

# Futurewatch

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An information service on current international perspectives on our futures, prepared by futures scanner, **Jennifer Coote**. Annual dates in last two digits.

## Education

### Education for tuning the world

Addressing a conference of media ecologists, Canadian academic and author **E McLuhan**, *Vital Speeches of the Day, Aug 09*, calls for a radical change in education systems to cope with the social and cultural onslaught of the ever evolving new media technologies. Today's students are already familiar with multi modal texts which combine to manipulate or inform the user's views of their world. Immersed in these "literacies," they are like those auditors of the olden oral poets who enthralled their hearers and transported them to a new mode of being. Young students are likewise sensitised to "inhabit" their learning rather than to take an objective and rational view.

The human brain's marvellous plasticity can be endlessly rewired to meet changing environments, which will train educated "generalists" who are capable of reading the texts of multiple media according to their meanings and forms. The hitherto separate worlds of the arts and sciences are merging. Interpretations of textual information may require understanding of meanings (literal, allegoric etc), and also interpretation of forms (formal, efficient, material). Our survival depends on our ability to read and interpret the literal and cultural sense of whatever text we meet. An education system based on formal analysis and concepts needs new emphasis on training in critical awareness and perception. Eventually there needs to be oversight of the perceived environment, not only of the individual or a specific culture, but of the world.

**Opening Up Education: The Collective Advancement of Education Through Open Technology, Open Content and Open Knowledge**, Ed T Iiyoshi, M S Vijay Kumar, MIT Press, 08, is arranged to cover software, content and pedagogy. Leaders in the field discuss issues of software design and implementation, and adoption by users. Content includes management of intellectual property and quality control. The role of teachers is changing as students are able to create content, with Web 3.0 promising more changes ahead. A final section covers initiatives to explore how learning takes place.

*Science, 2 Jan 09*, **Special Section, Education and Technology**, offers a range of expert views of over the horizon developments in a fast moving field. These include:-a study of the Open Educational Resources movement, M S Smith; **Technology and Informal Education: What is**

**Taught, What is Learnt, P M Greenfield; Technology and Testing, E S Quellmalz, J W Pellegrino.**

### **Student achievement and engagement**

Emeritus Professor **I Snook**, *Education Review*, 17 July 09, pp.6-7, delves into the respective ideological perspectives on the gap between different rates of achievement of various social groups in gaining school-based qualifications. The major divisional lines are drawn between those who consider that inequities in health, educational achievement, etc, arise from basic socioeconomic inequalities and those who blame the individual for failing, or in the case of children, blame the teachers. Each side dismisses the other's arguments as "excuses". An OECD study found that the major factor in student achievement is what the students bring with them to the classroom, from their family and community. Another large scale study across several countries asked if there is a commonality of poor outcomes for poor societies, in health, education etc. For up to about \$25,000, the answer is generally, Yes. The solution to raising the outcomes for the poorer achievers is therefore largely political, especially in a society such as NZ which is becoming more unequal. There are some schools as well as some individual students, who defy the odds. The results from such schools need be taken with some caution, because there are qualifying factors in many cases. And the successes of such schools, if warranted, should not be used as cudgels to belabour the other schools and educators, nor used to excuse neglect of the obstacles that the successful educators have overcome.

Professor **M Thrupp**, Waikato University, *Education Review*, 14 Aug 09, p.8, considers that the politics of blame in the debates over the power of good teaching on student outcomes is unfair to teachers. It can easily lead to policies promising "false" salvation such as performance pay or privatisation if teachers do not appear to deliver. Teachers should refuse to be overloaded with such responsibilities. Yes, teachers can make a difference but they cannot solve all the student performance problems.

