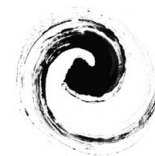


Out of the Box



This month I introduce the idea that the human race has become too tall. I review a couple of books projected as don't diet dieting regimes. Editor-in-Chief Agneta Yngve has let me announce the new global expert report on food, nutrition, physical activity and the prevention of cancer, in which I have an interest.

The trouble with Plato

First, a word on experts. 'Leave it to the experts' we hear. Well, that's nice – in this field, or I should say paddock, of public health nutrition, you are no doubt an expert. I admit to a cosy glow when I am introduced as an expert. But what's an expert worth? Here's the philosopher of science Paul Feyerabend, on the great debate on leadership in Athens at the time of Plato and Aristotle. The established side said that: 'An expert is a person who produces important knowledge and has important skills. His knowledge and his skills must not be questioned or changed by non-experts. They must be taken over by society in exactly the form suggested by the experts'. But as the dissident side pointed out: 'Experts arriving at their results often restrict their vision. They do not study all phenomena but only those in a special field'.

Paul Feyerabend, a dissident, adds: 'It would therefore be foolish to regard expert ideas as "true" or as "real" ... without further studies that go beyond expert limits. And it would be equally foolish to introduce them into society without having made sure that the professional aims of the experts agree with the aims of society'¹. This helps to explain what I try to do here. Wars may be won by clever uses of technology (or overwhelming force) but war is not just a technical issue. Nor is public health; nor is nutrition.

The trouble with dieting

And so now for the dietetic topic that engages many people much of the time, but is usually disdained by professionals, except in their private lives: dieting, meaning some form of energy restriction whose purpose is to lose body fat.

My first co-authored book, published in 1983, elaborated the apparent paradox of its title *Dieting Makes You Fat*². Its reception reminded me that conventional scientists are a clerical caste, costive when challenged. I was sometimes told that its thesis was not adequately upheld by the findings of then current research science. If this meant the thesis was original, I agreed. I did not agree that it was right to wait until grant-holders

(or -givers) gave their consensual consent. Somebody is bound to recognise what is obvious first. As Ludwig Wittgenstein says: 'We fail to be struck by what, once seen, is most striking and most powerful'³.

Besides which – I said – if so, let the research be done. So it is nice to know that all sorts of studies undertaken in the last couple of decades support the basic thesis of our book^{3–9} (if you want more references, ask). Its starting point is the Minnesota Experiment, the monumental 1944–1946 study of the effects of energy restriction undertaken by the army of workers led by Ancel Keys¹⁰, whose findings have been revisited and developed by Abdul Dulloo of the University of Fribourg and his colleagues^{11,12}.

Rates of weight gain, overweight and obesity are rocketing. So are the numbers of dieting books. At the end of a tour in Amazonia lately I was browsing in the Belém airport bookshop. There is a whole section devoted to dieting books. Two were named after places (*A Dieta de Sonoma*, *A Dieta de South Beach*); one was time-based (*A Dieta Das 3 Horas*); there was a one-food dieting book (*A Dieta do Mel* – honey); an eponymous dieting book (*A Dieta Perricone*); two based on the notion that French women don't get fat (*As Mulheres Francesas Não Engordam*, *A Não Dieta Dos Francescas*); two based on biochemical theses, one orthodox (*A Dieta Do Índice Glicêmico*) one unorthodox (*A Dieta do Typo Sanguíneo*); and one whose title in English is *Ten Habits That Mess Up a Woman's Diet*. There were more, but my flight was called.

Jeeppers! I doubt that Kennedy or Heathrow bookshops stocked as much choice 25 years ago. There are few obese people in the streets and markets in Belém, and I saw none in the countryside, except one driver of a broken-down truck. However, it was a different story in the Belém Hilton restaurant, where breasts billowed, bellies bounced and backsides biffed my tea off my table; and there, I suppose, were the airport shop customers.

The trouble with not dieting

What I also found was an example of another category: the don't diet dieting book (*A Dieta Sem Dieta*). Being grossly overweight already (in the nine pieces of luggage sense, nothing personal) I didn't buy any dieting books in Belém, but I had done so at Sydney airport a few weeks previously; my haul included two whose titles make them sound like don't diet dieting books: *Never Say Diet Again*¹³ and *The Don't Go Hungry Diet*¹⁴.

Naturally I am curious to see if such books repeat ideas in *Dieting Makes You Fat* or intermediate sources. Indeed they do. 'Dieting can cause the body's metabolism to slow down... This mechanism protected our ancestors from famine... but is not so useful to us now' says *NSDA*, and 'Dieting can actually make you fat, as a sluggish metabolism can trigger the yo-yo syndrome. When you lose weight you lose it as fat and muscle but, when you regain it, it only comes back on as fat'. Without physical activity, quite². 'After six years of dieting, I'd gained 40 kilos! I had dieted myself fat' says *TDGHD*. And after some brainy stuff about hypothalamic levels of neuropeptide Y, 'we had discovered some of the ways in which dieting can make you fat'.

