

Out of the Box

Nutrition science for this century

This column is completed in Germany at the Justus-Liebig University, Giessen. Our host at our workshop on The New Nutrition Science Project has been Claus Leitzmann, Treasurer of the International Union of Nutritional Sciences (IUNS) and lately Professor of Nutrition at Giessen; and our patrons have been Stefan Hormuth, Rector of the university; Mark Wahlqvist, President of IUNS; and the Baroness Mariuccia Zerilli-Marimò, President of the World Health Policy Forum.

The university at Giessen is named after Justus von Liebig; now less well-known than Louis Pasteur, he has had a comparable lasting impact on the world. He is the founder of the agriculture, food and nutrition sciences in what still remain their dominant forms.

His energy and enterprise were awesome. His promotion of his formulations of artificial fertiliser transformed agriculture. He boosted protein as the supreme nutrient, laying the foundations for the global beef and dairy industries. He was scientific director of the Fray Bentos cattle-farming business in Uruguay, making his beef extract, marketed as an elixir to the populations and the armies of Britain as well as Germany. He was the initial leading purveyor of artificial milk, which he formulated from cow's milk, flour and potassium bicarbonate, puffing it as 'double the concentration of women's milk', and thus inspiring Henri Nestlé¹. All in all, he accelerated the growth of plants, animals and humans, with the results seen now world-wide.

Justus von Liebig was the most influential biochemist of the industrial revolution. Above all, he was responsible for the industrialisation of food systems. Like Louis Pasteur, he doted on kings and princes, smashed the reputations of colleagues with ecological views, was the toast of European high society, and was a master publicist of his own ideas, which were mostly either mistaken or else now obsolete^{2,3}. He may be the one nutrition scientist commemorated on a postage stamp, issued in Germany on the 200th anniversary of his birth in 2003.

So our workshop, whose purpose has been to give nutrition science a broader definition, additional dimensions and relevant principles, took place in the most resonant setting. It culminated in the ceremony of commitment to the Giessen Declaration in the Liebig Museum, in the laboratory building built for and by the great man himself, where he devised, taught and practised nutrition science according to biochemical principles. All of us present read out and signed the Declaration at his rostrum in his lecture theatre.

The ideas and needs of the 19th century were the context for Justus von Liebig. Those of the 21st century are summarised by Ricardo Uauy, who will succeed Mark Wahlqvist as IUNS president later this year. He says (paper in preparation): 'The chemical and biological sciences have provided a strong base for nutrition and have been of immense value in establishing nutrition as a science with public health relevance. However these approaches are clearly insufficient to address the main challenges that confront nutrition science now in the twenty-first century. There is a pressing need to include the social, economic and human right aspects in order to define future policies that will secure the right to safe and nutritious food for all'.

The papers and proceedings of the workshop, including the Giessen Declaration, will be published in a special issue of this journal, on the occasion this September of the IUNS International Congress of Nutrition in Durban, South Africa.

Sabre-tooth tigers and stud poker

Now for what words mean and do. Watch your language. Ideology is often imprinted in our minds by persistent use of tendentious words and terms.

As head of the secretariat for a scientific report published in the late 1990s⁴, one of my jobs was to see that its terminology was consistent and appropriate. And here is a confession. I used the term 'gatherer-hunter', and altered 'hunter-gatherer'.

Why, is because I believe the evidence supports feminist ethnology and also common sense. Did palaeolithic men regularly roar off across the savannah beating their chests, to throw their spears into the hides of mammoths that then sagged into hillocks of meat, to have their throats hacked out with stone axes? No, they did not. It is more likely that male everyday primeval life was the equivalent of playing stud poker, getting loaded and placing bets on the gee-gees, as well as running off with other men's wives and setting the world to rights, while the women did the work, which is to say the gathering. Sure, if an auroch dropped dead outside the cave the men would drag it in; and when bored or nagged they would do some low-risk hunting, of monkeys, birds and lizards, maybe even wild pigs, and back home in myth-making mood would paint pictures of sabre-tooth tigers on the cave walls. *But hunt the tigers?* Don't be ridiculous.

