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Transparency, accountability and inclusivity are not going to solve all our problems in handling risk

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Over the last few years, the regulatory system for GM foods and crops in Europe has ground to a halt because of the difficulty in reaching agreement. Regulators, in struggling to overcome the distrust and suspicion that has greeted GM soya in particular, have introduced a new mantra: transparency, accountability and inclusivity. I argue in this paper that this mantra, although a considerable advance on what has gone before, will not solve all our problems; basically, because such procedures can only partially deal with the loss of trust and the climate of suspicion in which we now working. Some suggestions are made as to what we should do next.

I am not going to argue that we should abandon this new mantra of transparency, accountability and inclusivity in our search for acceptable procedures to handle risk, and return to secrecy, non-accountability and elitism. Rather, I want to point out that this mantra – so enthusiastically endorsed by both international bodies and governments – has, in my view, real shortcomings, crucially because it will not be enough on its own. My evidence comes mainly from the storms over genetically modified foods and crops. I have been involved in this controversy, in one way or another, since the late 1980s. I was Chairman of the British Government's Advisory Committee on Novel Foods and Processes (ACNFP) from 1989 to 1997. This was the committee responsible for advising ministers on the safety of all novel foods, including those derived by genetic modification. We used to think, we scientists, that all we had to do was to decide whether a novel food or process was safe or not, and that the consumer would accept what we, the experts, had decided. We should have known better. The refusal of the consumer to accept food irradiation, a process I believe to be perfectly safe, should have made us think again. But we had to learn the hard way.

We had not grasped, at that time, the importance of consumer perception, or

understood the very different way the consumer sees risk. Nor had we realized what I believe lies behind these changes; the growth of a significant public ambivalence to this new technology, and the risks involved in using it.

The public's reaction against the first genetically modified product we approved, a genetically modified yeast, modified by the transfer of a gene from a related yeast to improve baking qualities, made us pause and think again. The genetic modification was a very minor one; indeed one that could have been brought about by the normal yeast mating process. But there was such hostility from the Press to this product, approved in late 1989, that it has never been used. In response to this setback, a consumer representative and an ethical adviser – to advise us when we were encountering an ethical issue – was added to the committee in 1990. We had a second pause for reflection when we were asked to approve, or not, the entry of sheep into the food chain which had been part of an experiment to produce transgenic animals. These sheep had not taken up any foreign gene, and there was no technical reason why they should not have entered the food chain, for there was no safety hazard at all as far as we could see. But being a little wiser this time, we consulted widely and then recommended both labelling and choice to the Minister saying 'the first and most important requirement is for a system of labelling which permits informed choice in relation to the presence of ethically sensitive trans genes in food'. The market size was small and this recommendation meant effectively that the product never entered the food chain, not for reasons of public safety but for reasons of public acceptability. We did not want newspaper headlines of 'Genetic experiment rejects in your supermarket'! So here too the media played a crucial role in drawing the potential risks to the public's attention. From then on, the role of the media was crucial. The climate in which we were working had changed.

Following this, Zeneca introduced a GM tomato puree into the country and sought ACNFP approval for its commercialization. The tomatoes were grown and processed in California and shipped in small cans to the UK for sale by Safeway and Sainsbury's. Zeneca proposed to us a regime of product safety testing and worked out with their retail partners a labelling regime so that the public could be fully informed of its origins. The product outsold its non-GM counterpart by 2:1 and the only criticism that was made was that the public bought it because it was 1 p cheaper!

Even with this background, it never occurred to us that objections were going to be raised to GM soya meal a few years later. This introduction almost coincided with the highly dubious experiments reported by Dr A. Pusztai, who claimed that rats fed with GM potatoes were adversely affected; claims first made on television in August 1998. These claims were vigorously promoted in the spring of 1999 and, although the experiments and their interpretation were severely criticized by his collaborators, by other scientists and by the Royal Society, he persisted in

his claims. The results of his experiments, when finally published toward the end of 1999, were much less dramatic than the initial claims, and it is very doubtful whether any of the small effects he observed were due to the genetic modification of the potatoes. However, the public decided that there was probably a problem here, on the grounds of 'no smoke without fire', and it has been only recently that such concerns have faded away. Partly this has come about because two other groups, who had set out to repeat Pusztai's experiments, were unable to do so. Partly because the Monsanto company have published, in a peer-reviewed journal, extensive details of a full toxicological study of GM soya, including long-term feeding trials, where no adverse effects were observed. But, above all, it is now clear that a very large number of North Americans have eaten the flour made from GM soya without suffering any ill effects. However, there is no doubt that this claim, ill-founded as it was, substantially affected public opinion.

