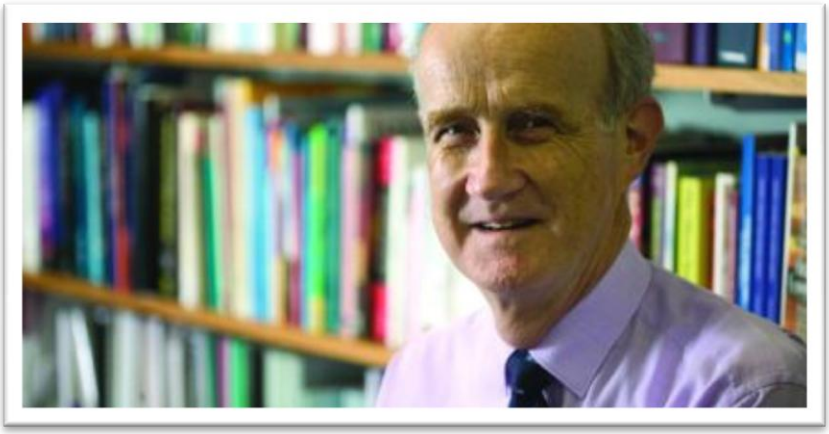
WN *Feedback*

World Nutrition **Volume 5, Number 11, November 2014**

Journal of the World Public Health Nutrition Association
Published monthly at www.wphna.org/worldnutrition/

Heroes
Tony McMichael

Access May 2014 Tony McMichael, Helen Berry, Colin Butler on climate here
Access July 2014 Tony McMichael's choices of top texts
Access October 2014 Naomi Klein, Tony McMichael, Colin Butler on climate here
Access October 2014 Geoffrey Cannon on Tony McMichael here



Editor's note

Tony McMichael, our main author with Colin Butler on climate, food systems and human health, and an architect of the *New Nutrition*, died in September. Some of his contributions can be accessed above. Below are appreciations from Colin Butler, Mark Wahlqvist, Jane Dixon and Colin Sindall, Ro MacFarlane, Elihu Richter, Jonathan Patz, Chris Kelman, Geof Rayner, Peter Kim Streatfield, Nancy Krieger, Claus Leitzmann, and Geoffrey Cannon.

Earth systems. Tony McMichael
Global vision

Colin Butler writes:

The late 1960s was a period of great ferment and turmoil for young people. It was also a period of intense concern about global population growth. Tony McMichael, having combined medical qualifications with having being president of the Australian

students' union, decided to engage in the most political dimension of the medical and health sciences – public health.

He was influenced by big thinkers about the place of humans on the planet such as Paul Ehrlich and René Dubos. These spurred him to write a series of essays called 'Spaceship Earth' in *Nation Review*, a weekly newspaper, and thus to build up his own thinking. Two decades later, just when – despite the 1992 Rio Summit – complacency about global population and global environmental impact was arguably most prevalent, he published his first and most important and influential book, *Planetary Overload* (1). By then Tony's academic reputation as an international epidemiologist was well established, and this book may have seemed a gamble. Indeed, before its eager acceptance by Cambridge University Press, its manuscript had been dismissed by a reviewer for Oxford University Press.

Earth system science

At that time the integration of earth system science and health was scarcely beginning, though the foundations had been laid by the microbiologist turned planetary ecologist René Dubos (2). Tony McMichael is the most influential thinker to build on that legacy. Today, ecological public health courses are emerging as legitimate and indeed vital.

Tony died less than a week after the greatest global climate protest so far in history, recorded in *WN* in October. US president Barack Obama, assisted by the recent steep fall in price of solar and some other forms of renewable energy, may perhaps understand the job-creating, economy-saving and civilisation-preserving potential of a rapid transition to clean global energy.

If we humans are to survive as an advanced, wise and compassionate species, the work of people like Tony McMichael will increasingly be recognised as fundamental to the shift that is needed, and that so many of us are now engaged in.

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1 McMichael AJ. *Planetary Overload. Global Environmental Change and the Health of the Human Species*. Cambridge: Cambridge University Press, 1993

2 Ward B, Dubos R. 1973). *Only One Earth: The Care and Maintenance of a Small Planet*. London: Penguin, 1973.

*Butler CD. Earth systems. Tony McMichael. Global vision [Feedback]. World Nutrition November 2014, **5,** 11, 1008-1009*

The 1960s. Tony McMichael
Good medicine

Mark Wahlqvist, Basil Hetzel and Tony McMichael gathered together in the grounds of Australian National University. Tony was Basil's first PhD student at Monash University

Mark Wahlqvist writes:

My association and admiration for Tony McMichael is long, formative, and profound. We were at medical school together in Adelaide within a circle of friends who included my late wife, Soo Sien Huang. One important thing was clear. That was Tony's cross-cultural interest and respect in an Australia which then still had a racially-based immigration policy. In due course we would be involved in studies of migrant health as we embarked on research careers with public health relevance. But much was to intervene.

In the 1960s there was social unrest, student revolt, and the Vietnam War. Tony being the president of the Australian Union of University Students in 1967 was not a good ticket for entry into a conservative medical profession. He had to move from Adelaide to Melbourne – and for other reasons so did Soo Sien and I. Tony and Judith Healy, his wife, came to live with us, so we explored new ideas and faced a rapidly changing world (so what changes).

