



# laetus in praesens

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## Anticipating Future Strategic Triple Whammies In the light of earthquake-tsunami-nuclear misconceptions

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Prepared on the occasion of the disaster arising from the [Tohoku earthquake and tsunami](#) in Japan (2011)

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## Introduction

Beyond deploring the horrendous destruction and loss of life and livelihoods in Japan, the question is how to derive insight from the event. Of special relevance is the manner in which the event overwhelmed assiduous provisions in anticipation of any single crisis. The point was originally well made by John Platt:

What finally makes all of our crises still more dangerous is that they are now coming on top of each other. Most administrations...are not prepared to deal with...multiple crises, a crisis of crises all at one time...Every problem may escalate because those involved no longer have time to think straight. (*What we must do*. *Science*, 28 November 1969, pp. 1115-1121).

The moment has apparently now been recognized by the UN Secretary-General Ban Ki-moon who recently declared:

We are living through an era like no other. There are multiple crises: a food crisis, fuel crisis, flu crisis and financial crisis... Each is a crisis we have not seen for many years, even generations. But this time they are hitting the world all at once. We have never seen any era when we have been hit by all these multiple crises at the one time... Peacekeeping has experienced serious setbacks. Today we face mounting difficulties in getting enough troops, the right equipment and adequate logistical support. This supply has not kept pace with demand. (*United Nations peace missions in peril*, *The Guardian*, 8 July 2009)

Arguably **it is not the safety of the technology that needs to be the subject of the urgent "stress tests" currently planned, rather it is the strategic mindset which should be subject to some form of "stress test"**.

Is strategic planning designed for 4-fold whammies, 6-fold whammies, etc -- to which many already considered themselves to be explicitly exposed? Or is it deliberately, unless challenged, designed primarily for single whammy crises?

This exploration follows on a commentary on risk assessment triggered by the flooding in Australia earlier in 2011 (*Disastrous Floods as Indicators of Systemic Risk Neglect*, 2011).

## Multi-whammy preparedness: a Strategic Whammy Scale?

Employing urban jargon, it might be said that the skills of planning, decision-making and emergency preparedness now appears to focus on the single "whammy". In that jargon, there is recognition of the knockout effects of a "double whammy". Japanese society has been faced with a "triple whammy" as variously reported (Linda Sieg and Nathan Layne, *Can Japan find "New Deal" after triple whammy?* *Reuters*, 14 March 2011; Lore Croghan, *Financial experts estimate Japan's triple natural disaster damage at about \$180B*, *New York Daily News*, 15 March 2011). The world may anticipate more of this kind -- perhaps of greater complexity, in the spirit of Platt's

argument. The multiplicity of "whammies" could even be usefully distinguished by a form of [Richter Scale](#) of emergency complexity -- raising the question of how society would handle an eightfold whammy on that scale. Should that scale be appropriately named the **Strategic Whammy Scale**?

A **whammy** is understood as being originally associated with a problematic -- even evil -- occurrence or setback. As such it is consistent with the more conventional strategic identification of "[wicked problems](#)". In the form of a **double whammy**, as with a double blow in boxing, it is all the more deadly and difficult to counteract. The double whammy is recognized as a combination of two usually adverse forces, circumstances, or effects.

It has notably been successfully used in electoral campaigns in the UK to characterize the agenda of an opposing party. (Melanie Phillips, *A Double Blow for British democracy*, *Daily Mail*, 3 November 2010; *Lexington: A Double Blow*, *The Economist*, 22 July 2010; *Terrorists strike double blow*, *Dawn.com*, 26 January 2011). Reference has been made to a **triple whammy** in the UK and elsewhere (Sean O'Grady, *Britain's Economy Faces Triple Whammy*, *Bloomberg Businessweek*, 22 July 2010; Amantha Perera, *East Reels Under Triple Whammy*, *IPS*, 27 January 2011). A tsunami killing 186 people in the Pacific in 2009 was triggered by a combination of three earthquakes (*Triple whammy triggered Samoa tsunami*, *Agence France Presse*, 18 August 2010).

The phenomenon of a triple whammy has been notably recognized in personal health, both in relation to renal failure and to aging (Katarzyna K Lobo and Gillian M Shenfield, *Drug combinations and impaired renal function - the 'triple whammy*, *British Journal of Clinical Pharmacology*, February 2005; Robert McKelvie, *Fight the Triple Whammy of Obesity, Inactivity and Aging*, *Suite101.com*, 27 November 2010). These examples are perhaps to be considered, ironically, as systemically equivalent to issues of "waste management" and "decommissioning" on an industrial scale.

There has also been recognition of a "**quadruple whammy**" (Donal Buckley, *Property Investors Suffer a Quadruple Whammy*, *Independent.ie*, 8 April 2009; Steven W. Johnson, *Fuel Costs and Food Prices: a quadruple whammy*, *Qondio*, 25 April 2008; Adrian Blau, *A Quadruple Whammy for First-Past-the-Post*, *Electoral Studies*, 2004; Jennifer Langston, *The Money Squeeze: Seniors face financial 'quadruple whammy'*, *Seattlepi.com*, 6 April 2008). The pattern has been extended to acknowledgement of a "**quintuple whammy**" (Jean Floten, *'Quintuple whammy' threatens BCC*, *Bellevue Reporter*, 6 August 2008; Simon Evans, *Wine Trade Warns of Tax 'Quintuple Whammy'*, *The Independent*, 3 February 2008). References are also to be found to a "**sextuple whammy**".

For John Vidal (*What will spark the next Fukushima?*, *The Guardian*, 14 March 2011):

Next time the disaster may have nothing to do with an earthquake or a tsunami, but be because of terrorism, climate change, a fatal error in an anonymous engineering works, proliferation of plutonium or a deranged plant manager.

