

Sea of Faith

Exploring Values, Spirituality and Meaning

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The future is all bad! thing will turn up!
MICAwber or Cassandra?
Responding to an increasingly uncertain future.
Conference 2015

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St Cuthbert's College, 122 Market Road,
Epsom, Auckland

SATURDAY 3 OCTOBER

11:00–12:00

Keynote: Kennedy Graham –
*Confronting our souls to save our hides:
a global perspective on an uncertain future.*

Confronting Our Souls to Save Our Hides:

Responding to an Uncertain Global Future

Kennedy Graham

1. *Dimensions of uncertainty*
2. *Uncertainty and the planet*
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Dimensions of Uncertainty

There are different dimensions to uncertainty. There is anthropocentric uncertainty. Humans cannot predict the future, and so it is forever uncertain. World War I came as a surprise. So did the Munich Olympics, the collapse of the Berlin Wall, 9/11, the first Fiji coup and the Wahine disaster. This gives rise to a cave-like fear, from which we protect ourselves through societal bonding and technological wizardry.

Primal fear could be tamed, or at least befriended. We came to terms with it, enveloping our local fears in the bosom of a cosmic security – an abiding assumption that all was well with the cosmos and our planetary home. During the Pleistocene, homo sapiens retreated from the ice but we were not afraid; it was simply the forces of Nature to which we were responding. Thereafter, our sense of cosmic security was at its highest, throughout the Holocene – 10,000 years of warm and stable climate.

All of that has come to end. It took three quick centuries for modern science, from Copernicus to the current classical model, to show that not all is as it seems. And in the fleeting span of a human lifetime, we now pause, at the entrance to a new, cosmic, cave, peering out on dark matter, dark energy and super-symmetry in the search for a Theory of Everything.

So we now have cosmic uncertainty. It is not primal, but existential. There is, today, a developing intellectual industry known as ‘existential risk’. The scientists conjured it up, the universities are packaging it, and the corporates and the military are taking it seriously.

Cosmic uncertainty takes three forms. There is new knowledge of the cosmos itself, spawning a new sense of infinite wonder. There is a dawning recognition that we are personally responsible for the degradation of our planet. And we are taking the identity and direction of our species into our own hands. The magnitude and impact of these developments are unprecedented and cannot be under-stated.

First I address the planet. It is the more traditional pursuit, more amenable to established analysis, and it has been my field.

Uncertainty and the Planet

This is where politics and law intersect. When I was in my formative years in the ‘70s and ‘80s, the world was a politically comprehensible place – tough, but comprehensible. A combination of traditional diplomacy with new law and institutional capacity reached out purposefully to tame atavistic power. Hammarskjöldian thought – spiritual, philosophical and political – added purpose and drama. If I have had a prophet in front of me, on the mountain path that is my life, it has been this Swede.

But the world failed to cement his vision. It was easier to accord him instead high personal esteem, posthumously, than to emulate him. We failed to respond to the challenge set by his intellectual clarity and political courage. We took the low road of muddling through.

Meanwhile the world changed. It is no longer as simple. When the League was born, 95 years ago, there were 42 constituent members. When the UN replaced it 25 years later, there were 51. Today, there are 193. That is not an optimal number for collective decision-making. And they nominally have equal status and voting rights, even though the largest is over 200,000 times more populous than the smallest. That is not a perfect way to instil credibility and impart authority. How can the global community have faith in its town hall when the configuration is deficient to the point of absurdity?

Yet any effort at reform, whether it is the General Assembly or the Security Council, occasions orgiastic writhing – implacable opposition from the privileged, rivalry from the aspirants, and a general mood of helplessness from the rest. Thus it has been for 70 years.

As the UN displays a continuing impotence, increasingly confining itself to humanitarian rather than strategic action, other entities move in to fill the void. Al Gore has neatly captured it in two phrases – Earth Inc. and Global Mind. The global corporates act in concert to minimise political regulation, then freely compete to exploit the planet's resources and dispose of the excessive waste. The global civil society sounds the alarm and urges remedial action, but it is no match. The UN reaches out to both, but tentatively and with no coherence or cohesion. The sisters from Bretton Woods, the IMF, World Bank and WTO, bless the corporates, keep the UN at a distance, and largely ignore the civil society.

