

How Should Humanity Steer the Future?

Innovation Is the Key for Humanity's Future

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The true wealth of humanity lies with its knowledge and tools, not with the transient control of material resources that is its monetary wealth. Nevertheless, economic growth is what sustains the growth in the wealth of knowledge and tools and innovation is the way to sustain economic growth. With every innovation and its change, though, also comes free choice and humanity must still choose whether to change the world or to change ourselves.

This essays shows that humanity should steer a future to:

stabilize population amount and demographics;

grow the economy with productivity through innovation;

shift spending from less desirable to more desirable needs with innovation;

use the recursion of more knowledge and more tools to generate more innovation;

*choose with each innovation between changing ourselves to adapt to the world as it is
or changing the world;*

teach our children to believe in their purpose, origin, and destiny.

To steer the future, humanity must first be holding the steering wheels of all of the buses that it is on. To steer to a future, humanity must first of all believe in a purpose, and since humanity today is not on a single bus, this complicates any purpose to steer to a single future.

Humanity's disparate governments are often not only at odds with each other but sometimes also full of strife even within themselves. Humanity steers its buses with different purposes into different futures and there are some aboard who even question whether there are any desirable futures that are even worth steering towards. A majority of others seem content just to drive around all day without any clear destiny or purpose.

It's really not surprising why we necessarily and pessimistically first imagine all of our worst possible futures. That innate pessimism is how we avoid many undesirable futures, like injury and death, by imagining how bad things could be. In spite of this pessimism, though, we actually spend most of our time and energy dreaming and imagining about desirable futures. Our desirable futures are not with the predictions of doom and gloom, rather our desirable futures are about the questions that we ask and then try to answer.

Humans are unique in that we feel compelled to both ask questions that we can answer as well as to ask questions that we can never ever hope to answer. The twentieth century philosopher, Ludwig Wittgenstein, spoke of the limits of knowledge by noting that we are quite capable of asking questions that have no clear answers, and so should only answer when something can be said.

For doubt can exist only where a question exists, a question only where an answer exists, and an answer only where something can be said. [Ludwig Wittgenstein 1951]

Immanuel Kant said much the same thing two centuries before Wittgenstein, but Kant added that we still cannot ignore questions even if they do not have answers.

Human reason has this peculiar fate that in one species of its knowledge it is burdened by questions which, as prescribed by the very nature of reason itself, it is not able to ignore, but which, as transcending all its powers, it is also not able to answer. [Kant, Critique of Pure Reason, 1781]

Humanity asks questions about the world and should steer certainly towards the questions that it can answer, but humanity must not ignore the questions that it cannot answer. After all, sometimes we just lack the knowledge to even know if a question can be answered. It is clear that our propensity to ask questions that do not seem to have answers has in the past lead humanity to find answers that we did not expect and those answers then have changed the questions that we ask.

Humanity has evolved into quite a civilization on earth over the last ten thousand or so years by asking questions. From the plains of eastern Africa to the fertile crescent of Iraq, somehow humanity's curiosity has found us desirable futures in every habitable biome on earth...and even some in space as well...by asking about that new place beyond the horizon. And yet all during this period of accelerating growth and expansion, we still wondered and we still had further questions about our futures and the futures of our children and all of our progeny. Clearly humanity had a beginning...but what is to be our destiny? And, what has been and is now humanity's purpose?

Humanity has not only grown in population, we have progressively become more productive as well. Humanity's per capita wealth increases with productivity and, more importantly, total information and knowledge increase, which is the true wealth of humanity. With more knowledge and tools, we can answer more questions. Whereas monetary wealth is a rather transient control of material resources by individuals and entities, knowledge and information represent the true collective wealth of all of humanity.

Stabilize population and grow innovation

Economic growth is a very desirable future for humanity since a growing economy produces more jobs and generates more wealth. But with growth normally also comes more population, more resource demand, and more pollution. So a first goal for humanity has to be to continue the course that steers us to a stable population and a stable demographic, goals that many nations have already nearly achieved.

Growth has been such an important part of civilization that we index our macro economies today with a gross domestic product, GDP, and interpret a positive growth in GDP as desirable. But there are two very different parts to GDP growth: population and productivity and while it is clear that eventually population will stabilize into a constant demographic, what is not so clear is that economies can still grow with just productivity.

