

As It Should Be. As It Must Be. Perspectives on Our Present Situation

“It is as it’s supposed to be. All of it. Everything.”

– *The Challenge of Why*, p 307

And nothing that has happened recently gives me the slightest doubt about this conclusion. Yes, we face a world-spanning economic crisis that could breed poverty, suffering, and instability on a massive scale. We face a global environmental problem that with potentially catastrophic consequences. But these problems don’t indicate that humanity’s existence has suddenly become absurd. On the contrary, they are exactly, *precisely* what we need to establish humanity’s ability to move towards its best possible future.

I have argued that humanity’s purpose consists in finding ways to develop a progressively more complex society.* Society’s complexity brings us all manner of good things and holds out the prospect of allowing us to transcend the human condition permanently, to proceed to another realm of being. The continual advance of society’s complexity demands those two traits that are unique to humans: intelligence and morality. My abstract argument now plays out in concrete details of the present moment, in the crises we face and the options from which we must choose a way forward. Even though these specific crises may be historical artifacts, their *nature* could not be otherwise if it is to fill its role in the scheme of human purpose.

Age-Appropriate

Our current problems pose fundamentally the same challenge that one that has always stood in the way of human progress, namely integrating complex society in a way lets us realize the great value of differentiating society’s functions. We don’t undertake this for its own sake; nobody is deliberately trying to make society more complex. But when humanity has searched for solutions to its problems, the most viable ones often demand differentiation of society’s functions into new, specialized institutions and roles, and this new differentiation requires new ways of cooperating with more and more people.

No age has been without its integration challenges. As soon as a society has incorporated a certain level of complexity, some fresh challenge emerges to draw it on to the next level. The challenge has always been exactly appropriate for the society’s level of readiness and exactly what was needed to lead that society to the next level of complexity. Societies that made right choices complexified and prospered. Societies that made wrong choices stagnated or degenerated.

The challenges of our era seem as difficult for us today as the ones of yesterday did to the people who faced them. Our challenges are certainly daunting, arguably more daunting on an absolute scale than any that have gone before. And the consequences of failure are certainly portentous,

* A complex society differentiates its functions into finer and finer subfunctions so that specialists can performed them most efficiently and introduce innovations. But these functions must be integrated back together to gain the benefits of this specialization, and this integration challenges humanity’s full measure of intelligence, morality, and determination. For a full treatment of the subject, see my book, *The Challenge of Why*.

arguably more portentous on an absolute scale than any that have gone before. But I don't think it's fair to use an absolute scale. On an absolute scale, we are enormously better prepared to meet our challenges than any previous cohort of humanity. We have in hand the knowledge, understanding, and technology we need. The nature of our challenge is appropriate for the readiness of our age to meet it.

So Far, So Good...

So far, humanity has done a reasonably good job of integrating, at least at the forefront of societal complexity. Two major breakthroughs have allowed this: modern democracy and modern capitalism. Both democracy and capitalism take advantage of a person's natural selfishness because they allow, even require, people to act in their self-interest. Their primal forms, participatory democracy and *laisse faire* capitalism, permitted society to be more complex than their natural alternatives, but their flaws limited their usefulness in complexifying society.

Participatory democracy couldn't act with speed and clear purpose in a crisis. It was generally directed by hot passions rather than cool reason, and it usually ended up allowing those with the franchise to legally abuse those without it. To fix these flaws, modern democracy evolved such innovations as constitution and the rule of law, representation, and the separation of powers. *Laisse faire* capitalism invariably concentrated wealth in the few at the expense of the many and gave the advantage to those who are most willing to use immoral means to compete. To fix these flaws, modern capitalism is kept in check through such things as industry standards of practice, government regulation, legally enforced contracts, and organized labor. With their worst flaws amended, these institutions have allowed modern society to grow increasingly complex

... Except When Not.