And what of the international judiciary? Start with the World Court, which is not its real name. It is the International Court of Justice. International because the major states do not use it, and enter reservations to ensure a general immunity. The ICJ is used sparingly, and at the periphery. If it were truly a World Court, they could not get away with it. A new body, the International Criminal Court, extends individual accountability to leaders and to military personnel. It is a major step forward. But it is new, and largely lacks enforcement power. The major powers do not join, and treat it warily, even cynically, employing the referral mechanism accorded the Security Council to hold others accountable in the ICC while they are not.

And all this concerns the executive branch of government. What of the legislative branch? At the national level, the three branches are well-arranged in constitutional inter-action based on the principles of comity and mutual restraint. But at the global level, the legislature is undeveloped. The UN Charter opens in the name of “we the peoples of the United Nations”. But the UN then proceeds on the basis, almost exclusively, of the executive branches.

Where are the representatives of the world's people? The Inter-Parliamentary Union, an august body which preceded even the League of Nations, solemnly passes resolutions in Geneva. It has recently forged an ever-closer partnership with the United Nations through a formal cooperation agreement. But there is a way to go before the representatives of the peoples of the world are genuinely engaged in influencing global policy.

So the web of global governance in human affairs is fragile at best, dangerously weak at worst. Does this matter? In the evolution of political thought, the according of legitimacy to ever-larger scales of unit has proceeded with care and circumspection, and the process has been neither linear nor continuous. So why should we worry, when we are so protective of our small-scale sovereignties?

We should worry only if and when our technological capacity to wreak destruction runs ahead of our political capacity to prevent or remedy it.

And that is precisely where we are. In the mid-20th century, the rules were fashioned to manage the single major threat confronting the world – armed conflict among nation-states. But the ink on the Charter was still drying when Hiroshima ushered in a new era of globally-destructive power. Collective security, underpinning the Charter's doctrinal method of conflict management, rested on conventional weaponry whose potential damage would be limited to the locality. In contrast, a nuclear winter threatens the planet.

And the political timing was equally perverse: the advent of atomic power accompanied the bipolar division of the Cold War. So, collective security through conventional superiority ceded ground to collective defence through nuclear deterrence. Collective security is global; collective defence is sub-global. There is a world of difference; and the difference threatens the world.

Is there a way out? Possibly. In theory the UN Security Council is responsible for the management of armed conflict. The Council has three criteria: aggression, breach of the peace, and threats to the peace. The first two are judgements of fact pertaining to armed force; the former attributes culpability, the latter does not. The third extends to the risk, rather than the fact, of armed force. It allows subjective judgement at the precursor stage – the so-called ‘drivers of conflict’ and its ‘multipliers’. And it is this which accords the Security Council the potential to keep pace, dynamically, with the times. Whether it is doing so, well enough, is a matter of judgement.

Since the end of the Cold War, two major trends have occurred with regard to the Council.

- First it has widened, allowing itself greater latitude in determining what constitutes a threat to the peace. This has come to include internal civil war, unconstitutional regime change, terrorism and weapons of mass destruction. These determinations have all essentially concerned the use of armed force, but they have ventured beyond the simplicity of purely inter-state conflict.
- Secondly it has deepened, allowing itself a new empowerment in responding with measures to prevent the threat from materialising. This has included making decisions, binding on all states, pertaining to their domestic legislation. These decisions have, to date, addressed terrorism, weapons of mass destruction and, more recently, ‘foreign terrorist fighters’. Stefan Talmon has opined on the Security Council as ‘global legislator’.

The question now is how much the Council judges it necessary to use its wider, deeper powers as it ventures across the savannah. In has, in recent years, declared a pandemic disease to be a threat to peace, and it is inching towards declaring climate change to be such a threat.

But with regard to climate change, we remain conflicted. Several leading states have placed the subject under the Council’s nose for eight years now, and the Secretary-General has declared that, in his view, climate change is already a threat to peace and security. The Council has gone as far as to declare it to be a ‘risk multiplier’, but stops tantalisingly short of agreeing that it is in itself a threat, which would accord it binding powers.

In July, I called on the NZ Government, which was president of the Council for that month, to get the Council across the line and declare climate change a threat to the peace. New Zealand was convening a debate on the security of small island states. The debate inevitably focused on sea-level rise as an existential threat to their very survival. The Council did not so declare, on that day, but it is only a matter of time before it does, under the presidency of a larger, more influential, state.