University of Waikato researcher **P Whitinui**, edits **Making Education Count: Successful Schooling for Maori Students in the 21<sup>st</sup> Century**, (due in 2010) with contributions from fifteen education experts passionate about making a difference for such students. Themes:-improving schooling success for Maori Students in 21<sup>st</sup> century; creating a culture of care for Maori students; enhancing Maori students' success; culturally responsive teaching pedagogies in action: culturally responsive learning environments for enhancing Maori student success. The editor seeks to widen the discussion about the purpose of school and its benefits for Maori, and how student success can be connected with the student need for self understanding and for identity.

**I M Evans, S Harvey**, psychologists, Massey University, *Education Review*, 30 Jan 09, pp.7-8, are researching "emotional climate" in children's learning. In the interactions between student and teacher, much emphasis is placed on discipline and teaching techniques, but there is limited awareness of emotions in both teachers and students. Yet these affect the social and emotional development of students as well as their educational outcomes. There are several dimensions in emotional climate:-awareness of emotions; management of emotions; what teachers believe about emotions; and emotional interpersonal guidelines such as fairness, respect and trust. It

seems likely that students will vary in the types of such a climate to which they respond, and that there can be cultural as well as individual differences.

Student engagement was the topic for international researchers hosted by **NZ Council for Educational Research**, *Education Review*, 6 Nov 09, p.7, with the focus on relationships between staff and students. Personal investment in learning is needed as much as completing classroom tasks. Identifying students and connecting with students who can be otherwise just blanks; personal greetings from senior staff to individual students, connections to family and whanau, early positive experiences which build confidence, and size of classes can all contribute to student engagement. Research shows that most students start eager to learn, but as they enter adolescence many disengage and find school boring. Student engagement is a way to rethink the way teaching takes place and how it can be approached in innovative ways.

**J Wyn**, *Youth Studies Australia Vol.28/1, 09*, examines the failure of efforts to improve young people's school-to-work transitions and enhance their social inclusion. Such endeavours need to take account of the changing social and economic realities in which young Australians live, and to address important aspects such as identity and well-being. Education which continues to be framed in an industrial model fails to equip students to navigate through the new economies, to live well and engage with complexity and diversity.

### **Education for peoples of the pacific**

**Rethinking Education Curricula in the Pacific: Challenges and Prospects**, eds. **K Sanga, K H Thaman**, Institute of Research & Development in the Pacific, VUW, 09. This selection of specialist and official contributions seeks to revise the current European cultural bias of Pacific education. More focus is needed on the actual experience of the students and engagement with the many cultures of the region, in both the content and the pedagogy.

**S. Middleton**, Manakau Inst.of Technology, *Education Review 17 July, 09, p.1&6* argues that investing in the education of Pasifika people in New Zealand could be an excellent option for a government seeking to invest in the future of the wider pacific community. Better education for the rapidly growing numbers of locally born students means better jobs and more funds to be shared with the countries of family origin. These students are persistent in the education system, but leave with the lowest qualifications, which indicates that the system does not work well for them or engage with their culture.

**Success for All: Improving Maori and Pasifika Student Success in Degree Level Studies**, **Airini, E.Curtis et al**, Univ. Auckland, 09. This report from a two year study highlight problems and good practice for tertiary students, but many of the insights are applicable at other adult education levels and with younger students, such as:- sound pedagogy, building confidence, good relationships based on respect for culture as a well as the person and fostering a sense of belonging.

### **University challenges and changes**

Univ. of Alberta Vice-Chancellor **I. V Samarasekera**, *Science, 12 Nov 09, pp.160-161*, considers that a new social contract is needed for research universities

and their public and private partners. This would promote the pursuit of basic research and encourage solution-driven work. To overcome the present inertia and muddle, new mechanisms are needed, using interdisciplinary, inter-sector and inter-professional approaches for research into international security, sustainability and economic recovery problems. Innovative donors are promoting specialist institutes for basic and solution-driven work, "collaboratories" are being developed involving university, government and private interests to focus on both aspects research. Overarching these emerging models of what works best; there needs to be an international agency drawn from both from Western and Asian Universities to award funds and evaluate progress.

