened to the implacable predictions of growing poverty, coming famines, expanding deserts, imminent plagues, impending water wars, inevitable oil exhaustion, mineral shortages, falling sperm counts, thinning ozone, acidifying rain, nuclear winters, mad-cow epidemics, Y2K computer bugs, killer bees, sex-change fish, global warming, ocean acidification and even asteroid impacts that would presently bring this happy interlude to a terrible end. I cannot recall a time when one or other of these scares was not solemnly espoused by sober, distinguished and serious elites and hysterically echoed by the media. I cannot recall a time when I was not being urged by somebody that the world could only survive if it abandoned the foolish goal of economic growth. The fashionable reason for pessimism changed, but the pessimism was constant. In the 1960s the population explosion and global famine were top of the charts, in the 1970s the exhaustion of resources, in the 1980s acid rain, in the 1990s pandemics, in the 2000s global warming. One by one these scares came and (all but the last) went. Were we just lucky? Are we, in the memorable image of the old joke, like the man who falls past the first floor of the skyscraper and thinks 'So far so good!'? Or was it the pessimism that was unrealistic?

Ridley's recollection raises an interesting question: Why are we as a species so willing to believe in doomsday scenarios that never quite materialize in practice?

In their 2012 book, *Abundance: The Future is Better than You Think*, Peter H. Diamandis and Steven Kotler offer one plausible explanation. Human beings are constantly bombarded with information. Because our brains have a limited computing power, they have to separate what is important—such as a lion running toward us—from what is mundane. Because survival is more important than all other considerations, most information enters our brains through the amygdala—a part of the brain that is “responsible for primal emotions like rage, hate and fear.” Information relating to those primal

emotions gets our attention first because the amygdala “is always looking for something to fear.” Our species has evolved to prioritize bad news. Pessimists survived, while optimists got eaten by lions.

Newspapers and other media have long since recognized that pessimism sells. According to one analysis, about 90 percent of all articles in *The Washington Post* tend to be pessimistic in tone. As the old saying among journalists goes, “If it bleeds, it leads.” Politicians, too, have realized that banging on about “crises” increases their power and can get them reelected, and may also lead to prestigious prizes and lucrative speaking engagements. Thus politicians on both left and right play on our fears—from crime supposedly caused by playing violent computer games to health maladies supposedly caused by the consumption of genetically modified foods.

More than the physical structure of the human brain may be at play, of course. Take, for example, the role of ideology in shaping our perception of the world around us. If we start from a premise that the dominant economic system in the world today (i.e., some combination of private ownership, competition, free trade, deregulation, and moves toward liberalization) is either immoral or destructive, then it is difficult to reconcile that system with good news about human development. In other words, to maintain skepticism about the “system,” one is forced to ignore or discount positive developments in human well-being.

The dominant economic system in the world today is, of course, capitalism or, to use less ideologically loaded terminology, free enterprise or the free market. Just how “free” the free market really is, is debatable. In many supposedly free-market societies, like Europe and the United States, local and national governments tend to redistribute between 40 percent and 50 percent of the gross national product.

Where does the skepticism about free market come from? The late Harvard University philosopher Robert Nozick provides one plausible answer. The intellectual elite (i.e., the wordsmiths who occupy many positions within academia, the media, and government bureaucracies) tend to take a more negative view of free market than the one presented here. These individuals shape society’s language and access to information. As such, the anti-free-market sentiment of the intellectual elite carries great weight.

“From the beginnings of recorded thought,” Nozick writes, “intellectuals have told us their activity is most valuable. Plato valued the rational faculty above courage and the appetites and deemed that philosophers should rule; Aristotle held that intellectual contemplation was the highest activity.” Intellectuals have thus come to think of themselves as the “most valuable” members of society and “feel entitled to the highest rewards their society has to offer.” The markets, however, tend to reward “economic contribution.” Consequently, intellectuals tend not to be the most rewarded members of a free-market society. That runs counter to the intellectuals’ expectations. When they socialize with the most rewarded individuals in society, the intellectuals resent that they are not compensated to the same degree. To rectify this perceived injustice, intellectuals advocate for a society that distributes compensation in line with their expectations, rather than economic contribution.

It is perhaps best to start by explaining what the Human Progress website is not trying to accomplish. It will not try to convince you that the world is a perfect place. As long as there are people who go hungry or die from preventable diseases, there will always be room for improvement. To that end, we all have a role to play in helping the destitute in our communities and beyond.

Our goal, then, is not to paint a rosy picture of the state of humanity, but a realistic one. A realistic account of the world should focus on long-term trends, comparing living standards between two or more generations. Crucially, it should compare the imperfect present with a much more imperfect past, rather than with an imagined utopia in the future.

As such, this website has two main aims. First is to inform you about the many ways in which the world has become a better place. Second is to allow you to search for reasons that brought that improvement about. While we think that policies and institutions compatible with freedom and openness are important factors in promoting human progress, we let the evidence speak for itself and hope the website stimulates an intelligent debate on the drivers of human progress.