The global challenge goes beyond this. As we depart the Holocene and enter the Anthropocene with all its uncertainty for humankind, we need to develop, with urgency, an effective form of global governance for the planetary stewardship we have so determinedly carved out for ourselves.

This requires a change of mind-set – a sense of planetary responsibility, a new global political mentality. Thought is being given to this in the form of two concepts: the planetary boundaries and Earth governance. Nine planetary boundaries have been identified which we cannot transgress without irrevocable damage to the planet. We have already crossed four (ozone depletion, GHG emissions, biodiversity loss and the bio-geochemical cycle). Three others (ocean acidification, fresh water, land-use availability) are close to the limits. For the remaining two (aerosol loading and chemical pollutants), we lack the means of quantification to know.

The precursor to this is the ecological footprint. After ten millennia of population and economic growth, we crossed the ecological boundary, the planet’s carrying capacity, about three decades ago. Over the ensuing 30 years we have strung up a global ecological overshoot of 50%. The Club of Rome’s ‘Limits to Growth’ was maligned and dismissed, back in the ‘70s. Over the past decade or so, it has been acknowledged to be right. Yet we turn away from its implications.

Above all, we do not address the global population issue, with its statistical projection from 7.3 billion today to 9.8 b in 2050. If we have a 50% overshoot, that means our carrying capacity today, on current technology and lifestyle, is some 4.8 b. Yet, with all the degradation around us, we feverishly plan for 10 b. New Zealand justifies dairy emissions on this basis – a plucky little country of 4 m. feeding six times its own number.

I do not think the 10 b. will materialise. The constraints are already setting in. I enquired recently about the methodological basis of the UN demographic projections. They do not factor in such constraints. And I enquired about the extent of UN policy planning on global population. Effectively, there is none, any more.

What, then, of the natural constraints? When we ask which of the planetary boundaries we have under active legal management in the sense of some kind of global governance, the answer is just three: ozone, GHG emissions, and biodiversity. We have framework conventions for these, albeit of modest effect. With a few others, we have soft law in the form of UN declarations. With the remainder, there is scientific enquiry and some political concern but no legal action underway.

Are we to develop an adequate form of stewardship to preserve and protect the planet? If so, we shall almost certainly need to develop a stronger system of governance, involving global executive action through the Security Council, rather than relying on international negotiation. Some 200 sovereign entities squabbling like

geese in a 19th-century, zero-sum ruckus that resembles old-style trade negotiations – otherwise known as multilateral environmental diplomacy – will not make the cut. The global commons requires more.

There is increasing apprehension about the planet's tipping-points; the so called, 'abrupt, non-linear' change to the ecosystem that might trigger an irreversible trend towards a catastrophic climate that would, simply, be untenable for human civilization. It is one thing for the sea level to rise, whether 0.5 or 1.0 m. by 2100 as estimated by the IPCC on a linear basis – or even by 10 to 15 m. over a period of centuries if Antarctic and Greenland ice-melt intensifies. It is a qualitatively different matter if methane release occurs in large quantity from the northern tundra or seabed.

It took the IPCC until 2014, with its 5th Assessment Report, to identify methane release as one of the nine potential tipping-points. And it assigns it a 'very low' probability. There are, however, recent reports from scientific groups undertaking the latest field-site inspections that indicate such release is beginning to occur.

The art of 'existential risk management' might suggest that the international community factor this into its formal deliberations, however low a probability it chooses to assign its occurrence. So, the 'existential survival' question needs to be posed, now and not later: if the world woke up, over a period of, say, six months, to clear evidence that large-scale methane release was occurring, what is to be the political response?

What would be not only the substantive response but the procedural pathway to it? Who is to meet? By what method of empowerment are they to assemble, consult, deliberate and decide? What would be their legitimacy? What might be the powers they assume? Would that assumption require popular ratification? Who would give it, what kind of empowerment, on what conditions, and through what procedure for revocation? And what, in fact, could the world, could humanity, actually do, substantively, in any event? How do you battle your own methane burp with armed force, which simply causes more belching?

