

Futurewatch

Jennifer Coote
New Zealand Futures Trust
New Zealand

An information service on current, international perspectives in our futures, prepared by futures scanner *Jennifer Coote*. Annual dates in last two digits. Any items not accessible via library systems may be obtainable from *Futures Thinking Aotearoa*.

Environment – 1. On Climate Change

Tipping Points

G. Walker, *Nature*, 15 June, 06, pp. 802-805, examines the case for tipping points in the Earth's climate. Such a situation occurs when the internal dynamics propel a change previously driven by external factors. An accelerating plethora of research papers indicates that previous estimates are changing very rapidly. Earth may have three particular tipping spots where change is happening very rapidly and possibly irretrievably, in the polar regions and Greenland.

While natural climate swings in the Arctic may have been factor, the polar sea ice is thinning to such an extent that the waters are permanently warmer, which aggravates the ice depletion, and warmer atmospheric temperatures are occurring in polar regions. Consequences are profound for polar creatures, not only polar bears but more significantly for photosynthetic plants living in the ice crevices which are fundamental to the food chain and not adapted to an ice-free life. The local warming, over a long period, could affect the Greenland tipping point whose ice shrinkage, though slow enough to take centuries, could release enough water to drown all sea coasts more deeply than Hurricane Katrina did for New Orleans. A world wide average warming of 3.1C degrees is estimated to achieve this. Water slipping down through the icecap crevasses could accelerate the warming of the ice cover, and also the tipping point.

The loss of sea ice would have a more far-reaching effect on the usually stable pattern of global wind systems, three in each hemisphere, which are dependent on a white, cold, North Pole.

Melting of the Greenland ice-sheet is crucial to a third tipping point, the great oceanic conveyor system or thermohaline circulation. Cold, saline, polar sea water sinks, drawing surface and warmer water in and northwards, thus keeping many countries in northern latitudes warmer. This process drives flows of deep oceanic currents around the world. A permanent plug of fresh water in the North Atlantic would shut down this oceanic system with profound consequences, for many centuries. Extensive research into the behavior of oceanic currents is underway. The cessation of the thermohaline would lead to a major shift in tropical rainfall. Even a weakening of the system on which much of Asia's food depends causes severe problems.

Ultimately human tipping points are the most important. Currently the global economic system ensures that greenhouse gases will continue rising. What can be done? and how soon? depends on how intolerable the changes are for humans. *Nature Editorial*, p. 785, emphasises that focus on tipping points can distract human responses because of the scientific uncertainty, the danger of distorted response and fatalism. A rational response is two-pronged: reduce the rate of greenhouse gas influence on climate change and build up resilience and adaptability to adverse climates.

See *New Scientist*, 15 April, 06, pp. 42-46, for details on the thermohaline. Specialist study of the highly sensitive polar ocean ecosystems in a world affected by climate change, V. Smetacek, S. Nicol, *Insight Review, Bio-Oceanography, Nature*, 15 September, 05.

Recommended Reading

An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do About It, A. Gore, Rodale, 06, is a well illustrated companion to the movie with a personal commentary, unique, with important data.

The Winds of Change: Climate, Weather, and the Destruction of Civilisations, E. Linden, Simon and Schuster, 06, is a readable case backed by expert opinion and research with the subtle message that climate change has been a "serial killer" of civilisations over millennia. But it has also been a serial creator. Are we better prepared than our ancestors to cope?

Field Notes From a Catastrophe, E. Kolbert, Bloomsbury, 06, is based on articles from *The New Yorker*, focused on the northern hemisphere, with the hard evidence that global warming is real, happening now and is very serious.

Climate Change and Biodiversity, T. E. Lovejoy, L. Hannah, eds., Yale Univ. Press, 05. If human chances for adaptation to climate change are debatable, for many of earth's creatures there is far less hope. 66 authors suggest ways to save a little from the wreckage. Most nature reserves and conservation areas are in the wrong places. The message from palaeoecology is that plants and animals moved, dispersed, or adapted and many can do so again. A world of scattered refuges among parcels of mixed use can provide a matrix with escape routes between the refuges. But is there the will?

