2012 July column
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Juiz de Fora. This column here starts with *Rio2012: What next*. It notes that many Association members are encouraging us all to think big. Then there are some thoughts on formulations designed to match or improve on nature, which all began with artificial baby formula around 150 years ago. Then there's a riff arising from a modest meal, which at the time of writing was that day's brunch and those for the previous week.

My hero: MFK Fisher
Queen of food writers

Here is this month's hero: MFK (Mary Frances Kennedy) Fisher, early and late in her life. WH Auden once reckoned her to be the best writer of prose in the US. She was – let's say is – a scholar of food and its preparation and cooking. One of her labours of love was to spend two years translating and annotating the masterwork of the French philosopher and gastronome Jean Anthelme Brillat-Savarin (1). After the choice of Claudia Roden two months ago, MFK Fisher is chosen this month.

We should, I suggest, consider putting food prepared and eaten as meals, right back into nutrition as taught and practiced. After all, this was so until the early nineteenth century, as part of the 'natural philosophy' of dietetics. So maybe it should be part of our vocation to read, mark and inwardly digest distinguished food writing such as that by MFK Fisher.

Reference

1 Brillat-Savarin J-A. *The Physiology of Taste. Or; Meditations on Transcendental Gastronomy*. MFK Fisher (tr). Washington DC: Counterpoint, 1999. First published 1949.

Rio2012: What next

Reading big



More writers – and thinkers and activists – who inspire us. Josué de Castro (left), and then Rudolf Virchow, Paulo Freire, Pierre Bourdieu, Amartya Sen

In April and May *World Nutrition* ran a series of 29 short pieces answering some questions on the occasion of the *Rio2012* conference. The general idea was to get into the mood of *Rio2012: What next* – to look ahead. One of the questions asked was: What advice can usefully be given now to a young public health nutritionist?

How big a picture?

Philip James advised young professionals to make sure they are grounded. 'Do not get into general public health nutrition too soon. Become a valid expert in a biological science, or some other hard, rigorous endeavour, with publications to your name. This will protect you, because inevitably as a public health nutritionist you will be attacked as a woolly amateur dabbling in politics'. Catherine Geissler, another nutrition scientist with deep experience, agreed: 'We all need specialist knowledge of the biological science of nutrition and malnutrition' and then, going further, said 'but also knowledge of the underlying social, psychological and economic factors'.

Most other advice was also big picture stuff. For example, Inês Rugani said: 'Invest in reading and interaction from different areas, such as human rights, communication, ecology, human sciences, which relate to food and nutrition, to broaden your understanding and sense of the scope of the area you choose to work in'. Shiriki Kumanyika, while assuming that young colleagues will learn the basics, said: 'Take up at least one other knowledge area besides nutrition science to add to your perspective and your toolbox. Consider economics, city planning, marketing, anthropology, social care, or any other area that is relevant to eating and feeding'. And Mark Lawrence advised: 'To mend the current broken food system means to challenge the predominant "business as usual" approach. You will need multiple competencies beyond knowledge of public health and nutrition, such as policy analysis, advocacy, research and communication'.

How far to go?

Even more heady was the range of writers chosen just by one contributor. Some of these, with long records are Josué de Castro (Catherine Geissler), Rudolf Virchow (me), Paulo Freire (Fabio Gomes), Pierre Bourdieu (Shiriki Kumanyika), and Amartya Sen (Carlos Monteiro), pictured in this order from left to right above. Others included Gilles Bibeau (Jean-Claude Moubarac), Richard Wilkinson (Philip James), Harriet Friedman (Renato Maluf), Philip McMichael (Renato Maluf), and John Stuart Mill (Geof Rayner) (1).

Most of these distinguished public figures (they all have wikipedia or other internet entries) were or are philosophers, or else have approached their special subject – such as pathology, education, economics, anthropology – from a philosophical point of view. Most were or are activists, at least in the sense of being engaged with social or political movements, and two among other things were elected politicians. The list is evenly balanced between people who can roughly be classed as outside or inside the established order of their times. None can be classified only as writers or scholars. All have made some lasting mark on the ways in which we may understand and act on fundamental issues such as justice, equity and rights.