Experienced strategic planner and university administrator **J Dew**, *The Futurist*, Mar/April, 10, outlines the trends leading to the long forecast future for colleges and universities. These include global standardisation of education content and accreditation, greater diversity in the student body, and more options for where, when, and how learning takes place.

### **Developing the teachers and testing the students**

**Fixing Teacher Professional Development**, **H C Hill**, *Phi Delta Kappan*, March 09, examines the weakness of the fragmented and often poor quality US programmes with constructive suggestions about radical improvement.

**Growing Teachers: Some Important Principles for Professional Development**, **S Wassermann**, *Phi Delta Kappan*, March 09, describes the unique, decades long professional programmes run by Simon Frazer University, Canada, which can be widely applied.

**Building on No Child Left Behind**, *Science*, 6 Nov 09 pp.802-804. This US federal programme of standardised testing on levels of reading, science and maths has made some gains so far, but that more needs to be done. There is too much focus on basic rather than on higher-order skills, wide variation in state standards, narrowing of the curriculum and other distortions. The evidence on the data which measures the success of NCLB is limited. Improvements are needed especially in rigorous research and development and in evaluation.

### **Listings**

**Education and Violent Political Conflict, Symposium**, *Harvard Education Review*, Vol.79/1, Spring 09. Contributors report on varieties of educational innovation and experience in such conflict prone areas as Colombia, Uganda, Israel-Palestinian territories, Iran and Afghanistan. Education can be a means to interrupt and to perpetuate violence, and has a challenging role in post conflict societies.

**Alternative Educational Futures; Pedagogies for Emergent Worlds**, **M Bussey et al**, Sense Pub, 08. Three Australian based academics provide a provocative collection of leading-edge thinking, with research and case studies, for more effective, flexible and appropriate education in a rapidly changing world.

**The Future of Education: Reimagining Our Schools from the Ground Up**, **K Egan**, Yale Univ. Press, 08. This Canadian academic adds to the usual three major lenses through which education is viewed:-socialisation, mastering the knowledge

base, and developing human potential. He explores a curriculum built on a fourth, cognitive tools, the dynamics between the brain and external symbolic material.

## **Economics/Business**

### **Probemathical outlook**

**M Wolf**, *Financial Times*, 24 Feb 10, p.9, considers that how the crisis in the world economy arose is a guide as to how it would best be resolved. A big part of the reason lay in the series of bubbles:-asset prices, risk acceleration in the financial sector, over investment in consumables rather than productive assets and trade imbalances, as well as monetary policy mistakes. There are two alternative exit routes, re-ignition of the credit engine in the high income countries, or continued deleveraging of private spending, with a prolonged fiscal deficit. The first alternative would probably lead to an even larger financial crisis in future, and the second would still see the fiscal resources fail.

Growth out of the present indebtedness without undue collapse could happen if private and public sector investment in the deficit countries surged, and consumer demand grew in the emerging countries. Should these possibilities occur, radical rethinking is still required. This would mean that countries such as US and UK sustain their high indebtedness even as they promoted major investment. They should also engage with emerging economies to discuss reforms to global finance which would facilitate a sustained net flow of funds from the developed to the emerging countries. Essentially, much higher investment from the private sector's huge surpluses needs to be invested across the world.

**J Roberston**, *Newsletter 29, April 10*, [www.jamesrobertson.com](http://www.jamesrobertson.com) reports comments from <http://the-free-lunch.blogspot.com>, interview with Prof **R Werner**, Director, Centre for Banking, Finance and Sustainable Development, Southampton University, on UK forthcoming elections. "Money creation and allocation are largely undertaken by the private sector, namely the commercial banks through the extension of what are called "bank loans." What led us into the crisis is the persistent abuse of this public privilege to create and allocate money supply by those private, profit-oriented operators for the benefit of unproductive speculators. The Parties will have to get to grips with this issue, ideally by banning all bank credit extended for financial transactions and speculation, or, by taking this public privilege away from the banks, rendering the creation and allocation of the money supply a public monopoly again. Unfortunately none of the three Party Leaders or their Treasury appointees seems sufficiently aware of, or interested in this problem, and thus we cannot expect the type of policies that will deliver stable, sustainable and equitable growth from them."