In this situation, even the changes that had been made to the composition of the committee were not sufficient to hold back the flood of suspicion, hostility and anger that erupted after the arrival of genetically modified soya in Europe from Monsanto, a few years later, which frankly we failed to foresee. This product contained only two foreign genes, the significant one being from a soil bacterium, which enables the plant to survive the application of Roundup. Despite this product having been used widely in North and South America, and the flour from the beans having been eaten by hundreds of millions of people, there is still resistance in Europe to its introduction as a food. As a consequence, the whole approval process in Europe has stopped, and we in the UK are now seeing the commercial fall-out from this situation. There is now no agrifood company left with its corporate headquarters in the UK, and research in plant genetics is being cut back.

The problem does not lie, I believe, in any technical failure in the risk assessment process as such, but rather in the subsequent reactions to decisions. We did, for example, try using the well-known HAZOP scheme of analysis to see if we could improve the risk assessment process, but the outcome of the risk assessment was the same.

As you may know, the UK Government has, in response to this storm and the consequent loss of public trust in the regulatory process, set up a new layer in the approval/regulatory process, with three new Commissions to advise on new developments in medicine, food and the environment. This layer lies above the technical/regulatory committee system, and below Ministers, and its role is to identify the social and ethical issues that Ministers need to take into account in making decisions. Government has decided that membership of all these Commissions should be inclusive, with scientists in a minority. Transparency is important too, and welcome; the agendas and minutes of meetings are published on the web, there is widespread consultation with draft reports being freely

available and some meetings are being held in public. Inclusivity means, for example, that the Agriculture and Environment Biotechnology Commission (AEBC), which is concerned with the environmental hazards arising from sowing GM crops, has, as a full member, the Chairman of Greenpeace UK, who is also a Professor at Lancaster University. This process seems to be working fairly well in the area of food and human health, but is encountering much more difficulty in reaching agreement over environmental issues. Unsurprisingly, they are finding it almost impossible to reach consensus, and have had on some occasions to report a failure to agree. It is easy to see why the Chairman of Greenpeace UK finds it difficult, if not impossible, to compromise his position as being opposed to GM foods and crops, and I personally think that he is a prisoner of the Greenpeace declared public campaigning and fundraising position. There is also a strong input coming, as is appropriate, from the social sciences, but the frame is postmodernist, strongly coloured by the view that all data, including scientific data, are dependent on the observer and are but part of a discourse. So there is a continuing debate, not only about 'unknowns' but also about 'unknown unknowns'. Unlike the Food Standards Agency, the AEBC has not yet done anything – in my view – to help the public sort its way through claims and counterclaims relating to GM. Rather, it focuses on public concerns and what it sees as public perceptions, while its 'public' has become, to a large extent, the anti-GM campaign groups who see the Commission as a future model for putting more radical views to Government.

The UK Government has recently initiated a full-scale national 'debate' as a way of resolving the issues. This will come to its conclusions next June. As part of the public debate, there will two reviews, one in the Cabinet Office, to look at the cost and benefits of GM crops and the other to look at the science, working across several Ministries. The Prime Minister's Strategy Unit has (on 25 September 2002) published on its website (www.strategy.gov.uk) its scoping note for a study on the overall costs and benefits associated with the growing of genetically modified crops in the UK, and has invited comments. The Government will take a final decision based on the outcome of the whole debate. Behind these new initiatives lies the new-found trust in the mantra of transparency, accountability and inclusivity. But surely these are just descriptions of processes, ways of getting things done? They are appealing to civil servants and politicians no doubt, but are not, I suggest, ways of dealing with the underlying problems. Let me suggest just two of these issues.

The first lies with our concern about what is natural, for that in turn leads some to think of genetic modification as 'interference'. But surely that springs from a romantic view of 'nature', going back to Rousseau, which sees everything as good as it comes from the hands of the author of nature, while everything degenerates in the hands of man. Those that hold this idea of nature feel threatened by the use of genetic manipulation; the world should be left as it is. Yet this is surely

an illusion? There is no way in which we can live in the world as it was naturally first made; even organic farmers intervene constantly. But there is another sense in which the idea of the 'natural' is threatened by genetic modification; and that is through the idea of the 'species'. We accept, as Mary Warnock puts it (*The Times Higher*, 12 July 2002, pp. 20–21), that 'genes are shared across the natural world, bringing all creatures, plants, fruit flies, men and women into a kind of universal cousinhood'. But many see this idea as threatening the standing of men and women as thinking, responsible individuals. If we are no more than a bag of genes, then what is special about being human? So the argument runs, consciously or unconsciously, species should be left alone. I am equivocal about this argument. At one level I can see that moving one gene from a micro-organism into a plant does not threaten the natural order, but at another level, producing a hybrid of a sheep and a goat, which has been done by other methods, I find personally offensive. We need to think through what we mean by 'natural'.

