

## Out of the Box



One of the principles of the new nutrition science is: 'We can properly understand the food and nutrition issues that face us now and for the foreseeable future, only by examination of previous processes that have shaped the world's food systems'<sup>1</sup>. I reflect on this principle. I also point out how odd it is to assume that the Anglo take on the world, expressed – as here – in the English language, corresponds to reality. I note evidence that research funded by industry favours the funders. Plus there are a couple of jokes – I hope.

### Why the past is with us

People interested only in the present assume their imminent obliteration, because we all will soon be history. The people least likely to understand the nature, value and purpose of food and nutrition in human health, let alone in the greater scheme of things, are those bred in parts of the world whose food systems have no long traditions. The obvious examples are the UK, whose peasantry was driven off the land by enclosures and clearances completed in the late 18th century; and the USA, whose original peoples were displaced or exterminated by the guns, germs and steel of European settlers, a process completed in the late 19th century. Those of us born in the UK or the USA tend to forget the strange and recent origins of our national food systems.

Nutrition as a biochemical science was developed more in the UK and USA, and their empires and spheres of influence, than anywhere else in the world. In such territories – stripped for exploitation, their wild people and animals killed, tamed or corralled – food supplies were determined by mechanisation: bottling, canning, packaging, freezing; railways, steamships, trucks; disassembly lines<sup>2</sup>, factory farms, feed lots; steel roller mills<sup>3</sup>, hydrogenation<sup>4</sup>, hydrolysis. The value of food for the rich was profit; for the poor, fuel. Nutrition science justified and rationalised these inventions.

Accounts of the development of public health in Europe suggest that the force driving improvements in the food supplied to the common people was the benevolence of reformers who persuaded legislators to pass enlightened laws. No. The driving force was not soft hearts but hard heads. The ruling classes needed big strong young people to fight land wars, mine the earth, handle machines, and work shifts. Official dietaries specified amounts of foods and drinks, and then nutrients, of minimum quantity and quality sufficient to avoid nutritional deficiencies and other diseases of early life. Allowances for the destitute

and prisoners were designed to cause hunger short of starvation. Allowances for schoolchildren, workers and soldiers were more generous<sup>5,6</sup>.

### Why Sainsbury's was doomed

You may be thinking this is 'ancient history'. Wrong. In *The Third Man*, the movie scripted by Graham Greene, the charming villain played by Orson Welles justifies his mayhem, in a scene shot in a cabin of the amusement wheel in Vienna's Prater Park. He points out that the glories of the European renaissance flourished in a time of constant massacre, rape, pillage, chaos – communal, civil and foreign wars. Whereas, what has Switzerland, Europe's pacific nation, produced? 'The cuckoo clock!'

The first industrialised countries were stripped for war. In the first half of the 20th century the food supplies of Europe were determined by technology designed to prepare for, survive during, and recover from, two world wars. This perpetuated the doctrine of minimum standards, which persisted in Britain. In France, Germany, Italy and Greece the peasantry was never destroyed. Small farms and food businesses were built up again as continental Europe recovered from war, and traditional food cultures flourished.

Whereas Britain... In 1990, at a meeting at the headquarters of the then leading UK supermarket chain, held to charm members of the UK Guild of Food Writers, I cornered the then Lord Sainsbury. I told him that the slogan he had approved, 'Good food costs less at Sainsbury's', was pernicious and foolish. Would other firms assert that good cars, or cameras, or carpets, or cement, cost less? First, any such claim was obviously false. Second, if consumers were bludgeoned into believing this absurdity, it would make them care less and spend even less on food, and this would ruin Sainsbury's and the nation's health. I could see that the good food Lord was not used to being spoken to like this, so I kept it pithy. A perspiring public affairs director interposed himself. Ha! They knew nothing of Cannon's Bane. In the 1990s Sainsbury's market share plummeted, UK food retailing slogans are now all about choice, variety and quality, and Sainsbury's pathetic slogan now is: 'Try something new every day'. Cement, anyone?

In other countries people know what food is good for them, without needing chemistry lessons or perpetual novelties. This – the argument continues – is why nutrition as a biological science is weak in France, Germany, Italy and Greece, while at the same time

expectation of life free from chronic diseases (apart from those caused by alcoholic drinks) is relatively long in the regions of the Mediterranean littoral. Why, is because Mediterranean food systems and customs – central to Arab, Egyptian, Roman and Greek civilisations, and celebrated in their stories, songs and poems – also have much in common, including fresh vegetables, pulses and fruits, fish and seafood, and the olive.

