



Toward a Comprehensive Approach to Paradigm Change

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Abstract

The term 'paradigm shift' suggests a dramatic discontinuity, one which is almost impossible to prepare for. Paradigm shifts happen quickly and often unexpectedly. We presently find ourselves on the precipice of another threatening environmental catastrophe.

Developing a comprehensive approach to our challenges will require us to spend less time discussing why we need change and where we want to go and more time focusing on how we can actually get there. We must facilitate a choice of futures through policy incentives. A failure to take action today will see major global conflicts arising over increasingly scarce resources and increasing areas of our planet becoming uninhabitable, causing countless millions of refugees.

The World Future Council's latest initiative, the Global Policy Action Plan (GPACT), is an essential tool for today's policy-makers seeking to implement proven innovative policy solutions for our most urgent challenges to protect future generations. Bringing together the minimum policy changes required to achieve the goals the global community is debating, at the very least, GPACT will ensure that we are ready when the seemingly impossible suddenly becomes imperative.

The term paradigm change signifies a drastic discontinuity, practically impossible to prepare for. After such a change, the previous paradigm is not just seen as wrong but as incomprehensible, even mad, or at the very least "exhausted". It no longer makes sense and we find it hard to understand how it ever did. Did learned men in medieval Europe really debate how many angels could find room on the top of a needle?

The 2008 financial crisis did not change the worldview of the global majority. But those working in the financial sector might feel justified in speaking of a paradigm change. The World Wars and the collapse of the Soviet empire fall in the same category. For those who lived in the affected European countries, the world of 1915, 1940, and 1992 had dramatically changed, in ways which were inconceivable only a few years before the events occurred.

What can those drastic changes teach us about paradigm changes? First, they happened very quickly and unexpectedly. Neither the media, nor the markets, nor decision-makers and "experts" expected a world war at the time – with very few exceptions. As for the collapse of the Soviet order, at a conference in Moscow in May 1989, I heard the West German government representative assure his East German colleague that no one in the West was thinking of changing the status of Berlin – six months before the wall fell.

Another key lesson is how insignificant an event can trigger such momentous changes. The wrong turning which brought Archduke Franz Ferdinand in front of Gavrilo Princip's gun is well-known. In 1938 my father, working as a journalist in Berlin, became convinced that Hitler was planning a war and that killing him could prevent it. My father had an apartment overlooking a square where Hitler often spoke and was prepared to shoot him. But while he was within a good shot, he feared he might miss, with disastrous consequences. So he sent a message to London via his contacts, suggesting they send a sharp-shooter, but the reply came back that His Majesty's Government would not do such a thing... As for the collapse of the Soviet Union, a few years later President Gorbachev told a common friend that, if he had known how badly Yeltsin wanted to be "Number 1", he would have offered him his job so that he did not have to destroy the Soviet Union to get it...

"There is a growing paradigm gap between the "experts" our governments follow and our sense of reality."

What paradigm shift are we facing today, if any? While the "end of history" school has been discredited, we are still assured by leaders and opinion-leaders that our current world order is the best imaginable. The consequences of the financial crisis are being overcome, "growth" is resuming and poised to take off, technology and markets will solve our problems and a bright global future awaits.

The media love self-proclaimed converts who have re-joined this optimistic mainstream. A Danish statistician, Bjorn Lomborg, who claims to be a "self-proclaimed convert," but now "skeptical" environmentalist, assures us that "growth" will solve all environmental challenges. In a 100 years' time, he tells us, Bangladesh may be flooded because of climate change, but, if you extrapolate the country's current GDP growth rates, it will then be as rich as the Netherlands and thus able to afford to build enough sea-walls to protect itself. Orio Giarini, Director of the Risk Institute, identifies this modern belief in the "magical power of price" as a key element of the current paradigm, which is increasingly disconnected from the real world. In a ruined natural environment, there is unlikely to be any economic growth – or markets, or democracy or human rights. All our achievements and all our hopes depend on sustainable ecosystems, enabling life on earth to flourish. This may seem obvious. But it is not the preachers of GDP magic who our political leaders follow. Prominent climate economists like William Nordhaus and Thomas Schelling write that climate change will only seriously affect agriculture. But, in an industrialised country like the USA, agriculture only represents ca. 3% of the economy. So, they say, even a 50% collapse would only slow down GDP growth by 1.5%, which can easily be compensated for in other areas. Thus, as long as we produce enough iPods and iPads, it does not matter if food production is collapsing.

