

## Out of the Box

How important is nutrition? Very, we may say. Naturally we want to believe that what we do matters, if only to avoid that sense of futility that can beset conscientious people<sup>1</sup>. But are we sure? And how important is nutrition within public health as a whole?

### Urbanisation

At the 27th annual session of what is now the UN Standing Committee on Nutrition, held in April 2000 at the World Bank in Washington, I made an enthusiastic presentation saying that nutrition should be pushed up the global political agenda. Urban Jonsson of the United Nations Children's Fund (UNICEF) strode to the microphone and sunk his teeth in me. Did I not know what is happening in sub-Saharan Africa? Was I not aware that the whole region is devastated by AIDS, the number one killer disease in all Africa<sup>2</sup>? What irresponsibility, what ignorance, what stupidity, explained my fatuous mouthings? Et cetera.

Anybody who has been mauled by Urban, whose forensic skill is made more penetrative by his genially satanic demeanour, remains shaken. I was also stirred, and this May in Geneva at the World Health Organization (WHO) I thought about what he said, looking at the agenda for its 57th annual World Health Assembly (WHA)<sup>3</sup>, which included proposals to destroy stocks of smallpox virus, to eradicate poliomyelitis, on human organ and tissue transplantation, and on implementation of the Framework Convention on Tobacco Control. Are these less important than the WHO global strategies on diet, physical activity and health<sup>4</sup> and on infant and young child feeding<sup>5</sup>, which are of greater professional interest to readers of this journal? If so, why?

### The temptation of Dr Lee

Of course all these topics matter. But resources for public health, never infinite, are now under increasing threat. So what are the irreducible priorities? There is another reason to ask this question. A rumour in the Palais des Nations in May during the WHA was of secret deals with WHO Director-General Lee Jong-wook. The buzz was that the US government was willing not to thwart the Framework Convention, and also to help make Dr Lee's '3 by 5' dream come true, of enabling 3 million HIV-positive people to have access to anti-retroviral drugs by the year 2005. But, in return, the US government expected Dr Lee first, not officiously to strive to keep alive the global strategy on diet, physical activity and health, which if meaningfully enacted would impede US trade and general international

policy<sup>6</sup>, and second, to deny and bury the immediate scientific basis of the strategy, the 2003 WHO/Food and Agriculture Organization of the United Nations (FAO) report on prevention of chronic diseases<sup>7</sup>.

Are such deals struck? On 5 January this year Dr Lee received a letter from William R Steiger of the office of global health affairs in the US Department of Health and Human Services (DHHS) enclosing a 28-page onslaught on the 2003 WHO/FAO report<sup>8</sup>. This was copied to Jacques Diouf, Director-General of FAO. The letter and enclosure also insisted that WHO is a technical agency only, restricted to helping member states go about their own business, that health or disease is a matter of individual choice, and that in the report – and the strategy – WHO and FAO were straying into areas outside their 'mandates and competencies', such as taxation and subsidies, terms of trade, marketing/advertising and other determinants of health and disease controlled by governments and industry. Stick to education and information, was the warning.

This private letter was leaked to a public interest group, I guess by a whistle-blower then working at WHO headquarters. The USA contributes 22% of WHO funds<sup>9</sup>, and the 'nuclear option' of a freeze, cut or withdrawal of US funding from WHO was then in the news<sup>10</sup>. So we can assume that Dr Lee and his senior staff read this letter and its enclosure carefully, as anybody would if made a request backed by a gun pushed in the ear.

By contrast, on 19 January, at the 113th twice-yearly meeting of the WHO Executive Board, Dr Steiger, leading for the US delegation, was a veritable Prospero<sup>11</sup>. He 'congratulated the Director-General on making the "3 by 5" initiative central to his tenure. The United States recognized WHO's leadership role in that area and would do everything it could to ensure the success of his initiative. . . . At least two million people would receive anti-retroviral medication through new funding from the United States in 14 targeted countries over the next five years. In addition, more than 75 countries were receiving bilateral assistance from the United States. . . . His country was also committed to working closely with technical staff at WHO headquarters in order to reach the "3 by 5" target. . . . He recalled that the fourth round of applications for funding from the Global Fund was currently open and encouraged Member States that had not already done so to prepare applications'. The next day he was back on the rampage against the global strategy<sup>11</sup>.

