

Out of the Box



Why do we think it is better to be relatively big? Why, when we think about food insecurity, do we tend to overlook the USA? It's because our thoughts are driven by ideas, which may – as in these cases – be challenged or contradicted by facts and by other ideas. Plus here is some news about the UN System Standing (or falling?) Committee on Nutrition.

Philosophy of science

What comes first, the fact or the theory?

Readers ask what I meant in my previous column by saying: 'The basis for all organised human activity, whether governing a country, changing a job or undertaking a randomised controlled trial, is not facts. It is ideas that drive us'.

As with politics or employment, so it is with public health nutrition. Here's how the philosopher of science Steve Fuller makes the point: 'The most salient feature of the scientific enterprise is that it is theory-driven... Scientists begin with a certain view of the world, which they then test against the evidence, in light of which their view is then revised and extended accordingly'⁽¹⁾.

This does not mean that ideas, or systems of ideas – ideologies – are good, or are more reliable than facts. It is simply that ideas come first. The ability to have ideas is a defining characteristic of humans. This is how we work: we don't see data, we see shapes, we make patterns, like every time we 'see' a far-off post or shadow as a person until we come closer. Often the more powerful the idea the more likely it is to sink below consciousness. Ideas are not truths. They work if they are useful. They are tested and may be overturned by the organised experiences and observations we call 'facts'. Don't imagine that facts are truths. That's a bad idea. Indeed, it may be a smart idea to put 'truth' in a box labelled 'religion'.

Rather than continue to bombard you with aphorisms, in this column I give a couple of examples of ideas that drive conventional thinking and ordinary science, but that turn out to fly in the face of facts.

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John Waterlow. Protein requirements, Optimum human height

The politics of size

The first idea to be assaulted, not for the first time here⁽¹⁾, is that it's best to be big and tall. Ten years ago an

international symposium asked how to feed a world population of more than 8 billion. John Waterlow gave a keynote address. He challenged a doctrine with which he himself has been associated, that 'the growth potential of children should be fully expressed'⁽²⁾. Thus of small people, he pointed out that 'the porters of Nepal are able to carry loads equal to their body weights up 1,000 metres in a day, something that none of us here could do'. Is this merely because Sherpas are tough-gene adult survivors of populations with high infant mortality? He concluded: 'I am inclined to think that except where there is a demand for heavy and continuous work, it is no great physical handicap to be small'⁽³⁾.

Children: who are at risk, and of what?

The theme of what is optimum human size has pre-occupied nutrition scientists for many years – indeed, ever since experiments beginning in the mid-19th century showed that manipulation of the macronutrient content of diets alters trajectories of growth and weight, and that diets high in animal protein accelerate growth.

Conversely, children of undernourished mothers who are born small, and who grow very slowly, suffer infestations and infections, and are undernourished almost to the point of inanition, need nutritional and other support; otherwise they are fairly likely to die, or to remain retarded. The task of enabling children who live in conditions of chronic and acute poverty and food insecurity to grow up healthy, remains a rightful priority of UN agencies, governments and civil society organisations.

That's one thing. But it is quite another thing to suppose that the faster children grow, and the taller they become, the better. One of the first times I thought about this was in 1985 with Caroline Walker in Sri Lanka. We were walking down a dirt road towards a village, to visit a monastery. A small girl saw us some way off, picked up her toddler brother, gripped him to her hip, and ran up the incline to greet us, laughing. I thought at first she must be around 6 years old, but she was probably around 9. It was hard to imagine young girls in Britain being able to do what she did.

A similar thought occurred to us that evening. Ananda, the owner of the rural rest-house where we were staying, took us out to the garden to greet his tiny thin mother, then in her 70s, who smiling, was squatted behind a stone mortar, pounding and grinding herbs and spices for our supper with a wooden pestle as long and thick as her arms. We could not see an elderly English lady enjoying such hard sustained work.

John Waterlow chaired a UN expert consultation whose report on human energy and protein requirements was

published in 1985⁽²⁾. This cited a Tunisian study showing that short ‘stunted’ children from poor families were stronger and had more stamina than bigger children from affluent families. It also cited an Italian study showing that small children from poor families whose diets were frugal had better cardiovascular performance than bigger children who ate more. A further study showed that small thin Indian miners had higher aerobic capacity than miners in other countries.

Requirements for what?

The report summarised: ‘These findings suggest that habitual physical activity is a more important determinant of fitness than is body size per se⁽²⁾. Nonetheless it concluded that relatively fast growth and taller height – the ‘full expression’ of ‘growth potential’ – was the right policy, even though ‘healthy’ growth trajectories were based on those of children fed cow’s milk formula with levels of protein much higher than is present in breastmilk. John Waterlow concluded: ‘If the present judgements are thought to be inappropriate then it is up to the user, or the community of users, to offer more appropriate judgements. No longer can we bypass the question: “Requirements for what?”⁽²⁾. Quite.

Which brings me again⁽¹⁾ to Thomas Samaras, who testifies to some new findings in this issue⁽⁴⁾ which, he states, support his general contention⁽⁵⁾ that from the biological point of view it is generally better to be short than to be tall. This view has been rubbished by George Davey-Smith, who insists that taller people are generally healthier and live longer⁽⁶⁾. George points out that Tom is a man with a mission, who looks kindly on studies that support his position. Scientists are supposed not to do this. Besides, Tom is a retired senior systems engineer, not an epidemiologist. But on at least some of the biology he is turning out to be right.