In 1968 Tony's future was uncertain, and to make ends meet and explore the medico-social needs of inner Melbourne, we worked together in family medicine. There was no national health insurance system then, and the poor struggled with access to health care, often dependent on the doctor's charity. We became advocates of health care reform.

Basil Hetzel, our professor of medicine at the University of Adelaide, had worked in Papua New Guinea on iodine deficiency, formulating the concept of Iodine Deficiency Disorders and ultimately leading the international programme to eradicate them. He had moved to Monash University in Melbourne as its foundation professor

of social and preventive medicine. I connected with him again and suggested that Tony might welcome an opportunity to do his PhD with Basil. The rest is history.

Tony and I often compared notes and developed mutual interests in migrant health and in what I and now others call 'eco-nutrition'. *I followed him on the impact of climate change*. He developed with great insight and diligence the nexus between planetary and human health. We were shaped by our time of youth, the universities with which we were associated, our fellow students and friends, and unusually inspiring mentors. Tony's extraordinary legacy will continue to unfold.

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*Wahlqvist M. The 1960s. Tony McMichael. Good medicine [Feedback]. World Nutrition November 2014, **5,** 11, 1010-1011*

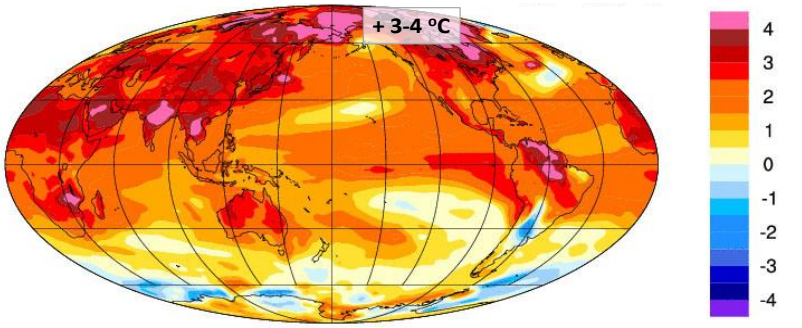
Life as a whole. Tony McMichael
Social justice

Jane Dixon and Colin Sindall write:

IPCC 5th Assessment Report, 2013

Projected Warming (RCP 4.5) **by 2070**

Near-Surface Global-Average Air Temperature = + 1.76°C



Antarctic coastal fringe cools – stronger southern 'westerlies' bring colder deep-water to surface; stratospheric ozone depletion reduces local 'greenhouse' effect

A powerful projection of land and ocean temperatures in just over 50 years' time. A slide from Tony McMichael's final presentation to epidemiological colleagues, Anchorage, Alaska, in August

Tony McMichael's best known achievements over 40 years are in the three areas of climate change (see above), environment and health, and human nutrition and chronic disease. As well, he made leading contributions in occupational health, environmental exposures, cancer epidemiology, and the new public health ecology

paradigm. A book edited by Colin Butler, Jane Dixon and Tony Capon, *Health of People, Places and Planet: Reflections on Four Decades of Tony McMichael's Epidemiological Understanding*, whose 38 chapters reflect on Tony's life work, is now under review. For Tony all the areas he worked in, connected. In *Planetary Overload* (1) he stated:

> While risks to health result from deviations from the dietary nutrient profile for which human biology evolved, so the production of food in an overcrowded and unequal world poses risks to the environment.

Why diets change

One of the overlooked early contributions to Tony's 'big picture' thinking was to write with Basil Hetzel a book, *The LS Factor* (2). Rather than attribute diet-related disease to poor dietary choices of individuals, he and Basil argued that powerful societal forces were shaping dietary change. They questioned the political and economic directions modern societies are taking. For Tony, the 'nutrition transition' paradigm is under-theorised. All it says is that diets change as societies modernise. But why?

Many aspects of the *The LS Factor* could easily have been written by a political scientist or sociologist (albeit one highly skilled in epidemiology!). This foreshadowed much of Tony's later, multi-disciplinary thinking. His use of the term 'lifestyle' (as in 'LS') does not refer to individual risk behaviour, but to ways of living, which is to say, sets of activities with all of their attendant value-laden meanings. Long before the resurgence of the 'social determinants' concept, Tony used historical and sociological analyses. Life chances (including exposure to food products and their marketing) and longer-term societal changes, rather than individual choices, for Tony were stronger explanations for the chronic diseases that have become public health crises

He later explicitly writes of human cultural evolution determining the sources and methods of food production. While this 'had occurred at an ever-increasing pace, human biology has not had time to adapt'. Such a line of reasoning shaped his work on climate change and food systems. This has included studies of the impact of meat production and consumption on the biosphere, and the direct (through diet-related disease) and indirect (through environmental degradation) impact of industrial food systems on health.

Asking 'why?'

Unique in the experience of one of us (Jane, a food sociologist working for 15 years in an epidemiology centre), has been Tony always asking 'why'. He was hugely impatient with merely descriptive epidemiology. He urged visiting scholars to investigate socio-cultural and economic drivers of environmental and public health risks. The influence of his brother Philip, of the development sociology department at Cornell University, was evident. They collaborated formally only on a couple of occasions, but the cross-fertilisation was apparent: Philip concerned with the environmental consequences of

capitalist development, and Tony with the corporate and global commodity chains underpinning food systems. He always exhorted public health scientists to read much more widely, and politically as well as historically.