Whereas increasing population simply grows economies by providing more workers, more consumption, more possible futures, and more pollution, innovation grows economies by increasing the productivity of humanity. Innovation along with the growth in knowledge and tools that result are then important futures towards which humanity should steer.

Spend more on desirable needs

The humanity needs chart shown below divides U.S. gross domestic product, GDP, among fourteen sectors of the economy. Expressing total GDP as a sum of humanity's needs shows not only where we actually spend our wealth, it also shows in which sectors we desire to spend more and in which sectors we desire to spend less. Although this breakdown of an economy is not unique, of the fourteen needs of humanity, transportation, shelter, and healthcare dominate relative spending in the U.S. Indeed the strategy right now in the U.S. is to spend less on healthcare and more on transportation and shelter.

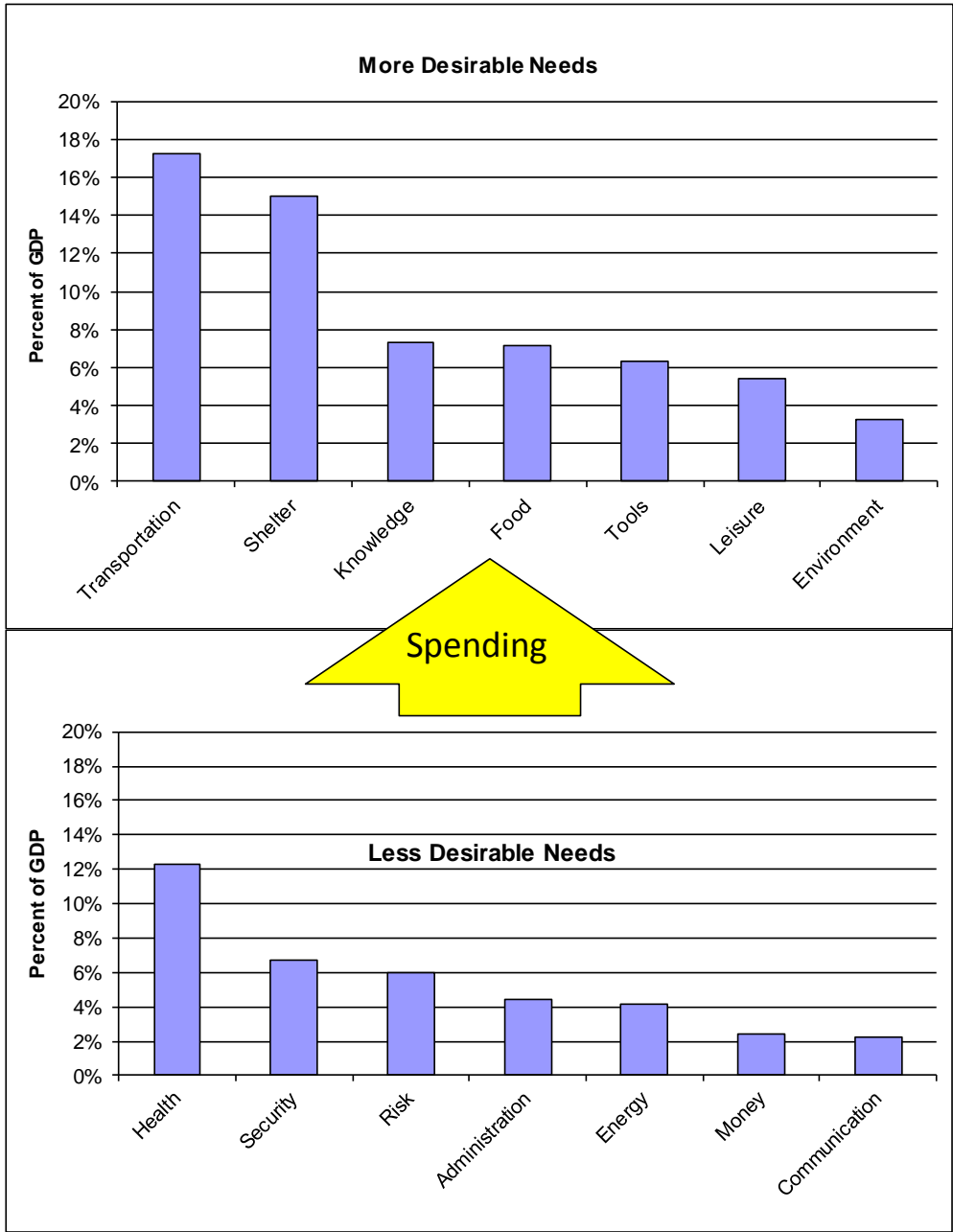
Humanity, just like the people that comprise it, does then have a purpose to spend more on desirable sectors and to spend less on undesirable sectors and not just ride around in the bus all day. All people anchor their consciousness with some kind of purpose and desire to spend more on some things and less on other things.