Nutrition scientists of Northern Europe and the USA are devoted to interventions designed to analyse and reconfigure the chemical profiles of food. Whereas their colleagues in Mediterranean Europe – Anna Ferro-Luzzi and Antonia Trichopoulou come to mind – are social and environmental as well as biological scientists, who protect and preserve Mediterranean food systems<sup>7</sup>. If you want to know where a nutrition scientist is coming from, ask about butter, margarine and olive oil. There are no songs about margarine.

### Why not eat wheat

Food systems depend on climate, terrain, history and culture. They have done, and will do – more than now, anyway. If you want to choose a country to nourish your grandchildren, check its indigenous and traditional food systems. In a couple of generations, when the dwindling supply of oil remains controlled by cartels of politicians and industrialists, the real cost of transport is maybe ten times what it is now and our descendants are used to carbon rationing, most sensible people will work global and live, grow and eat local.

In the meantime though, more populations will have forgotten the fruits of their own earth. Take Brazil, the country where I live. If I had thought through the thesis of this column before moving, I would have done better to choose Mexico. In Brazil, as in what became the USA, European settlers exterminated and displaced the natives. In those parts of Latin America where the original conquistadores encountered the Aztec, Maya and Inca civilisations, the native peoples were reduced but not eliminated, and their food systems have become part of what are now rich national food cultures.

Whereas Brazil... Brazilian cuisine? Fresh fish is a good choice, and I have eaten toothsome African-inspired dishes in Olinda and elsewhere on the littoral. The African influence has enlightened Brazil which, if it had been dominated by the Portuguese incursion, would be a dark country. (Think of the manager of Chelsea FC – like that.) But in general, as evident from cruising any supermarket, Brazilian food supplies are as muddled as those of the UK and USA.

For example, bread. Brazilian bread is disgusting. Why, is because the climate and terrain of Brazil is good for cassava (manioc, here *mandioca*) and for corn (maize, here *milho*), the indigenous starchy staples, and also for rice (*arroz*), maybe introduced by Chinese explorers<sup>8</sup>, but not for wheat. But as from the 1950s, as Brazil was opened up to foreign capital and as more women worked, imports

of wheat – at first from the USA and then later from Chile and Argentina – and production and sales of wheat bread, wheat products and baked goods made from wheat increased from a low base. Now, supermarkets sell mountains of wrapped sliced floppy square white loaves, much ‘enriched’ or ‘fortified’, straight off the pallet. Cassava, corn and rice from Brazil are also available in quantity, but in the side aisles where basic food for poor people is sold in sacks.

Corn, cassava and rice need preparation. Bread, if laced with preservatives to delay visible mould in the damp tropics, sits around for a couple of days, a vehicle for *sandwiches*. Most Brazilians I see eat white bread and rolls for breakfast, often toasted with butter and cheese.

Many good people in Brazil advocate the restoration of mixed agriculture, so that rural communities can be close to self-sufficient, and able to stay on the land. The conditions of life for impoverished communities in the big cities of Brazil, mostly descendants of people forced off the land, are horrible<sup>9</sup>. Now there is some movement back, encouraged by celebrities like the photographer Sebastiao Salgado, who is restoring the forest on land in Aimores in Minas Gerais, where his father raised cattle and grew beans and rice<sup>10</sup>.

When in Brazil, do as the native Brazilians did. Forget wheat. In any substantial town there are usually a couple of wholefood bakeries that make and sell corn bread; and *broa*, the plain cake made from corn, is easy to find. Plus *mandioca frita*, fat chips made from cassava, with cold Brazilian beer, is one of the delights of life here.

### Why audiences murmur

Last month I reported that Sir Richard Doll, the distinguished epidemiologist who insisted that industrial carcinogens are not an important cause of cancer, was for many years paid consultancy fees by manufacturers of said carcinogens. My opinion is that his work in this area should be struck out of Index Medicus, and a new systematic review and meta-analyses undertaken. If there are enough independent studies to support a systematic review, and if funds could be raised from independent sources, the results would surely show that industrial chemicals and pollutants are more important as causes of cancer than asserted by Sir Richard.

This all reminds me of a meeting held some years back in London, by the Royal Society of Medicine Food and Health Forum, on ‘Sugars and Health’. There was one speaker, the then science director of the Sugar Bureau. I had asked the then Forum chair if his decision to put on this show was wise. He replied that the findings to be presented were all published in peer-reviewed journals and, anyway, would I like to chair the meeting? OK, I said, and did.

The presentation was nice, the papers reviewed were by reputable researchers, and the story was that sugar was right up there with whole grains and vegetables and fruits

as an essential part of healthy diets. The audience was impressed. The speaker sat down and I stood up. As chair, I wondered if I could kick off by asking about the funding of research. I said I seemed to remember that refiners of sugar and manufacturers of sugary products, together with their trade and front organisations, had been strong supporters of research<sup>11</sup>, and could the speaker tell us how many of the studies cited had been funded by this section of industry?