This is not an isolated example. In a famous disagreement with his colleague, Herman Daly, while they were both at the World Bank, the US economist Lawrence Summers insisted that our natural environment is a dependent subsystem (box within a box) of our human economy. To many outside the economics profession, this belief is not just wrong, but mad, on par with the belief that the earth is flat. But Summers is one of the most influential men on the planet, having served as a chief economic advisor to two US Presidents (Clinton and Obama), as well as chief economist of the World Bank and President of Harvard University.

So it would appear that there is a growing paradigm gap between the “experts” our governments follow and our sense of reality. It is hard to deny that this gap is the most serious ever, as it reflects not just a shift in worldviews, but how to deal with a threat to the survival of our civilisation, possibly even of life on earth. The fear that runaway climate change can trigger events which will make our Earth uninhabitable, like the planet Venus is, fortunately, not a majority view among climate experts. But neither is it a negligible minority view. It has recently been expressed by Lord Giddens, a former prominent British government advisor and Director of the London School of Economics in *The Politics of Climate Change*.

The majority of climate change experts predict a world radically different from today, with ongoing major global conflicts over ever scarcer resources, increasing areas of our planet becoming increasingly uninhabitable and with countless millions of refugees. Such scenarios can also be found in studies from the Pentagon and British defence government think tanks.

So why is there no greater public concern? The Club of Rome warned of such scenarios 40 years ago and predicted that the crisis would hit now. But such truths are still too inconvenient, to use Al Gore’s term, because the required changes would not only be very difficult, but, in many cases, inconceivable. Economic globalisation has enabled us to extend natural limits by growing into the economic and ecological space of other countries, ensuring that, when limits hit, they will come globally and simultaneously: “global peak everything”. Orio Giarini, who participated in the early Club of Rome discussions, writes that “no one at that time had any idea of a possible warming of the planet or of the role of the greenhouse effect” (*Itinerary to the Third Age*, The Risk Institute 2013, p. 88).

Of course some experts did, but it is sobering to consider that today, not just humanity as a whole but even a single wealthy human being could fund geo-engineering experiments which could influence the global climate...

Paradigm changes are non-negotiable. We can negotiate with financial creditors, and find a solution (including a refusal to pay) within years to even the most serious economic crisis. But melting glaciers and spreading deserts do not negotiate. Nature provides no rescue packages.

The shift of perspective required is very hard to imagine within the old paradigm. But we have to try to visualize it if we want to secure our shared future. Al Gore warned in his 1992 book *Earth in the Balance* that the environmental challenges force us to re-think and, where necessary, change every institution, treaty, law, etc. As we know, not much has happened since in this respect.

A sustainable energy supply is now a human and environmental security issue which cannot be subjected to the rules of the market. A World Future Council study last year found that the cost of the non-use of renewable energies amounts to over US \$3 trillion p.a. in wasted natural capital. The solar, wind, etc. energy potential we do not use every day is lost forever. Instead we burn valuable fossil fuel raw materials. Cost comparisons between non-renewables and renewables which omit these wider costs are bad accounting, reflecting the power of the corporate oligarchies ruling the world.

Chandran Nair, who founded the Global Institute for Tomorrow and advises the Chinese Government, says that the most urgent innovations now needed are not technical but new accounting models which help internalize costs. But costs have been externalized for so long and on such a massive scale – at the expense of our environment and future generations – that such reforms will be extremely difficult to implement. Attempts to abolish fossil fuel subsidies in African and Arab countries have caused major riots. Integrated approaches for compensating the poor are being tried e.g. in Indonesia, but so far with limited success.

“We are ruled by increasingly absurd economic dogmas.”