But the second issue that lies behind these initiatives is the acceptance of a loss of trust in the regulatory process, both scientific and political. However as the distinguished moral philosopher Onora O'Neill points out in her splendid recent BBC Reith lectures (http://www.bbc.co.uk/radio4/reith2002/– since published in full as *A Question of Trust: The BBC Reith Lectures 2002*, Cambridge University Press), the problem is not so much a loss of trust, as the creation of a climate of suspicion. She points out that although people responding to opinion polls tend to say that they trust no one, not doctors, not politicians, not lawyers, not estate agents, not research scientists – they in fact place their trust in them perforce. Actions might be thought to speak louder than words. We say we trust less, but we do not act as if that were true. Is it like being asked whether we would like lower taxes; there is only one obvious answer! If we want to draw up a contract, we have to trust a solicitor. If we have appendicitis, there is nothing for it but to go to a surgeon. Society simply cannot function without our placing trust in such experts; good behaviour whether in the City or on the streets depends on non-cynical trust. Are we really going to recreate trust by a process that is just transparent, accountable and inclusive?

Onora O'Neill looks at each of these three in turn; she is equivocal about transparency: 'the very technologies that spread information so easily and efficiently are every bit as good as spreading misinformation and disinformation. Some sorts of openness … may be bad for trust', and she continues to describe transparency, as having 'marginalized the more basic obligation not to deceive.' For example, the publication of the exact location of the GM field trials in the UK immediately led to vandalism. So, damned if you do (publish the location of the trials), damned if you don't. She has harsh things to say about the climate of accountability, the 'unending stream of new legislation and regulation, memoranda and instructions, guidance and advice' that streams into all public

institutions and overwhelms them with bureaucracy. In the UK we are just now pulling back from the mass of paperwork we have forced onto our police force, put there to increase accountability but which is seriously damaging efficiency. 'Audit' has replaced professionalism. There is nothing here to restore trust, only possibly exposure of mistrust – and we all know the dangerous human temptation to try and beat the system, including that of accountability. Indeed, it becomes game playing, acceptable as 'normal' behaviour. As Mary Warnock points out in another article (*The Times Higher*, 30 August 2002, p. 21) 'Public mistrust has grown more and more in the very years in which openness has been evermore avidly pursued'. And inclusivity? I am not sure how well this is working. There have been some excellent changes, committees now consult routinely as a part of their decision making processes, and I have been very impressed by the honesty and the effectiveness of the consultation process during a recent enquiry run by the Food Standards Agency, of which I was a part. All Government Advisory committees now meet regularly in public for parts of their agenda, and all UK government advisory committees now have consumer representatives as members. But there are problems; for example, people tell me that when these committees meet in public, an idea which seems excellent in principle, the meetings are dominated by the same small number of people, usually from pressure groups, who always turn up wherever the meeting is held in the UK, and whose presence makes newcomers hesitant to participate. And who is to nominate 'the consumer representative'? The practice in Britain has been for Ministers to do this, and my experience of those people who have been selected in this way has been very positive, but they face the danger of 'going native', becoming too similar to the ways that the Committee looks at issues, and losing touch with their fellow consumers.

There are other problems too. We now have the situation in which any linkage between the scientific members of these committees and industry is criticized by the pressure groups as inevitably compromising their judgement, even if the linkage is no more than the support of one research student in a large group. Two junior Ministers I know of will not appoint to any government advisory committee anyone who has any link at all with industry, since they regard them as inevitably tainted. This practice continues despite a robust defence of the use of experts from industry by the Science and Technology Committee of the House of Commons (a report entitled 'Scientific advisory system: genetically modified foods' 1999) as follows:

> We recommend that the government rejects proposals to bar employees of biotechnology or food companies from serving on scientific advisory committees. It is vital that appointments to scientific advisory committees should continue to be made by selecting people with the most suitable and relevant expertise.