The reply was: all of them. The speaker then asked me if I was impugning the integrity of the scientists who had undertaken the research. No, I was not, I said, but perhaps as chair I could put the discussion to the meeting. Seeing two London University professors of public health nutrition in the audience, I asked them did they know that all the research cited was funded by the sugar industry? No, they said. Then I asked was their judgement of the weight of the evidence from these studies affected by this knowledge? Yes, they said. The audience stirred and murmured.

How much simpler public health nutrition would be, if all papers published in peer-reviewed journals were of uniform excellent credible quality. But Daniel Ludwig of Harvard Medical School has produced a review of 206 papers on milk, juices and soft drinks<sup>12</sup>. Roughly half the studies mentioned funding sources. Of the intervention studies that declared industry funding, none reported findings unfavourable to industry. Taking all the studies together, those funded by industry were between four and eight times more likely to produce results favourable to industry. As the UK fortnightly *Private Eye* says, in its sardonic commentaries on the ways of the world: Just fancy that!

### Why independence matters

Here is a bit more anent Richard Doll. Colleagues say that he did not keep his payments from industry secret, and they were found in his papers after he died. Well, it depends what is meant by 'secret'. Besides, the deed is done. He chose not to mention the payments on the occasions when he stated that industrial carcinogens, including some made by the firms that were paying him money, were not a significant cause of cancer. It seems that journalists, and also lawyers in court hearings when he appeared as an expert witness, did not ask him if he was paid by industry. Did this exonerate him? My view is no. This information was part of 'the whole truth'.

Would his disclosure of these payments have affected the weight put on his evidence and judgement, in court and in the media? Obviously, yes. It would have been better if these matters had come to light in his lifetime.

All this bears on nutrition science. Do you know colleagues whose views on (say) infant formula, or on industrially produced meat, cow's milk, added sugars, sugary breakfast cereals, sugary drinks, food fortification

and so forth, are consistently harmonious with those of the relevant industries? Have you ever noticed them speaking on platforms that you have a feeling are supported by industry, stating their views? Have you ever added 1 + 1?

Unless nutrition science earns a reputation for being independent from interested parties, politicians and civil servants and others wise in the ways of the world will not pay much attention to anything we say, unless it happens to coincide with their immediate interests.

### Why facts are not enough

I was recently warned by a colleague that my writing is 'intellectual'. As you may guess, his nationality is not French or German, Indian or Chinese. The Anglo attitude to science, expressed in English, swept all before it as a result of the two world wars and the investment most of all in the USA in Big Science<sup>13</sup>, and is now hegemonic. An early form of globalisation used in the interests of the dominant powers, this is not just a matter of language, but of ideology. It is now so embedded in teaching and practice as to be practically invisible, except to those brought up in cultures whose world-view is different, and to the odd contrarian.

The Anglo take on what is wrong and what is real, is that what is particular comes first and what is general comes later (if at all), and that conclusions not agreed to be directly derived from data should be set aside as spurious and certainly unscientific. The foundation of this inductive approach to understanding the world was laid by Francis Bacon and developed by John Locke and David Hume. It was reinforced in concrete by the logical positivists<sup>14</sup>. The Oxford school of philosophy, when I was a student, was dominated by the dogma of 'sense-data', which proposed that anything that can't be seen, heard, touched, smelled or tasted should be mentally picked off and discarded with a grimace as if a pustule or maggot, and labelled meaningless, 'metaphysical'. (A lusty version was practised by a former editor of *The Sunday Times*, who was said by his staff to be only interested in stories about what he could eat, screw, or plug in.) But this approach has some rather obvious problems. What about electricity, for example? Or emotions?

The last two paragraphs include only a couple of references. Well, I am drafting this rusticated on the Ostra (Oyster) Canal, Cabo Frio, on the littoral of the state of Rio de Janeiro. True, I could rustle up a bunch of salient references from the Internet. (I think it was David Horrobin, the founder of *Medical Hypotheses*, who once jested that a good case could be made for the moon being made from blue cheese, with copious reference to peer-reviewed literature; and would itself be published in the peer-reviewed literature if the authors used arcane terminology when referring to blue cheese and the moon.) But I am presenting ideas, which I suppose is what my colleague meant when he said my writing is

intellectual. Confronted with such stuff, most conventionally trained scientists tend to feel queasy, as if taken for a ride on an amusement wheel.

### Why get rats pissed

The general result of the Anglo orthodoxy has been the subjugation of values to facts, of ideas to data. Countless competent researchers crunch numbers, out of harm's way, able to raise a family, pay the rent, publish in journals, train students, and occasionally present papers in foreign locations. You know the kind of work I mean. It produces papers with titles like 'Enhancement of 1,2-dimethylhydrazine-induced rectal carcinogenesis following chronic ethanol consumption in the rat' and 'Prediction of selenium concentration in human toenails' and 'Amplification of c-Ki-ras-2 oncogene sequences in human carcinoma of the pancreas'.