The final presentation

When Tony came in 2001 to be the new director of Australia's National Centre for Epidemiology and Population Health, he said that humans had 30 years to change course in the way they consumed the earth's commons.

Jane's final conversation with Tony this year, reveals the depth of his conviction that societies have to be transformed, and quickly, if humankind and the planet are to survive. It was early August, and he was about to travel to Anchorage, Alaska, to be the opening keynote speaker at the International Epidemiology Association world congress. One of his slides is shown at the beginning of our letter. He said rather wearily that he was not looking forward to the reception he might get, for he was going to put forward yet another challenge to the discipline to rethink its orthodoxies and approaches. He had felt inspired, he said, by reading Thomas Piketty's *Capital in the Twenty First Century*, and was struck by parallels between the current state of epidemiology and economics. As Piketty describes it, economics has lost its way because it ignores its basis in political economy. 'It is such a pity that one has to wait until retirement to read a work like this by Thomas Piketty', he said.

The uncomfortable message Tony gave at Anchorage, is that epidemiology is doomed to irrelevance unless it returns to its mid-19th century origins, when the observers of phenomenal trends put great effort into attempting to determine their social causes, and were equally engaged in the environmental and social reform movements of their day. Tony's own books, papers and articles already reveal a rich understanding of the lessons of history and politics. This is why his admirers cover such a wide terrain, and why his influence is, and will continue to be, profound.

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1 McMichael AJ. *Planetary Overload. Global Environmental Change and the Health of the Human Species*. Cambridge: Cambridge University Press, 1993.
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Dixon J, Sindall C. Life as a whole. Tony McMichael. Social justice [Feedback]. World Nutrition November 2014, ***5,*** *11, 1011-1013*

Epidemiology. Tony McMichael
Celestial biking

Elihu Richter writes:

My relationship with Tony spans his Handlebar Moustache through Post-Handlebar Moustache Periods, at meetings I remember in Ottawa, Antwerp, Krakow and Vancouver. In Mexico City he confessed to me that he had arrived not by bike but by plane. His book *Planetary Overload* (1) has pride of place on my shelves. He was always profound, witty, ironic, friendly and generous. Here are some thoughts on how Tony's ideas shaped my own work.

Tony's circles

He taught and showed me that epidemiology must move away from linear unidirectional models, to scenarios that are complex and circular. Our environments impact on us and we impact on these environments. A lot may be determined, but there is choice. I once explained this concept to a group of rabbis, and they got the message. They appreciated the Biblical precept that the Earth has not been given over to the absolute ownership of humans to use and abuse as they wish. Rather, we all should act as custodians, to maintain and preserve the Planet for the benefit of our contemporaries and for future generations.

Tony taught that we epidemiologists have to get over our hang-ups about ecological studies. He and I had a fast exchange on how to build analytic power into such studies, by looking at the before-after deltas in outcome. For example, road deaths in one total population exposed to speed cameras as compared with the same in another (2). Time, which usually lurks in the background, becomes the hero of the game in studies which look on ecosystem impacts. This insight has yet to be internalised by the epidemiological community.

Tony's radar

Tony and I shared a preoccupation with the impacts of transportation networks on both health (as with injury) and ecosystems (as with urban sprawl). This interest led to advocacy for shifts from more cars and roads to public transport, and of course biking and walking, with China as the disaster. Tony catalysed a paper of mine on injury and environmental epidemiology (3). My students and I remain grateful.

With Tony's inspiration, I tried to bring together 'tailpipe' epidemiology (pollutant emission) and 'bumper' epidemiology (kinetic energy). The unifying concept being that speed kills and pollutes as a function of the fourth power of its increase. Therefore the way to go to prevent both injury and disease, is to kill speed. Radar camera networks make this concept work in the public interest. More and more

government ministries of transport and of the environment are now seeing their common interest in this expression of Tony's ideas.

Later on I came to perceive Tony as a very foxy neo-Malthusian, concerned with the limits to all sorts of growth, including of population. He marshalled plenty of evidence for his case – overfishing, falling crop yields, water stresses, and so on. But I do not see him as a gloomy determinist pessimist. He had too much *joie d' vivre* for that. Is change in global climate apocalyptic? Maybe, but not necessarily. But Tony observed that there will always be winners as well as losers. And choice remains.

Tony's challenge

Tony wrestled with the question of what exactly is it that is in short supply, with Scenarios A, B, C and D as case studies. Why is it that drought and desertification lead to conflict, war and genocide between farmers and nomads in Darfur, but not between Southern California and Mexico? Why is it that Gaza, a crowded place, is poor and miserable, but Hong Kong, a much more crowded place, is booming?

I once asked Tony whether it is moral capacity and moral capital, and not population resource issues, that are the real issues. His answer was a challenge. He told me to write a book. This has led me to engage in a series of discussions with Tony's close colleague and friend Colin Butler. We are now sharing our concern for the need of models that somehow can take into account vast moral issues, including the horrors of war, atrocities and genocide. It turns out that Adam Smith himself was preoccupied with these questions.

Tony's challenge stays with me. I am grateful. Keep biking Up There, Tony – with a celestial helmet, of course.