*The Economist*, 28 Nov, 09 p.82, reports on two UK studies with recommendations for macroprudential regulation to prevent failure in the whole financial system. Overall the recommendations explore ways to make it harder for banks to lend freely in booms and easier for them to lend in recessions. Each study adds its own detailed specifics. No regulatory system is fail-safe, and the social cost likely to occur as a result needs tempering, perhaps by making banking capital structure more flexible, turning debt into loss-bearing equity in a crisis.

Economic researcher **Z Karabell**, *Time (NZ)*, 15 March 10, p.27, argues that US concerns about its massive indebtedness need to be restrained, particularly while interest rates are so low. The dollar is still a safe haven and a large part of the debt is owed by the federal government to itself. The US has to invest in improved health care and infrastructure to build a future and help re-create a workforce, and for now, debt is a means to that end.

### NZ's 21<sup>st</sup> century public sector

Seminars hosted by **VUW** and its **Institute of Policy Studies**, *Public Sector, Dec 09*, provided a range of views. The government priorities are lifting the sector's performance while reducing its cost, but also enabling people to manage their own interactions with government. Other contributors consider that these organisations are social as well as economic entities, and the values of a decade ago emphasising market and hierarchy need to be balanced by investment in systems and support and encouragement of collaboration and creative work. Leadership needs to foster a clan spirit based on shared values which build community. Some of these values seem soft and fuzzy to those attuned to spreadsheets. Meeting the changing expectations from the wider public community requires innovation in planning and delivery of service and effectiveness, improving capacity to recruit and retain a diverse and talented staff, and developing greater capacity to anticipate change not only in the short-term, but in the medium-term.

*Public Sector, Sep 09*, **R. O'Neill**, State Sector System Development Manager, State Services Commission, has been researching how e.government is working. Its implementation is up to expectations for organisational efficiency and effectiveness, but it is not yet "transformational". The same bureaucratic principles apply. e.government Professor **M Lips**, VUW notes that the technology needs to become an integral part of how an organisation goes about its business. The focus needs to become strategic and move towards citizen-centric methods of solving problems, with innovative thinking.

**Unlocking the Power of Networks: Keys to High-Performance Government**, **S Goldsmith, D F Kettl**, Brookings, 09. How networked government seeks to gather a large collection of participants, co-ordinate their work, and ensure that the result promotes the public interest.

### Three economies

*Business Review Weekly 28 Feb-3 March 10*, reports that according to a report by **Australian Financial Centre Forum**, Australia's finance sector could balloon into a regional financial services hub. Australian advantages for international funds managers include a very large pool of superannuation funds, sound economic and business management, and a strategic position alongside Asia. But interest rates need lowering, withholding tax eliminated, and a "passport" regime enabling funds to be directed anywhere to investors in Asia.

**Cover Story**, *Business Review Weekly*, 11-17 Feb 10, on the rise of the Asian economies, China and increasingly India, which has transformed the prospects for Australia in the 21<sup>st</sup> century, and unlike the Japanese boom two decades ago, appears

long-lasting. There is more to the Asian bonanza than the mining boom but some analysts warn that there could be significant pauses along the way. Seventy percent of Australian exports go to Asia along with strong contributions from services in education, tourism and engineering. Income tax cuts have been paid for by the mining boom, which has also boosted the Australian dollar, resulting in higher exchange rates and cheaper imports. The growing Asian middle class is catered to by numerous small and medium Australian enterprises, some 4500 in China. Australia's attachment to the Chinese growth engine is fuelling a foreign investment boom. But Australia's growing dependence on the Asian boom could also prove susceptible to an Asian bust.