If we are to address this grim scenario, we must acknowledge two potential routes. The first is to apply the full range of existing political and legal structures and powers at the international level that we currently have. In that scenario, our national leaders (times 193) would address their people, appealing for calm, summoning strength and resolve, and declaring confidence in a positive outcome through a rapid redress of the situation. Our national parliaments would meet, discuss and debate, and accord the national leaders new, and perhaps revolutionary, emergency powers to act on behalf of the nation(s). Assume, for the moment, that we avoid mutual recrimination.

But at the global level, what? The UN Secretary-General would presumably summon an emergency meeting of both the General Assembly and the Security Council. But what would the Security Council do? Would the General Assembly, to which the Council strictly is responsible, decide to appoint an emergency group of leaders to act on behalf of humanity? Perhaps that is already the Security Council. So, would the Council meet, continuously, at head-of-government level, until serious decisions are made?

Who would be the spokesperson, the representative, of humanity? Would it be the Security Council President or a grouping of the leaders of the major powers – say the US, EU and the BRICs? Would the Secretary-General be accorded political powers or continue to be kept as a public servant?

If there were a collective judgement that drastic action by all societies could ameliorate the situation over a period of, say, 50 years, how might the global leadership implement and enforce its decision-making?

None of this speculation is especially pretty, but it has to be addressed since the prospect of its occurrence is not entirely remote. If we are, indeed, in a global ecological crisis, and if the prospect of serious environmental calamity is discernible, whatever the probability factor, then is it not a rational action to plan, on a contingent basis, for some form of global leadership so that some form of global response might occur?

Or not? The counter-factual will be to muddle on through; to leave it to our time-honoured Westphalian political structure, derived from the 17th century CE and updated in the 20th, to make national decisions, times 193, and watch the invisible hand of collective decision-making solve the global problem in the 21st – accompanied by divine supplication, and nervous observation.

If there is a defining characteristic of our contemporary age, it will prove to have been free-riding through the global commons. If the global commons collapses as a result, the defining characteristic of the next political

age will be global governance with the mandate and authority to outlaw that. The unknown will be the state of the global commons at that stage.

Uncertainty and the Species

Meanwhile, we are engaging in self-determination of a whole new kind.

Once we cracked the genetic code, all bets were off. The helix has become our Cheshire cat. Creatures are becoming, as Humpty Dumpty would have it, exactly what we choose them to be. In the course of our lifetime, we have learnt to transplant vital organs, with the human head the final and perhaps imminent goal. We cryogenically preserve the elixir of life for fertilisation, with anybody at any time. And so we change the direction of our own species, and others. It is as if God has run amok – a whole new take on the meaning of creationism.

The legal and institutional capacity to curb the freedoms on this new-found power is laughably weak. Cultures clash, personal interests become unleashed, scientific curiosity drives relentlessly and sometimes recklessly, onward. There are some who say we are on the cusp of immortality. In a few decades, they say, our bodies may be able to re-generate sufficiently well to live on, indefinitely. One's only demise will be through accident or stupidity.

Another uncertainty inspires shock and awe. Those who remember HAL in '2001: a Space Odyssey' still entertain the notion of the human clash with computers. Elon Musk has called artificial intelligence our 'greatest existential threat'. Stephen Hawking has said: "full artificial intelligence may spell the end of the human race". Bill Gates has said he is concerned about 'super intelligence' which may be only a few decades away.

The use of artificial intelligence in military combat today, with UAVs (weaponised drones) and LAWS (Lethal Autonomous Weapons Systems) raises the spectre of removing direct human control over human killing. LAWS have been described as the third revolution in warfare, after gunpowder and nuclear weapons. The required technology, already demonstrated in self-driving cars, together with tactical control contained in Deep-Mind's DQN system, is capable of robotic urban search-and-destroys missions. The Geneva Conventions require an attack to satisfy three criteria: necessity, discrimination and proportionality, and the 1977 Protocol bans weapons that violate the 'principles of humanity and the dictates of public conscience'. UN negotiations are ongoing, with argumentation over the meaning of 'meaningful human control'. It is unclear how this will end.

Others contend that the real worry is not a scenario of clever and mean-spirited robots concluding that humankind is dispensable and acting as terminator. The concern is more prosaic: that a zealous computer will overdo its task to the point of absurdity and planetary danger. To quote Max Tegmark: "What you should fear is a computer that is competent in one area to a very bad degree". Or Oren Etzioni: "These doomsday scenarios confuse the science with remote philosophical problems about the mind and consciousness. If more people learned how to write software, they'd see how literal-minded these overgrown pencils we call computers actually are". Either way, humanity has developed no political-legal mechanism for governing this emerging scientific power, whose proportions are akin to Greek fable.