Note the word 'can'. This has two functions. One is the Weasel Word syndrome: avoid categorical statements and so stay in your comfort zone. The other is the Low Tar ploy: grotty old other dieting regimes (can) make you fat, but this sparkling new dieting regime will make you 'lose weight and keep it off forever', to quote *TDGHD*.

NSDA is compiled by a team of dietitians at the Sydney Royal Prince Alfred (RPA) Hospital Weight Management Program. It follows the primary prevention medical model. It is awarded a foreword by Professor Ian Caterson, who says: 'It is important to realise that we are eating too much'. It suggests that when you feel hungry, instead play with your pet, paint your toenails, mow the lawn, or begin a craft activity. It accepts *The Australian Guide to Healthy Eating*, whose recommendations include a range of 90–300 grams of protein a day. It cites five food groups: carbohydrates, protein, vegetables and legumes, fruits, dairy. It recommends strengthening calf muscles: 'Lift up and down on your toes. Balance yourself by holding on to a wall or a piece of furniture'.

Verdict? My guess is that the RPA Hospital dietitians work mostly with middle-class middle-aged fat ladies, with a policy of 'go easy on fat, sugar, and alcohol, try to be active, and every little bit helps'. This may prevent further gain of weight and fat, but is most unlikely to lead to significant permanent weight loss. If I am wrong, let's hear from Monica Allan, Anne-Marie Droulers and the RPAHWMP team.

The author of *TDGHD*, Amanda Sainsbury-Salis, also from Sydney, once weighed 93 kilos/205 pounds, which at 1.60 metres/5 foot 3 inches height, made her BMI around 36 – close to gross obesity. She says that her own regime, that has included 'wood-fired pizza Napolitana with chilli olive oil drizzled generously on top', doner kebab and halva, has enabled her to keep off a weight loss of 28 kilos/62 pounds for a decade. She is blurbed as 'Dr Amanda' and 'an internationally renowned molecular scientist', and she does indeed have a substantial list of co-authored papers registered on PubMed – mostly experiments on mice, rats and squirrels.

Like you and me, Dr Amanda is not a squirrel. Her book presents what she has found out for herself and on behalf of clients, apparently mostly grossly obese women, who

have attended her Sydney clinic. She says 'the only way to lose weight is to eat less than your body needs'. Her three nutritional guidelines are: 'Eat a wide variety of foods... Eat whole foods... Eat mainly vegetables and fruit'. She says 'It's almost impossible to lose weight and keep it off without physical activity', and prescribes 8000–12 000 steps at brisk walking pace every day – which I can tell you from my own daily 40 minutes of running and walking, will take at least an hour to an hour and a half.

Well, you don't need to be John Garrow to know that a diet mainly made up of vegetables and fruits, plus more than an hour of moderate physical activity every day, will put practically everybody into negative energy balance, as the phrase is. The interesting bit of *TDGHD* is what its author calls the Famine Reaction and the Fat Brake. With reference to the biochemical literature, she identifies various mechanisms that during and after energy-restrictive dieting 'alter the body's metabolism, enabling it to conserve and lay down fat', because humans are evolved to survive periods of food insecurity and famine by using the body as a larder. That's the famine reaction. I agree².

Thus also the camel's hump, and the (female) !Kung bum. Cannon's Law of Maladaptive Adiposity says that tendency to obesity, in any population exposed to energy-dense food supplies, varies with the number of generations the population is removed from food insecurity. Populations whose parents were food-insecure immediately become obese (the Pima-Nauru syndrome). Populations that have been food-secure for several generations get fat too, but more slowly.

The 'fat brake' is the mechanism designed to stop incessant weight gain which, Dr Amanda says, we wreck by weight cycling. She says we can thwart the 'famine reaction' simply by eating and by training ourselves to tell when we really are hungry, and that with some servicing and re-lining, the 'fat brake' will burn off extra energy consumed. This all sounds like Richard Keesey's set point theory; so it is, except that Dr Amanda claims that we can re-set our set points to the weight we want to be.

Verdict? *Never Say Diet Again* and *The Don't Go Hungry Diet* are not really don't diet dieting books. Rather, they propose ways to restrict energy without counting calories. Dr Amanda's regime is much more rigorous and realistic, and its intriguing strategy for fooling the 'famine reaction' may well be correct. It should be reviewed in detail.

The trouble with gold standards

After five years' work, the second stupendous global report on food, nutrition, physical activity and the prevention of cancer is published this month¹⁵, and launched in the USA, the UK, the Netherlands, France, China, and then points North, East, West and South. As a member of the secretariat responsible for the report – commissioned by the World Cancer Research Fund global

network – I know what's in it, but I mustn't say right now; this journal circulates in the month before its issue date.