African financial institutions and many of its economies have proved remarkably resilient to the global financial crisis, reports *African Business, Oct 09*, because of the legacy of ten years of reforms, and though current GDP is expected to be just 1.8% in 2009, this compares favourably in a world desperately trying to claw its way out of recession. Same issue, editor **A. Verssi** comments on the **Africa Competitiveness Report from World Bank and African Development Bank**, which ranks African states for competitiveness based on institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods market efficiency, technological readiness, market size, business sophistication, labour market efficiency, financial market sophistication and innovation. The top performers are Tunisia and South Africa, followed by Botswana, Mauritius, Morocco, Egypt and Namibia. Poorest performers are Burundi, Chad and Zimbabwe. The report, which includes comparisons with other global economies, including European states and emerging nations, confirms that the key to delivery of higher living standards for citizens is education.

*The Economist, 14 Nov 09, Special Section on Business and Finance in Brazil*, provides a useful overview of the positive progress in some economic areas, and the problems in many others, such as obstructive government and the large black economy.

## Futures Thinking

### Cassandra Scenarios

**Storms of my Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity, J. Hansen**, Bloomsbury, 09. This highly-reputable US climate researcher has become increasingly convinced that the research over the past few years is showing the threats to be much worse. Continuation on the present course, using up fossil fuels, will trigger a runaway greenhouse which will eventually cause the oceans to boil. Not only are politicians, especially in the US, unwilling to try to act, the political systems in many democracies are incapable of coping. All that is left is civil action, even disobedience.

**B. Holmes**, *New Scientist, 3 October, 09*, investigated what might develop if, as seems the likely, the present Anthropocene (human affected) era proves to be the shortest in the planet's history. Society collapses as ecologies and food systems fail, leaving a few humans surviving in a primitive existence. Studies of the Palaeocene-Eocene period, 55 million years ago featured a very rapid rise of some nine degrees in

temperatures, with massive rise in carbon dioxide, possibly from decomposing peat. After some 10,000-20,000 years the planetary balance recovered. Today the planet is much cooler, so warming will have a more dramatic effect. This could nudge the planet into the older, permanently warmer patterns rather than the cyclic glacial and interglacial. Such change could complete the massive biodiversity extinctions which are already underway. Millions of years later, the biosphere may have recovered sufficiently from its long trauma and many new life forms could appear.

### Institutions in turbulent times

**The Irrational Economist: Making Decisions in a Dangerous World**, Eds E Michel-Kerjan, P Slovic, Public Affairs, 10. We are into a new era where many of the costliest catastrophes have happened in the past forty years. Contributors challenge conventional wisdom about making sound decisions in such an era and the growing role of economists and social scientists as guides.

### Coevolving innovations

... in **Business Organizations and Information Technologies**, *blog of daviding*, posted 8 Sept 0, <http://coevolving.com/blogs> examines the numerous contributions in **Business Planning for Turbulent Times**, Eds. R Raminrez, J W Selsky, K van der Heijden, Earthscan, 08, which focus on the intersection between social ecology and scenario practice. The science of service systems involves both understanding the development of the human organisation and of technology, with particular reference to business and the public sector. Although this volume is not specifically addressed to service systems, it provokes some considerations for these. Five broad themes are involved.

Firstly, addiction to prediction. Institutions in theory are built to be effective and indispensable, but the inherent uncertainty of the future arouses deep fears in decision makers, to which they tend to respond with demand for certainty and prediction. Understanding risk is not the same as avoiding it.

Secondly, sustaining organizational systems in turbulent environments. The coevolving theory of systems involves their internal response to their environments, which in turn affect those environments. The variables and links need to be understood. In several distinct types of environment, those which are turbulent and hyper-turbulent, it is imperative not only to manage the immediate and local threats and opportunities but also to take account of such threats and opportunities on an extended horizon, and preferably in collaboration with other systems similarly affected. Adaptive failure results in stalemate, or polarisation, with enclaves developing which have little mutual contact.