What does the United Nations have to say on human and artificial intelligence? The human genome, said UNESCO in 1997, underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, the human genome is the common heritage of humanity. Practices which are contrary to human dignity, such as reproductive cloning of human beings, shall not be permitted.

In 2005, UNESCO adopted the Universal Declaration on Bioethics and Human Rights. The aim was to provide a universal framework of principles and procedures to guide the formulation of national legislation. States recognized the importance of freedom of scientific research and the benefits derived therefrom, but they stressed the need for this to occur within the framework of ethical principles in order to safeguard the interests of future generations. It recognised the importance of biodiversity and its conservation as a 'common concern of humankind'.

The World Health Assembly, in 2004, acknowledged that 'genomics raises concerns about safety and has complicated and new ethical, legal, social and economic implications.' The Assembly called on Member States

to facilitate greater collaboration among the private sector, the scientific community, civil society, and ‘other relevant stakeholders’.

In 2005, the UN General Assembly expressed concern over the serious medical, physical, psychological and social dangers that human cloning may carry for human dignity. It therefore called on all Member States to prohibit all forms of human cloning inasmuch as they are incompatible with human dignity and the protection of human life.

So, the UN is at least expressing an awareness of the dangers of this, and is moving to curb them.

Uncertainty and the Cosmos

As we focus on ourselves, we also find there is a cosmos beyond which may, perhaps, be incomprehensible. Those who remember HAL will also recall the moment Neil Armstrong stood on the Moon. We carry the image of Buzz Aldrin standing before the camera. And we carry, forever with awe, the breath-taking image of Earthrise from Apollo 8. Yet, in our foray into the cosmos as one species, we planted a national flag.

So, are we alone? The search for other life has taken one giant leap in recent months. In 1986 I visited the SETI Centre in California. I discussed the search programme with the Director, John Billingham, his hopes and expectations and frustrations. Those were the days when NASA was serious. Now, it is into cost-cutting. That was about the year the Prime Minister of Grenada was ridiculed for calling on the UN General Assembly to consider the need for acknowledging extra-terrestrial life. Today, some three decades later, humans accept it as a given, and SETI has recently been granted new sustenance, in the form of 21st-century-style private philanthropy, from a Russian oligarch. It has the professional blessing of the world’s leading astronomers and cosmologists. The recent discovery of Kepler 452-b brings it home. The most likely life, on current knowledge, is only 1,400 light-years away. Shame the human life-span is so fleetingly short.

The ultimate human uncertainty is this. Assuming other life forms out there and having regard to the Drake Equation, are they unknowingly waiting, to be discovered by Sapiens – we who dwell on planet Earth on the outskirts of one of the spiral arms in a modest galaxy, known parochially as the Milky Way? Or are they already aware of us? If it is the former, can we be trusted? If it is the latter, can they? Are we, with our weird combination of aggressive and transcendental capacity, ready for this? Do we qualify as good cosmic citizens, or are we riff-raff?

The professionals are taking this seriously. The ‘Declaration of Principles Concerning Activities Following the Detection of Extraterrestrial Intelligence’ has been crafted by the International Academy of Astronautics, with the support of the International Institute of Space Law. The declaration proposes a set of nine post-detection protocols. It is a commendable set of thoughtful global thinking, on the cusp between science and politics.

First, international consultations should be initiated to consider the question of sending communications to extraterrestrial civilizations. Such consultation on whether a message should be sent, and its content, should take place within the UN’s Committee on the Peaceful Uses of Outer Space (COPUOS) and within other governmental and non-governmental organizations. They should accommodate participation by qualified, interested groups that can contribute constructively to these consultations. They should be open to participation by all interested States and should be intended to lead to recommendations reflecting a consensus.

The General Assembly should then consider making the decision on whether or not to send a message to extraterrestrial intelligence, and on what the content of that message should be, based on recommendations from the Committee. If a decision is made to send a message to extraterrestrial intelligence, it should be sent on behalf of all humankind, rather than from individual States. The content of such a message should reflect a careful concern for the broad interests and wellbeing of humanity, and should be made available to the public in advance of transmission. As the sending of a communication to extraterrestrial intelligence could lead to an exchange of communications separated by many years, consideration should be given to a long-term institutional framework for such communications. And no communication to extraterrestrial intelligence should be sent by any State until appropriate international consultations have taken place.