Reports with titles like *Controlling Vitamin Deficiency* or *Winning the War Against Hidden Hunger* cite with approval studies showing that if investigators fill the arms or guts of impoverished tots full of synthetic vitamin X, lo and behold, higher concentrations of vitamin X show up in the children's blood. Pages and pages can be and are then filled with figures displaying the combinations and permutations and statistical significances of such 'knee-bone-connected-to-the-thigh-bone' interventions, which show that yes, the wretched of the earth also have circulation systems and yes, the instruments of measurement work.

Is the war on hunger being won? Inasmuch as it is, I suggest that this is not because of collaborations between UN agencies, national governments and the pharmaceutical industry resulting in shiny reports that evade the economic and political reasons for food insecurity.

Most published studies, including in our field, fail the 'what for?' test. Take the study mentioned above in which rats are given a stonking dose of a carcinogen and made to go on the razzle, and then are found when 'sacrificed' to be more likely to develop cancer of the bit under the tail. So what? Is this helpful for rats? No. Is this helpful for humans? No, because apart from humans not being rats, such toxicology has no bearing on any human experience. Piss-artists, even those legendary Danish brewery workers who were reputed to carouse while sitting on top of sodden beer-barrels, were not previously injected with 1,2-dimethylhydrazine.

### Why all this matters

Since 1980 I have tried to make sense of nutrition science and its application to food and nutrition policy. Now as one of hundreds of colleagues on the same road, I feel that the way forward in this century is by the redefinition of nutrition as a three-dimensional biological, social and

environmental science<sup>1</sup>. New ideas are never all new: as a brilliant new book<sup>15</sup> shows, the scope of nutrition, fundamental in the Hindu faith, was a crucial theme in the debates that shaped England, the USA and France in their times of revolution.

Don't get me wrong. Scientific judgements must be evidence-based. (Did anybody say otherwise?) And the best evidence comes from independent reviews of all types of relevant literature, which are then independently assessed and judged – as for example masterminded by my colleague Martin Wiseman, director of the project responsible for the forthcoming second report on food, nutrition, physical activity and the prevention of cancer, to be published late this year. (What counts as relevant needs careful consideration.) But process must not drive out thought.

Meanwhile I offer Cannon's Law of Numbers, which is: What is most valuable is least measurable. I also offer an Ostra Canal Principle, which is: In the beginning, is the idea.

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### References

- 1 The Giessen Declaration, *Public Health Nutrition* 2005; **8**(6A): 783–6. Also available at [www.iuns.org](http://www.iuns.org)
- 2 Giedion S. *Technology Takes Command*. Oxford: University Press, 1948.
- 3 David E. *British Bread and Yeast Cookery*. London: Allen Lane, 1977.
- 4 van Stuyvenberg J, ed. *Margarine. An Economic, Social and Scientific History, 1869–1969*. Liverpool: University Press, 1969.
- 5 Drummond J, Wilbraham A. *The Englishman's Diet. Five Centuries of English Food*. London: Pimlico, 1980 [first published 1939].
- 6 Barber T, Oddy D, Yudkin J. *The Dietary Surveys of Dr Edward Smith, 1862–1863*. London: Staples Press/Queen Elizabeth College, 1970.
- 7 Conference Proceedings of the IV Barcelona International Congress on the Mediterranean Diet, Barcelona, Spain, 6–7 March 2002. *Public Health Nutrition* 2004; **7**(7): 927–83.
- 8 Menzies G. 1491. *The Year China Discovered the World*. London: Transworld, 2002.
- 9 Ribeiro D. Chaotic urbanization [Chapter 8]. *Brazilian People. The Formation and Meaning of Brazil*. Florida: University Press, 2000 [first published in Portuguese, 1995].
- 10 Wroe N. Man with the golden eye. *The Guardian*, 10 June 2000.
- 11 Cannon G. Sugars: the amazing vanishing conference [Chapter 3]. *The Politics of Food*. London: Century, 1987.
- 12 Tanne J. Influential nutrition research is often funded by industry, study finds. *British Medical Journal* 2007; **334**: 62.
- 13 Fuller S. *Thomas Kubn. A Philosophical History for Our Times*. Chicago, IL: University Press, 2000.
- 14 Ayer A. *Language, Truth and Logic*. New York: Dover, 1946 [first published 1936].
- 15 Stuart T. *The Bloodless Revolution. Radical Vegetarians and the Discovery of India*. London: Harper Collins, 2006.