So I altered 'hunter-gatherer' and said nothing, and nobody seemed to notice. The point being that what prehistoric people actually ate, and so the implications of 'hunter-gatherer' and of 'gatherer-hunter', are critical from the evolutionary point of view: one term implies

adaptation to meat-oriented food systems, the other to plant-based systems.

There are three broad theories about evolution, food systems and human health, all of which imply that humans are not adapted to what are now the globally dominant food systems. One is that humans are adapted to grains, which, with vegetables and fruits, are the staples of healthy plant-based diets⁵. Two is that 10 000 years is a blink of an evolutionary eye, and that humans are adapted to palaeolithic diets with a lot of lean meat (from lizards, monkeys, pigs, and so on)^{6,7}. Three is that 200 000 years is a minute of the evolutionary year, and that humans are primates adapted to eat the leaves, seeds, nuts and fruits of trees and shrubs, plus any insects, birds and dead babies that come to hand⁸. Did my use of the term 'gatherer-hunter' ease the conclusion of the expert panel, that healthy diets are plant-based? I like to think so.

Embedding ideology

Staying with words and terms and their power, here is my riff on 'lifestyle'. Chronic diseases were once known as 'diseases of civilisation' or of affluence, or as 'Western diseases'. In the late 1980s 'diseases of lifestyle', and 'lifestyle' as a general term, started to be used.

The term is not to be found in the World Health Organization's (WHO) 1990 report on diet and prevention of chronic diseases⁹. But here is the United Nations' (UN) *World Declaration and Plan of Action* two years later¹⁰: 'Non-communicable diseases related to unhealthy lifestyles and inappropriate diets are increasing in prevalence', under the heading 'Promoting appropriate diets and healthy lifestyles'. And so now here is the 2003 WHO report on prevention of chronic diseases¹¹: 'The Consultation recognized that the growing epidemic of chronic disease afflicting both developed and developing countries was related to dietary and lifestyle changes'. 'Lifestyle' is used at least six times in the introductory sections of the report.

In 2004, the WHO World Health Assembly agreed the current global strategy on diet, physical activity and health¹². The 'lifestyle' pepper pot was shaken vigorously over the Resolution, where the term is again used six times; although it is avoided in the Strategy itself in favour of 'physical activity', I guess as a result of good work done by a senior WHO executive who sends me *e-billets-doux* when I do not mention his name.

Shrinking a nation

So why 'lifestyle' and why is the term now pervasive? I know why. I was there. In 1980 I visited SRI International (previously Stanford Research Institute) set up to solve problems for government and industry¹³. I had come to see Arnold Mitchell, Peter Schwartz and James Ogilvy, originators of VALSTM, which stands for 'values and

lifestyles'. You can't patent ordinary words but *you can own the acronym*.

SRI International is outside the campus of Stanford University, which has always been hardwired into the US government–industry complex; not so long ago its provost was Condoleezza Rice. VALSTM is a conceptual framework for the psychosocial analysis of populations, and... *once you've shrunk a nation... what then?*

Dr Schwartz and Dr Ogilvy skimmed the ideas of the human potential movement just up the California coast at Big Sur, stating: 'We call the stories *paradigms* or *world views*... a fundamental shift in basic beliefs and assumptions about the nature of things and the human condition'¹⁴. Evocation of VALSTM *needs italics* as well as *screamers!* These guys had seen the future and how to make it work. *They were the change!*

Dr Mitchell created VALSTM market typologies to categorise people in the USA, such as '(16) Bachelor, newlywed, full nest I, full nest II, empty nest, solitary survivor' and '(23) Swinger, unisex person, easy rider, multistylist'¹⁵. Refined down we are all innovators, thinkers, achievers, experiencers, believers, strivers, makers or survivors. Those guys were mesmeric – Peter Schwartz in particular, a shaped-up cross between Jerry Garcia of the Grateful Dead and Fat Freddie the Fabulous Furry Freak Brother. They were bright. They were networked. Sure they were bullshit artists. But to adapt what Tom Wolfe said of Marshall McLuhan – *what if they were right?*