These choices do indeed implicitly position public health nutrition as a branch of public health, with a special purpose is to protect, preserve and improve nutritional health and well-being, and public goods as well. All very encouraging. At the same time, surely Philip James and Catherine Geissler are right.

Baby formula
The triumph of food chemistry



Inventor of baby formula? Justus von Liebig (left), not Henri Nestlé (right). But both had the same big bold idea: that chemistry can improve on nature

Now for a different topic. Here's some thoughts about the public health effect and also the commercial impact of products that 'improve on nature'. The biochemist who first devised infant formula in any big way was Justus von Liebig (1803-1873,



Liebig's Meat Extract made by his own company. At left is a radiant image of health and youth. At right is Gabriel appearing to the prophet Mohammad

commemorated on a German postage stamp at left above). The creation of mass-produced baby formula was one aspect of the development of nutrition science in the nineteenth century according to biochemical principles. Von Liebig devised a formula in 1864 from cow's milk, wheat (and later cheaper pea) flour, malt flour and potassium bicarbonate. He knew that this mix contained protein in far greater concentration than breastmilk. This was part of his master-plan, because he already knew that protein promoted growth. He advertised it as 'double the concentration of women's milk', also claiming: 'The milk has brought many needy children back to health and life, and it has exposed to view the huge mortality in suckling infants in England, France, and many parts of Germany' (1). Which goes some way to saying that breast is worse.

Von Liebig became wealthy also from other types of early industrial ultra-processed products. He identified cattle as sources of mass manufactured meat as well as of milk. His formulations included beef from Uruguay rendered down into paste and advertised as an elixir (2). *Liebig Fleisch-Extrakt* was the precursor of branded products like Oxo™ and Bovril™, that became items in many millions of household larders, and which were marketed also as having special medicinal and health-giving qualities, as suggested by the advertisements above, audacious even for their day.

Von Liebig, whose impact on public health then and now, one way and another, is almost that of Louis Pasteur, proposed for the products he devised that they were either equal or superior to what exists in nature. This idea was in tune with its machine age times. It inspired the foundation of what became big businesses, some of which grew into what are now transnational food and drug corporations. Soon afterwards Henri Nestlé (1814-1890, shown with an early tin of his formula, at right, top) (3), wrote that with his colleague Jean Balthasar Schnetzlehe he had made a formula from: 'Good Swiss milk and bread, cooked after a new method of my invention, mixed in proportion, scientifically correct, so as to form a food that leaves nothing to be desired' (4). Thus the claims that Nestlé formula was complete

nourishment for young children (second from the left, top), or else was a second mother (the advertisement not from Nestlé, second from the right) (5).

The world's leading baby formula manufacturers now, are in order, Nestlé, Mead-Johnson, Danone, and Abbott. This April Nestlé took over Pfizer's baby formula business for $US 11.85 billion (6,7). The global market now is worth close to $US 10 billion a year. The US and European market is now seen by the transnationals as being saturated, but nevertheless overall global sales are booming, and overall are close to the 'double-digit' of 10 per cent growth or more every year. This is accounted for by the 'emerging markets' of the global South. Thus from 2008 to 2010, in China production of baby formula almost doubled. Some scholar should be tracking the rise of childhood obesity in China, in line with that of formula sales.

References and notes

1 Brock W. *Justus von Liebig. The Chemical Gatekeeper*. Cambridge: Cambridge University Press, 1997.

2 The origin of meat extract is a story in itself. In those days the main trade in cattle raised in Argentina and Uruguay was in their hides. Once skinned, the bodies of vast herds were dumped on the pampas. There was far too much meat for the local populations to eat, and refrigerated international transport was not then well developed. Hence von Liebig's brainwave. Boil the flesh down to paste, ship the stuff in barrels, can or bottle it at the other end, and sell it as what is now known as a functional food. It worked – and the cattle were no longer left to rot. By 1875, 500 tonnes of *Liebig Extrakt* were being shipped every year. This is not meant to suggest that von Liebig or other such entrepreneurs, including Henri Nestlé, were cynical. They surely believed in the quality and value of their products.

3 Henri Nestlé was born German, as Heinrich Nestle (no accent), the family name being that for a small birds-nest. Nest-ling, as it were. Hence the Nestlé trademark.