These desires for consumption are not only what we need to survive, i.e. food, water, and shelter, these beliefs involve knowledge and tools and leisure and so on. Although complex, all fourteen needs distill down to the very simple three axioms of origin, destiny, and purpose. Humanity's future and destiny are anchored with beliefs in both an origin, i.e. where we came from, as well as a belief in a purpose, i.e. how we are getting to where we are going, our destiny.

Thousands of years ago in 400-500 BCE in ancient China, Laotzi wrote as part of the dao,

At the center of your being you have the answer; you know who you are and you know what you want. [Laotzi, 400-500 BCE]

The purpose embodied within Laotzi's dao has long anchored the Chinese consciousness and the same purpose has anchored all humanity as well. We want to spend more resources on desirable needs and less on undesirable needs and we therefore know what we want and we know what we don't want.



We often take for granted our knowledge about the concepts of time, space, and consciousness and yet all of these concepts have unanswered questions that we do not really understand very well. Time is some sort of series of moments like the frames in a video camera, space is an invisible and infinitely divisible void of nothing that separates objects from each other, and consciousness is what we all have whenever we are awake.

Despite our somewhat cursory understanding of time and space and consciousness, these concepts are most of what defines the universe and our reality. Yet our questions about reality tend to focus more on just a few objects and their actions and that focus determines our desires, not the empty space between objects.

Human consciousness is a characteristic that makes us unique although we are never really sure why that is. There are many other animals that also seem to be conscious and since we do not have a very good definition of consciousness, it is not really clear if human consciousness is unique. There are also many other unique aspects of human biology such as language, brain size, fine motor skills, pattern recognition, and so on. We further wonder about a collective consciousness for humanity and whether it even makes sense that humanity could learn consciousness.

Adult humans exhibit conscious behavior but we only seem to learn a very simple consciousness by the time we are about five or six. Although young children do show some conscious behavior, until five or six years old we do not remember experience very well and without memory, consciousness is incomplete. Consciousness necessarily includes both memory of past experiences and the ability to associate present experience with related memories of past experience.

After children learn consciousness, though, it still takes another ten or so more years of growth, socialization, schooling, and mentoring to refine a child's beliefs into the conscious purpose of an adult. We typically reach adult consciousness around eighteen years old and even though we seem to know that we are conscious, we are never quite sure that anyone else is conscious. But one thing is for sure and that is that our consciousness is how we ask and answer the questions and those questions are the innovation that drives growth and a desirable future.

Humanity's innovation is the key to its knowledge and information and the growth of knowledge with time is the source of further innovation. Humanity senses the world just as its individuals do and humanity has a feeling based on the relations of current innovation with past knowledge and information. Knowledge and information are the memory of humanity, and humanity acts based on its feelings much like we act based on our feelings. While humanity also imagines and avoids undesirable futures, humanity just like its individuals mainly imagines desirable futures, selects one, and chooses actions to journey to that future.

The impulses of our brain are the neuron communication that binds our consciousness just as the communication of humanity associates and relates people as communities, cities, provinces, and nations. People tend to associate with other people that have similar beliefs and desires and people form communities that are part of cities and part of states or provinces and finally parts of nations. Humanity, though, is really the network of all of these relations among people, from those of people all the way to those of nations.

We know that time has passed when we remember experiences from our past and we relate those experiences to the feeling that we have in the present moment. We imagine what the future will be like by remembering the past, but our memory of the past is only approximate and any future only exists as many possibilities, not a certain one. In fact, even in the present, all the objects and actions that we ever see or hear are only the possibilities of what those objects and actions might actually be. After all, we are fooled all the time by the many illusions of sensation.

