

“On the connection between soil, plant, animal and human being”

I am very nervous about doing this. After dinner speaking is a minefield and I have spectacularly blown up or out on the couple of times I have been rash enough to agree to it.

This time I have taken advice from someone with experience. Remember, he told me, at that time of night, after a good meal, plenty of wine, in comfortable surroundings only about a third of the audience will be listening, one third will be day dreaming and the rest will be falling asleep. That means that most of your audience are enjoying themselves and how many speakers can claim that.

With that in mind I thought I might play a trick on two thirds of you by going straight to the climax of my talk and doing the ending now. Endings are important. No matter how bad a talk has been if the ending is memorable people forget the proceeding incoherence. Moreover, if you can get the voice right you can wake up the missing two thirds, imparting the only gem in the whole talk and allowing them to pretend they heard the whole thing and believe that the rest of it was as good as the end. Thereby ensuring a reputation as a good speaker.

I discovered a great ending about a year ago and have been looking around for a use for it since then. It comes from a book by Douglas Adams called Dirk Gently's Holistic Detective Agency, and therefore has some relevance to the title I was asked to speak to as the agency works on a belief in the “ fundamental interconnectedness of everything” so much so that a search for a missing cat in London can be carried out on a sun-drenched beach in Barbados.

In fact, the whole book is interesting from a scientific perspective. For example, there is a passage extolling the virtues of Sir Isaac Newton, as the renowned inventor of the catflap. “But what about gravity?” one character asks, to which the Holistic Detective scornfully replies that gravity was hanging around waiting to be discovered, “they even keep it on at the weekends, someone was bound to notice it sooner or later but the catflap is an invention of pure genius”

Which has nothing whatsoever to do with my talk, nor it's ending, - except at a fundamentally interconnected level – an ending, which I think, is a fitting one for this talk and this conference. Here it is:

“ let us go. Let us think the unthinkable, let us do the undoable. Let us grapple with the ineffable itself, and see if we may not eff it after all.”

And which, sorry to disappoint some of you who have heard me use bad language in presentations all around the world, is as close as I will get to swearing tonight. But I think that's a good ending because it captures the upfront, ballsy, lets do it energy that the scattered remnants of the organic movement need to dredge up from somewhere. And that includes researchers.

Although I admire the scientific discipline, I frequently find myself wondering whether the traditional approach to science involving testable hypotheses, replication, statistical significance and repeatability is adequate enough to meet the challenge of

understanding such things as the complexity of whole ecological systems without taking apart and destroying the very object of the study.

There are, of course, differing scientific philosophies and disciplines and many types of scientist. I suppose that some are good and some less so. According to the humorist Fran Lebowitz "the further back one goes the science one encounters is of a consistently higher quality. For example, in studying the science of yesteryear one comes across such interesting notions as gravity, electricity and the roundness of the earth - while an examination of more recent phenomena shows a strong trend towards spray cheese, stretch denim and the moog synthesiser."

A comment which is deliciously bitchy and not entirely accurate but does provide a route to the first observation I would like to make. Most researchers employed in the food sector in the UK are working on designing "novel" food products rather than on nutritional questions. I have not checked the figures but I am told that more money is spent on development of food technology than on nutritional research. Which is not surprising because it is big business.

Derek Cooper, who was an outstanding UK broadcaster on food matters, told about a time that he addressed the executives and researchers of a company marketing Cornish Dairy Chocolate Ice Cream. The product didn't come from Cornwall, wasn't made in a dairy and contained neither chocolate nor cream. This wonder of modern food science was composed of "corn syrup, cheese whey, mono- and di-glycerides, carob bean gum, cellulose, dextrose monohydrate, polysorbate 80, artificial flavours and colours." During his presentation, Cooper suggested that the company adopt a new and upbeat marketing slogan - "Our ice cream comes from contented palm trees." He reports that the applause was exceedingly minimal.