There is an irony to using the whammy metaphor in the case of the Japanese disaster given the renowned familiarity with the martial arts within that culture. A single whammy is relatively trivial within that framework -- unworthy of a "Black Belt". One question is whether martial arts insights into multi-whammy engagements with an opponent translate fruitfully into strategic thinking. In the case of karate, as one martial art, it recognizes 108 [katas](#). These are typically described as a set sequence of karate moves consisting of kicks, punches, sweeps, strikes, blocks, and throws -- all meriting interpretation as "whammies" to which a society might be exposed, when interpreted metaphorically in a strategic sense. What is the level of "multi-whammy expertise" required by the [black swan events](#) identified by Nassim Nicholas Taleb (*The Black Swan: the impact of the highly improbable*, 2007)?

Given the acknowledged skills of Japanese society in planning for earthquakes, the many countries with nuclear power agendas have now urgently focused on the safety of their own installations. Why now? Whilst entirely appropriate as a stop-gap consideration, **the concern in what follows is with the strategic mindset dangerously preoccupied with single whammy thinking**, occasionally extending to double whammy preoccupations. With respect to carefully designed fail-safe technology, the Japanese disaster highlighted one of the 36 "laws" of system failure: *When a fail-safe system fails, it fails by failing to fail safe* (John Gall, *The Systems Bible*, 2003).

Within a martial arts framework, assuming the opponent is a "wicked problem" complex, what strategic complexity might be required to respond appropriately? Can the martial arts of the Japanese tradition suggest the strategic nimbleness required by the future -- and required by the Japanese to respond to future "multi-whammies"? How might this compare with the preferred simplicity of single-issue strategic "shoot-em-ups"? Although an increasingly widely used metaphor, how might whammy and multi-whammy experience be related to any more systemic focus on exposure to vicious problems cycles and interlocking loops (*Examples of vicious problem cycles and loops*, 1995)?

At the time of writing, Japan has raised the alert level at the stricken nuclear plant from four to five on the seven-point [International Nuclear Event Scale](#) (*Japan raises nuclear alert level*, *BBC News*, 18 March 2011). Appropriately *The Economist* frames its account of the disaster as being "hydra-headed" (*Nature Strikes Back*, 19 March 2011). It might be asked whether any "Strategic Whammy Scale" should reflect the strategic complexity and wider impact of a potential disaster -- whether applied to a collectivity or especially as experienced by an individual. Perhaps more subtle would be a scale reflecting the degree of surprise (*Engaging with the Inexplicable, the Incomprehensible and the Unexpected*, 2010).

Similar suggestions have been made and summarized in relation to the [The Goat Rodeo Complex/Difficult Situation Scale](#) articulated by [Vinay Gupta](#). In discussing the effect on the financial markets of such disasters, Jeff Sommer notes the worst-case scenario facility ("WRST") offered on Bloomberg terminals to enable investors to measure the level of risk in their portfolios according to various "what if" hypotheses (*Seeing disaster by the numbers*, *The Global Edition of the New York Times*, 21 March 2011). *The Economist* has also been led to comment on the interest of investors in hedging "tail risk" with respect to "fat tail" ("black swan") events (*Worst-case scenarios: Fat-tail attraction*, 24 March 24th 2011).

Beyond the possibilities suggested above by John Vidal, there is the potential impact of asteroids on Earth. Using a remarkable graphic,

the point is made by Mark Fischetti (*Death by Asteroid: what we don't know could hurt us*, *Scientific American*, March 2011):

Researchers have identified more than 2,300 asteroids and comets that are big enough to cause considerable damage on Earth and could possibly hit us... Scientists estimate that they have found fewer than 1 percent of the projectiles.

## Transcending the obvious

Beyond recovery efforts in Japan, it is curious to note that **the widespread debate enabled by the media has focused primarily on the risks associated with the "nuclear option"** -- not on the more general learnings for which it constitutes but one example. The nuclear option of course forms part of the ongoing debate on energy resources, as variously articulated by:

- the **nuclear industry**, determined to portray nuclear power as zero risk, or failing that (as has now proven to be the case) as the most cost-effective option with minimum risk. Of course, with the level of disaster in Japan, this argument appears increasingly questionable. As stated by Chancellor Merkel in stressing : that Germany's nuclear plants were among the world's safest, she declared that "when, in Japan, the apparently impossible becomes possible and the absolutely unlikely reality, then the situation changes" (*Japan crisis: Germany to speed up nuclear energy exit*, *BBC News*, 17 March 2011).

However emphasis continues to be placed on the absence of viable alternatives. In the midst of the Japanese crisis, claims for their viability were even labelled a lie by the French Minister of Foreign Affairs (*Alain Juppé : "Dire aux Français qu'on va sortir du nucléaire, c'est leur mentir"*, *SudOuest*, 15 mars 2011). In the same period, **John Ritch**, Director of the **World Nuclear Association**, courageously declared, seemingly in the absence of information for which others were pleading, that the only problem in the use of the old reactors under threat of meltdown had been failure of a very simple cooling system which was no longer a feature of modern reactor design (*New Fire at Japan Nuclear Plant*, *CNN*, 15 March 2011). From this the world is led to assume that nuclear is being reframed as zero risk -- despite the disaster.

It is unfortunate for the industry argument made by Ritch that it is made in a context of increasing recognition of a pattern of denial, cover-up and falsification of records, as reported by John Vidal and Damian Carrington (*Japan radiation leaks feared as nuclear experts point to possible cover-up*, *The Guardian*, 14 March 2011):

Nuclear experts have thrown doubt on the accuracy of official information issued about the Fukushima nuclear accident, saying that it followed a pattern of secrecy and cover-ups employed in other nuclear accidents.... The country's government has previously been accused of covering up nuclear accidents and hampering the development of alternative energy. In a **newly released diplomatic cable obtained by WikiLeaks**... the Japanese government department responsible for nuclear energy - has been "covering up nuclear accidents and obscuring the true costs and problems associated with the nuclear industry".