The progress of these institutions did not follow a linear course from their primal to their modern forms. Primal democracy thrived only in narrow circumstances, for example a fresh colony planted on a foreign shore. Once an economic or military elite emerged, once a surge of new immigrants arrived, once the colony was threatened by enemies, the democratic form yielded to an autocratic or aristocratic form. These governance forms seem to have been the best way to preserve and complexify a society when it is beset by enemies, or while the population was ignorant, or when the work needed to just survive demanded most of the attention of most of the people. When complexification finally brought the populace some rudimentary education and understanding of the world, they became less tolerant of their disadvantages relative to the powerful. To continue the progress of complexification, people had to replace the authoritarian paradigm with an improved democratic one.

Capitalism promotes complexification best when it stimulates competition. But in the development of capitalism, people realized that their private interest could be best promoted and protected by colluding with competitors. They established guilds and cartels and other monopolistic institutions to reduce competition, or sought charters from government to provide them an exclusive franchise. In the same way that democracy went through periods of autocracy and aristocracy, capitalism went through monopolistic and oligopolistic periods. Although these

institutions promoted complexification and had benefits that primal capitalism lacked, the inevitable abuses finally shifted the balance of benefits and harms so far in favor of the wealthy that other stakeholders found it intolerable. Modern capitalism, with its external checks on collusion, is very different from primal capitalism, and those differences make it much more conducive to societal complexification.

Evolving Complexity

Complexification has a distinct dynamic. Any complex system requires that its differentiated parts fit well in their niche and integrate well with the other parts, but it takes trial and error to get it right. When engineers deliberately design a complex system, like a space shuttle, they have formal processes called systems engineering that helps them think through these issues ahead of time, yet they still must do a great deal of testing, and their testing inevitably reveals many things that their careful planning didn't anticipate, things that must be corrected before the system will perform optimally.* When a complex system arises without deliberate planning, as human society did, progress depends even more strongly on testing and correction.

Complexification's trial-and-error dynamic is behind our current global crises, but it will be more obvious if we first examine it in a more familiar and concrete example. The development of the information economy provides a good study.

Gurus of the information economy consider innovation is the age's highest virtue. You will remember how many innovative uses of the internet emerged in the middle and late 1990s. Certainly, progress demands innovation to identify rewarding niches, but those innovations must then be tested. Once innovative uses for the internet were forced to operate in the real environment, they typically matured into something different than they were when they were at their start. They were modified to overcome flaws revealed by the realities of interacting with the rest of the system. Some grew beyond their initial niche, others shrunk in response to competition, some morphed into something else. The vast majority of innovations didn't survive the shake-out; they eventually withered and disappeared. The information economy that remains is creative innovation minus destructive testing.

The most successful innovations established a paradigm for other innovations. For example, in the 1990s, when most users were new to the internet, the idea arose to provide them with a web portal, a full-service site that provided many different, alluring capabilities. The portal paradigm spawned innovative variants that refined and improved the basic idea. These variants competed against each other and became more efficient in the process. Creating, testing, and selecting variants on the portal paradigm produced tangible progress.

But while this made the portal paradigm more efficient *within* its environment, it also made it less tolerant of changes *to* the environment. In time, users became more proficient finding their own way around the internet, and as websites themselves became more user-friendly. Full-service portals lost their usefulness; they may soon disappear altogether. The withering of the portal paradigm, though it may seem like a step backwards to the pre-portal days, in fact reflects progress. As training wheels are to a bicycle, as bicycles are to motor scooters, as motor scooters

* It has been said that in engineering, a design is an hypothesis to be tested.

are to cars, things that were essential in one environment becomes dispensable in another. Their destruction is not to be mourned as a setback, but celebrated as progress.

Progress in Regress

A look back through human history shows the same dynamic of complexification at work in the institutions that constitute human society, though the longer time scale makes it less obvious. Innovations continually arise to meet needs and are tested by interacting with the other elements of society. Those that survive the rough and tumble of reality turn into institutions that endure. Particularly successful institutions become paradigms that are copied and built upon. Many innovations do not endure. For example, the commune has emerged at many times in many variations – utopian communities, religious micro-sects, co-ops – but none has managed to establish an enduring institutional paradigm that others built upon.