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*Richter E. Tony McMichael. Epidemiology. Celestial biking. World Nutrition November 2014, **5**, 11, 1014-1015*

Study. Tony McMichael
The leading edge

Ro MacFarlane writes:

In June 2014 I was awarded a PhD in epidemiology for which Tony McMichael was my senior supervisor, so I have the honour of being one of his last students. I am grateful to be warmed by the glow of the accumulated wisdom of his long career, and to engage with his far ranging discussions, his exquisite tutelage on communicating unambiguously in the English language, and his genuine interest and support.

Only connect

Just prior to starting my doctoral research I had been working in the remote Australian Western Desert with traditional Indigenous landowners, navigating the complex cultural, political, social, and conservation issues of aspirations for healthy country people, and by natural extension healthy people. Other times I have worked with farmers on similar issues. A burning question for me, had always been: Why we do not see these things as more generally interlinked? Was it because we don't have the evidence base, or because we cannot find time to lay all the pieces out on a table and organise them better?

Stepping back from the urgent to find the important, I applied and was accepted to do doctoral research at the National Centre for Epidemiology and Population Health at the Australian National University, as then directed by Tony. This is an extraordinary multidisciplinary centre where the important questions are asked, and if the data or techniques required to investigate them do not pre-exist, then the challenge to develop them or find the disciplines that do so is met.

The leading edge

As I strove to unravel the role of ecological change in regional emerging diseases, my scale of enquiry shifted from the immediate to the landscape, and delved further back in time. I became increasingly in awe of the depth of Tony's thinking. This, often published decades ago, is so rich and forms an exquisitely vast and multidimensional scaffold to which my own research adds another small brace and bolt.

This framework holds the dispersed and disparate evidence base that Tony was organising As our knowledge of each system and its impact on human and planetary well-being is critically explored, we understand the impacts on other systems better and our ability to make wise decisions is strengthened. These relationships are so complex and intertwined and yet critical to understand. This is not an endeavour for the faint hearted: it is epidemiology at the edge.

Support is not universal for multidisciplinary research, as I have come to know personally. Tony shared anecdotes of his pioneering days working on climate and health. 'What right have you got to talk about climate and disease?' was apparently roared at him at conferences in the 1990s by characters with bronzed arms, scarred with the bites of mosquitoes from years of malarial research in the tropics. Time has vindicated the importance of his careful scholarship and steadfastness.

Ecological change in the 20th and 21st century has been overwhelming. The expansion of land clearing, particularly for livestock; the uncoupling of livestock rearing systems from fodder production; the pressure on wildlife to accommodate our increasing human landscapes or perish; and the ever growing numbers of humans concentrated in expanding urban centres – all these impact on diseases, and on broader well-being. Climate change exacerbates these effects. Social inequality and poverty undermines our ability to move forward successfully.

Equipped with accumulating evidence, sturdy conceptual frameworks, the interest of international organisations, and even listening politicians, the baton has been passed to younger and new generations, to continue striving for a healthy planet and a healthy humanity.

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MacFarlane R. Epidemiology. Tony McMichael. The leading edge [Feedback]. World Nutrition November 2014, ***5,*** *11, 1016-1017*

The human family. Tony McMichael
Mentor of mentors

Jonathan Patz writes:

During the early stage of his career, Tony worked in the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) Division of Human Nutrition. While studying the dietary and environmental influences on early childhood exposures, he was among the first to research the link between lead and childhood brain development, and was co-author for the Port Pirie 15-year prospective study on children's IQ and lead exposure.

He wrote on providing food for populations today, without over-exploiting resources required for tomorrow. The title of one of his 2005 studies is telling:

'Integrating nutrition and ecology: Balancing the health of humans and biosphere'. He also published on cancer prevention, and on ultraviolet radiation, vitamin D status and early-life infections and development or progression of autoimmune diseases, such as multiple sclerosis.

He also made a major discovery concerning occupational health. He identified 'The healthy worker effect', whereby very sick people no longer in the workforce were left out of risk calculations, which showed the need for lower 'safe exposure' thresholds.

I first met Tony in 1993, in Geneva, at the World Health Organization. At the time, WHO had just been approached by the UN Intergovernmental Panel on Climate Change (IPCC) to contribute a health chapter for their second Assessment Report – health was missing in the first report. Tony was invited to serve as 'convening lead author', and continued in this role.

He produced over 300 peer-reviewed papers. His 1993 book *Planetary Overload: Global Environmental Change and Human Health* for me will forever rank alongside René Dubos' *So Human an Animal,* Aldo Leopold's *Sand County Almanac,* and Rachel Carson's *Silent Spring.* His warnings from the early 1990s have become clear and shocking realities now. For example, greenhouse gas emissions are now twice the average rates than between 1970-2000. And since 2008, more than half of the world's population lives in cities.

Tony's families

Tony's family is a *tour de force* as well. His brother Philip, professor at Cornell University, studies global implications of agriculture and food policies, including recent land-grabs for food and biofuels. Tony's wife Judith Healy is an associate professor at the Australian National University's school of Pacific and Asian studies. Their daughter Anna is a widely recorded violinist, and their daughter Celia is a lecturer at La Trobe University in Melbourne.

Thanks to Tony McMichael, children are smarter, workers are healthier, nutrition of future generations has risen in priority, and policy-makers and citizens are aware of the impact of climate change on food systems and world health. Tony was a selfless and caring professor who to so many scientists and professionals was the mentor of all mentors. I will always remember Tony McMichael as a gifted teacher, a wonderful and humorous friend, and an inspiration.