Finally, States should not cooperate with attempts to communicate with extraterrestrial intelligence that do not conform to the Declaration’s principles. In their deliberations on these questions, States participating in this Declaration and UN bodies should draw on the expertise of scientists, scholars, and other persons with relevant knowledge.

Perhaps we are beginning to mature.

Confronting our Souls

Elon Musk also made this observation: “There have only been about a half dozen genuinely important events in the four-billion-year saga of life on Earth: single-celled life, multi-celled life, differentiation into plants and animals, movement of animals from water to land, and the advent of mammals and consciousness. The next big moment will be life becoming multi-planetary, an unprecedented adventure that would dramatically enhance the richness and diversity of our collective consciousness. It would also serve as a hedge against the myriad – and growing – threats to our survival. An asteroid or a super-volcano could certainly destroy us, but we also face risks the dinosaurs never saw: an engineered virus, nuclear war, inadvertent creation of a micro black hole, or some as-yet-unknown technology could spell the end of us. Sooner or later, we must expand life beyond our little blue mud ball – or go extinct.”

When I lived in Geneva a few decades back, I took my son into the experimental tunnel at CERN. I summoned the courage to ask the fearful question: might our blind quest for knowledge vaporise us in an instant? The Director chuckled gently. Yet I still wonder. They asked themselves this at Los Alamos. After all, it is clear by now that the cosmos takes no prisoners. Quantum mechanics, relativity and gravity do not, as yet, mix and match. Super-symmetry is today’s siren call. Parallel universes make classical scientists shudder. We have had 13.7 billion years to become aware of the cosmos. We believe there is another 100 billion to go, which ought to be enough. We do not know whether it will be the Big Crunch, or the Big Freeze, or the Big Rip. There remains much we do not know, including whether we’ll be around.

How hopeful or how fearful need we be? What should be the prescriptive nature of our response? Should it tilt towards Micawber or Cassandra? If not, then who?

In search of an answer, I adopt a second conceptual distinction – the qualitative difference between the normative and the imperative in human reasoning – in our value judgements and our policy prescriptions. Since the beginning of political thought, we have based all our reasoning on the normative, otherwise known as the prescriptive – how humans ought to live, as individuals, as societies, and in our relations between societies.

Now, technology is outstripping our political evolution. Our ability to plan rationally and inclusively for an uncertain future is proving inadequate before the magnitude and pace of such change.

Yuval Noah Harari identifies four major revolutions which homo-sapiens has experienced: cognitive, agricultural, scientific, and digital. From the first, we think and speak. From the second, we organise and produce. From the third, we experiment and exploit. From the fourth, we compute and share. That sharing rests on everything that has gone before. It signifies a coming-together, not just of information but of culture, a physical coming together, perhaps before we are culturally ready. There is as much danger in this as opportunity.

With all of the uncertainties, and the need for global unification, what is a species to do? Probably, I think, experience a spiritual revolution. The situation requires a sea-change in mental framework, moral compass and political identity – across all nations, among all humans. Underlying this, there will need to be an awakening cosmological self-perception, and corresponding sense of humility. To save our hides, we need to confront our souls – perhaps the collective human soul. We need to explore how we might do this – how to steer a course between Micawber and Cassandra for collective salvation.

If we are to steer such a course, neither too optimistic nor too pessimistic, who would be its embodiment? I choose Churchill, for his stern and resolute good cheer. He replaced a false optimism, known as appeasement, not with a terminal pessimism but an open and candid acknowledgment of the magnitude and urgency of the task, and a steely determination not to shy away from it. This is what we need, today. There is too much denial at present, of various kinds – including a type of Edwardian reverie.

But who speaks for the world in the 21st century? Churchill, of course, was a national leader, speaking for his country, if addressing the world. The famous leaders of the 20th century were all national figures: Ghandi, Kennedy, King, Gorbachev. Only Hammarskjöld spoke forcefully as UN leader, the nearest thing to ‘speaking for the world’; yet those qualities are rare.