To steer the future, humanity deals with these many uncertainties and we must believe in the need for a purpose, but we also must allow for a diversity of individual purposes that are within acceptable norms. The typical norms of the golden rule and a compassion for others are among a set of evolving principle beliefs that humanity has adopted, but there are other principle beliefs that humanity needs in order to find a purpose.

Innovation changes the world or it just changes us

We believe in our ability to change the world to make it desirable, but at the same time we also desire to adhere to acceptable civil and religious norms. Acceptable norms can vary among communities and norms can be very diverse as long as compassion and the golden rule along with basic freedom from coercion. Humanity must have norms since what we desire could do harm to another person and their desires could harm us as well.

We can also believe that there is a fate and destiny to the world within some kind of a preordained natural order, called a karma or fate. A belief in fate means that we align our purpose with that of the overarching natural order. Thus instead of necessarily changing the world to reach a desirable future, we could just change ourselves, our desires, and adapt to the destiny of experience in the natural world.

Humanity necessarily struggles with a balance between these two beliefs: on the one hand, changing the world to reach a desirable future and on the other hand, changing yourself and your desires and accept and adapt to the natural world as it is. In fact, we all struggle with this fundamental choice in each of our journeys of purpose to a desirable future.

Without a purpose in each of our lives we would have no life and without a collective purpose for humanity, humanity would be just a collection of disparate purposes, buses steered aimlessly without a common destiny. Humanity can and should evolve into a common purpose as long as that purpose is flexible enough to accommodate a diversity of opinion and morality.

The key to humanity's growth lies in the same three axioms that guide each of us every day: knowing where we come from, knowing where we're going to, and a purpose in how to get where we are going. Innovation is the key to humanity's purpose and innovation is a broad goal that in principle grows the GDP of desirable needs of humanity. In particular, knowledge and tools are the two needs that figure very prominently into humanity's future of change. The tools of computers and cell phones and the internet have obviously all changed the world a great deal and have provided many desirable futures. The dispersal of knowledge and information that these tools provide is the basis for much innovation.

For a future where we change ourselves to adapt to the world as it is, though, it is the innovation of pure knowledge that grows humanity. We must distill from our knowledge the wisdom to choose when to change the world or when to change ourselves. The recursion of innovation along with knowledge and tools provides humanity with purpose and a choice between two possible futures: changing the world or changing ourselves.

Teach our children to believe

The growth that innovation inspires leads people to either change the world or to change themselves and their desires and adapt to the world as it is. Either destiny can be desirable. After all, the computers and cell phones and the internet also have undesirable futures in that they result in complex living versus a simple life and we lose privacy with the very public consciousness of the internet.

Knowledge represents the relational memory of a lifetime of experience and along with the mechanics of thought, defines the consciousness that is who we are. Humanity's knowledge is in the sedimentary layers of the geology of knowledge. Along with memory, the action of humanity's consciousness is with the increase in knowledge over time. Just as the advance of time in some sense is the gravity that binds

us to earth, the sun, stars, and galaxies, our own advance in knowledge binds our minds to the universe of knowledge.

An increase of knowledge over time is the binding action of all humanity. While DNA is the knowledge and information that we know as life, it is the evolution of DNA's information that binds all life together on earth. Charge force binds our microscopic universe of electrons, protons, and neutrons, and gravity force binds our macroscopic universe of the atoms of air, water, stone, stars, and galaxies. The neural actions of our minds bind our sensation to our action with feeling. It is therefore humanity's innovation and the corresponding increase of knowledge and information that is the feeling that binds humanity's sensations to its actions.

Innovation is the key to humanity's feeling and feeling is how humanity makes decisions. Humanity should steer its feelings to future's innovation with some common norms that limit individual behavior, but does not preclude individual expression and innovation. Control of information has always been an important goal of government since erroneous or fraudulent information can harm other people. Another role of government, though, is in limiting coercive behavior, since as long as people have material things, there will be others who want to steal those things. There will always be those who choose coercion to gain material wealth or power over others and so there will always be battery, murder, and wars between nations.