VALSTM sold sizzle. The US people having been shrink-wrapped into bite-sized chunks, industry and government bought and brought in at the time in US history when, after Johnson–Nixon, confidence in governance was at an all-time low. VALSTM identified a new mood in the USA, of reliance only on self-determination by individual choice of... *lifestyle. What you buy and how you vote is who you are.*

The concoctions of the SRI International alchemists transformed big red numbers into big black numbers, and deadwood into presidents. The VALSTM analysis was used by achievers who got Ron Reagan elected on a platform of giving politics back to the experiencers, believers, strivers and makers (*belongs*, in one VALSTM word), most likely to switch their vote to a regular guy on horseback wearing an easy smile. The rest is George Bush I, Tony Blair Parts 1, 2 and 3, George Bush II Parts 1 and 2... and so on: plastic politics. Ten years after my visit to Menlo Park, 'lifestyle' infiltrated the UN system. The line was no-government government, politics as a commodity, *freedom to choose any product and to be any individual... lifestyle.*

Killing public health

The concept of 'lifestyle' is powerful, for it contradicts the concept of public health. It implies that individuals are free to choose whether or not to modify their risk of chronic disease, and that prevention is all about education and

information. As soon as you start to use the term 'lifestyle', public health is tossed in the trash. Dead.

A moment's thought shows that the term makes sense only for privileged people with a real range of choice – and not always for them. Take alcohol. Can people become dependent on or addicted to alcohol? Yes¹⁶. Is the term 'lifestyle' appropriate, applied to addictive behaviour? No.

Or, consider the view that environmental insults begin to lead to disease early in life and even before birth¹⁷. We all know now that energy-dense diets cause obesity and diabetes in children¹¹, and the evidence that ad lib formula feeding is a cause of overweight in children is now consensual¹⁸. It is fatuous to use the term 'lifestyle' to apply to a young child or a baby growing in the womb.

Further, while middle-class people in high-income countries may have freedom to make choices, most communities in the world have little choice but to consume the cheap food immediately to hand^{19,20}, the more so as they are pushed off the land into urban agglomerations; their scope for style doesn't go much beyond cola drinks and tee-shirts. In the *favelas*, the shanty-towns outside and inside Brazilian cities, the only people with a style of life are those who sell hard drugs or young bodies.

Unloading words and terms

The concept of 'lifestyle' implies that systemic approaches to disease are misplaced. You may by now be wondering what term is preferable. Sometimes 'lifestyle' is redundant. Sometimes 'physical activity' is what is meant. The closest to an equivalent term is the plural 'ways of life'. 'Behaviour and habits' may do. So here is the start of a lexicon of loaded and unloaded terms. Some of the neutral terms are best used with reference to quantified scales. I don't include 'hunter-gatherer' and 'gatherer-hunter': both are tendentious, one is righteous. Please send me more examples.

The quest for the smoking memo

Was the concept of 'lifestyle' introduced into UN reports and policy documents deliberately, to invalidate attribution of due responsibility to governments and industry for the quality and nature of food systems and supplies, and thus to what people eat? I think so, yes. I do not yet possess a smoking memorandum. But the term was introduced, and has had the effect of stifling debate and agreement on policy action on what the United Nations Children's Fund calls the underlying and basic causes of disease²¹.

How did this happen? One theory might be that one day a nutrition scientist visited SRI International or read about the work of VALS™ and thought hey, that's a good term for chronic diseases, *diseases of lifestyle*, and made the suggestion at the next UN expert consultation of which s/he was a member, and everybody said good idea, and bingo.

The chance of this being the true story is as likely as Joe Caveman clubbing woolly rhinoceroses to death. Scien-

LOADED TERM

Lifestyle
Developed country
Developing country
America
Wasted
Stunted
Fruit and vegetables
Rich in fat and sugar

UNLOADED TERM

Ways of life, or behaviour and habits
High-income country
Middle- or low-income country
United States of America
Thin, or very thin
Short, or very short
Vegetables and fruits
High in fat and sugar

tists on UN expert panels are responsible for the reports, but the text is drafted by secretariats: international civil servants whose previous and subsequent careers may be in academic work, or in government or industry.