Am I suggesting that these felicitations, permissions and invitations, read in the light of Dr Steiger's letter received two weeks previously, suggest that the US government

sure would appreciate reciprocation in one or two other areas of interest and concern from Dr Lee, the WHO secretariat and indeed sugar-exporting and other impoverished countries racked by AIDS, the lifestyles of some of whose corrupted rulers is sustained by the skimming of trade and aid dollars into Swiss bank accounts? I sure am. Have you ever said in effect: 'This is what I will do for you; now what will you do for me?'

But I must not stray from my point. Assume that a deal was being proposed – or merely indicated, for in diplomacy sometimes nothing explicit need be said. Put yourself in the place of Dr Lee. Would you end your several private meetings with the overall leader of the US delegation, DHHS Secretary Tommy G Thompson, by politely telling him where he could put his deal? And, precisely to my point, would you be right to do so? Which is more important: a global strategy to slow down rates of chronic diseases, or treatment of HIV/AIDS? I think I know what Urban would say – though he might bludgeon the '3 by 5' programme as a solution to the agony of sub-Saharan Africa.

### Plagues upon us

We have a duty to reflect on the context of our work. In her investigation mostly of actual and potential infectious pandemics, whose subtitle is *The Collapse of Global Public Health*<sup>12</sup>, reporter Laurie Garrett also reminds me of what Urban was getting at.

Take former USSR. Capitalisation has created 33 US\$ billionaires in Moscow<sup>13</sup> (including the new owner of Chelsea football club), but is less good news for most of the rest of the population. Throughout the former USSR deaths from accidents, poisonings, suicides and murder have rocketed, as have deaths from tuberculosis, diphtheria, poliomyelitis, typhoid and cholera. In the now Russian Federation, male life expectancy in 1970 was 65; in 1993, 58, in 1998, 56. In former USSR most men are said to be alcoholics<sup>14</sup>. According to Murray Feshbach of Georgetown University, some service industries are booming: in the 1990s rates of syphilis in 10–14-year-old Russian girls increased by a factor of 30.

The privatisation of public health is making the people of rich as well as poor countries more vulnerable to infectious diseases. Take the USA. Hospitals have become pest-holes. During the 1990s almost half of all hospital patients in intensive care units suffered bacterial infections<sup>15</sup>, every year around 100 000 patients die from hospital-acquired infections<sup>16</sup>, and by 1992 drug-resistant diseases were the 11th biggest killer in the USA<sup>17</sup>. Globally, drug-resistant tuberculosis may now be out of control<sup>18</sup>. Between 1979 and 1998, globally AIDS killed 13.9 million people, probably more than the Black Death<sup>2</sup>.

Given figures like these and the possibility of uncontrolled, virulent pandemic infectious diseases maybe more devastating than AIDS, perhaps released

initially by terrorist groups or rogue states who really do hold useable stocks of weapons of biological mass destruction, are we so sure that we should fight for higher status and more resources for public health nutrition? Perhaps all such battles should be lost. Perhaps we should keep quiet, and be content to hoe a narrow row. More on this in my next column.

### Big potatoes

Now for a change of theme. This column could include a regular item with a heading rather like the old 'Ripley's Believe It Or Not' strip, which featured hurricanoes of toads and fish, Mexican shamans who run a hundred miles daily, and the cubic capacity of the skull pyramids ordered by Tamberlaine.

In this spirit here is a story from *The Guardian*<sup>19</sup>. Last year, the US Department of Agriculture (USDA) reclassified frozen French fries (potato chips) not only as vegetables but also as fresh vegetables. This came to light as a result of a recent lawsuit in Texas. The federal lawyers claimed: 'While [the] plaintiff argued that batter-coated French fries are processed products, they have not been processed to the point that they are no longer fresh. [A product is] still considered "fresh" because it is not preserved. It retains its perishable quality'. Judge Richard Schell concurred and so ruled.