A more important conclusion from Ritch's comment, as a leading representative of the nuclear industry, is that **the 400 installed reactors around the world are all effectively site-tests in anticipation of problems which would enable future designs to be improved** -- to replace older models, now beyond any warranty period. It would of course be regrettable that any "problems" emerging over a longer test period -- especially in the seismic regions where 100 reactors are already located (and more than 350 are planned) -- should lead to loss of life. This would of course not occur with the replacement models in which society is encouraged to invest. This implies a heavy investment by society in "test equipment" awaiting instructive failure, however costly. A strategy of **planned obsolescence** -- gone fatally mad?

Framed otherwise, **the effective life of a reactor is necessarily much shorter than advertised** -- only a few years -- in order to benefit from such new safety features in a timely manner. A major difficulty with this logic is the **dependence engendered on very expensive installed capacity** -- making it difficult, if not impossible, to replace reactors according to the rhythm of design improvements **considered essential for safety reasons**. There is no provision for **"product recall"** -- in contrast with any automotive technology revealing dangerous defects. Society cannot afford to "renew" its nuclear technology as frequently as required. It is therefore held to be at fault by the nuclear industry, declining all responsibility for the consequences of such negligence.

- the **anti-nuclear / renewable lobby**, having long promoted the need for alternatives and the dangers of the nuclear option -- dangers previously denied or minimized by the nuclear industry. The campaign has been notably framed as "abandoning the nuclear option".\*\*\*

It is appropriate to note that some people, otherwise identified as opinion-makers for the green agenda, have argued controversially in support of the realism of the nuclear option as having less immediately problematic effects on the environment than coal and gas. They include **James Lovelock** and **Jonathon Porritt**. In mid-crisis, for example, the argument of **George Monbiot** (*Japan nuclear crisis should not carry weight in atomic energy debate*, *The Guardian*, 16 March 2011) is:

I despise and fear the nuclear industry as much as any other green: all experience hath shown that, in most countries, the companies running it are a corner-cutting bunch of scumbags, whose business originated as a by-product of nuclear weapons manufacture. But, sound as the roots of the anti-nuclear movement are, we cannot allow historical sentiment to shield us from the bigger picture. Even when nuclear power plants go horribly wrong, they do less damage to the planet and its people than coal-burning stations operating normally.

Framed in this way, by either party, the focus is on the anticipated level of energy resources essential for the future needs of human civilization. Understanding of "essential" is nuanced by each party to mean either "unlimited energy resources" to facilitate unconstrained, exponential "growth", or "constrained use of energy" by judicious redesign to guarantee a "sustainable future". George Monbiot continues his argument with a later summary (*Why Fukushima made me stop worrying and love nuclear power*, *The Guardian*, 21 March 2011).

In commenting on the events in Japan, [Bill McKibben](#) (*Japan's horror reveals how thin is the edge we live on*, *The Guardian*, 19 March 2011), as author of *Eaarth: making a life on a tough new planet* (2010) offers an example of the only two strategic options currently considered feasible:

One is to attempt to widen it with more technology. If the Earth's temperature is rising, maybe we could "geoengineer" the planet, tossing sulphur into the atmosphere in an effort to block incoming sunlight. It's theoretically possible. But researchers warn it could do more harm than good, and maybe this isn't the week to trust the grandest promises of engineers, not when they've all but lost control of the highest technology we've ever built... The other possibility is to try to build down a little: to focus on resilience, on safety. And to do that - here's the controversial part - instead of focusing on growth.

**To what extent do both exemplify different forms of tunnel vision**, understood metaphorically to denote the reluctance of the narrow-minded to consider alternatives to a preferred line of thought or predisposed to a favoured outcome? Each party would of course self-righteously frame the other in that way. To that would be added the claim that the other is "in denial".

There is no question whatsoever of exploring the **shared assumptions** which lead to either conclusion. **The human need for more "energy" is held to be unquestionable -- a given as constant as gravity**. It defines the context of human civilization. What might be those assumptions? What might be the pattern of denial with which they are together associated? How can they be elicited and considered, especially if they are disruptive of conventional cognitive frameworks? What are the "stress tests" appropriate to determining cognitive weaknesses in this regard? How do they relate to considerations of **critical thinking** (*Web resources: Critical thinking vs. Specious arguments*, 2001)?

Given the example of "stress tests" on banking institutions, now followed by those on nuclear reactors, can society rely on the procedures whereby these are carried out "voluntarily"? Given that "testing" in some installations is only carried out every ten years (in France for example), how might such tests be compared with "external" testing by groups -- simulating terrorists, for example -- paid generously only if they can demonstrate vulnerabilities. How is it that the testing of automobiles, presumably less complex, is typically required every few years in many countries?

<p><i>EU bank regulator defends stress tests</i> (<i>The Guardian</i>, 19 March 2010)</p>
<p>The London-based European Banking Authority - which replaced the Committee of European Banking Supervisors at the start of the year - wants to fight off criticism of last year's tests, which were regarded as a whitewash after only seven of 91 banks tested were required to raise more capital. Ireland's banks passed the tests - only to need multimillion-pound injections of capital by the end of the year.</p> <p>But the EBA has immediately run into controversy about the scenarios it will run on the banks in Europe. "Anyone looking for a worst-case scenario rather than a moderate stress test will be disappointed," said analyst CreditSights.</p>
<p><i>Nuclear plant tests are met with doubt</i> (<i>The Gobar Edition of The New York Times</i>, 24 March 2011)</p>
<p>Critics of the proposal want to know whether it is a political maneuver, or whether there are real safety issues with the 143 power reactors now operating throughout the bloc....</p> <p>So far, governments have said the tests should be voluntary. But some analysts have already said that stress tests are little more than a hollow slogan that should, if anything, stoke fears about the adequacy of the current safety regime in Europe.</p> <p>'By proposing stress tests, are leaders saying that the normal safety inspections aren't being done appropriately?' said Mycle Schneider, an independent energy analyst in Paris and a critic of the nuclear industry. 'That would be a frightening statement.'</p>
<p><i>E.U. decides to test its reactors</i> (<i>The Gobar Edition of The New York Times</i>, 26 March 2011)</p>
<p>Voluntary safety checks on 143 plants are a step toward central oversight.... The tests represent only a modest step toward centralized oversight of nuclear energy facilities in Europe, where member states zealously guard control over their energy industries.... The plan...calls for national regulators to conduct the tests on the basis of common criteria drafted with the European commission</p>