Martin Wiseman, director of the project, was previously as head of the UK Department of Health nutrition unit responsible for the 1998 DH report on diet and the prevention of cancer¹⁶. A feature of the new report is that the evidence on which the panel of scientists has based its judgements and recommendations has mostly been collected in the form of independent systematic literature reviews. This has two benefits. One is the systematic method itself which, when faced with over 10 000 papers admitted as evidence, has been a massive task. Two is the separation of responsibility. By analogy with a court of law, expert committees that combine the functions of witness, advocate, judge and jury may come to problematic conclusions, liable to be overturned.

The new report has retained from its predecessor¹⁷ the graphic device of matrices in all relevant chapters and sections, in which the panel's judgements are displayed. This technique has been adapted by the World Health Organization¹⁸. The judgements 'convincing' and 'probable', both an adequate basis for public health recommendations, have been retained. Other categories of judgement have been modified from those used in the first report. Also, the criteria that justify panel judgements have been made somewhat more stringent: a body of evidence that justified a judgement of 'convincing' in the first report might be rated 'probable' in the new report, and so on.

Like its predecessor, the new report balances evidence from different types of epidemiological study, and epidemiological with experimental evidence. It is agreed again that there is no 'gold standard' study design. In particular, randomised controlled trials, designed to test the efficacy and safety of drugs, have limited use in the assessment of foods and drinks, and causation and prevention of disease. (Funny that the term 'gold standard' is used to refer to supremely valuable evidence: the USA and the UK abandoned the gold standard in the 1930s to avoid irretrievable financial collapse¹⁹.)

The trouble with height

Now to San Diego, home of Thomas Samaras, who is trained as an engineer; 35 years ago he co-authored the first textbook on configuration management which – he tells me – integrates examination of performance, durability, cost, interfacing systems and the environment.

He then applied this systems approach to humans, and since the 1970s has been publishing in journals from *Human Development* to the *Bulletin of the World Health Organization* to *Medical Hypotheses*. His theme is that humans have become too big – not just too fat, but also too tall – and that it is best to be small; not just slim, but also relatively short. His views are now collected in a big book²⁰. I think he is right²¹.

My own journey began around 20 years ago, when I blundered into a meeting of paediatric nutritionists, sat at the back, and listened. What intrigued me was what was not said. So in my role as seeker after truth, I stuck up my hand. All the discussion today – I said – is based on the assumption that children should be born big, grow fast, mature early, and become tall adults. Why?

I can still feel the silence, as all the specialists turned round and gazed at me, with that 'who let you in here?' expression. The meeting chair ignored my question, and in the coffee break I was blanked. It seemed I had asked a question not only idiotic but also pernicious.

The trouble with coddling

Later I learned why. In 1992 Michael Latham invited me to give three lectures on the impact of nutrition science on world food and agriculture to the Cornell faculty. I decided to advance the 'so what's wrong with being small?' idea. Encouraged by Malden Nesheim, then the provost, and Cutberto Garza, then head of the nutrition division, the food, nutrition and agriculture departments at Cornell have a reputation for being open-minded. Also, it was the 'go for growth' dogma that around the 1860s had led to the foundation of land-grant colleges including Cornell, charged to push US meat, dairy and milk technology.

I started my lectures by pointing out that the Cornell pioneers were shorter and lighter – on average around 3 inches (8 cm) and 40 pounds (18 kg) less than the average faculty member facing me – and not much bigger and heavier than food-secure Asian rural populations. Also, the average age of sexual maturity in the mid-19th century was 14–15 years, contrasted with what is now 11–12 years²². I plunged on. 'This astounding development in human scale and function was not a result of acts of nature, but of nutritional scientists. Like plants and animals, we have been intensively grown'.

My talks did not go down a storm. Michael sent me away with papers stating that such reasoning smacked of the abominable 'small but healthy' heresy of the development economist David Seckler²³ and others²⁴ and would, if taken seriously, condemn the children of Africa and Asia to wasted as well as stunted lives. One peroration states: 'Speaking of smallness as a desirable attribute, is similar to making a virtue of the scarred lungs of a person who has survived a severe attack of pulmonary tuberculosis'²⁵.

The conventional wisdom of the then dominant group (characterised by acronym maestro Philip Payne at the 1985 ICN in Brighton as 'Coddling') was that small people are malnourished by definition²⁶. David Seckler perhaps did not help his case by saying that small people seem to do the heavy work in India, including carrying the luggage of large people at Delhi airport and railway station. But his main point is dynamite, because. . .

...but as my grandma wrote at the end of her letters to me at school, I must close now. My space is up. More on the Samaras Thesis next month.

Acknowledgements

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