WFC councillor Pavan Sukhdev, who was referred by Deutsche Bank to UNEP to study the costs of biodiversity destruction, writes in *Corporation 2020* that most corporations would be bankrupt if forced to pay the full costs of their production. Not doing so is of course unfair competition, even fraudulent. But the necessary transition will be an enormous challenge, requiring detailed strategies and a new legal framework for corporations and markets. Sukhdev points out that our economic planning is based on discounting the future, based on the assumption that we will be richer then. But what, he asks, if we become poorer, due to the need to share scarcer resources, as many now fear? Should future discount rates then be negative? Should value-added taxes be replaced by value-depleted taxes? Where is the research being done on the economic implications of such reforms?

Sukhdev is not alone. Lord Stern, former Chief Economist at the World Bank, regards discounting the future as discriminatory.

We are ruled by increasingly absurd economic dogmas. No political leader would dare proclaim a goal of 1% to 1½% GDP growth. But such a growth rate would still expand the economy by a third to one-half in one generation. The German Empire was industrialised with such growth rates. CEOs in the extractive industries warn that the resources to support global 3% growth are not being found at rates which would make this possible. Chandran Nair, founder of the Global Institute for Tomorrow (GIFT) in Hong Kong, writes in *Consumptionomics* that it will not be physically possible for China to have the p.c. resource consumption of the USA – or even Taiwan. There can be no human right to something which is not possible.

When asked what a sustainable future would be like, Nair replied: “Fewer car races and more dancing competitions”. In the USA, this earned him the accusation of being “an environmental Taliban”... A re-focusing on traditional community values is the key message of the “Chinese Dream” of an ecological civilisation spread by President Xi. But he finds it very difficult to change course, facing demands to open up China’s financial markets to speculators with very different priorities...

Developing a comprehensive approach will require us to spend less time discussing why we need change and where we want to go. There is already considerable agreement on this, but far too little attention has been paid to the “how”, i.e. the practical steps necessary to get from here to there. Many believe that this will require either a sudden change of human consciousness (which we cannot wait for) or a huge “bottom-up” movement to debate and agree

on a common future. But, while our future will be shared, as we live on the same planet, there is no reason why it should be “common”, i.e. the same. This terminology reflects the “end of history” and globalisation ideology which claims that there is only one global future.

Our task should be to ensure that a variety of futures can flourish. That is our duty to future generations: to expand their choice of futures, rather than reducing them, as we are currently doing. This also requires that future generations are represented when decisions affecting them are made, which is why the WFC is working for the establishment of a UN High Commissioner for Future Generations. (This will be decided at the High-Level Political Forum and then at the General Assembly in the coming months).

We are also working for the creation of Parliamentary Ombudspersons for Future Generations on the national level in different countries, as well as on establishing the concept of crimes against future generations in international law.

Removing ‘unfreedoms’, to use Amartya Sen’s term, for future generations requires first of all reversing trends which will increase such unfreedoms by biodiversity destruction, over-fishing, reducing forest cover, destabilising our climate, etc. It also requires a sustainable economic and financial system facilitating the creation of real and sustainable wealth, where money and markets become our servants, instead of our religion.

This will include monetary reform to ensure that whatever a society can do, it can also finance. It will require a radical ecological tax reform, taxing resources instead of labour, as well as building sustainable systems of production and finance to create the right incentives for entrepreneurship and innovation.

The key policy reforms we have identified, after a broad international consultation process, are presented in the WFC Global Policy Action Plan (GPACT), which we plan to publish next year as a (draft) Global Pact. The aim is to provide a tool for decision-makers and public campaigning by bringing together the minimum policy changes which we believe will be required to achieve the goals the global community is debating. At the very least, this will ensure that we are ready when the seemingly impossible suddenly becomes imperative.

The end of the belief in the power of market prices to solve human and planetary challenges – the “modern magic formula” (Orio Giarini) – is likely to have very drastic consequences. But the paradigm change approaching may go even deeper, challenging another cornerstone of our modern worldview: the belief in the unstoppable global dominance of science and technology over our lives and minds. There is today a growing public disillusionment with both, seen as intolerant gods which increasingly dominate instead of benefiting us.