The Weather Makers: The History and Future Impact of Climate Change, T. Flannery, Text Publishing, 05, Allen Lane, 06. An Antipodean perspective. An extract reprinted in *Bulletin/Newsweek*, 4 Oct 05, examines long term shifts into drought for Sahelian Africa and Australia. "Global dimming" cuts the sunlight reaching the earth with the dust particles from coal fired plants and motor vehicles. As the drought-stricken lands dry out dust accumulates. Already the load has increased by a third, and the impacts on oceans and distant lands has yet to be fully appreciated.

Responses

Some species are already adapting to changes in seasonal events or length which affect their breeding cycles, arising from climate change, *Science*, 9 June 06, pp. 1477-1478. Birds such as the European great tit, squirrels and insects, including mosquitoes, are showing genetic response to change.

J. Paavola, W. N. Adger, *Ecological Economics*, Vol. 56, 06, pp. 594-609, outline key justice dilemmas which create problems in current proposals for climate change adaptation. Four principles are proposed for fair adaptation:- avoiding dangerous climate change, forward-looking responsibility, putting the most vulnerable people first and equal participation by all. Initial instruments to achieve this should allow a safe maximum of 400-500 ppm of carbon dioxide concentration in the atmosphere and a carbon tax of \$20-50 per carbon equivalent ton.

R. G. Bell, World Resources Institute, *Foreign Affairs*, May-June 06, examines what to do about climate change. Curbing emissions is likely to be prolonged and messy. Current assumptions need revising because they achieve little. Yet setting and enforcing caps on greenhouse emissions is crucial. Global trading is no magic remedy. And the incentives of appropriate technology still need regulatory oversight in use. Strategies need to be customised for the governments that must implement them with regulatory skills developed in many nations who lack them.

By starting small with an adjustment of achievable target caps they can meet, could move developing countries towards target higher levels. The appropriate sections of governments should be raised in status and clout. To counter the attitudes that environmental controls are a luxury, resulting efficiencies and public health benefits need to be emphasised. Training and equipment for regulatory oversight in developing countries needs to be consistent and systematic yet customised to each country. Public interest groups can help with the 'push' to stimulate political will.

Nature, 17 November, 05, pp. 283-285, reports that the Netherlands is making key decisions about "climate proofing", incorporating risks and opportunities. This especially vulnerable country appreciates the challenges of flooding and severe drought. Critical estimations include where to make changes, the time available and the importance of cost effective change now rather than later. Policies are debated at all levels, and involve citizens.

Other Climate Change Developments

Nature, 12 Jan 06, p. 1128; *Science*, 13 Jan 06, p. 159, report on new research showing that plants and grasses release methane under certain, but normal, conditions. The reason is puzzling but the finding also has implications in climate change calculations which assumed that all sources of methane, a major greenhouse gas, were accounted for. Reappraisals are needed on the how much the sources contribute, how they could be mitigated and how they might change. *Countrywide (NZ)*, March 06, p. 73, reports that this finding does not affect the overall significant of trees as carbon sinks, and that local scientific research reveals that methane consuming bacteria are especially busy under trees, indigenous and exotic, more so than under pasture.

Woods Hole oceanographer **S.C. Doney**, *Scientific American*, March 06, details the processes by which the oceans are becoming more acidic, the resulting chemical effects and the consequential damage to the productive habitats. As over 30% of fossil fuel emissions end up in the oceans, which are slightly alkaline, the carbon dioxide acidifies the ocean. The diverse coral regions are badly affected as are the shells of tiny creatures which are key links in the food chain.

T.P. Barnett et al, *Nature*, 17 November 05, report climate modelling affected by a warmer world where the hydrological cycle is changed by reduction in precipitations as snow and ice. Resulting reductions in melt and run off have severe implications for areas dependent on this, because the reduction in peak flows shifts the supply to winter and spring with much reduced flow thereafter.

A raucous new field of climate study arose after Hurricane Katrina, hurricane climatology, *New Scientist*, 3 December 05, pp. 36-41; *Science*, 5 May 06, pp. 676-678. Expert views are conflicting on the evidence and models which suggest that there are more of the severe category 4 & 5 storms than previously, driven by increased tropical warming and possible global warming. But how much does that warming affect hurricane intensity?