4 Apple R. *Mothers and Medicine. A Social History of Infant Feeding*. Madison, WI: University of Wisconsin Press, 1987

5 The composition of baby formula has of course developed as a result of the steady progress of nutrition science, and is now far removed from what it was in its early days.

6 UBIC Consulting. *Ingredients for the World Infant Formula Market 2012*. http://www.ubic-consulting.com/template/fs/documents/Nutraceuticals/Ingredients-in-the-world-infant-formula-market.pdf

7 Von Liebig's own company eventually became part of what is now the transnational corporation Unilever.

Quality

Thoughts on brunch

The preparation and enjoyment of brunch one June Sunday, today as I write, brought the thoughts in this item to mind. My Brazilian family is visiting Amapa in Amazonia. Being by myself here at home, I make myself enormous salads. The ideas that follow, feel like they are evoked by the whole experience of my brunches. As I munch, here we go...

The limits of measurement

Here is what arrived in my mind – not for the first time. What are the limits of science? If it is concerned only with what can be measured, science surely does have limitations. One reason is that quality by its nature cannot be measured (1). Ideas – like say these here – have all sorts of biochemical, neurological and other correlates, but these are not the ideas themselves. Picking up a small glazed bowl on my desk marked 'Sahorre' on its back, right now, I sense the sunny French Catalonian day when I bought it, and I see Susie its maker in her workshop. All sorts of electrical impulses are happening in my brain; but these are the pathways and not the cause of my memories. Decisions, choices, thoughts, actions, have measurable correlates but are essentially immeasurable, even mysterious (2). This is also true of all forms of art. Please don't mistake the intention here. Science and technology are central to all levels of civilisation, but I'm suggesting that civilisation is not bounded by them, unless we choose to give 'science' a broader definition (3).

Here is a reason for the stunning impact of the book *Zen and the Art of Motorcycle Maintenance* (4). Today I open it at a sticky Post-It note and find what now follows. Robert Pirsig, trained as a chemist, wrestled with issues like this. 'Quality… you know what it is, yet you don't know what it is. But that's self-contradictory. But some things *are* better than others, that is, they have more quality. But when you try to say what the quality is… it all goes *poof* !... But if no one knows what it is, then for all practical purposes it doesn't exist at all. But…obviously some things are better than others… but what's the "betterness"? So round and round you go… What the hell is Quality? What *is* it?'

The meaning of the act

That's what I was thinking as I enjoyed my big salad. What is it, and those for the last week, made of? Yes, lettuce and tomato is a base, but that's just the start. Also included are fruits – yesterday pineapple, the day before passion-fruit, today, avocado and lime – and some slivers of the last of the gorgonzola, just beginning to go brown – and two garlic cloves and a hunk of fresh ginger, chopped and mixed with olive oil, balsamic vinegar, and sea salt. Which of these singly or in combination is most

stimulating, or even psychoactive? We can only guess. Together with two slices of corn bread made by a friend of this house, that's the main meal of the day. After a week of this, on waking and getting up and taking four turns round the condominium, I feel more energetic and productive. Some slight aches have gone. The world feels a better place. It feels like the salads are a necessary reason. But what is it about them that may be contributing to this sense of well-being?

For sure, nutrition in its usual sense is part of the story: the nutrients within the foods I am eating, and what I am not eating but would be if I was not satisfied by my salads. Vegetables (including green leafies) and fruits, we've all known about some of the goodies in them ever since the discovery of the functions of vitamins. It took some meticulous analysis of fats to identify why avocados and olive oil are great stuff – in moderation, naturally. Fresh artisanal bread as an accompaniment is OK. Garlic and ginger? Like many herbs and spices, these are intensely rich in all sorts of bioactive compounds, many no doubt off the conventional nutrition science map and so which remain mysterious, except to self-confident naturopaths (5).

Nutrients also have a context – the foods in which they are contained. Foods also have a context, which may be rich or impoverished. Thus the act of preparing the salads has brought with it a sense of participation and creativity. The use of a knife brought from London evokes meals prepared, some long ago, and in my mind's eye and ear I see faces and hear voices, as we may do when engaged in convivial tasks, and as I wash and chop and cut and slice and squeeze and peel and chop some more and pour and mix, I choose one of these times that has swirled into mind, and meditate while continuing to prepare the meal (6).