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Patz J. The human family. Tony McMichael. Mentor of mentors [Feedback]. World Nutrition November 2014, ***5,*** *11, 1017-1018*

Music. Tony McMichael
Homage to Chopin

Chris Kelman writes:

In Tony, I was fortunate to have as a mentor and friend one of the heroes of my profession. Despite widespread recognition of his extraordinary ability, plus the day-to-day admiration of his colleagues and friends, he seemed almost unaware of his unique talents. He treated us all as equals and was eager to hear our ideas.

Tony had a life-long and touching admiration of Chopin. During a visit to Paris he set up a small photographic composition that involved his personal copy of the polonaises placed on the tomb at Père Lachaise. He told me that he hoped some of the spirit of the composer would infuse into his sheet music. When I last heard him play, it seemed his scheme had been successful!

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Kelman C. Music. Tony McMichael. Homage to Chopin [Feedback]. World Nutrition November 2014, ***5,*** *11, 1019*

Public health. Tony McMichael
Big thinking

Geof Rayner writes:

In September, sitting in a meeting on obesity convened by civil servants, I was reminded of Tony McMichael. Complaining that the approach the civil servants were using was too short-sighted, too individualistic, I made the distinction between the proximal and the distal. Too often, in this so-called 'neo-liberal', 'market-driven' age, preference is given to proximal factors, such as people's apparent 'choice' (determined by many factors, from the money in their pocket to the 'push' of marketing), as opposed to the distal, the overall shaping of conditions, environments and circumstances, which is overlooked or ignored. This was terminology from a powerful essay by Tony (1).

In his writing, which survives him, Tony has other targets too. These include the overhang of ideas from the past on to the present, dualistic tendencies such as the separation of the conditions of human health from ecosystem health, and dualisms of all kinds derived from dominant trends in Western thought. He was an inspiration. He emboldened his readers and listeners to think more deeply, to throw off simple-

minded, often ideologically-formed blinkers. He showed that this is the era of ecological public health, where what humans do to the planet feeds back into human health. It is not just a matter of economic growth securing health, since determinants of growth are also wrecking the planet.

For people working in the food and agriculture fields, reading Tony McMichael and thinking about what he believed, is richly rewarding. In this way he is still with us. Every movement needs its heroes, because they are brave, and because they set examples. Tony McMichael remains one of **t**hese**.**

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Reference

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*World Nutrition November 2014, **5**, 11, 1019-1020*

Population. Tony McMichael
Urban crowding

Peter Kim Streatfield writes:

In 2007 Tony made what I believe was his first visit to Bangladesh and to Dhaka, where I work at the Centre for Population, Urbanisation and Climate Change. Bangladesh is a country symbolising the pressures of human populations on the environment, an issue which Tony was greatly interested in, as we all know. He made landfall in Bangladesh on 15 November, a date etched in our memories, as Cyclone Sidr also made landfall on the same day on the southern coast of the country. This was a pretty dramatic stage entrance, for a climate scientist to be accompanied by a category 5 cyclone.

We had planned a trip for Tony to our Matlab field-site by seaplane on the next day, but that was cancelled, as all aircraft were needed for ferrying medics and supplies to the coast. Instead we took Tony to the slums of Dhaka, which is believed to be the most overcrowded city on earth, one reason being *forced migration from farmland* ruined by salt floods. There he could readily see the consequences of population overload on the planet, along with environmental challenges facing countries with limited resources, including space. He seemed to thrive on interacting with the slum dwellers, sitting in tiny rooms (homes) asking mothers about childhood illnesses and how the health system worked (or not) for them.

Working with the young

Later Tony spent hours with our staff discussing what research they might do to explore the relationship between climate change and health. It was a greatly appreciated visit by the staff, particularly as he was willing to devote most of his limited time to the younger researchers.

I had no idea that Tony was unwell, and now regret that I did not take greater advantage of his willingness to communicate about what climate change-health and population research we need to do here in Bangladesh. As has been said, he will be greatly missed on the global climate-environment stage, but also at a more personal level by our research staff in a place which epitomises the concerns he has been highlighting for many years.

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Streatfield PK. Population. Tony McMichael. Urban crowding
*World Nutrition November 2014, **5**, 11, 1020-1021*

History. Tony McMichael
Past, present, future

Nancy Krieger writes:

Tony's work as an epidemiologist has contributed in so many ways to the bettering of people's lives and also life on this planet. He had a profound understanding of the need for deep theoretical and historical analysis of past and present conditions, always with an eye to the future, including the threats posed by global climate change, and always with an eye towards equity. I always appreciated and benefitted from our exchanges (and his humour). And I have always made sure to assign his writings to my students, so that they may learn from his wisdom and insights, all as part of carrying on the work to build a more just and sustainable world.

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Krieiger N. History. Tony McMichael. Past, present, future
*World Nutrition November 2014, **5**, 11, 1021*

The new nutrition. Tony McMichael
The diamond mine

Claus Leitzmann writes:

Tony as a Giessen New Nutrition workshop participant shaped its Declaration and also drafted paragraphs on the spot. Here he is on the crucial third day, watched and admired by Marco Sória

Some people you have to meet only once for a lasting impression. My single encounter with Tony was at our workshop in Giessen a decade ago, when Geoffrey Cannon and I initiated our project *The New Nutrition Science*. This meeting lasted for most of a week, so there was ample time to get acquainted.