Frozen French fries and such-like products amount to around 5% of the total calories produced and consumed in the USA, so this is big potatoes. Further, the USDA also now defines all vegetables cooked in fat or batter, and indeed toffee-apples, as fresh. M'learned feds may now claim that the new definition applies to most foods. The argument seems to turn on what is inside the fatty, sugary and/or salty coating. So chips (crisps in the UK)? No relevant difference. Fried fish? Likewise. Fish sticks (fingers)? Meat pies? Pork scratchings? Why not? Hot dogs, hamburgers, economy sausages<sup>20</sup>? True, these are preserved in any usual sense, but they are perishable. Again, why not?

Indeed, it seems that the good ol' m'Lud has ruled that any food that does not rot is fresh. In which case – with some more imaginative litigation – what may remain outside the definition of 'fresh', as well as maybe dried, bottled and canned foods and drinks, vitamin pills, gravy powders, bones, vinegar, bubble gum, cough drops, 'best-by 2020' cookies and spirituous liquors, is sugar. As it is, children all over the USA are now eating lots more 'fresh' food. And that's official!

### Fasting in the wild

Now for some reflections on what may seem to be personal health nutrition, which may have wider dimensions. Early this year I completed a 10-day fruits-only fast, eating as many whole fresh (yes, really fresh) pineapples,

mangoes, grapes or papayas as I could manage on successive days, plus freshly squeezed juices, a litre plus of water a day and, to confess, lots of weak black tea. I report that four pineapples a day is my limit. Later in London I visited the natural remedies emporium within the Hale Clinic in Park Crescent, and found a book claiming that water-only fasting is the real thing<sup>21</sup>. This appealed to me, and afterwards for seven days in three successive months I knocked back a couple of litres of water a day and nothing else – no tea, no fruit, not even a nut.

Why, is because I like to test my resolve. Alain de Botton says of Friedrich Nietzsche, who in his 30s rented a room by Sils-Maria in the Engadine, rose at 5 and after a morning's writing regularly climbed 1600 m to the summit of Piz Corvatsch (the local Alp): 'He had judged difficulties to be an essential prerequisite of fulfilment'<sup>22</sup>. Exactly!

Taking a long view, there is of course nothing unusual about fasting. Religions typically advocate or require some form of restricted diet or fasting, especially at times of the year when collective retreat into meditative states is considered important.

Prolonged fasting, restricted to water or to frugal or symbolic foods, is an essential prerequisite of the visions on which religions are founded and developed. Jesus, fasting a feasible 40 days and 40 nights, was within an already ancient tradition; and St John Chrysostom declared: 'As bodily food fattens the body, so fasting strengthens the soul . . . to put the heavenly higher than the pleasant and pleasurable things of life'. So back at home in Brazil, humming 'If 'twas was good for the holy fathers, 'tis good enough for me', I reached for the bottle of spring water and awaited results.

Are tests of will or spiritual exercises involving food (or absence of food) relevant to public health nutrition? Why not? Health is of the mind and heart as well as the body. An integrated approach to nutrition will include its mental and emotional dimensions as well as its effects on physical health and disease.

### Starving makes you fat

Back to earth and within the current paradigm, the main argument against fasting is that this is not a good way to sustain loss of excess body fat. Indeed, to the contrary. An effective way to breed fat animals is to starve them early in life and occasionally thereafter. Why, is because starvation activates what can be called the 'stuff yourself when you can get it' syndrome, which makes evolutionary sense; and to paraphrase the great geneticist Theodosius Dobzhansky, evolution alone explains biology<sup>23</sup>.

The 'rebound effect' after a period of energy restriction – whether dieting, fasting or starving – of voracious appetite and extra gain of weight, and in particular of fat, is built into us so as to survive periodic famine<sup>24</sup>. WHO identifies dieting/overeating cycles as a 'possible' cause of weight gain and obesity<sup>7,25</sup>. A more thorough review of

the literature, much of which is corralled in animal physiology and human psychology journals, should show conclusive evidence of a causal relationship.