Environment - 2. General

Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble, L. R. Brown, W. W. Norton, 06. This is revised and expanded from the 2003 edition, warning that humankind is crossing unseen natural thresholds, with scant time to adjust. These are: energy supply, water shortages, rising temperatures and rising seas, stressed natural systems, and early signs of decline. Plan B - with a Poverty Eradication Budget attached, covers:- eradicating poverty, restoring the earth, stabilizing climate change, designing sustainable cities and building a new economy. Published in 22 languages.

On Water

When the Rivers Run Dry: Water- The Defining Crisis of the Twenty-First Century, F. Pearce, Eden Books/Beacon Press, 06. An reputable science journalist takes readers on a global tour of water related disasters, many of them little publicised. Includes useful data presented in a readable style.

Scientific American, May 05, pp. 17-18, reports on new research which indicates that a mix of chemicals, separately in low concentrations and harmless, can be lethal combined. This critical new areas of study raises enormous problems for regulators as broader classes of compounds need to be assessed for their interactions.

T. J. Collins, C. Walter, *Scientific American*, March 06, describe new chemical enzyme catalysts which can destroy stubborn water pollutants such as dyes and pesticides, harmful to human health.

Liquid Assets: The Critical Need to Safeguard Freshwater Ecosystems, S. Postel, Worldwatch paper 170, Worldwatch Institute, 05, see also *Environment*, Dec 05. A new strategy is needed to cope with the realities of fresh water as disruptions and scarcities abound but policies continue promoting inefficiency and ecological damage. Recommendations cover watershed protection, setting ecological goals for the health of fresh waterways and water ecosystems, capping human use of freshwater, regulating for water-use pricing and reducing irrigation subsidies and investing in more efficient irrigation techniques.

Islands Business, Aug 05, pp. 27-28, reports that an **International Waters Project** is helping the Cook Is government to assess the options to protect the coun-

try's valuable watersheds. The best estimate for the cost savings in avoidance of watershed pollution is NZ\$7.4 million pa. For the ten thousand inhabitants, current water pollution concerns have led to widespread use of water filtering devices costing over \$100,000 annually. There are also high costs for the tourism industry, bottled water purchases and water quality related illnesses.

e.nz, May-June 06, highlights water as the fuel for NZ agricultural economy. Unprecedented demand in the South Island from changing farming practices, is creating challenges for fair and efficient use of what is now a contestable resource. The role of engineers in this, and the prospects of tradable water rights are examined.

Illegal Deforestation

Biologist **W. Laurance**, *New Scientist*, 15 Oct 05, reports on the accelerating destruction of Amazonian forest, from about fourteen thousand square kilometers in early 1990s to twenty-four thousand square kilometers in 2004. The loss of forest cover is particularly serious since this is a major sink in the global weather system.

Brazilian governments have encouraged settlements in Amazonia for forty years, building highways, other infrastructure and encouraging settlement, which is now twenty million, mostly poor farmers, who are growing soybeans for export. Illegal logging is the biggest challenge. Its momentum combined with lawlessness and corruption appears to be beyond government control. International condemnation pushes the government to attempt environmental control but the government's economic development section has more clout.

There is still time to help the Amazonian forest, with pressure to integrate Brazilian economic and environmental interests, better monitoring and regulation, help from international finance organisations and other countries, especially the US. But the environmental reputation of the US has suffered badly in recent years.

N. Sizer, *Far Eastern Economic Review*, May 05, reports that illegal logging in S.E. Asia is also rising alarmingly because it is highly profitable, driven by demand from China and Japan, although India and some other markets are involved. Profits are offset by hefty bribes. Indonesia is the worst affected as over 50% of its logging is illegal and two million hectares of its forest disappear annually. Its weak government enables thefts, but some change is occurring, with prosecutions of some timber smugglers, regional co-operation slowly developing around information sharing and joint enforcement, and major international timber retailers are promoting policies to avoid illegal logging purchases. The World Bank estimates that timber theft could be costing governments about fifteen billion dollars annually.

Green Dragon?

"China's Limits to Growth: Greening State and Society", *Development and Change*, Jan 06. A team of interdisciplinary specialists examines a wide range of issues in the challenge to transform environmental policy in the face of both powerful economic processes and a bureaucracy undergoing restructure. Much globally hangs on how this challenge is met. The viability of programmes for "greening" in absolute terms may be debatable, with a precautionary approach being more feasible.