As with the web portal paradigm, something that constitutes useful progress in one environment may not be useful when the environment changes. And the environment always changes. Complexification itself changes the environment. For example, autocratic governance paradigm thrives when the populace does not have an adequate understanding of where its best interests lie. Think of it as the web portal of governance. Autocratic governance propelled a lot of the complexification that made the world better, and it may still have a role to play in underdeveloped societies. But as complexification brought the populace progressively more prosperity, leisure, and contact with the wider world, the autocratic paradigm ceased to be the best for society as a whole. Changing a paradigm has a bigger effect on society than merely changing an institution. Everything based on that paradigm must also be modified to accommodate the new reality. Many institutions and even other paradigms must be adjusted or even destroyed. This produces tangible regress until variants on the new paradigm emerge and optimize its efficiency. But once the new paradigm has been optimized, it permits more robust progress in complexification than its predecessor.

The cycle of innovate-test-select creates a saw-tooth kind of progress. Optimization, a creative process, makes something more efficient. Selection, a destructive process, makes it more robust. Efficiency and robustness are not polar opposites, but it takes this saw-tooth experimentation to balance them for a certain set of conditions. Destroying suboptimal variants or even an obsolete paradigm is an integral part of creating this balance. The destructive process may seem like a step backwards, but this regress is essential to progress.

This balance of efficiency and robustness is a dynamic process not a static state. While the environment is more or less stable, the balance tips in favor of efficiency. When conditions change rapidly, robustness is more important. So the balance of efficiency and robustness is never absolutely right or wrong. It is only right or wrong in its conditions. When the conditions change, institutions must change. When conditions change radically, the paradigm itself may have to change, causing a particularly wrenching regress.

Now, Then

The modern democratic and capitalist paradigms have brought human society – at least societies that have fully embraced them – to historic heights of societal complexity. The benefits are now clear. Yet as I write this, the capitalist paradigm faces two crisis that will cause regress in societal complexification. One, an acute economic one, illustrates what happens when a paradigm becomes optimized for efficiency at the expense of robustness. The other, a long-term environmental one, traces to changes in the natural environment that may undermine the paradigm itself.

Our acute economic crisis has several separate causes, all of which trace to pursuing efficiency at the expense of robustness.

Innovations in the world financial system made it so efficient that it became brittle,^{*} vulnerable to shocks. Computer and communication technology allowed capital to be employed wherever in the world it would create the greatest wealth at the moment. Innovative vehicles for packaging and reselling assets diffused risks to allow people to achieve the higher returns associated with risky investments. Governments encouraged such innovation by the reducing regulatory scrutiny. The financial system became extremely efficient.

All this readily available investment money did materially improve societal complexity. The free flow of money and goods around the world provided the integration capabilities to allow labor to be differentiated to its most effective location. Societies such as India and China with huge populations doing low-productivity agricultural labor began to employ people in higher productivity activities in low-skill manufacturing of things such as clothing and toys. Societies such as South Korea, Taiwan, and eastern Europe that concentrated on low-skill manufacturing moved towards more productive, higher skill manufacturing of such things as automobiles and electronics. Societies such as western Europe, the United States, and Japan, which had depended on high skill manufacturing, shifted their labor force towards very productive specialized products and knowledge work, producing such things as aircraft, manufacturing equipment, medicines, art (movies and books), and software. These global-scale efficiencies did indeed grow the world's real wealth.

But now we can see that the efficiency of the financial markets was bought at the expense of its robustness. Financial deregulation was embraced with the expectation that the markets would balance productive, wealth-creating risk against counter-productive, abusive risks. But this efficient financial market found ways to spread the counter-productive risks world-wide and created financial vehicles that disguised their risk. These diluted the market incentives designed to correct the risks, so they grew and accumulated without effective checks. Financial risk efficiently found and affected all of the world's ready capital.