The concern with critical weaknesses in strategic thinking is not simply the concern with regard to evident failures, loss of livelihoods -- if not loss of life. As a result of the financial crisis, it was claimed that "now we know what the problems are, we can fix them". However, there too, despite the application of "stress tests" to individual banks, it is unclear that it has proven possible to address systemic defects. Indeed it would appear that these have been ignored as too complex and subtle to enable regulatory focus to be brought to bear on other than token issues. Much is made of the return to "business as usual" -- exemplified by the controversial issue of bonuses distributed to the unchastened using bailout funds from taxpayers -- many of whose livelihoods had been destroyed by the risk-taking culture of those receiving the bonuses. Nobody has been upheld as being conclusively at fault. Nor is it apparent that any particular

process merited adjustment.

Will this also be true of assessment of the disaster in Japan?

## "Acts of God"?

In the case of a single whammy disaster, as with the recent flooding in parts of Australia, every effort is made to "hide behind God" -- whose manifestations are technically defined by the insurance industry as [Acts of God](#). These are events defined legally as being outside of human control, for which no one (other than God) can be held responsible -- *pace* [Richard Dawkins](#) (*The God Delusion*, 2006). This situation has been variously exemplified by [lawsuits against God](#) -- in reality and in fiction. To the extent that a "whammy" is held to have supernaturally evil connotations, it might well be understood as the singular act of a malevolent deity.

Within the Japanese culture related implications may be considered. The [Shinto religion](#) accords special importance to the subtler forces of nature of which natural disasters are a manifestation. The disaster of March 2011 might then be interpreted as a combination of such subtle forces -- of Earth (in the case of the earthquakes), of Water (in the case of the tsunami), of Fire (in the case of the reactor explosions), and of Air (in the case of airborne dissemination of radioactivity). Framed in this way it could be considered a fourfold whammy.

Of potential significance, in the absence of a single deity within the Shinto framework, is whether the disaster is necessarily to be recognized as an "Act of Kami" -- the *kami* being the spirits and natural forces essential within the Shinto worldview. As with the role played by *feng shui* in siting buildings within Chinese cultures, notably where importance is attached to commercial success. This might highlight the importance of other factors in siting nuclear reactors (Tom Mitchell, *An ancient route to office harmony*, *Financial Times*, 15 December 2007). Would a specialist in *feng shui* recommend siting a reactor on a seismic fault line? Whilst those working heroically with the reactors to ward off meltdown can be recognized as imbued with the best of the "*kamikaze*" spirit, it might be asked whether siting the reactors on fault lines should be understood as a "*kamikaze* strategy" in its most problematic sense.

However, just as with the responses of other religions to "Acts of God", how the Shinto religion and its adherents will frame that disaster from a supernatural perspective remains to be seen. The question in both cases is how religion anticipates any crisis of crises -- potentially in fulfillment of prophecy (*Spontaneous Initiation of Armageddon -- a heartfelt response to systemic negligence*, 2004; *Acts of God vs Acts of al-Qaida: Hurricane Katrina as a message to Bible Belt America?* 2005).

Within the framework of Christian religious "end times" prophecy, the [Four Horsemen of the Apocalypse](#) -- Conquest/Pestilence, War, Famine and Death -- could be understood as a "fourfold whammy". In countries in which politics is imbued with religious considerations, as notably with the USA and Europe (to some degree), how does strategic planning take account of such dimensions or -- having failed to do so -- with religious framing of failure to do so?

## Systemic neglect -- of warnings

In endeavouring to transcend any "knee-jerk" framings of disaster and responsibilities for it, how is consideration given to the process whereby documented warnings of potential disaster were neglected, set aside or disparaged? Clear examples are offered by:

- [Indian Ocean earthquake/tsunami](#) (2004): [Smith Thammasaroj](#) a former chief of Thailand's Meteorological Department, predicted in 1998 that a tsunami would hit tourist areas and that there would be a massive death toll. Officials did not pay attention to him until after the disaster of December 2004. A false alarm would have a very negative effect on the tourist industry, and the Thai government decided that it would forgo any early-warning system. He was forced in 1998 to retire under a shadow. After tens of thousands of deaths in the tsunami of 2004, he was reinstated in 2005 -- as minister in charge of the Thai disaster warning office.
- [Italian earthquake](#) (2009): An Italian seismologist had predicted the disastrous earthquake in Italy in April 2009 (*Seismologist predicted L'Aquila quake*, *Euronews*, 6 April 2009). He had been reported to the authorities for spreading panic and warnings were suppressed from the web.
- [Queensland flooding](#) (2010/2011): One widely-cited excuse by authorities for the damage in Queensland was the "exceptional" nature of the event -- a "200-year" event, necessarily beyond any reasonable government mandate. Whether or not this figure is statistically accurate or the consequence of faulty modelling, a more correct understanding is that there is then a probability that such an event will occur once in ever 200 years. But, as noted by a citizen in one community at risk, it is then just as likely (statistically) to be repeated in a few years time -- since the "200 years" is but **a statistical average over a much more extended period** (*Disastrous Floods as Indicators of Systemic Risk Neglect*, 2011)
- [Japan earthquake/tsunami](#) (2011): As noted by Tom Zeller Jr. (*Experts Had Long Criticized Potential Weakness in Design of Stricken Reactor*, *Global Edition of The New York Times*, 15 March 2011), warnings about the General Electric reactor design at Fukushima had begun in 1972. Warnings were ignored, as noted by Robin McKie (*Japan ministers ignored safety warnings over nuclear reactors*, *The Guardian*, 12 March 2011), notably those made by a Japanese seismologist stating specifically that such an accident was highly likely to occur (*Ishibashi Katsukiko, Why Worry? Japan's Nuclear Plants at Grave Risk From Quake Damage*, *The Asia Pacific Journal: Japan Focus*, 11 August 2007).