Ecos, Oct-Nov 05, p. 13, reports on the Great Green Wall, a 4480 kilometre forest belt stretching across northern China, the world's largest ecological development, designed to halt the extension of the Gobi Desert. Started in 1978, it is due for completion by 2050. Similar shelterbelt programmes on a lesser scale are being developed elsewhere in China.

***China's Past, China's Future: Energy, Food and Environment*, V. Smil**, Routledge, 04. An expert on China's biophysical development takes a systems approach to the complex Chinese predicaments. The three themes are examined in light of trends over the past fifty years with particular emphasis on the need for China's people to reduce inefficiencies.

Listings

"Do Global Attitudes and Behaviours Support Sustainable Development?"

A. A. Leiserowitz et al., *Environment*, Nov 05. A number of international surveys on environmental concerns and values are examined: - on population, poverty and consumerism, sci-tech, income inequalities and overall support for sustainable development. There are serious gaps between individual beliefs and behaviors, barriers between the pro-sustainability attitudes and individual and collective behaviors, but there are shorter and longer-term strategies to promote behavioral change.

***National Environmental Accounting: Bridging the Gap Between Ecology and Economy*, J. Hecht**, Resources for the Future, 05. An introduction for non-experts on a complex development that can move society forward to sustainability

Futures, May 06: "**Futures of Bioregions**". A bioregion is a large geopolitical area bounded by natural physical characteristics. This poses problems for planning since a variety of jurisdictions may be involved, and very-long-term planning is needed but usually ignored. One marine system and several land bioregions are examined in several continents. Specially noteworthy is **D. McGregor**, "**The Future of Fire in Environmental Management**". Ecosystems depend on fire for their vitality and sustainability while humans seek to contain it.

Economics/Business

Entrepreneurs, Leadership, Development and Capitalism

McGill University management academic **H. Mintzberg**, *Development in Practice*, Vol. 16(1),06, questions the term "developed" during a visit with Ghanaians about development leaders. Three approaches to development are: - the now discredited communist top-down approach and globalisation's promotion of outside-in approach. But this approach was not used by developed economies, who are forcing it upon less developed ones, denying them the markets for their products while seeking easy access for their own. Rather the success stories, including the US, have taken a third way, the inside-up indigenous development model. Ghana does not lack for enterprise on which to develop, there are family businesses, spin-offs from existing enterprises, co-operatives and networks. Government has role in drawing these enterprises together and facilitating learning process, as also do the NGOs. There is a missing middle between these levels of enterprise and those large, integrated foreign-technology-based firms, the reason for this is not clear.

Leadership development has parallels with the development process itself. The foreign, US inspired one can be called "heroic", whereas the African model comes from the village; long periods of discussion, then reflecting and decision. **Kofi Annan** is the quintessential African leader.

C. J. Schramm, business development executive, University of Virginia, spoke to the European Finance Ministers, *Vital Speeches of the Day*, June 06, on the transformation of capitalism to an Entrepreneurial mode. This is established in US and is spreading to UK, Ireland, China and India. It combines new economic actors with modifications of existing institutions: - hugely more efficient capital markets, increasing rates of technological development, enormous efficiencies in their application, the expansion of human capital reflecting prior expansion of individual wealth, personal investment decisions about acquisition of skills, education and experience and a changing understanding of work and leisure.

The result is increased productivity, employment (though not secure tenure) and stable prices. Four institutions are driving this change, rather than the earlier triad of labor, business and government. Large firms and government remain though playing different roles, organised labor fades, entrepreneurial firms and universities emerge. There is now little concern for an equilibrium, for certainty and control.

It also appears that culture has a greater influence on the character of capitalism than formerly realised, as there now appear to be multiple forms of capitalism. In Europe, the countries having the greatest productivity growth, lowest unemployment, are the Nordics and UK, who have comparatively low public ownership, less restrictive regulatory burdens and lower barriers to entrepreneurship. Entrepreneurial Capitalism cannot be created by bureaucracy, and standard solutions do not work since economies are so diverse. The trick is to manage economic incentives, institutional rules and economic incentives to encourage individuals to shift to doing better by assuming risk and creating high growth enterprises.