Because free market mechanisms did not react to the risks, central bankers did not detect the insipient problem, so they managed the money supply using a faulty understanding of the real situation. The most important job of a nation's central bank is to match the supply of money with the real national wealth that money supports. The central banker's challenge is to determine what change in value reflects growth in real wealth and what reflects inflation. The central bank

^{*} Brittleness is not the same as weakness. Brittle means that it fails by breaking rather than bending. Glass, for example, can be both strong and brittle.

of Japan in the '80s and early '90s mistook inflation in real estate prices for growth of wealth and increased the supply of money to inappropriate levels. This created a phony prosperity. Japan's central bank was not able to deflate the currency back to an appropriate ratio to national wealth. Instead, the nation had to wait until the economy grew to match the money supply before it could record a growth in national wealth. This caused Japan's "lost decade". The US central bank in the '90s was more restrained about matching to money supply to the inflation of the technology bubble; much of the growth in money reflected a real growth in wealth, and the bursting of the tech bubble was relatively benign. However, the US central bank was deceived by housing inflation in the '00s. It let the money supply gallop head of real wealth as reflected, for example, in wage growth. Much of what appeared to be economic growth in the first decade of the 21st Century now seems to also have been a phony prosperity.

Diffusing and disguising financial risks, thought they improved the efficiency of financial markets, did not prove to be a robust substitute for controlling them. In early 2008, a brief, intense spurt of inflation in commodities, led by oil, provided the pin that burst the housing price bubble that had been inflated by the excessive money. When the basis for the world's economic growth was revealed to be grounded in inflated valuations rather than real wealth, the efficient but brittle financial system snapped suddenly, catastrophically, and globally.

This crisis also revealed that government policies enacted to enable free market efficiency had disabled mechanisms that promoted robustness. Although they did not cause the crisis, they undermined the economic robustness that would allow societies to navigate the crisis more gracefully.

The most important of these is tax policy in the US. Since the 1980s, a politically powerful constituency has advocated for, and generally achieved, a tax structure that had the affect of directing money away from the public sector and into the private sector, where it supports business investment and consumer spending. Proponents of low taxes have claimed credit for significant wealth creation. While lower taxes spurred wealth-creating activity in the private sector, they did so at the cost of the *wealth-enabling* activity in the public sector. Private sector investments, when managed well, promote economic efficiency because efficiency creates profits in a few years.* Public sector investments, when managed well, promote economic robustness in order to provide the sustained growth that promotes social stability. Restrained public spending on education in recent decades has left the US with a workforce that is not prepared for the challenges of tomorrow's economy, making it less robust to future changes. Deferred public spending on infrastructure has made the economy unable to accommodate growth without increasingly wasted hours in such unproductive activities as commuting and air travel delays. Limited public spending on research and development focused our inventive genius on evolutionary technology that satisfies impatient private investment and away from revolutionary ideas that have the potential to sustain economic development when current

* Markets must produce profits that respect the time value of money. The time value of money is established fundamentally by inflation. If there were no inflation, investors could then be patient indefinitely. The existence of some inflation means that any investment must pay back at no less than the rate of inflation or the investor stands to lose principal. Investments that are unlikely to be repaid at a gain in a few years cannot be supported by the private sector (unless they are part of an investment portfolio that balances longer returns against very high, very near term returns). Thus, public sector investment is essential to underwriting longer term investments.

technology reaches diminishing returns. And while the public sector did not invest in those accounts that support that future growth, it borrowed against its future income to serve the immediate needs of government. Without adequate growth, public debt will be repaid by a diminished standard of living, either through inflating the value of money or deflating the value of goods and services upon which livelihoods depend.

In the competitive world economy, a nation that invests in long-term robustness at the expense of even a little, near-term efficiency will lose out in the competition for investment capital. Because short-sighted policies are well rewarded, nations must coordinate their policies so that they compete in ways that permit appropriate levels of robustness for the long-term good.

Repairing the imbalances between efficiency and robustness in the financial system seems to mostly involve reinstating external checks on markets and rebalancing capital flows between the private and public sectors. We know how to do this, and although there's always room for innovation, the changes required are likely to be new variations in the capitalist paradigm, not a new paradigm. The challenge will be making this correction while shielding the populace from the kind of economic hardship that causes political and social instability.

It is not yet clear, however, whether the environmental crisis can be managed without some change to the capitalist paradigm.