John Vidal argues that an untrustworthy nuclear industry, incompetently regulated, is leading the world into greater and greater danger (*What will spark the next Fukushima?*, *The Guardian*, 14 March 2011):

Even though Japan had been warned many times that possibly the most dangerous place in the world to site a nuclear power

station was on its coast, no one had taken into account the double-whammy effect of a tsunami and an earthquake on conventional technology. It's easy to be wise after the event, but the inquest will surely show that the accident was not caused by an unpredictable natural disaster, but by a series of highly predictable bad calls by human regulators.

As with the framing of the Queensland floods as unforeseeable "200-year events", the Japanese disaster has been similarly framed, as noted by Mitsuyoshi Numano (Beyond expectations, *International Herald Tribune*, 21 March 2011):

What is hard to accept... is that the electrical power companies and government agencies tried to account for the disaster by explaining that the circumstances that led up to it were far outside the bounds of anything that could have been predicted -- in their words, "beyond all expectations". We have heard this phrase repeatedly on television reports.... But it has been obvious all along that science and technology can deal only with things that fall within the range of what can be expected.

**What authoritative planning process is effectively designed to marginalize and disparage such warnings** -- denying the relevance of data points or "massaging" them in support of other arguments? More intriguing is how subsequent authoritative inquiries are designed to ensure that no one is to be upheld as blameworthy in disasters such as experienced in Japan. How does "arrogance" work in justifying otherwise questionable strategic conclusions? Is the phenomenon of "arrogance" to be considered scientifically meaningless?

Commenting on the Fukushima disaster, astrophysicist Satoru Ikeuchi (Arrogance of science, *International Herald Tribune*, 21 March 2011) cites physicist Torahiko Terada (*The more civilization progresses, the greater the violence of nature's wrath*) as preamble to his statement:

Scientists and engineers think they are responding to the demands of society, but they have forgotten their larger responsibilities to society, emphasizing only the positive aspects of their endeavours... Japan reached global prominence through science and technology, but we cannot deny that this has also resulted in an arrogance that has diminished our ability to imagine disaster. We have fallen into the trap of being stupefied by civilization

Should those complicit in the neglect of systemic warnings be recognized, through their risk-taking, as potentially complicit in crimes against humanity? This was a question raised with respect to the terror experienced by those exposed to the financial crisis (*Extreme Financial Risk-taking as Extremism -- subject to anti-terrorism legislation?* 2009).

Of potential relevance to recognition of technological arrogance and overconfidence is research cited by Michael Shermer (*Financial Flimflam: why economic experts' predictions fail*, *Scientific American*, March 2011), namely that of the self-deception among professional prognosticators as investigated by Philip E. Tetlock (*Expert Political Judgment*, 2005):

There was one significant factor in greater prediction success, however, and that was cognitive style: 'foxes' who know a little about many things do better than 'hedgehogs' who know a lot about one area of expertise. Low scorers, Tetlock wrote, were 'thinkers who 'know one big thing,' aggressively extend the explanatory reach of that one big thing into new domains, display bristly impatience with those who 'do not get it,' and express considerable confidence that they are already pretty proficient forecasters.' High scorers in the study were 'thinkers who know many small things (tricks of their trade), are skeptical of grand schemes, see explanation and prediction not as deductive exercises but rather as exercises in flexible 'ad hocery' that require stitching together diverse sources of information, and are rather diffident about their own forecasting prowess.'

One clear factor is the pressure to define the focus of a technology sufficiently narrowly in terms of its effects over time, on the environment, on employment, and on other sectors. From a broader systemic perspective, this could be recognized as being completely unscientific, asystemic and irresponsible -- except in the sense of responding with the utmost methodological care (beyond any possible criticism) within a pre-defined boundary. This approach could be named pejoratively as "**conceptual gerrymandering**" -- namely choosing the boundaries to accord with the strategic commitment, and avoiding any challenge to it.

## Identifying strategic options characterized by marginalization of warnings

It remains unclear **what strategic options have been taken, or are envisaged, for which warnings have been marginalized to a degree that the future may regret**. Who could be trusted to investigate such possibilities? Especially interesting are the cases which are variously upheld -- as with the nuclear option -- as being "risk zero". Also of interest are cases where the risks are to processes to which there is currently little sensitivity.

Examples for consideration might include:

- **introduction of species**: a well-documented strategic problem consequent on ill-considered enthusiasm for silver-bullet remedies
- stimulants, and the interests which promote them:
  - smoking: long upheld as being of insignificant risk, an argument now considered totally discredited
  - alcohol: as with smoking, although the argument is widely challenged in practice
  - narcotic substances: the subject of extensive controversy, despite widespread criminalization and the extent of their use amongst the well-informed and influential
- **fluoridation of water**: a matter of continuing debate
- pesticides / hormones / additives: a matter of continuing debate, despite widespread adoption and lack of guarantees regarding future problematic consequences