Tony was the star of our illustrious group of scientists, and experts from banking, the law, government, philosophy, and the media. Tony had most insight concerning our key objective of integrating all aspects of nutrition, beginning with the industries serving farmers over the production, storage, transport, processing, packaging, distribution and trading to the preparation and consumption of food.

In our discussions Tony contributed continuously from his tremendous experience. He was a diamond mine of ideas that helped us to develop a concept of nutrition to fit the challenges of the present times and the future. Like others at the workshop I was impressed by Tony's wisdom and humour, and his excellent piano playing.

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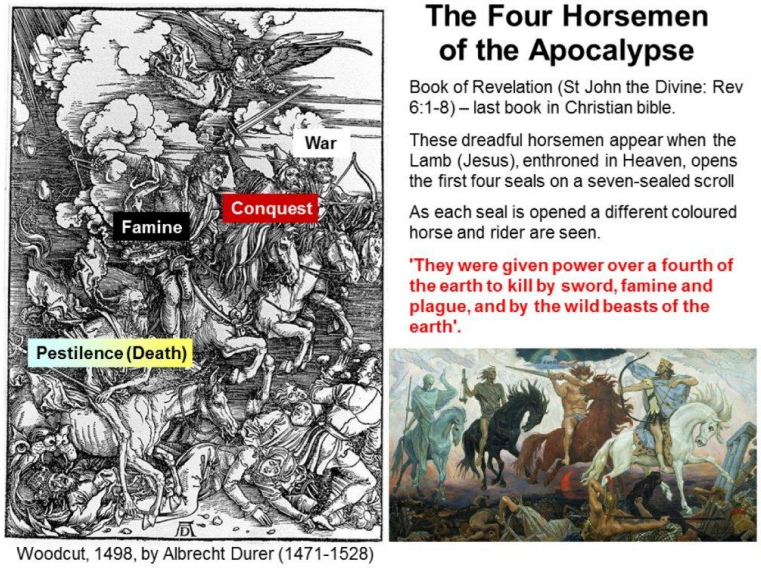
Leitzmann C. The New Nutrition. Tony McMichael. The diamond mine.
*World Nutrition November 2014, **5**, 11, 1022*

Prophecy. Tony McMichael
The Four Horsemen



Woodcut, 1498, by Albrecht Durer (1471-1528)

Geoffrey Cannon writes:

It was Tony who prompted us to project our October commentaries on change in climate (1) with an image of the Biblical Four Horseman of the Apocalypse. Above is a slide from his 2011 lecture at the Australian Academy of Science in honour of Frank Fenner (2). Tony was always careful not to be black or bleak in his concluding statements. He began his lecture with a 2010 statement from Frank Fenner:

> Homo sapiens will become extinct, perhaps within 100 years. A lot of other animals will, too. It's an irreversible situation. I think it's too late.

Tony stated that this was not his view. But he did not claim that he was right. His study of the impact of changes in climate throughout history, before and after the life of Christ, showed that the apocalyptic vision of St John did indeed foretell what was to come, in the shape for example of the Black Death. Tony also stated that modern resources do not make us immune from the impact of change in climate which, he always pointed out, is now occurring at a faster rate than previously in history.

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2 McMichael AJ. Pestilence, pandemics and climate change. 2000 years of experience plus 100 years of risk. Lecture given at the Australian Academy of Science, 2011

Cannon G. Prophesy. Tony McMichael. The Four Horsemen.
*World Nutrition November 2014, **5**, 11, 1023*

Climate. World governance

Systems failure

Hot stuff. US president Barack Obama speaking at a meeting held to address climate change. Summer of 2014 was the hottest since records began, says the US National Climatic Data Center

Roberto Savio writes:

The UN Climate Summit, extraordinarily called by secretary-general Ban Ki-moon on 23 September, seemed to show that it had finally dawned on political leaders that there is an urgent problem about the impact that industrially-generated change in climate is having on the planet. And yet, the array of leaders gathered together in New York, although full of general platitudes, gave another depressing display of failure to come up with a concrete answer. While acknowledging the problem, many leaders found a way to duck their responsibility, usually by indicating domestic constraints.

The US destiny

Thus US President Barack Obama made it clear that Congress would not be ready to ratify an international climate treaty. Nothing new here. This line of reasoning applies to the US approach in general. Congress does not accept binding the United States to any international treaty because of the US claims to an exceptional destiny, which cannot be brought under scrutiny or control by those who are not US citizens. Also, the US has become a dysfunctional country, where the judicial, legislative and executive powers cannot cooperate, even on crucial issues.

Anant Geete, India's new minister of heavy industries and public enterprises, stated that growth in his country has priority over anything else, and therefore India will continue on its path towards industrialisation, with energy sources and fully based on coal, while other renewable energies will be brought in progressively, even if this will eventually make India the world's biggest polluter.

The European Union could not make any commitment, because a new Commission was due to take over in October. The person earmarked for the post of commissioner for climate action and energy is Miguel Arias Canete of Spain, a major shareholder in two Spanish oil companies until he sold his shares to shore up support for his nomination. The new and more conservative Commission has brought in a well-known UK City lobbyist, Lord Jonathan Hill, to the portfolio of financial services. Such a system of political compromises is like bringing Count Dracula in to run a blood bank.