Derek told me that story at a conference we were attending entitled "Agricultural Production and Nutrition". The promotional material declared that, "This conference will investigate whether there is a relationship between the quality/safety of food and the production systems used to raise it"? Derek thought this was so obvious it should not require stating and the fact that it had to be was a sign of how stupid our civilisation has been.

No one here needs reminding that the principles of nutrition upon which our health depends have played no part, save by accident, in our agricultural production, nor in the way we organise our society to grow, process, or distribute our food.

How can this be? How can such monumental folly have come about? There have been plenty of warnings.

As Michael Crawford and David Marsh point out in their excellent book "The Driving Force" Darwin considered that food could manipulate species and, although referring to birds, said he could "... see no difficulty in parents being forced or induced to vary the food brought, and selection adapting the young ones to it, and thus by degree any amount of diversity might be arrived at.' He argued that there are two factors which determine evolution - natural selection and what he described as "conditions of existence". "Today we would call this environment."

Crawford and Marsh go on: "In all the controversies over what the causes of diversity might be, no-one seems to have paid much attention to the factor in the environment that has the most obvious effect on any organism: food."

"A mutant that depends on a nutrient it cannot get is not 'fit' and will not survive; nor will an established species if its essential food supplies run out. most evolutionists do not give nearly enough emphasis to this obvious truth. They would not deny it but they seldom see how important it is. The point which is missed is that food is not just food. The milk of different species is not interchangeable; its composition is uniquely tailored to each individual species' post-natal requirements. Cows' milk is very much richer in protein than human milk, but human milk is very much richer in essential fatty acids. Food contains a crucial 'qualitative' element which makes possible various specialisations within both the plant and animal kingdoms." This means that the food we ate throughout evolution had some bearing on what we are today. "Nutrition will also play an important role in deciding our future."

This seems so obvious that one wonders why anyone has bothered to write it down. Except for the fact that it has been generally ignored and it profoundly affects the well-being of every human on this planet.

The pioneers of the organic movement could get quite worked up about this. Lady Eve Balfour, for example, wrote: "My subject is food, which concerns everyone; it is the soil, which concerns everyone - even if they do not realise it - and it is the history of certain recent scientific research linking these three vital subjects."

She wanted this message to reach "the legislator, politician, voter, tax and rate -payer, farmer, gardener, veterinary surgeon, doctor, sanitary inspector, public health authority, school teacher, priest, Tinker, Tailor, Soldier, Sailor - in fact, the Citizen". Throughout her life, Eve Balfour was bursting to tell all those who would listen, and those who wouldn't, what she and other organic pioneers had realised - "that health, whether of soil, plant, animal or man, is one and indivisible."

This concept of health is truly revolutionary. It was back in the forties and unfortunately it remains so today.

Why revolutionary?

Because in order to give form, shape and structure to that concept we would have to fundamentally alter the way our civilisation relates to the biological base of the planet; we would have to fundamentally alter our civilisation's relationship to all our primary resources; and, probably more difficult, alter the way we relate to each other as communities, regions and as individuals.

There is a pseudo Chinese proverb that says: "if you do not change direction you will end up where you are going"

This was a tall order back in the early 1940s but it is arguably more problematic in our urban, suburban, globalised, sanitised, consumerised, pre-packed, shrink-wrapped, shrunk brained, clichéd and disconnected modern world – where kids do not know that milk comes from cows, how can they have any notion of a connection between soil, plant, animal and man?

Here is a poem by the Liverpool poet Roger McGough that highlights the problem. It is called Soil: In it the poet is speaking to the soil.

we've ignored each other for a long time
and I'm strictly an indoor man
anytime to call would be the wrong time
I'll avoid you as long as I can

When I was a boy
We were good friends
I made pies out of you
When you were wet
And in childhood's glorious
Summer weather
We just rough and tumbled together
We were very close

Just me and you and the sun
the world a place for having fun
always so much to be done