- [genetically modified foodstuffs](#) (GM): a matter of continuing controversy, as with pesticides
- communications technology:
  - mobile phones: a matter of continuing debate regarding longer-term health issues
  - web technology: a matter of concern in terms of creation of dependencies, surveillance and invasion of privacy, and the socio-political implications of implementation of any "kill switch"
- non-biodegradable packaging: a matter of continuing concern, notably in the light of the consequences of its accumulation in the oceans
- geoengineering: promoted as an (untestable) technological fix to mitigate global warming (*Geo-engineering Oversight Agency for Thermal Stabilization (GOATS)*, 2008)
- financial derivatives: especially as an example of dependency on untested models (*Uncritical Strategic Dependence on Little-known Metrics: the Gaussian Copula, the Kaya Identity, and what else?* 2009)

The phenomenon has been more generally explored by Naomi Oreskes and Erik M. Conway (*Merchants of Doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming*, 2010)

Also of interest is the manner in which those advocating, patenting and/or licensing any technology typically ensure comfortable limitations on their liability. As highlighted above, technologies promoted as panaceas (despite calls for prudence) effectively transform the user into a "tester" responsible for any problematic outcomes. Examples include:

- nuclear reactor technology: in the Fukushima case, as Zeller (2011) notes "G.E.'s liability would seem limited in Japan -- largely because the regulatory system in that country places most liability on the plant operator". As stated by a G.E. spokesman (according to Zeller), those reactors were 'the industry's workhorse with a proven track record of safety and reliability for more than 40 years.'
- genetically modified foodstuffs (GM): The shift in liability to the farmer is noted by Barbara Peterson (*Monsanto Shifts ALL Liability to Farmers*, 21 February 2011) citing the relevant paragraph of the Monsanto contract:

'Grower's exclusive limited remedy: the exclusive remedy of the grower and the limit of the liability of Monsanto or any seller for any and all losses, injury or damages resulting from the use or handling of seed (including claims based in contract, negligence, product liability, strict liability, tort, or otherwise) shall be the price paid by the grower for the quantity of the seed involved or, at the election of Monsanto or the seed seller, the replacement of the seed. **In no event shall Monsanto or any seller be liable for any incidental, consequential, special, or punitive damages.**' [emphasis added]

See also commentary on *Monsanto Shifts All Liability For Damages Caused By Its GM Crops to Farmers, Now and For Perpetuity* (*World News Network*, 2011).

There is as yet no recognition of the legal responsibility of those retaining legal rights over intellectual property, as separately discussed (*From Patent Rights to Patent Responsibilities: obligations incumbent on owners and licensors of intellectual property*, 2007; *Universal Declaration of Patent Responsibilities: a draft proposal*, 2007).

To the above examples might of course be added a range of socio-political innovations.

## Conclusion

**Reframing the debate:** Of particular interest, as with the energy debate, is where both parties assiduously avoid consideration of questions which might reframe the debate within which their identities are so well defined. With respect to that debate, in a sense both parties are together complicit in avoiding any rethinking regarding the framing of the need for "energy" (*Lipoproblems: Developing a Strategy Omitting a Key Problem*, 2009).

In a commentary on both the Japanese disaster and the simultaneous UN intervention in Libya, an appropriate question is asked by [Neal Ascherson](#): *If we aspire to put the world right, we must be sure of what is wrong* (*The Observer*, 20 March 2011). Fruitfully he cites an engineer who argues:

As an engineer, I can tell you the root of all human mistakes. It's people putting things right, before they have finished finding out what's wrong.

This suggests a refinement of the classic: *If it ain't broke, don't fix it*. This might then read: *If you cannot tell what people mean when they say a technology is at risk, then you do not have the competence to eliminate that risk*. This would be consistent with Ascherson's comment:

Common to most of these horrors is the world's convulsive greed for energy - whether nuclear or fossil. It's that greed which makes people rush in with cowboy repair solutions, failing to seek the real sources of a problem.

Response to the Japanese disaster exemplifies inappropriate framing of challenges:

- in the particular case, the tragic destruction was the consequence of bad placement of habitations and installations. It is therefore the strategic decision governing such placement, compounded by negligence of documented warnings, which together enabled

that destruction (as in the case of other such disasters). **The destruction (and loss of life) was not caused by the earthquake, nor by the tsunami,** nor (potentially) by the reactor accidents. **Their effects were the consequence of inappropriate governance.** Statements that the "tsunami caused the destruction" reinforces inadequate **systemic thinking**. The tsunami was only a proximate cause., triggered by the earthquake. The "hidden cause" of the destruction was the inadequacy of the preceding systemic thinking.

- whether from a legal, insurance, religious perspective or other perspective, it is neither "nature" nor "God" that can be claimed to be culpable for such a disaster and a "crime against humanity". **The "crimes against humanity" which could be fruitfully explored are those perpetrated by the individuals and institutions who knowingly took risks in placing lives, livelihoods and property in danger.**
- more generally, as a more fundamental cause of global crises, is **failure to even consider why a population is under increasing pressure for resources** (such as energy) -- despite documented warnings. This then encourages such inadequate systemic thinking and provides excuses to support further **inappropriate high-risk governance** -- increasing the vulnerability of lives, livelihoods and property.

In considering the potential optimistic and pessimistic outcomes of the Fukushima disaster, the challenge is framed by Jeffrey Kluger (*Fear Goes Nuclear*, *Time*, 28 March 2011):

It's still too early to say whether the bright yin or the dark yang will be closer to how the Fukushima drama unfolds, and true clarity may not come for a long time yet. What is certain is that whatever happens, **we all need to start thinking very hard about how we got into this mess** and how we can prevent it from ever happening again. [*emphasis added*]

**Learning from the financial crisis:** The emphasis here is not however on any specific class of disasters, as exemplified by Fukushima, but rather on the strategic capacity to anticipate complex disasters and articulate responses to them. Rather than anticipate analysis of the Fukushima disaster, it is therefore appropriate to note the [report](#) on the [financial crisis of 2007-2010](#) by the US [Financial Crisis Inquiry Commission](#) (FCIC) in January 2011. It concluded that:

...the crisis was avoidable and was caused by: Widespread failures in financial regulation, including the Federal Reserve's failure to stem the tide of toxic mortgages; Dramatic breakdowns in corporate governance including too many financial firms acting recklessly and taking on too much risk; An explosive mix of excessive borrowing and risk by households and Wall Street that put the financial system on a collision course with crisis; Key policy makers ill prepared for the crisis, lacking a full understanding of the financial system they oversaw; and systemic breaches in accountability and ethics at all levels

The report notes that:

As this report goes to print, there are 26 million Americans who are out of work ... Nearly \$11tn in household wealth has vanished ... The collateral damage of this crisis has been real people and real communities. The impacts of this crisis are likely to be felt for a generation.