Thirdly, techniques for envisioning future systems. Designing business/institutions/service systems for turbulent times often draws upon the methods of scenarios and search conferences. The latter may be especially relevant for opening up scenarios work beyond a single organisation to a wider variety of constituents. To date, much systems thinking in scenarios work has tended to focus on the "hard" aspects which can be described objectively. A "soft" approach could usefully incorporate world-



views, which can build appreciation of differences and contribute to new shared meanings.

Fourthly, changing systems. There are new ideas to be incorporated into the evolution and redesign of service systems, such as complexity theory. The propensity of a system to change may be influenced by its state of stability or instability, by mindsets focused on episodic versus continuous change, and decisions made in the near-future which have ripple effects in the longer term.

Fifthly, shared value and engagement. Service systems emphasise a view of co-production as an alternative to producer-product. Such a view may need to recognise the voices of external or peripheral parties who could either encourage or hinder the goals of the directly involved co-producers as initially described within the system.

## Health/Medicine

### The big global issues and health

*The Lancet*, 24 Jan, 31 Jan, 7 Feb, 14 Feb, 21 Feb, 28 Feb, 09, offers a six part series examining global issues connecting **Trade and Health**. No 1 examines historical aspects and the search for policy coherence; No 2 explores the systems of international trade and international health cooperation, their linkages and how deficits in these might be overcome. No 4 examines trade in health services, GATS and International Property Rights; No 5 sets out the complexities of IPR for access to medicines; and No 6 outlines the priority areas in the challenges and actions required. No 3 outlines a conceptual framework of the links between trade liberalisation and health outcomes, and reviews four key areas:-income, inequality, economic security and unhealthy diets. Trade liberalisation's benefits in economic growth need complementary policies to offset the resulting greater wage inequality, and economic insecurity. Such trade has also facilitated the availability of highly processed, calorie-rich, nutrient-poor food in developing countries. Health professionals need support to counter these risks.

*The Lancet*, 16 May 09 presents a massive report on **Health and Climate** change from a year-long Commission study run jointly by **The Lancet and Institute for Public Health, University of London**, Director **A. Costello**. This study involved a very wide range of professionals in addition to clinicians, including engineers, political scientists, anthropologists and economists. It developed new ways to examine and integrate data. Five critical challenges were identified. Firstly, there is a massive gap in information about how humankind needs to respond to negative health effects of climate change. Secondly, there is an immense task to address the inadequacies of health systems to cope with the impacts on those most likely to be affected, the poorest peoples. Thirdly, adaptive technologies are needed, but these have to come from a greater research investment into climate change science. Fourthly, ways to create conditions for low-carbon living are needed. Finally, there is the major problem of adapting our institutions to make climate change our priority.

*The Economist*, 18 April 09, **Special Report on Health Care and Technology**, examines the growing convergence of biology and engineering. Electronic health records can be loaded into searchable databases, improving clinical practice and

potentially boosting drugs research. Also in line to revolutionise healthcare are advanced materials, imaging, nanotechnology, and sophisticated modelling and simulation. Medicine is becoming more portable, precise and personal. Even mobile phone technology is enabling personalised medicine to bloom in developing countries. But questions remain as to just how far the resulting patient empowerment will actually result in better patient outcomes and well-being.

*Newsletter of the Neurological Foundation NZ, Autumn 10*, presents an *ABC News/MedPage Today* summary of the last decade's top ten medical advances collated from replies from 800 specialists. Human genome discoveries reach the bedside; doctors and patients harness information technology; anti-smoking laws and campaigns reduce public smoking; heart disease deaths drop by 40%; stem cell research laboratory breakthroughs and clinical advances; targeted therapies for cancer expand with new drugs; combination drug therapy extends HIV survival; minimally invasive and robotic techniques revolutionise surgery; study finds heart, cancer risk resulting from hormone replacement therapy; scientists peer into the mind with functional MRI.