Worldwide flooding

There were plenty of background papers prepared for the UN summit. One prepared by the Intergovernmental Council on Climate Change, brought together 3.200 scientists from all over the world. Another global study conducted by Climate Central, a US research group, based on more detailed sea-level data than has previously been available, reports that about 1 person in every 40 in the world lives in an area which will be susceptible to flooding in the next 100 years – about 177 million people. Even if immediate measures were taken for climate control, 1.9 percent of the population of coastal countries would be affected. At worst, the figure would be 3.1 percent. To give a concrete example, 4 percent of the Chinese population, 50 million people, would be affected. Eight of the 10 large countries most at risk are in Asia.

The voice of Abdulla Yameen, President of the Maldives, who reminded leaders at the climate summit that small island countries – which would be the first to suffer from any rise in sea levels – have formed a federation to defend their right to exist, went largely unheeded.

Denial continues

There are no signs that the situation is improving. In the decade up to 2012, global emissions of CO_2 rose by an average of 2.7 per cent. In 2013, emissions were the highest in the last 30 years. And yet, the energy sector is mounting a strong campaign to deny that there is any climate change. If anything, say the deniers of climate change, what is happening is part of a normal historical cycle, not the result of human activity. All data demonstrating the contrary are being ignored. Many people believe that debate on the issue is still open.

Perhaps what happened in late September between Google and the American Legislative Exchange Council (ALEC) is symptomatic of this 'normal historical cycle' On 22 September Google chairman Eric Schmidt announced that his high-tech company was withdrawing from ALEC, saying: 'Everyone understands climate change is occurring and the people who oppose it are really hurting our children and our grandchildren and making the world a much worse place. And so we should not be aligned with such people – they're just literally lying.'

ALEC has urged repeal of state renewable power standards. Reacting to Google's decision, Lisa Nelson of ALEC said: 'It is unfortunate to learn Google has ended its membership in the American Legislative Exchange Council as a result of public pressure from left-leaning individuals and organisations who intentionally confuse free market policy perspectives for climate change denial'. So, if you are worried about climate change, you are left-wing and against the market!

Industry moves

Only corporations made any concrete pledges at the New York summit. Apple chief executive officer Timothy Cook said that his company was committing itself to focusing on the emissions of its main suppliers, which account for around 70 percent of the greenhouse gases that come from production and use of the company's products. Cook rejected the idea that society must choose between economic growth and environment protection, giving as an example a huge solar farm that his company built in North Carolina to help power a data centre there. 'People told us this couldn't happen, it could not be done, but we did it. It is great for the environment, and by the way it is also good for economics.'

Cargill, the huge American commodity processor, pledged to go even further with an existing no-deforestation commitment on palm oil, and extend it to cover all its agricultural products. With other companies processing Indonesian palm oil, Cargill called on the Indonesian government to get tougher on deforestation.

Safeguarding the environment has long been a rallying banner for a large part of civil society worldwide, and a major cause for concern among younger generations. The hundreds of thousands of people who took to the streets throughout the world ahead of the New York summit in solidarity with the need to do something about climate, were no mere figment of the media's imagination. So why were they clearly invisible to the planet's decision-makers?

The next important date for the climate on the UN agenda is the climate change conference to be held in Paris in 2015. Will our political leaders again waste the chance to do something concrete? Will they continue to stand by and watch as time runs out for the planet, and for humankind?

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Savio R. Climate. Government. World governance. Systems failure [Feedback]. World Nutrition November 2014, 5, 11, 1024-1026

Nutrition programmes. Conflicts of interest
Who gets fortified: children or corporations?

Access March 2013 Editorial on fortification here
Access March 2013 Mark Lawrence on food fortification here
Access June 2013 WHO Margaret Chan Helsinki statement here
Access October 2013 Big Food Watch on industry and nutrition profession here

Open fresh food market in Quito, Ecuador. National and local food systems and supplies are the best basis for nutrition programmes that will prevent disease and promote good health and well-being

Wilma Freire and William Waters write:

In the past few years, ethical discussion on nutrition research, planning, and programme implementation has focused on the increasingly prominent role of corporate interests in shaping how long-standing and also emerging nutrition problems are addressed. Many health professionals have grave concerns regarding the influence of transnational corporations. Our example here is corporate involvement in the development and implementation of policies and programmes that give priority to food fortification, at the expense of protection and promotion of the production and consumption of locally-produced foods.

Conflicts of interest

Nutritional interventions and policy initiatives are too often based on (and limited to) fortification strategies that are closely linked to the production and marketing of processed food products and nutritional supplements by transnational corporations and their local partners. These initiatives, and the research behind them,

have been shaped in at least four ways through corporate sponsorships, grants and other methods that approach or cross the lines of conflict of interest.

- Key nutrition journals receive support from food and drink corporations such as Nestlé and Coca Cola, two of the ten biggest food and drink product manufacturers in the world. The annual sales of these enterprises exceed the gross national product of many poor and even middle-income countries, and they spend on average $US 3 billion annually on advertising and marketing worldwide.