Commentary on the report notes how the blame is spread systemically, including homeowners, with few subject to effective prosecution (Dominic Rushe, *Financial crisis was 'avoidable'*, *The Guardian*, 27 January 2011). There is no question whatsoever of "crimes against humanity" or "terrorism" (*Extreme Financial Risk-taking as Extremism -- subject to anti-terrorism legislation?* 2009). Most striking is the widely note re-emergence of the "fat cat" bonus culture and a minimum of effective regulation.

There is every probability that culpability for Fukushima will be spread equally thinly and that strategic "business as usual" will re-emerge in the case of "energy". The same may be expected of the inquiry into the [Queensland floods of 2010-2011](#), as previously discussed (*Disastrous Floods as Indicators of Systemic Risk Neglect*, 2011). In the midst of the nuclear disaster, and despite its financial consequences, it has been widely noted that the corporation responsible for the reactor design apparently operates tax free (*How G.E. reaps billions, tax free*, *The Global Edition of The New York Times*, 26 March 2011).

**Radical strategic stress testing:** A more appropriate "stress test" might then engage in a more radical exploration of questions such as:

- what is the "energy" essential to viable, meaningful quality of life ?
- who wants/needs more "energy", now and in the future ?
- which kinds of "energy" are required for a viable, meaningful quality of life, and where is it to be obtained?
- where is such "energy" required to ensure a viable, meaningful quality of life ?
- when is such "energy" required -- considering both immediate needs and those of future generations ?
- how is such "energy" to be derived or engendered ?
- why is "energy" so fundamental to human civilization ?

Such a pattern of questions raises the currently excluded possibility of considering "energy" in another light -- beyond the limitations of the nuclear vs. renewables framework. What "energy" might possibly reframe both -- if only in the eyes of the future? Such a possibility has previously been explored (*Reframing Sustainable Sources of Energy for the Future: the vital role of psychosocial variants*, 2006)? It is the subject of further speculative exploration in an accompanying document (*Massive Elicitation of Psychosocial Energy: requisite technology for collective enlightenment*, 2011).

**Recognizing taboos:** The absence of such discussion suggests that dialogue about any such possibility is surrounded by what amounts

to fundamental taboos -- a case of prejudice exemplified through the "unsaid" (*Global Strategic Implications of the Unsaid*, 2003). Somehow it is too psychoactively "charged" for considered discussion. Any effort to do so engenders polarization and problematic dynamics -- effectively rendering it impossible. This suggests that any initiative should explore the nature of that problematic arena through a form of meta-dialogue about the possibility of dialogue -- carefully avoiding taking up the hazardous topics in any conventional manner. Simply put there is a need to talk about the talking which is currently impossible. It is presumably the nature and quality of that dialogue which underlies the possibility of sustainable development (*Sustainable Dialogue as a Necessary Template for Sustainable Global Community*, 1995).

One clue is the observation of policy scientist **Geoffrey Vickers**: A trap is a function of the nature of the trapped (*Freedom in a Rocking Boat: changing values in an unstable society*, 1972). The inability to focus on the nature of the trap suggests that it is curiously "hidden" as a form of anathema in the collective unconscious -- reminiscent of the argument made by **John Ralston Saul** (*The Unconscious Civilization*, 1995). A clue is also provided by a "pyramid" of curious **legal injunctions**, notably in British law:

- injunction: namely a court order to stop someone doing something, including making information available
- super-injunction: a gag order prohibiting mention of itself, namely the existence of the injunction, to avoid creating the impression that there is something of significance to conceal
- hyper-injunction: namely prohibiting discussion an issue with "members of Parliament, journalists and lawyers" -- except for purposes of legal defence
- meta-injunction: hypothesized in a discussion of the above by Tim Dowling, namely "a form of legal suppression so all-injecting that it is illegal for me to tell you that there is such a thing" (*Got secrets you want to keep? Get a hyper-injunction*, *The Guardian*, 21 March 2011)

In the light of the strategic errors of the past, another clue to "engagement" with the current barrier to collective learning is provided by Donald N. Michael, author of *The Unprepared Society: planning for a precarious future* (1968) and *On Learning to Plan and Planning to Learn* (1973). With respect to "the requirement to embrace error", he notes:

More bluntly, future-responsive societal learning makes it necessary for individuals and organizations to embrace error. It is the only way to ensure a shared self-consciousness about limited theory to the nature of social dynamics, about limited data for testing theory, and hence about our limited ability to control our situation well enough to be successful more often than not. (1973).

Michael asks: What personal qualities are required to acknowledge and confront the deep uncertainty and "the inevitable fact of our ignorance" in a complex, fast-changing world? (*In Search of the Missing Elephant: selected essays*, 2010).

**Need for shock learning?**: There is therefore a need to frame the challenge in a suitably shocking manner to render the nature of the requisite "embrace" comprehensible. A suitable "cognitive shock" might therefore be offered by suggesting that society is in the paradoxical (if not perverse) position curiously modelled by a charged comparison with the mindset surrounding the prosecution of **Oscar Wilde** in 1895 for homosexual behaviour. Like Wilde, society today might be said to subscribe to what Wilde famously addressed as *The love that dare not speak its name*. Rather than that particular behaviour, it is what the future may well perceive as the abominable perversion prevailing today -- surrounded by taboo -- which might be articulated by its proponents as:

Under all and every circumstance my secret love is to procreate -- irrespective of the burden it imposes on others, on social security, food and other systems, or on the environment (in terms of ecological footprint) -- and I will do this until I am no longer able. I expect my religion, my political party, my neighbours and society as a whole to support me with sympathy, or at least unquestioningly, in this endeavour.