Take the two dogs in my family. Cris the Siberian husky eats fastidiously and is lean, while Pluma the Hungarian Kavasch eats voraciously, and until we stopped her eating what Cris left over, she got fat. Why, is because Pluma was the runt of her litter, semi-starved as a pup and adopted by us in a scrawny scabby state, and so she is programmed to gobble. In Brazil this compulsion is well-known as *fome histórica* (historic hunger) to health professionals working in crèches for children from impoverished families who, unless prevented, gorge compulsively. Indeed: after a seven-day water-only fast I become a human Pluma, rummaging among pans left on top of the stove for leftovers, though I do stop short of becoming the Midnight Icebox Raider of Minas Gerais.

### The Barker fallacy

Food insecurity explains the appreciation of fat wives in Arabia and Africa, the notoriously energy-dense cuisines of the Yiddish Jews of Central and Eastern Europe, steatopygous Hottentot posteriors and camels' humps. If you can't be sure of enough food, the one safe place to store energy is inside the body.

Once again, the explanation is evolution. Humans are evolved to be uniquely adaptable to circumstances. When people are deprived of food which then becomes and remains abundant, they will tend to overeat and become fat because in times of plenty they respond to innate hunger signals activated by their times of want. Starving and gorging is indeed a cycle, just as anorexia–bulimia is a syndrome, the result of adaptations in metabolic signalling mechanisms that in inappropriate circumstances are not only compulsive but also pathogenic.

The so-called 'Barker hypothesis' is misunderstood by its followers<sup>7</sup> and by its originators<sup>26</sup>. Small light neonates and children defined as 'stunted' or 'wasted' are not as such at special risk of chronic diseases in later life. Were this so, obesity, diabetes and heart disease would have been endemic throughout history. The essential factor is the combination of being small and light at birth as a result of frugal intrauterine nutrition, and then the double whammy of being overfed formula to induce accelerated 'catch-up growth', and then (usually premature) weaning on to energy-dense fatty sugary diets<sup>27</sup>. César Victora points out to me that Atul Singhal and Alan Lucas of the Institute of Child Health in London take a similar view, based on their own and other long-term human studies<sup>28</sup>.

### Thanks for the memory

So what can be said for water-only fasting, apart from self-mastery? In my experience, which chimes with the

pioneering books that advocate fasting<sup>21,29,30</sup>, plenty. After a couple of days of ravenous hunger and a couple or so more of feeling weak and sometimes tired, energy surges and all the senses become vibrant as in childhood. What most impresses me is access to long-term memory, which consistently kicks in on day 6 or 7. What is the biochemical explanation? Is it because, after some days of a total fast, the brain and heart are fuelled by ketone bodies? Can these be bottled, please?

After the first hard four or five days I also feel wonderfully healthy, with two readily measurable clinical signs: my blood pressure drops to well below the 'normal' 120/80 – once to an ethereal 100/60 – and my resting pulse to well under 50 beats a minute. A radical claim is that fasting lets the body rid itself not only of accumulated rubbish but also diseased tissue<sup>21</sup>. The claim that whole-food diets that (compared with typical industrialised diets) are extremely low in fats, sugars and salt, reverse diabetes, heart disease and their symptoms, is supported in conventional scientific literature<sup>31</sup>. So does fasting also encourage the *vis medicatrix naturae*, the body's natural powers of healing? Can we learn from animals, who when they are ill or injured usually stop eating? Are there implications here for public health? I think so.

Orthodox journals have little to say about fasting, or – see my next column – sustained energy restriction in humans. One reason is that most of the trials of life will never be approved as a topic for research. Imagine the discussion in the grant application review and ethics committee rooms. 'Fasting?' Sound of nervous laughter, collective intake of breath and teeth-sucking. 'Not a priority. No potential for patients or patents. Cranky. Useless. Dangerous – will promote anorexia nervosa. Subjects may die – horrible insurance implications'. And (the awful unspoken thought): 'Suppose it works?'

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