The other dimensions of health

Biology is one dimension of nutrition. Two others are the social and environmental dimensions. What drives tall adult height creates social problems. Thus, sexual maturity is largely a function of body size and body fat. Children who become sexually mature aged 10–12, rather than the historically normal 12–14, are less likely to be able to control their hormonal impulses at a time in life when they are better off at school and are not emotionally ready to be parents. Environmentally, big tall people are obviously a disaster. As John Waterlow has said: ‘If everyone were to achieve the height now common in industrialised countries, this height explosion would be almost as disastrous as the population explosion, carrying with it the need not only for more food, but also for more clothing, more space, more natural resources of all kinds⁽³⁾.

This sounds like a case for a systematic literature review key-worded birth weight, breastmilk, formula feeds, stunting, wasting, anaemia, infection, infestation, height, growth, growth trajectory, menarche, disease, chronic disease, cardiovascular disease, cancer, morbidity, mortality; and also environment, natural resources, ecological footprint, food supplies, and so forth. This might generate a first hit of 2 million papers or 10 million if laboratory animals are included. But before undertaking such a Pharoanic task, are we really, really sure that studies indicating that taller people are healthier have controlled for confounding factors like nutritional quality of diets, social class, economic and occupational status, and so forth? I pause, for a reply.

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Food insecurity

Hunger in the USA

It’s safe to say that most people in the South think that almost everybody in the USA is prosperous. Any such idea crumbles in face of the facts. Categories like ‘high-income countries’ are averages. For many millions of families in the USA, the ‘American dream’ never came true. President Hoover made a promise in 1928 of ‘a chicken in every pot’. His timing was off: then came the Great Crash. Forty years later President Nixon acknowledged: ‘Despite our material abundance and agricultural wealth ... there can be no doubt that hunger and malnutrition exist in America, and that some millions may be affected⁽¹⁾.

Forty years after that, a new report issued by the US government estimates that almost 700 000 children went hungry at some time in 2007. Just over 11 % of all families in the USA, or 36.2 million adults and children, were sometimes food-insecure, and within this number, just over 4 % of families, or roughly 12 million people, experienced ‘very low food security’ – a category until two years ago defined as ‘food insecurity with hunger’. A total of 30 % of all families headed by single mothers sometimes went short of food.

My email server is currently advertising 'Feeding America', the US Food Bank, with a Board largely made up of executives from the food manufacturing industry (<http://feedingamerica.org>). Human doggie-bags is the name of their enterprise. One of its headlines is 'One in eight Americans struggle with the reality of hunger and food insecurity'. With a couple of clicks I learn how to 'Join the hunger action center to help start solving the problem of hunger in your community'. James Weill, president of the pro-poor Food Research and Action Center, predicts that in 2008 increases in hunger will have greatly increased, 'based on the increased demand we're seeing this year at food stamp agencies, emergency kitchens, women, infants and children clinics'⁽³⁾. 'Hunger' as defined in the USA is less severe than as defined for Africa. Nevertheless, the idea that life is easy for almost everybody in the USA, faced with the facts, can be tossed in the trash.

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UN System Standing Committee on Nutrition Going concern, or going, going...?

In December Alexander Müller, an assistant director-general of the FAO, was announced as the new chair of the UN System Standing Committee on Nutrition (SCN), and Francesco Branca of WHO is baling out the boat until a new 'technical' secretary is appointed. This is good news: both these Europeans are skilled and dedicated senior international civil servants.

There is though as yet no sign of adequate funding for the SCN and its core work, including its annual meeting, its working groups and its reports on the world nutrition situation. Meanwhile, more vultures are circling. The UK Department for International Development (DfID) says in an internal consultation paper: 'SCN's effectiveness is widely believed to be constrained by limited capacity, complex organisational structures and lack of funding'⁽¹⁾. The Washington-based Center for Global Development, a self-styled think-tank, whose advisors include members of President Obama's cabinet (<http://www.cgdev.org>), has prepared a report on the 'global nutrition architecture', whose conclusions will be known after this column goes to press'. The report may well confirm the DfID's judgement that 'international nutrition is under-funded... un-coordinated, lacking leadership... and marginalised'. If accepted, the tank-thoughts from Washington are likely to keep the SCN working in ways of working with which the

Washington government is comfortable; because if rejected, the alternative may be oblivion.

There is a third way. The time has come for an idea backed by the facts. The best judges of what impoverished communities need are the people themselves. Certainly they need support for their needs to be articulated and their voices heard, preferably from relevant professionals who live within their communities; but what they don't need and what does not work are 'aid' programmes imposed from above and outside. It is time for UN agencies to listen and respond much more respectfully to genuinely representative people's organisations. The only programmes that can work well are those in which the people most immediately affected are partners⁽²⁾. As just one example of very many, the efficacy of leaf concentrate as a potentially self-sustaining way to alleviate undernutrition^(3,4) deserves attention.

Impoverished communities in the Congo, Madagascar, Bolivia, Haiti, Bangladesh, Indonesia, and elsewhere, listen to the radio and may watch television. They are likely to believe that the new world order has been no good for them and now also that it is a general calamity⁽⁵⁾. Surely what recent political and economic events teach us is that 'experts' and money by themselves solve nothing.

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