Our job now

Robert Pirsig's book and story, and his training as a chemical scientist, indicates that what sometimes drove him 'out of his mind' was trying to make sense of human life – what we sense and feel every moment, when we pay attention – within the confines of quantitative science. Surely, this cannot be done. How would you quantify the poem or music or painting of your choice, or experiences that are most bright to you? This is not possible. Quality is beyond quantity. Quality has no numbers.

Now it is time to ground this series of connected ideas. Yes, a central responsibility of the science of nutrition is to go on identifying the elements of food that most contribute to health and well-being, and also to avoidance of disease. Yes, a proper understanding of nutrition in all its aspects, means that the most valuable judgements will also fully take into account society, the environment, future generations, and the biosphere. But the implication of the ideas here goes further yet. It is that nutrition is – or should be – also concerned with matters of the mind, and even of the heart and spirit, which after all are defining characteristics of our species. This would make it an art as well as a science. Would this be strange? So, after all, is medicine.

Notes and references

1 Except through surrogates, such as 'This automobile must be the best, look how much it cost me' – or indeed the confusion of 'development' (a value-laden term) with the average income of a population. Zeal to measure quality explains a lot of what has gone wrong for us all.

2 Hampshire S. *Thought and Action*. London: Chatto and Windus, 1959.

3 This is not suggesting that what is not science should be roped into religion, as suggested in Stephen Jay Gould's off-beam book *Rocks of Ages*. Religions are or should be about values, but values don't belong to religions.

4 Pirsig R, *Zen and the Art of Motorcycle Maintenance. An Inquiry into Values*. London: The Bodley Head, 1975.

5 Hartvig K. *Eat for Immunity. The Practical Guide to Strengthening the Body's Defense Systems*. London: Duncan Baird, 2002.

6 I wager that the acts of ordering and devouring a burger would never have any such effect. What's here is in the same territory as Marcel Proust's tale of how the taste of a *madeleine* (a kind of cake) evoked deep memories. But he was not a nutritionist. Do you think this is relevant to nutrition?

MFK Fisher

A fisher of fish

The most meditative statement I have ever read about Fish, not a fish or the fish but Fish, is a poem from the Japanese. In Japan the seventeen-syllable exercise known as a haiku is considered proper for kings as well as philosophers, and the ones I have always remembered, sometimes in spite of myself, could almost as well have been written by an emperor as a thinker. It is, in its own restrained way, full of passion:

> Young leaves ev'rywhere;
> The mountain cuckoo singing:
> My first bonito!

It is perhaps easier to slide from the sublime to the ridiculous gastronomically than any other way, so I do not hesitate to add here that a bonito is a striped tunny about three feet long, found in tropical waters. It is contraband in California. I have often eaten fillets of it in a restaurant in Hollywood, where it is served grilled almost black on one wide and doused with lemon and melted butter. I have always thought that I would like a chance to cook it myself, and not do it so thoroughly.

MFK Fisher (1908-1992)
Translator's glosses on Brillat-Savarin Meditation 6 (1)

It's so tempting to go on and on quoting MFK Fisher. Here she is above on Brillat-Savarin on thinness. 'This pretty phrase "*la salade… qui réjouit le coeur*" is often quoted and misquoted…I truthfully do not think that salads gladden the heart, but that they are light in the stomach and easily digested, and that they bring a feeling of easiness and comfort to the whole belly and especially to the poor overworked organ that perches on top of it, the human heart. Anything that does that is, of course, a gladsome thing'. So this is why my brunches are so good for me. How wise. How obvious, once stated. Some of MFK Fisher's books are listed below (1-5).

References

1 Brillat-Savarin J-A. *The Physiology of Taste. Or; Meditations on Transcendental Gastronomy*. MFK Fisher (tr). Washington DC: Counterpoint, 1999. First published 1949.

2 Fisher MFK. *How to Cook a Wolf*. New York: Duell, Sloan and Pierce, 1942.

3 Fisher MFK. *The Gastronomical Me*. New York: Duell, Sloan and Pierce, 1943.

4 Fisher MFK. *An Alphabet for Gourmets*. London: The Folio Society, 2005. First published 1949.

5 Fisher MFK. *Recipes: The Cooking of Provincial France*. New York: Time-Life Books, 1968.

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