Asian "Communities"

Asian historian **T. Hamashita**, *Asia-Pacific Perspectives*, Dec 05, has been studying centuries of Chinese entrepreneurial activity in countries around the circles of seas, from Okhotsk through to the Tasman and then westward into the Andaman and the Indian Ocean. By the seventh century the Tang dynasty had established a tributary trade system which continued into the twentieth century, which was multicultural, multi faceted and in which the political subordination was peripheral to the economic relationships. Current conceptions of an East Asian Community based on nation units may be less useful for future development than the earlier open, autonomous sea-based models from the region.

Diplomat and academic **M. Taniguchi**, an expert on North-South issues, *Asia-Pacific Perspectives*, August 05, also reflects on East Asian Community since the pivotal shock of the 1997 currency crisis. Japan has promoted further development of the concept since 2002-4. Present problems between China, Japan and S. Korea are hindering progress, because of the limited understanding their peoples have of each other. To build a sense of community requires closer economic integration in four main areas: environmental co-operation, especially over pollution, energy development to reduce intense competition, a common agricultural policy and currency and finance.

N. K. Otmazgin, *Contemporary Southeast Asia*, Vol. 27(3), 05, notes that Asian regional dynamism and cross-border activities rather than intergovernmental agreements are characteristic. There is also the role of popular culture where regional media alliances and market diffusion by entrepreneurs, companies and promoters feeds the consumer appetites of the region's burgeoning middle classes and develops a regional awareness.

M. F. Montes, S. Wagle, Asia-Pacific Regional Center, UNDP, *Far Eastern Economic Review*, June 06, warn that an Asian Economic Community offers real prospects to lift many out of poverty but the current pressure for a frenzy of over 150 bilateral and regional free trade agreements threatens to tie the regional competitiveness into a noodle bowl of preferential arrangements. Three essential elements are needed for these to really promote expansive regional co-operation: - enhancement for regional competitiveness, for example by avoiding too much variation among the agreements; intensification of a proactive, multidimensional approach to regional co-operation; and only entering into extra regional trade treaties that do not undermine national development objectives, regional co-operation and the multilateral trading system.

Tools and Skills

S. Lall et al, *World Development*, Vol. 34(2), 05 have developed an Index which measures the sophistication of products for classifying export trade data. This captures factors such as technology, ease of product fragmentation, natural resource availability and marketing. This has been tested for application in analysis of national economic export performance.

I. Vasiu, L. Vasiu, "Top Management Skills in E. Governance: a Conceptual Framework", *Journal of E.Government*, Vol. 2(3), 05, finetunes existing theory on development of such skills, useful for development of training programmes.

Futures Thinking

The Vulcanised Brain and the Future Neuro-State

Princeton Professor of Psychiatry **J. D. Cohen**, *Journal of Economic Perspectives*, Fall 05, recounts how modern brain imaging methods enable understanding of the processes by which the confederation of mechanisms which comprise brain functioning act together, but sometimes compete with different results. The significance of this for human decision making is highlighted. Some of the emotional processing involved arises in the old brain mechanisms of our evolutionary past, and may no longer be stewards of our best interests. While sociologists and economists may initially find most use for these studies, eventually they are significant for policy-makers, as new rationally devised technologies give us power to control our behaviour and our environment.

Vulcanising, which treats rubber to improve its strength, resilience and usefulness, can be analogous to the prefrontal cortex which enables moral reasoning and highly flexible and general reasoning capability fundamental for rational behavior. Similar "vulcanising" is developed not only in individuals, but also in the training of several

professional groups, cultivating mechanisms for overcoming strong emotional response. This is not a uniform human development, there are intellectual and cultural differences. For human society the positive results can be a huge range of beneficial technologies, but serious abuse of the same.

Research is needed to improve understanding of the conditions under which particular emotions are engaged productively and those in which emotive responses may lead us astray.