- Professional congresses and other scientific events receive large sums for corporate sponsorship. For example, several of the world's largest transnational food and beverage corporations had prominent stands in the IUNS International Conference on Nutrition in Granada in October 2013, and also sponsored and controlled supposedly impartial scientific discussions without disclosing existing or potential conflicts of interest that could influence the direction and diffusion of scientific research.

- A variety of non-government organisations such as the Global Alliance for Improved Nutrition (GAIN), the Micronutrient Initiative, and the Scaling Up Nutrition (SUN) programme, are prominently engaged in defining the global nutrition agenda with corporate support.

- Multilateral organisations pressure member countries to implement policies that benefit their corporate partners or allies. For example, the World Food Programme is currently applying heavy pressure on Ecuador to fortify rice, despite evidence from the recent national health and nutrition survey which shows that this staple is already consumed in excess, and where the prevalence of overweight and obesity has nearly reached levels found in Mexico and Chile. Micronutrient deficiencies persist in Ecuador, but the problem is largely one of children under the age of 2 and much less with people in other age groups who consume most of the rice. Promoting the mass fortification of rice makes no sense, and it appears that the benefit would accrue mostly to corporations involved in the expanded sale of rice and the means to fortify it.

The better approach

The principal defence of single, vertical approaches to micronutrient deficiencies is that food fortification policies and programmes are based on scientific evidence, while calls for considering alternative approaches are not. It is also asserted that conflicts of interest are not an important issue in this regard.

We do not agree. While officials working for WHO and other multilateral organisations promote fortification as the way to address specific nutritional deficiencies, they should also provide opportunities for open discussion about the design and implantation of effective nutrition programmes centred on other approaches, especially those based on local participation and the promotion of a varied and healthy diet with locally-produced fresh foods, while eschewing conflicts of interest. In this context, for example, the provision of micronutrient supplements

and fortified foods should only be promoted when needed within the WHO Package of 24 Essential Nutrition Interventions.

There is no dispute that WHO bases its recommendations on scientific evidence. In the great majority of cases it has admirably fulfilled its historic mission. In technical terms, food fortification can resolve nutritional deficiencies. In some cases, it has been the appropriate programmatic response to specific nutritional problems. In Latin America, nutrition initiatives implemented with PAHOs involvement have included carefully-designed programmes of iron fortification. Likewise, iodine fortification of salt in Ecuador is one of the great examples of successful nutrition intervention in the past half century.

These examples, though, illustrate a critical point. Interventions are successful and sustainable when they are based on the active involvement and participation of national and local decision-makers and other actors, including the private sector at the country and local level. Moreover, these interventions were framed and implemented as part of integrated approaches to complex problems. Certainly, they were also scientifically sound, but that element in and of itself was not the only reason for success. Even in the case of the wonderful experience of virtually eliminating iodine deficiency in Ecuador, there was no magic bullet. Moreover, the solutions to these and similar problems were not shaped by corporate interests.

The threat of Big Food

In this regard, in June 2013, at the 8th Global Conference on Health Promotion in Helsinki, WHO director-general Margaret Chan refers to the opposition of 'forces that are not so friendly' to the adoption of healthy ways of life due to the 'business interests of powerful economic operators.' She refers to 'Big Food, Big Soda, and Big Alcohol,' which 'fear regulation' and use tactics that 'include front groups, lobbies, promises of self-regulation, lawsuits, and industry-funded research that confuses the evidence and keeps the public in doubt' in addition to influencing scientific discussion and debate.

Conflicts of interest present a very real danger. As Margaret Chan points out, transnational corporations employ a variety of strategies to further their objectives at the expense of public health, including 'gifts, grants, and contributions to worthy causes that cast these industries as respectable corporate citizens in the eyes of politicians and the public', while they publicly assert 'that the responsibility for harm to health' rests with individuals and that government actions constitute 'interference in personal liberties and free choice.'

In the same context, corporate strategies are part of a broader process of transforming diets by eroding the consumption of varied and essentially healthy diets by marketing ultra-processed, energy-dense food and drink products that are basically unhealthy but extremely profitable. At the same time, as is the case of other parts of

the world, Ecuador is confronted by a growing epidemic of overweight and obesity, Its ability to promote public health and good nutrition is severely challenged by the market power of transnational corporate interests.

One of the most important lessons to emerge from a half century of nutrition interventions is that technical soundness is a necessary but not sufficient component of successful and sustainable programme and policy implementation. A second (and related) lesson has been that policies and programmes that increase dependency on external factors will in the long run create as many (or more) problems as they solve.

Promoting food fortification alone, at the expense of broader approaches that are part of a whole constellation of elements that enhance food security, is not necessarily the best way to proceed. This is particularly the case when transnational enterprises act not as potentially valuable partners in the resolution of nutrition problems, but rather in order to enhance their market shares and profits.

Our reservations regarding food fortification are not based on unawareness of its potential usefulness in some cases, nor in a blanket opposition to the participation of the private sector. Rather, we hope that open and transparent discussions of this critical issue will enable consideration of a broad range of sustainable approaches to different forms of malnutrition, and that discussion on critical problems of malnutrition can be freed from all forms of conflicts of interest.

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Freire WB, Waters WF. Nutrition programmes. Conflicts of interest. Who gets fortified: children or corporations? [Feedback]. World Nutrition November 2014, 5, 11, 1027-1030

How to respond

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