Not surprisingly it is becoming very difficult to find anyone suitable to join the committees, for we in the UK have been pressed for some years now to build active links between the universities and industry. All the new procedures I have spoken of also increase the workload, not just of the civil servants, but also of the members of the committee who, in the UK, are drawn almost exclusively from the Universities and Research Institutes, and who are scarcely paid anything extra at all. And what was once seen as appropriate public service, the duty of a civic minded scientist, is now not just a huge amount of work, but also exposes one to endless criticism in the media, on the web (as I and colleagues know from personal experience) and sometimes in person. I am afraid that we are making the system so complicated that it is becoming unworkable, and that soon the only people who will have the time to put into this complex process will be those who have another agenda, which is to so radicalize the process that it ceases to be useful for policy makers.

Consequently, I do not think that we have yet found a way to get at the basic problem, which is the climate of suspicion and loss of trust. Certainly we need to trust; but as Samuel Johnson put it 'it is happier to be sometimes cheated than not to trust'. To quote Onora O'Neill again: 'trust is needed not because everything is wholly predictable, let alone wholly guaranteed, but on the contrary because life has to be led without guarantees.'

I am unsure as what we should do, but I think we do need some new ideas, and should not just keep on wheeling out our mantra as if it were a magic formula. And what about the regulatory process? My own view is that we have gone as far as we can go in changing procedures, and that now we scientists will have to become more robust, more prepared to defend ourselves and our probity, less defensive, less prepared to accept that everything we do is tainted by self interest or bias. I do not think there is any more ground to be given. We also have to become much more professional in our working with the media and there are encouraging signs that this is happening. The European Life Sciences Group recently (9 July 2002) held a one-day workshop in Brussels for scientists and communicators across the EU, and its recommendations are on their way to the Commissioner. The Royal Society has become much more active in these debates (see www.royalsoc.ac.uk/scienceinsociety/data/forum/index/html), and a Science Media Centre has recently been established in London to 'promote the voices, stories and views of the scientific community to the news media when science hits the headlines'. Finally, we must be prepared to police our own patch better – to ensure that untrustworthy science, and there has been some – is exposed.

Another area where we are encountering problems is in legislation to protect consumers from unnecessary risk, particularly as we expose the limitations of the current move toward labelling and traceability. Just what are the limits of our obligations to consumers? To protect them from all risk? But if not, where do we

draw the line? And do we have to label everything? Obviously not, but what do we have to label? For example, a recent European Parliamentary vote has called for labelling of 'all products touched by biotech elements', a regulation I believe to be unenforceable. In addition, a recent House of Lords Report was unable to get any agreement from the green NGOs as to what the lower limit of labelling should be set at, currently 1% – but 0.5% or even 0% is now being pressed for. That leaves us with a problem: how in politics (the art of the possible), do you do a deal if one party has a non-negotiable position? Indeed, the whole concept of consumer choice and labelling as part of the solution to our difficulties has been challenged by Michael Reiss, a scientist and ethicist with experience of the UK regulatory system, in an article in a recent *Nature Biotechnology* (Vol. 20, September 2002, p. 868). In view of the difficulties of arriving at an acceptable labelling regime, he proposes:

> that in many circumstances it is better not to require such labelling but to permit retailers and restaurants that provide food to decide, in a free-market environment, whether or not to label. In that way, the principle of choice holds, both at the level of retailers and restaurants and at the level of individual consumers. If consumers really want to know whether of not the food they are buying or eating is from GMOs, they will seek out those retailers and restaurants that label. If, as I suspect is actually the case for most consumers, they haven't a deep interest in whether or not genetic modification has played a role; they won't seek out such labels.

But there is a final problem I want to leave with you; my suspicion is that politicians, unable to see an easy solution to these problems, have passed the problem down to a body, meant to represent the full range of civil society, in the hope that solutions will emerge. I fear that this will lead to stalemate; politicians are elected and paid to balance interests and to make difficult decisions. We have to hold them to that, and not let them off a hook they do not wish to be on. Of course, we must be deeply involved in risk assessment and play some role in risk management – offering policy alternatives to a Minister for example – but we can too easily be sucked into the risk management decision process (it is flattering for one thing), and then if it goes wrong, the politicians blame the scientists and they walk away unscathed. I've seen this too often and it's a delusion to think that it leads to better policies.

About the Author

Derek Burke is a biochemist and was Professor of Biological Sciences at the University of Warwick, and later Vice-Chancellor of the University of East Anglia and Chairman of the UK Advisory Committee on Novel Foods and Processes.