As is to be expected, this change of perspective is first appearing in the nation which was a pioneer in adopting and embracing technology. The latest issue of “Baku Eye” reports that young Japanese “are becoming distrustful of technologies in a broad sense, as they are now often associated with falseness and futility. Having developed unimaginably complex virtual worlds, the Japanese have found themselves in a situation where dreaming about the future is no longer appealing because it can readily be visualized, packaged and sold in a matter of seconds”. Young Japanese are “astonishingly anti-consumerist” and “frustrated with the values of progress”, preferring to seek ‘satori’ (enlightenment). This is not an

isolated example. The pilgrim path to Santiago de Compostela in Spain, the monasteries of Mount Athos in Greece, spiritual and “intentional” communities in many countries, almost all deserted a few decades ago, are finding it hard to cope with demand. The young want to be captains of their soul, to use Dr. Ismail Serageldin’s expression, instead of being ruled by economic cost-benefit-analyses. Their indicator of progress is not economic growth, which has not delivered for them. In the last six years, the percentage of young Americans describing themselves as “lower-class” has doubled. Those in their 20s and 30s are less likely to have a high-school diploma than those aged 55-64. The American middle-class lifestyle, the dream of the global poor, is becoming unaffordable even in the USA (“*The Observer*”, London 27.4.14).

“Is it conceivable that the coming paradigm change will even invalidate the reductionist materialism on which our modern worldview is based?”

So the shift in focus from consumerism to inner growth is not surprising. My grandfather, the Baltic-German biologist after whom I am named, predicted 80 years ago that the key discoveries in future would be “diesseits” ourselves, i.e. in our inner rather than our outer worlds.

Our current paradigm is based on scientifically confirmed and mediated reality, but this is increasingly challenged, causing a counter-productive (and very unscientific!) backlash from a dogmatic thought-police. Prof. Rupert Sheldrake’s book *The Science Delusion: Freeing the Spirit of Enquiry* was bound to upset the scientific establishment. But the massive pressures which caused his TED Talk recording to be removed show a disturbing trend.

But is it conceivable that the coming paradigm change will even invalidate the reductionist materialism on which our modern worldview is based? This question has increasingly become taboo, because our scientific elites fear that any doubts will be used to validate creationism and superstition. But such taboos and fears reflect the weaknesses of the current worldview.

My grandfather, who studied the sensitive universes (Umwelten) of many animal species, and the irreducible complexities of their interactions, regarded the grandiose claims made for Darwinian evolutionism as “playing games, not science”. His work has inspired the science of biosemiotics.

“The ‘scientific’ reactions to Nagel’s book show that the defenders of old paradigms have not progressed in 500 years.”

The biologist Lynn Margulis, who collaborated with James Lovelock on developing the Gaia theory, thought that Neo-Darwinism would come to be seen by history as a “minor twentieth-century religious sect”.

In 2012 the US philosopher Thomas Nagel, a self-proclaimed atheist, published *Mind & Cosmos*, subtitled “Why the materialist neo-Darwinian conception of nature is almost certainly false”. He describes it as a “heroic triumph of ideological theory over common sense

(which) will come to seem laughable in a generation or two”. His critique is two-fold. First, physico-chemical reductionism is becoming increasingly unbelievable as science discovers more details “about the chemical basis of life and the intricacy of the genetic code”. Second, neither the development of consciousness nor of reason can be explained in reductionist terms.

The ‘scientific’ reactions to Nagel’s book show that the defenders of old paradigms have not progressed in 500 years. He was inter alia accused of being part of a “reactionary gang”, causing the US *New Republic* magazine to warn of a “Darwinist mob”....

This leaves us with a twofold task, remaining open to new paradigmatic challenges while also being prepared to defend the values and achievements of modernity in an increasingly disorderly world of transition. From 1989-91, many citizens in Eastern and Central Europe assembled at round tables to help steer their countries to a new future. But they had a functioning model to follow, while we will have to both build and implement a new world. As Winston Churchill said, it will not be enough to do our best. We will have to do what is necessary.

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