J. Dunagan, University of Hawaii, *Journal of Future Studies*, November 04, dunagan@hawaii.edu, examined the wider and longer term field where advanced neural technologies radically transform the human brain, through a convergence of neuroscience with genetics, nanotech, artificial intelligence and bio informatics. Whole new categories of human knowledge, power and experience can develop, or transform existing knowledge. Major ethical and political issues arise, with a reshaping of the knowledge-power and governance systems. Some possible scenarios:- If enhancements are outlawed, only outlaws will have enhancements; technosapiens; schizophrenia; cyborg elite; critical mass; hearts and minds (mind control crucial for martial control of populations)

Methods and Tools

"Sustainable Futures: Policies for Global Development", **B. Hughes, P. D. Johnston**, *Futures*, Oct 05, examines the EU objective of sustainable development, one key objective of which is to become the most dynamic and competitive knowledge economy, enhancing sustained growth, employment and social cohesion. Three dimensions: sustained growth in human capital; sustained growth in social capital and preservation of natural capital. Simulations have shown that most of these policy initiatives, if implemented, could have substantial benefit. A global initiative to complement the EU's is needed.

"Personal Futuring: A Step-by-Step Guide", **V. Wheelwright**, *The Futurist*, May-June 06. A professional shows how you can DIY.

"Forecasting Emerging Technologies with the Aid of Science and Technology Databases", **M. Bengisu, R. Nakhili**, *Technological Forecasting and Social Change*, Vol. 73, 06, pp. 835-844. Turkish industrial engineers use selected keywords linked to databases to establish the annual crop of publications and patents. Analysis over a decade indicates that some emerging technologies are scarcely noticed by the S & T community. Correlation between scientific publications and patents is shown and the methods is valuable for linkage of foresight and funding efforts to S&T activities.

Peace/War & World Affairs

Thinking Globally

Global Responsibilities: Who Must Deliver on Human Rights? **A. Kuper**, ed., Routledge, 05. The liberating power of human rights discourse and action struggles in a world of increasing inequalities and weak states. Fresh thinking needs to include new sites of power, in NGOS, corporations, cross-border networks, intergovernmental institutions. Nine contributors include **A. Sen, P. Singer**.

Governance for Sustainable Development: A Foundation for the Future, G. Ayre, R. Callway, eds., Earthscan, 05, continues from the 2000 report from the World Humanity Action Trust, a UK think tank on global government. That report identified a number of stumbling blocks, including the silo mentality of institutions at local, national and international level, regarding sustainable management of resources. Building on that study, three pillars of sustainability are examined, Environment, Society and Economics, and specifics on Water, Energy, Health, Agriculture, Biodiversity, with ways to bring greater coherence in the global governance architecture.

Security Threats and Preventive Measures

Making Terrorism History, S. Ellworthy, G. Rifkind, Rider, 06, points to the crucial need to break into the cycle of violence, possibly most usefully at the point between anger and bitterness when there are forms of intervention which can open up alternatives. Strategies employing overwhelming force have proven their limitations, because there is a lack of appreciation of the contexts which sustain the violence, economic, social and cultural.

H. Urdal, Oslo Peace Research Institute, *Peace Researcher*, Vol. 42(4), 05, has examined evidence from the past half century correlating high population growth, high rates of urbanisation or large refugee populations and internal risk of armed combat. There appears to be limited connection.

Researcher S. Patrick, Center for Global Development, Washington D.C., *Washington Quarterly*, Spring 06, examines the linkage between weak or failing states and threats to international security, particularly from a US perspective. He critiques the US for a haphazard approach to such states which fails to integrate defense, development and diplomacy. The US should spearhead a coherent multilateral response to the linked challenges. Transnational spillovers occur from such countries, but each poorly performing country suffers from a distinctive set of pathologies and provides a unique mix of challenges.

S. Graham, *New Statesman*, 12 June, 06, outlines the new US technologies which be used for future warfare fought in the dirty, mazy streets of the global South. Matchbox sized sensors can be scattered in thousands around cities to capture data for military omniscience, X-ray eye sensors can see through concrete, while huge unmanned communications and surveillance airships hover above. Cities can be completely constructed in simulation to enable the most effective deployment of robot armies, self-operating, "intelligent," with 'doomsday' firing capability. Who will ultimately makes the decisions and be accountable as urban life becomes militarised in this way? See the same author, *Cities, War and Terrorism*, Blackwell, 06.

The Big N...