### Drugs and genetic testing

*Technology Review, Mar/April 10*, reports on the state of personalised medicine, labelled the 1.0 version, with relatively simple genetic tests to provide information on whether a patient will benefit from a particular drug, etc. Soon there will be more sophisticated versions. How to use that information to improve your medical care is the next big challenge.

**P Ng et al**, *Nature*, 8 Oct 09 note that there are differing results from direct-to-consumer genetics testing companies, on the same data. They provide nine recommendations to improve such predictions.

Big Pharma is learning to treat enemies as colleagues, *The Economist*, 8 Aug 09, pp.51-52. Budget constraints are forcing many governments to boost use of cheap generic drugs rather than the big pharmaceutical firms' pricey patented drugs.

Further pressures are coming from the expiry of many drug patents in the next few years, adding to the threat to profits. The big firms are responding by joining forces with their rivals, often buying them out in order to gain access to emerging markets and their increasing middle classes.

### The eyes have it

Myopia, or short-sightedness, appears to be a growing feature in modern, developed societies, *New Scientist*, 7 Nov, 09, pp.40-51. Currently the strongest link is in the amount time people, especially children, spend out of doors. There are possible linkages with consumption of high levels of carbohydrates, which can stimulate blood sugar levels. The shape of eye is also as possible factor, as experiments with lenses which try to reshape the eye suggest.

*New Scientist*, 20 Feb 10, pp.43-45, investigates new therapies for age-related macular degeneration, AMD, the commonest cause of blindness in Western societies. There are two types, one which develops slowly and another, "wet" AMD, which strikes extremely quickly. Recently a molecule in the eye, vascular endothelial growth factor, VEGF, was found to stimulate the growth of new blood vessels and restore

vision loss. Techniques for using this are evolving. RNA interference, which can switch off an individual gene, is being developed. Still under research are possibilities of using gene therapy itself. For the dry form of AMD the promising new therapy is replacement of the problem areas in the retina by using stem cells.

### Ongoing agendas

**C L Barry et al**, *The Millbank Quarterly*, March 09, explores the beliefs among the public which affect support for policies related to obesity. A number of obesity metaphors were used in a US researched opinion study, and were shown to be independent and valuable predictors of public support for policies, and also provided a potential framework for framing strategic educational programmes for changing attitudes.

*Nature*, 5 March 09, pp.25-27 reports on the discoveries neuroscientists are making as they look deeper into the relationship of the brain's functioning and the programmes developed by Alcohol Anonymous, which have been generally successful. Formerly, scientific focus was on the brain's limbic system which mediates fear and desire, but they are now exploring the pre-frontal cortex which regulates social cognition, self-monitoring, moral behaviour and other aspects. These are closely integrated into the limbic system. Physical damage, trauma and stress can all trigger malfunctioning of the prefrontal areas, which otherwise act as brakes on addictive behaviours. The AA 12 step programme specifically promotes the "braking system," provided addicts use it regularly.

Vaccines against cancer have been long-hoped for but proved elusive. **A Park, Time (NZ), 14 Sept 09**, reports on positive developments from trials of vaccines against melanoma and a type of lymphoma, and others against prostate cancer and a type of brain cancer. All this is built on the growth of understanding of the human immune system, how malignant cells work and of the best time for administration of the vaccines. Moreover, lessons from these developments are potentially the seed bed for an entirely new field of immune-based treatments for cancer.

*Scientific American*, Oct 09, **N Garcon, M Goldman**, report on new insights from immunological research have shown that a new groups of adjuvants, ingredients that stimulate immune system responses to vaccines can facilitate design of vaccines for specific targets. These adjuvants can also make existing vaccine more effective and make new ones possible.

### Listing

**The Longevity Revolution: the Benefits and Challenges of Living a Long Life**, **R N Butler**, Public Affairs, 08. A leading US exponent of geriatric medicine raises and examines a number of significant questions on issues such as, How can increased longevity be financed? He also offers a valuable conclusion, "Imagining Longevity," exploring what makes a good life.

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