But gradually
I grew away from you
Of course you were still there
During my earliest sexcapades
When I rough and fumbled
Not very well after bedtime
But during my first pubescent winter
You seemed very wet and dirty
So I stayed indoors
And acquired a taste
For girls and clean clothes

we found less and less to say
you were jealous so one day
I simply upped and moved away

I still called to see you on occasions
But we had little now in common
And my visits grew less frequent
Until finally

One cold bright April morning

Many years ago
A handful of you
Drummed on my father's
Waxworked coffin

at last it all made sense
there was no need for pretence
you said nothing in defence

And now just recently
While travelling from town to town
Past where you live
I have suddenly become aware
Of you watching me out there
Quietly waiting
Playing patience with the trees

we've avoided each other for a long time
and I'm strictly a city man
anytime to call would be the wrong time
I'll avoid you as long as I can

A modern view of soil: something to play in, to build on, be buried in - and avoided because it's dirty. Although, maybe there is also a hint of recognition that there is ultimately an elemental connection: a hint that might give us hope that all is not yet lost.

But there is certainly no recognition of the complexity, intricacy and sheer wonder of a living soil; no recognition of the many living processes within soil; no recognition that the soil food web is directly connected to our own nutrition and wellbeing.

Another Chinese proverb" A peasant will stand for a long time on a hillside with his mouth open, before a roast duck flies in." And it has taken me just as long to get to main point of the talk.

For all the hype and ballyhoo about so called sustainable agriculture, or even regenerative agriculture, about integrated farming systems, about low input systems, selected input systems or any other so called "system" that is lumped under the name alternative agriculture, and even though some certified organic food is unworthy of either word – organic and food - as far as I can see, organic farming is still the only modern agricultural production system that has been built from a concept or probably more accurately perspectives of health and nutrition.

This, I am pleased to say, has now been acknowledged in the new IFOAM principles which states "Organic Agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible." But what does that mean? Do some of us think it is one thing and others something different? For example the title of this talk speaks of the "connection between soil, plant, animal and human", whereas Eve Balfour, who produced the phrase in 1940 in her seminal book "The Living Soil" referred to them as "one and indivisible".

In fact she seemed to change her mind about what she meant over the course of her life. This is, indeed, symptomatic of the organic movement for although we have generally known what we are against. “What we are for”, in terms of concept, has been and is pretty incoherent. Some of this afternoon’s discussion highlighted that again. Although it also showed that we are, at least to some degree, beginning to feel our way forward.

The confusion and conceptual immaturity, which in my view bedevils the development of the organic movement to this day, can be traced through the various editions of the Living Soil. The book was primarily written to raise funds for “The Haughley Experiment” and up until and including the 1951 impression, it could be regarded as the working manifesto of the group of people who came together to found “The Soil Association” and establish that experiment. To some extent these revisions mirrored the dynamics of that group and their ideas.

“The Living Soil” canon (1940-1976) contains four core ideas: the first is that a biologically active, living soil is an essential prerequisite for soil fertility and that the role of soil micro-organisms (especially fungi) is particularly important - this was highlighted by the research of Dr. Rayner on Mycorrhiza.

Secondly, this natural soil fertility is maintained and enhanced by the return and addition of organic material in the form of compost - Sir Albert Howard was the leading proponent of this “compost-farming”.

The third idea emanated from the nutritional studies of Sir Robert McCarrison who found that the diets of the healthiest peoples he studied were “for the most part, fresh from its source, little altered by preparation and complete; and in the case of those based on agriculture, the natural cycle – (wastes to soil to plants to animals/man) is complete”.

Fourthly, that all living things are whole entities with their own integrity but they function in “mutuality of action” with all the other entities in their environment, so that whilst they are independent only a functional relationship between them can sustain the health of the whole; this holistic perspective was provided by George Scott-Williamson and Innes Pearce.

All of these ideas had been developed separately by their protagonists and did in fact stand independently but they also overlap. Firstly, there is a shared antagonism to intervention that caused “denaturing”: for example, in the soil by “artificial fertilisers” and through nutritionally damaging food processing. Secondly, they all emphasised biological interactions and thirdly, Lady Eve gave to them an overarching coherence encapsulated in her memorable concept of health – that “health, whether of soil, plant, animal and man is one and indivisible”.