My guess on 'lifestyle' is this. That sector of the food industry most challenged by the findings of independent scientists, funds trade and other front organisations, controls institutes and foundations some of which have official status with relevant UN agents, and hires public relations agencies who whizz around the world running ideas up the flagpole to see who will salute. That would most likely have been the original connection with VALS™ and its use in US politics and industry.

Industry attracts academics and UN agency staff with offers of funding, and with jaunts and jobs. It was within food trade workshops that the expressions 'food terrorists' and 'muesli-belt malnutrition' were dreamed up by rent-a-profs, as were 'there are no good or bad foods, only good or bad diets' and the 'nanny state' concept. It was probably in a boutique think-tank that somebody ran 'diseases of lifestyle' up the flagpole. Some senior UN official with what m'learned friends call 'links with industry', present at or informed of such a meeting, was then encouraged to use the term in drafts of reports. That's my guess.

Why did nobody object? Scientists who are members of UN consultations usually do not prepare texts themselves; they are presented with drafts for comment. Also they are mainly interested in their own area of expertise. Cannon's Law of Expert Focus says that the degree of attention to any document is a function of the relative distance of its contents from the line of work of the reader. It's the secretariat that thinks up the title of a report and writes its introductory and summary sections, as well as drafting the technical stuff. Of course: that's their job.

It's hard to imagine any member of an expert consultation saying around the year 1990: 'Hey, I object to this term "lifestyle"', and giving reasons such as those above. Scientists hate expressing opinions off their subjects. Nor are they accustomed to 'meta-discussions' on the meaning of language itself. Further, the making of such objections requires determination to face down a secretariat that controls the papers, prepares the drafts – and pays the bills. Plus the scientists are on up to 50–100 emails a day, have short-term contract staff on soft money who need to eat and pay the rent, and have to catch flights home and get back to work writing applications for grants

for research on which their reputations and thus their eligibility to serve on expert consultations depend.

Let them eat burgers

Do the references to public health in this column sound... brace yourself for an unutterable word... *socialist*? Damn right! Those who work for the sustained good health of populations share in the original vision of socialism, whose values are not individual but communal. All the more so when we know that premature disability and death, whatever its type of immediate cause – as for example mayhem, snakebite, diarrhoea, syphilis, diabetes, stroke, sclerosis, and yes indeed obesity and also AIDS – generally increase as a function of deprivation^{22–24}.

The potato famine in Ireland that killed a million people had as its efficient cause the *laissez-faire* policy of the British government, and was 'relieved' by trivial acts of charity while Ireland was still exporting food to Britain²⁵. We read about those days gone by and tut-tut at the vicious malice of the then British imperial ruling classes. Now move from the 1840s to the 2000s, and reflect on who is ruling the world now and who is suffering, and what is the difference? Essentially there is no difference.

An old British ditty has the refrain: 'It's the rich what gets the gravy/ It's the poor what gets the blame'. Lifestyle is a type of gravy, and the impoverished populations that get supplied with fat and sugar and become obese also get blamed. How absurd it is, and how disgraceful, that so much work is done by good people on the apparent assumption that what is wrong in the world can be put right by the workings of the market (whatever that might mean) or by the bounty of Sir Bill Gates.

After raining death on Afghanistan, the planes of the invading forces dropped food parcels; sometimes these landed in minefields. Should public health nutritionists confine their interest to the chemical composition of the contents of those goodie bags, or to fortification of the food supplied to refugees? I think not.