Hot, New World

The capitalist paradigm has, yes, harvested the value of the efficiency produced by differentiation, but it has traditionally also tried to harvest the value of exploiting something. Although the word *exploitation* has become laden with emotional connotations, economists use it in a neutral sense to mean paying less for something than the value it adds to the product. Capitalism always looks for something to exploit. The best thing to exploit is some natural resource that is free for the taking. The earliest recorded trade exploited natural resources that were abundant in one area but rare in another, commodities such as salt, metals, obsidian, and wood. Even resources that are obtained without cost require labor to extract and refine, and the world has had a long history of building wealth by exploiting labor. Slave labor was the most egregious example, but in recent centuries, agricultural efficiencies generated a surplus of displaced farm labor to exploit. Across history, rivers, seas, and oceans have been exploited for transportation and recently so has the air. Public infrastructure such as a roadway system is also ripe for exploitation. Houses have been planted on patches of free or low-value land. Aquifers were tapped for free, clean water.

Any finite resources that is exploited eventually succumbs to the tragedy of the commons. Everyone harvests value from an exploitable resource until it is no longer useful to anyone. Exploitive farming practices sucked the fertility from soil and let the topsoil wash away. Exploitive mining left worthless holes in the ground. Exploitative forestry left landscapes barren for a generation. Labor exploitation brutalized people beyond the tolerance of the human conscience. Public highways and even airways have saturated and clogged. Housing sprawls across every available acre. Aquifers are emptying.

Recently we have come to understand that exploitation of natural resources applies not only to extraction but also to deposition – serving as a sink for waste. For decades we known that rivers and lakes cannot absorb indefinite quantities of our liquid wastes; lately we have come to see that oceans cannot either. Landfills are bulging with our solid waste. And only very recently have we understood that even the atmosphere cannot absorb all the gaseous waste our lifeway produces.

Everywhere we look, we can see a global tragedy of the commons looming in a generation or two. The prospect of climate change driven by global warming is bringing us squarely to the realization that the tragedy of the commons could halt or even radically reverse humanity's societal complexification. It might even kill us all.

Modern capitalism is seeking ways to bring market mechanisms to bear on common resources. It has been argued, for example, that forest resources are more sustainable in private hands because the owner has an interest in maintaining the value of the asset over the long term. This may work well with renewable resources that yield to wise management; we've seen it working in farmlands, for example. But managing a resource that is part of a larger natural system, such as an ecology, without also managing the system leads to the exploitation of the larger common, makes the larger system, the ecology, less robust. For example, the farmer can preserve the value of his property by exploiting other commons: extracting the common groundwater and depositing his excess agricultural chemicals into the common water courses.

The financial crisis should cause us to ponder about whether private management is the right approach to the environmental crisis in the long term. The efficiency of the financial system was optimized without adequate consideration for the robustness of the larger system in which it was imbedded: the economy. Using market mechanisms for the environmental crisis might produce an efficient solution to a limited problem while robbing the larger system of its robustness. Since that "larger system" is the global environment upon which human life depends, we cannot risk inadvertently making it fragile.

Others suggest that market mechanisms might yet be engaged if governments, representing the ownership of the commons, levy a fee for using them that reflects their true value to society. While the idea has merit, it begs two difficult questions: Can governments be trusted to represent the long-term interests of humanity, eschewing compromises that placate their constituencies or provide near-term benefits at the expense of sustainable practices? Can anyone place a realistic value on any resource, considering how interconnected economic, ecological, and societal effects are?

Let us hope that we can develop capitalist mechanisms to manage this crisis, if for no other reason than the debt of gratitude we owe to capitalism for bringing us this far. But we must consider the possibility that the capitalist paradigm is almost played out. Envisioning a paradigm to replace capitalism will require the full genius of the human species. It may take decades or even centuries to implement. It ought to be prototyped, optimized, and tested in a small scale before we abandon the capitalist paradigm that has brought us so much prosperity. But it is not too early to think about what might come next.

All Together, Now

Clearly, extraordinary challenges lie immediately ahead of humanity. But this is as it's supposed to be, exactly, precisely, if human purpose is the ever-increasing complexification of society.