There is a problematic aspect of the canon – which in the early editions was extremely vague but later dominated the Haughley Experiment even though it remained opaque – which concerned the mechanism or process by which the quality of health within the soil (or humus) could be transmitted to plants and then to animals and man.

It was this process that most intrigued sympathisers from the scientific establishment such as Viscount Bledisloe, a Parliamentary Secretary to the Ministry of Agriculture and Chairman of the Lawes Agricultural Trust, which ran Rothamsted, the country's leading agricultural research station. Bledisloe readily accepted McCarrison's argument that "immunity from degenerative human disease followed the ingestion of a fresh, well-balanced diet of unprocessed natural foods" (1). He also accepted, and he had seen it for himself, Howard's work on compost and how it engendered resistance to disease in otherwise susceptible crops. Yet, does this mean that there is a "consequential relation between humus and human health"? Bledisloe, pointed out: "Viewed from a strictly scientific standpoint, there is, it would appear, a small but important "missing link" in the chain of contact" and he welcomed this "perhaps epoch-making experiment" which would investigate the possibility of such a link.

This is the weakest, although arguably the most important, aspect of the whole "Living Soil" canon. The mechanism or process by which health can be transmitted was not adequately defined or even described in any of the early editions. Its existence is alluded to through an association of the words "vitality", "living" and "quality". At various points Lady Eve uses the terms soil fertility and soil vitality interchangeably, she then makes a theoretical link with the quality of food and health by what is, in essence, a linguistic or textual association.

And to be brutally honest about it, the organic movement has been doing that ever since.

In the last book of the canon, the 1976 edition published in the U.S. as "The Living Soil and The Haughley Experiment", Lady Eve made another effort to describe what she meant: "health is not a state but a dynamic process.....The early pioneers believed that its course is identical with the flow of the nutrition cycle, and that to promote it one must, therefore, keep open all the living channels of this flow, though no one yet knows what they all are, or even the true nature of the flow itself. That land is a great storehouse for it, however, seems clear. What then is land? Let me give the late Aldo Leopold's definition: "Land...is not merely soil: it is a fountain of energy flowing through a circuit of soils, plants and animals. Food chains are the living channels which conduct energy upward: death and decay return it to the soil." Soil fertility he defined as "the capacity of soil to receive, store and transmit energy."

By the time the Haughley Experiment got underway in the early 1950s, Eve had fully embraced the concept of holism – in the true sense of the term and the experiment was set up with a closed system – note not an organic system - "to enlarge our knowledge of the nature of health itself". She no longer saw the "main issue" as comparison of "inorganic plant nutrients plus raw organic matter of vegetable origin, versus humus composed of animal and vegetable wastes in due proportion and properly composted", but rather as a study of "biological function in a farming organism" in "an ecological search for quality in food".

She had abandoned the reductionist search for "the missing link" and realised that within "functional relationships" of organic entities – "man, animal, plant along with...the living inhabitants of the soil" there is no "missing link", there is a "mutuality of action".

Innes Pearse described this as “each taking what it needs and rejecting what it has had no use for, thereby sustaining the needs of others (within their mutual inhabitation of the ecosphere). As a shift occurs through the action of one, so all shift within the functional organisation of the *whole*.”

But more than this. What each utilises in building up its own substance and carrying out its proper function, it stamps with its own specificity; its own “individuality”, or uniqueness. “Heat” for example, generated in any transaction passes “unlabelled” in its going, while there is that which having passed through the living organism, when ejected into the traffic stream, is imprinted with its specific identity, and leaving there its imprint on the scene for us to find – if we care to look!”

I think that FQH does care to look. Indeed this is its business, as it is the proper business of the organic movement if we are to be more than a passing phase, if we are to change, actually to save the world.

"We cannot predict the future, we can do better than that, we can invent it".