Are there civilizational leaders? Pope Francis stands out with his Encyclical, 'Laudato Si'. But the Pope is sub-global in position and role. To some extent, we are in a state of spiritual disarray. There is a weariness of faith, countered by religious extremism. Can we have a 'faith through science'; a scientific-based faith?

Well, there is a crisis of confidence in science, as well. Adam Frank and Marcelo Gleiser warn that there is a crisis 'at the edge of physics'. George Ellis and Joseph Silk have called for 'defending the integrity of physics'. They warn against taking 'scientific speculation' beyond the limits of the scientific method, which not only denigrates science but confuses human thinking.

Despite this it is likely that, if we are to save our hides through confronting our souls, it will be the forward-looking thinkers of the world, the Joachim Schellnhübers and Johan Rockströms, relating science and ethics into a political coherence, who will be guiding us. It is an intriguing twist of historical fate that it is not the generals who are advising the Security Council in the 21st century but the scientists.

We have, it seems, a way to go before we attain a true level of cosmic insight, a harmony among the sciences, and a rapport between science, philosophy and faith.

Saving our Hides

If we confront our souls, we shall stand a better chance of saving our hides. We need education, and we need new political thinking, and a new form of transcendent thought. And that needs to inform our understanding of the relationship between scientific insight and faith-based reflection and belief.

A global education

Some 3 billion people, 40% of humanity, have not heard of 'climate change', even though a sizeable proportion of them will have experienced it. The line between extreme weather from the Old Testament and the latest IPCC report is too fine a point for most. Climate change usually comes in around 10th to 20th on the global households' lists of concern.

Should leaders do more in education about the carrying capacity of the planet, the population growth rate, and the planetary boundaries? Of course they should. Will they get re-elected? Unlikely.

A new political spectrum

Our underlying ignorance is reflected in a persistently simplistic retention of the outmoded conceptual framework we use for judging, politics. It is 250 years since we began to use the 'left-right' spectrum for analysing political argumentation: the individual v the collective, freedom v equality, the market v regulation, small v big government. These concepts are correlated with the underlying philosophical affiliation – conservatism v liberalism.

The left-right spectrum has proven adequately useful for analysing national politics of the 19th and 20th centuries – the normative challenge of how we live, the quality of life. It is useless, even counter-productive, for analysing the global politics of the 21st – the imperative of whether we live, the survival of life. The concept of well-being must henceforth be subordinate to the concept of survival – the politics of aspiration to the politics of precaution. But we continue to perceive the latter through the prism of the former. It is like the clock in a Dali painting – lacking in depth-of-field.

Until we superimpose a vertical axis of sustainability over the horizontal axis of freedom/equality, we shall continue to perceive the challenge of survival as if it were a well-being issue. We continue to see the modern reality through a distorting lens. Only when we judge ourselves – individuals, nations, humanity – by the sustainability axis, shall we bring reality into focus. Only then shall we recognise the urgency and magnitude of the challenge and begin to make sensible decisions.

Harmony between religion, science and politics

It is not only Christianity that needs to green, it is all religions. The degradation of the planet is not faith-based. The Aral Sea competes with the Dead Sea, the Gulf of Mexico and the smog of Beijing for first prize in environmental degradation. Each represents a different civilizational origin.

The relationship between science and faith remains fraught. And so is the relationship between the various faiths themselves. Can faith and science intersect or is there a gulf between them?

I end where I began. We are on the cusp of unprecedented change. There is a general and pervasive feeling, an apprehension, of change, of transformation. Some are unaware. Some are dismissive. Some are consumed with dread. Some are blithe. For myself, I believe we need a sobered, purposeful resolve, of an unprecedented kind. Faced with global challenges but equipped with international capacities, we shall ensure a transformation to a new level of understanding through global self-governance, or we shall fail to preserve everything we hold dear. We can court disaster, or we can react in revolutionary chaos, or we can plan with rational foresight. Those are the choices.

A 'defiance of faith'

If I have a faith, it is in the blending of the human heart and mind. That faith would turn back upon itself. It would focus on the power and the merit of human rationality and reasoning, but with a sense of compassion and self-awareness, an understanding and acceptance of the new uncertainties we now face. As Hammarskjöld said in his seminal Chicago speech over half a century ago, "We, like our ancestors, can only press against the receding wall that hides the future." His Meditation Room, at UN headquarters, sublime in its beauty and simplicity, symbolises this for us.