Human progress has been found in spreading societal complexity in ever-widening circles: bands to clans to tribes; villages to towns to city-states to provinces to nations to civilizations; families to communities to ethnic groups to races to cultures. We have discovered, in contradiction to our reason and instinct, that the more of humanity we include in our complex society, the better it is for all of us. Societal complexity, not economic prosperity per se, really is the rising tide that can lift all boats.

The challenges presented by the imbalance between efficiency and robustness in the economy and by the looming tragedy of the global commons have no robust solutions that do not involve all of humanity. If we leave out any nation, no matter how small, the efficiency-loving mechanisms of the capitalist market will flood in to exploit its advantage. If the whole world manages to regulate its financial markets, excepting only, say, Burkina Faso, international banks will flood into Burkina Faso. It will become prosperous relative to other nations, tempting them to abandon their regulatory discipline. And in the end, the abuses permitted in this financial nexus will propagate world wide and again bring the global economy to ruin. If the whole world excepting only, say, Kyrgyzstan, finds ways to control its impact on the global environment, then the earth's most filthy industry will migrate to Kyrgyzstan. It will become the chimney, landfill, and sewer of the planet, prospering by supporting those industries that wish to exploit its claim to the commons. And in the end, its filth will find ways to spread around the planet and affect us all. Ignoring even such inconsequential international players as Burkina Faso and Kyrgyzstan will doom any global solution. We're all in this together.

And that is exactly, precisely the right challenge to societal complexification to face at this point in humanity's development. We must learn to respect each other without limit. We cannot restrict our attempts at cooperation to those with whom we share cultural, political, ethnic, or geographic ties. Since we cannot prosper by loving our friends while hating our enemies, we must find ways to somehow make friends of enemies. We must respect differences while empathizing with our commonalties. This is the only way to ensure the indefinite progress in societal complexification.

Feeling Our Way Through

So what do we do? What's next? If this is the problem, what is the solution?

I have no idea. My own specialized role in our complex society seems to be to understand the deep reasons why things work the way they do. I won't pretend to offer answers outside that scope. Others with very different specialized roles, knowledge, and abilities must propose ideas, evaluate approaches, and implement policies to address and redress the problems that have brought on the crises. I suspect this will take all the specialized expertise that humanity can bring to bear on the process.

My understanding of deep causes does let me offer the following guidance: the best pragmatic solution in the long run will be the most moral one. Moral solutions will be motivated by sympathy and respect for all people everywhere. Moral solutions will treat the earth and its resources as a living members of the human community, members that must not be exploited any more than a person would be.

We'll know if we're on the wrong track if we feel ourselves debating the issue with the pinch of selfishness in our hearts, the tension of competition in our arms, the fear of losing tickling our gut, with our jaws clenched in intransigence. We'll know we're on the right track if we can consider the ideas of others with disinterestedness relaxing our shoulders and weigh their concerns with gentle sadness swelling our chests.

Our ideas will not finally be judged by a compelling ideology, elegant arguments, or a count of votes, any more than internet companies were finally judged by their compelling business case, professional presentation, or securing of venture capital. Like internet start-ups, our ideas will finally be judged by whether the institutions they spawn thrive or whither. Our fear of losing a debate must not be stronger than our fear of being wrong. Only the right pragmatic solutions, not the right ideological solutions, will allow human progress to continue indefinitely.

The problems we face today are exactly, precisely what we need to establish our readiness to take next step in societal complexity. This is not really about the financial system or the environment – those are just the container for the true challenges. The true challenges are about working together as a global human community to solve those problems that keep us from integrating a globe-spanning human society. They are about growing beyond nationalism, racism, tribalism, and classism. They are about moving beyond selfishness as a motivation. They are about finding a satisfying balance between taking and giving.

The character of our current crises is exactly as it should be to help us finally appreciate our global commonality. The nature of the consequences of our choices is precisely as it must be to motivate us to find those difficult, moral solutions that have the ability to send humanity on to the next level of societal complexity.