Suffice it to say that humanity is a product of human nature and therefore humanity will never eliminate the extremes of human behavior that result in sociopathologies like robbery, battery, homicide, and war. Humanity can only innovate and strive to minimize the impacts of these sociopathologies with adequate security, which is, after all, also a common need of humanity.

Humanity should bring its children into a conscious purpose that provides cooperation with others and a desirable future. Humanity should steer its imagination into growing the knowledge and tools that foster innovation, since that innovation then grows the wealth that results in more knowledge and tools. Humanity imagines a desirable future beyond the limits of our fragile bodies and limited lifetimes and limited brains and humanity's future is only possible with the growth of information and knowledge and the growth in humanity's extended consciousness...the internet.

It is important to recognize that the innovation that grows humanity's knowledge and tools does not only come from science and technology. There are many innovations that arise within the other needs of humanity besides knowledge and tools. For example, there are the efficiencies in our monetary systems as well as our politics and governments, our energy and environment and all of these innovations allow humanity to shift resources from undesirable into more desirable needs. If humanity better manages its risk and reduces the need for security by reducing wars and civil strife, humanity will free more resources for growth of our collective knowledge and information and this innovation will lead to desirable foods, desirable leisure, and we will then also atone for the inevitable tradeoffs of our technology by improving the environment of the earth.

There is currently a great deal of concern over an imbalance in the distribution of monetary wealth on earth. But even though we should be concerned about the control of large amounts of wealth by individuals and corporations, we should also be concerned with the alternative control of large amounts of wealth by a very few individuals of our government or nongovernmental organizations. Humanity must steer a balance among its individuals, corporations, governments, and NGOs, since some of these

entities manage resources more effectively and more efficiently than other entities, and that naturally leads to further acquisition and control.

There will always be people who lack resources and people who control more resources than other people. There will always be not only the poor, those who lack resources, there will also always be the poor of spirit, those who lack knowledge or ability. People who do not function as well as others nevertheless serve to keep humanity diverse and diversity is needed by humanity's uncertain future. But what humanity does with its excess resources today can change the lives of many.

Although we think we know enough about the future, i.e. about time, there are ice ages that come every 100,000 years or so and ice ages are likely to come again. There are major extinctions and explosions of life that come every 112 million years or so and those will likely come again. Life on earth exists mainly in the primitive cells of bacterial DNA and intelligent life seems to evolve from this primitive life relatively quickly, over these hundreds of millions of years. Human history is just several hundred thousand years old after all.

As humanity adjusts to the natural rhythms of our mother earth, she adjust to us and we evolve into ever more complex neural states with desires that we don't even quite understand yet. Time and space and consciousness are all concepts that humans recognize as important, but humanity has not yet evolved into a common understanding about these concepts. Therefore it is very important for innovation that humanity evolve into a common understanding of time, space, and consciousness.

Perhaps we will see a new future in the evolution of understanding of our physical reality.

Humanity is fast approaching a hard wall that is the limits of our human biology. Just as Moore's law shows the inevitable limit of electronic miniaturization as the atom (although engineering has not yet reached that limit), human biology necessarily represents a limit of the period of our lives as well as both the limited neuron action and memory of our brains. We only live for so long and we can only remember so much and our bodies are programmed for obsolescence after just seventy or eighty years of productivity. Even if our bodies were to last longer, no matter how well we take care of ourselves, eventually we will reach the biological limit of our brain in the neural recursions and memories and neural pathologies that represent our consciousness.

Given the many imperfections and faults and sins of human nature, it seems that the singularity of Kurzweil will be unlikely. That is because it is unlikely that we will ever even desire a machine that acts as badly as people can sometimes act, and yet it is those faults that are a necessary part of what makes us human. Instead we augment our purpose with the knowledge and tools that we acquire as a result of humanity's recursion of innovation and there is no end in sight for this recursion and the growth that innovation sustains.

In summary, humanity should steer the future to:

- stabilize population amount and demographics;
- grow the economy with productivity;
- shift spending from less desirable to more desirable needs with innovation;
- use the recursion of more knowledge and more tools to generate more innovation;
- choose with each innovation between changing ourselves to adapt to the world as it is
or changing the world;
- teach our children to believe in their purpose, origin, and destiny.