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References

- 1 Brock W. *Justus von Liebig. The Chemical Gatekeeper*. Cambridge: University Press, 1997.
- 2 Latour B. *The Pasteurization of France*. Cambridge, MA: Harvard University Press, 1988 [first published in French, 1984].
- 3 Krischke M. Liebig, his university professor Karl Wilhelm Gottlieb Kastner, and his problematic relationship with romantic natural philosophy. *Ambix* 2003; **1**(1): 3–24.
- 4 World Cancer Research Fund (WCRF)/American Institute for Cancer Research (AICR). *Food, Nutrition and the Prevention of Cancer: A Global Perspective*. Washington, DC: WCRF/AICR, 1997.
- 5 Potter J. *Content with a Vegetable Love*. London: Caroline Walker Trust, 1994.
- 6 McMichael A. The third horseman: food, farming and famines [Chapter 3]. In: *Human Frontiers, Environments and Disease*. Cambridge: University Press, 2001.
- 7 Eaton S, Shostak M, Konner M. The stone age diet [Chapter 4]. In: *The Paleolithic Prescription*. New York: Harper and Row, 1988.
- 8 Leitzmann C, Hahn A. *Vegetarische Ernährung*. Stuttgart: Hippokrates, 1999.
- 9 World Health Organization (WHO). *Diet, Nutrition and the Prevention of Chronic Diseases*. Report of a WHO Study Group. Technical Report Series No. 797. Geneva: WHO, 1990.
- 10 Food and Agriculture Organization of the United Nations (FAO)/World Health Organization. International Conference on Nutrition. *World Declaration and Plan of Action*. Rome: FAO, 1992.
- 11 World Health Organization (WHO). *Diet, Nutrition and the Prevention of Chronic Diseases*. Report of a Joint WHO/FAO Expert Consultation. Technical Report Series No. 916. Geneva: WHO, 2003. Also available at <http://www.who.int>
- 12 World Health Organization (WHO). *Global Strategy on Diet, Physical Activity and Health*. 57th World Health Assembly, WHA 57.17. Geneva: WHO, 2004. Also available at <http://www.who.int/>
- 13 Available at <http://www.sri.com/>
- 14 Schwartz P, Ogilvy J. *The Emergent Paradigm: Changing Patterns of Thought and Belief*. Values and Lifestyles Program. VALS Report 7. Menlo Park, CA: SRI International, April 1979.
- 15 Mitchell A. *Social Change: Implications of Trends in Values and Lifestyles*. Values and Lifestyles Program. VALS Report 3. Menlo Park, CA: SRI International, January 1979.
- 16 World Health Organization (WHO). *Global Status Report on Alcohol*. Geneva: WHO, 1999.
- 17 Glickman P, Hanson M. *The Fetal Matrix*. Cambridge: University Press, 2005.
- 18 Cannon G. The formula for obesity, and other stories [Out of the Box]. *Public Health Nutrition* 2005; **8**(2): 113–6.
- 19 Food and Agriculture Organization of the United Nations (FAO). *Globalization of Food Systems in Developing Countries: Impact on Food Security and Nutrition*. FAO Food and Nutrition Paper No. 83. Rome: FAO, 2004. Also available at <http://www.fao.org>
- 20 Schmidhuber J, Shetty P. Nutrition transition, obesity and noncommunicable disease: drivers, outlook and concerns. *SCN News* 2004/2005; (29): 13–9. Also available at <http://www.unsystem.org/scn/>
- 21 Jonsson U. Integrating political and economic factors within nutrition-related policy research: an economic perspective. In: Pinstrup-Andersen P, ed. *The Political Economy of Food and Nutrition Policies*. Baltimore, MD: Johns Hopkins University Press, 1993.
- 22 Davey Smith G. The uses of 'Uses of Epidemiology'. Prepared for a meeting to honour Professor Jerry Morris on his 90th birthday. *International Journal of Epidemiology* 2001; **30**: 1146–55.
- 23 Peña M, Bacallao J. *Obesity and Poverty. A New Public Health Challenge*. Scientific Publication No. 576. Washington, DC: Pan American Health Organization, 2000.
- 24 McCullin D. *Life Interrupted. HIV/AIDS in Africa*. London: Christian Aid, 2004.
- 25 Salaman R. [Chapters XV–XVIII]. In: *The History and Social Influence of the Potato*. Cambridge: University Press, 1985 [first published 1949].