In his controversial legal defence of what was perceived by Victorian society as an abominable perversion, Wilde argued:

"The love that dare not speak its name" in this century is such a great affection of an elder for a younger man as there was between **David and Jonathan**, such as Plato made the very basis of his philosophy, and such as you find in the sonnets of Michelangelo and Shakespeare. It is that deep spiritual affection that is as pure as it is perfect. It dictates and pervades great works of art, like those of Shakespeare and Michelangelo, and those two letters of mine, such as they are. It is in this century misunderstood, so much misunderstood that it may be described as "the love that dare not speak its name," and on that account of it I am placed where I am now. It is beautiful, it is fine, it is the noblest form of affection. There is nothing unnatural about it. It is intellectual, and it repeatedly exists between an older and a younger man, when the older man has intellect, and the younger man has all the joy, hope and glamour of life before him. That it should be so, the world does not understand. The world mocks at it, and sometimes puts one in the pillory for it.

In this century-old case there is a curious degree of equivalence to the opprobrium currently attracted by **Julian Assange** of **Wikileaks** in arguing controversially for the transformative merits of greater transparency within the international community. As with Wilde, however, it is not the larger issues which are debated -- questionable secrecy on problematic matters -- but rather the narrow legal technicalities of sexuality necessary for condemnation and closure of the debate through its proponent. The nature and scope of such opprobrium is symbolized by the need of the USA to ensure that a person active in seeking such *transparency*, **Bradley Manning**, is made to *stand naked* each day outside his cell with the full approval of the President of the USA [more]. It is perhaps only curious that the feed from any web cam currently focused on him is not shared beyond those with access to **SIPRNET** (Julian Borger and David Leigh, *Siprnet: where America stores its secret cables*, *The Guardian*, 29 November 2010) -- for worldwide contemplation. [Scope for a relay of

volunteers to replicate his treatment for a continuing webcast?]

This is indicative of the convoluted collective mindset within which the more fundamental problems are perversely entangled and disguised -- potentially subject to a "meta-injunction" as mentioned above (*Twistedness in Psycho-social Systems: challenge to logic, morality, leadership and personal development*, 2004).

It is curious that forcing Manning to *stand naked* in that way offers a clear symbolic echo of the hundreds of millions forced by dominant global policies to "*stand naked*" in the slums of many countries -- an elegant complement to the manner by which "universal values" are embodied in the *Statue of Liberty*, extensively *cloaked* as the appropriate symbol of the systemic *cover-up* Manning calls into question. Together they stand (both in a "stress position") like the small "eyes", often omitted in depicting the symbol of the Tao -- indicative of the paradoxical strangeness of a larger truth. The "perversion" is similarly evident in the role of the permanent members of the UN Security Council in claiming overtly to be the defenders of global peace whilst effectively condoning each others activity as principal distributors of arms to any potential combatants. Curiously and ironically the convoluted pattern of denial is usefully represented through the familiar phenomenon of snoring as a metaphor as separately discussed (*Snoring of The Other: a politically relevant psycho-spiritual metaphor?* 2006). This metaphor is consistent with the analysis of John Ralston Saul (*The Unconscious Civilization*, 1995).

**Unquestioned population factor:** It is within this context that unconstrained population growth -- perhaps to be understood as a "wicked problem" -- can indeed be viewed systemically as exacerbating a wide spectrum of problems: energy, food, unemployment, health, shelter, education, social security, poverty, and the like. The current strategic posture is perhaps currently exemplified by the capacity of the UN Security Council to respond so tardily to the Libyan situation (*The Art of Non-Decision-Making*, 1997). This would seem to invite the intervention of Gaia as the "governor of last resort". Major disasters are one manifestation of such "humanitarian intervention".

Any debate about the matter is highly charged and effectively hazardous. **The question is whether, in dialogue about the possibility of dialogue, ways of handling the hazards of such debate more fruitfully could be discovered**, as separately argued (*Overpopulation Debate as a Psychosocial Hazard: development of safety guidelines from handling other hazardous materials*, 2009). The challenge has been evoked by Russ Wellen (*Trying to Make Alarm About Overpopulation Politically Correct Again, Foreign Policy in Focus*, 23 November 2010). Focusing on derivative problems -- those which derive from unchecked population growth -- can then be understood as an exercise in denial, as exemplified by "climate change" (*United Nations Overpopulation Denial Conference: exploring the underside of climate change*, 2009).

Is the key to the "exit from the nuclear option" for some countries, such as Germany, to be best explored through the possibility of an "exit from the population growth option"? **Rather than how much "energy" is required for unchecked population growth, is it more a question of what level of population ensures a sustainable quality of life for all -- sustained by "energy" of a different quality?**

The immense tragedy of the disaster in Japan could be said to raise the stakes in dialogue about issues that are central to global governance in the future. As with the tradition in China and Japan, is it an indicator of the supreme art of governance that the highest authority should be required to do nothing (Paul Gallagher, *Emperor Akihito: a bulwark against a sea of troubles, The Observer*, 20 March 2011)? In this sense **is it the case that the strategic options promoted should simply place the burden of testing their viability on the population at large** -- as with nuclear power and GM? Or, recognizing this subtle role of governance, does Japanese culture notably offer unique insights to subtler cognitive modalities of relevance to strategic nimbleness, as separately argued (*Ensuring Strategic Resilience through Haiku Patterns: reframing the scope of the "martial arts" in response to strategic threat*, 2008)?

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