Nuclear First Strike: Consequences of a Broken Taboo, G. H. Quester, John Hopkins University Press, 05. This is a speculative analysis of what might happen, both in global responses and US policy, under several types of scenarios: - cases of ambiguity; surprisingly low collateral damage; irresponsible nuclear escalation; clear and highly destructive nuclear escalation with definite government responsibility.

A. Glaser, F. N. von Hippel, *Scientific American*, Feb 06, focus on the role of highly enriched uranium (HEU) if terrorists obtained a hundred kilograms of it and could relatively easily make a rudimentary bomb. There are large quantities of HEU, obtainable on the black market and often contained in minimally protected sites. The challenge of preventing nuclear terrorism requires that security for HEU must be upgraded, it should then be diluted to become unsuitable for weapons, in a programme taking five-to eight years.

Nations and Regions to Note

A. Lieven, *The National Interest*, Spring 06, urges that the US adopt a more realistic attitude towards Pakistan, a difficult county with deep, underlying, ethnic fissures and social problems, which could lead long-term to disintegration. Economic growth rates, along with the population growth, have been high, but the majority are very poor and the middle class small. Military governments have alternated with an apparently welcome democracy, but the fundamental loyalties are to family, clan and religion. These, together with the patronage labelled "corruption", are intertwined in the system. So are the blood feuds which engender violence or intensive litigation. Pakistan can change, slowly, as will the military competition with India. External influences must be based on realism, by assisting in practical ways with development, especially an efficient water infrastructure, the provision of jobs and encouragement of an efficient transport and energy supply network linking Pakistan and India to Europe via Central Asia.

US academic **S. Zhao**, *Washington Quarterly*, Winter 05-06, explores the longer term prospects of the current Chinese pragmatic nationalism, which has been fostered since the 1990s to ensure loyalty to the regime in the face of major domestic changes. There is a fundamental historic sense of injustice and a dream of a strong China in face of external threats.

Current nationalism has three strands. Nativism calls for a return to self-reliance and traditional values, in face of Western hegemony while anti-traditionalism sees those traditions and the rigidity of the Confucian hierarchy as the source of national weakness and seeks to adopt Western cultural and economic models.

Both of these streams over the past two decades, have linked into liberal nationalism, many of whose supporters consider that the Western countries, especially US and Japan, are seeking to frustrate China's rise as a great Power. There is paradox also, since they want China not to be a slave to external powers but domestically desire that Chinese people not become the slaves of an authoritarian state. Liberal nationalism threatens the state monopoly of power and the regime has to move carefully to avoid popular assertiveness getting out of hand while also maintaining a carefully assertive face to outside powers, to appease domestic opinion.

J. Eisenman, J. Kurlantzick, *Current History*, May 06, see Africa as the ultimate test of China's role as a great power exerting influence far beyond its borders. Currently China has become a significant source of financial aid for a number of African states, including Mozambique and Zimbabwe. Resources, especially oil and minerals, have made Nigeria, Sudan, Angola, Gabon, Zambia and Democratic Republic of Congo highly attractive in China's quest for secure supplies. There is now

a policy of using economic support without the preconditions for good governance and anticorruption measures, with a focus on infrastructure creation rather than large buildings, all involving Chinese companies. Chinese business investment is being promoted, as well as Chinese cultural programmes and language. Military-to-military co-operation is providing important outlets for China's arms industry in Zimbabwe, Sudan and Horn of Africa. A significant downside, leads to China being seen as an irresponsible power, supporting corrupt authoritarian states and state controlled business sectors.

I. Bremmer, *World Policy Journal*, Winter 05-06, reports that as the 2008 Russian presidential elections draw near, rivalry will intensify between the two major power blocks inside the Kremlin, which is spilling into the streets and blocking progress on reform and strategy. The factions are the siloviki (former and active military and security officers) and the technocrats who lead the state energy corporations, Gazprom and Rosneft. This creates an uncertain climate for investment and hinders development of energy efficiency and much needed infrastructure development.

A. Lohrey, *Voting For Jesus: Christianity and Politics in Australia*, (Quarterly essay 22) Black, 06, argues that Australian public life needs a more detailed, insider's understanding of Christian theology, as religion becomes a more potent force in this highly secular culture. Slogans such as "family values" are codes which rally the neoliberals and optimise electoral chances.