
Book review

The Frankenfood Myth: How Protest and Politics Threaten the Biotech Revolution

Henry I. Miller and Gregory Conko
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Why has there been such a strong reaction to the planting of genetically modified crops and the eating of the foods made from those crops? For thousands of years, farmers have bred crops for their resistance to disease, productivity and nutritional value; and over the past century scientists have used increasingly sophisticated methods for modifying them at the genetic level. But only since the 1970s have advances in genetic manipulation come into the picture, with the promise of dramatically improved agricultural products but alongside strong public resistance to such crops and foods. In particular, attitudes in the USA and in Europe are very different, and a World Trade Organization dispute resolution panel is currently examining complaints from the USA, Canada and Argentina against the European Union (EU) concerning certain EU measures affecting the approval and marketing of some products of agricultural biotechnology. This book is timely, for it squarely addresses these issues.

The foreword is written by Norman E. Borlaug, who was awarded the Nobel Peace prize in 1970 for his work introducing what came to be known as 'The Green Revolution'. He writes:

Henry I Miller and Gregory Conko have written a brilliant account of how self-interest, bad science, and excessive government regulation have profoundly compromised the potential of the new biotechnology. This book

is a call to resist a pernicious political process that is currently denying enormous potential benefits to consumers throughout the world.

There follows a prologue by John H. Moore, Deputy Director of the US National Science Foundation from 1985 to 1990. His theme is the appropriateness, or not, of government regulation. He points out that 'We live in an age of government regulation that expands literally by the day', and that 'Government regulation is so pervasive, so intrusive upon our freedoms, that it should be carefully measured and based on rational considerations.' He then gives a series of examples of the way in which regulations have led to undesired outcomes in the USA, and further afield. He comes immediately to the crux of the current debate, and that is to what extent the 'precautionary principle' should be applied to novel foods and crops. He immediately points out that its rigid application would be 'a recipe for stagnation; it is anathema to innovation.' He then, appropriately, introduces a second principle due to William Nierenberg, called the Law of Constant Concern, which states that 'no matter how much reassuring evidence is produced, another concern always arises.' This sentiment could serve as a leitmotif for much of what is described in the book. He calls for limits to regulation in order that some of the fruits of modern science might become accessible to the public.

The next few chapters describe the birth of the new biotechnology, and point immediately to a central question in regulation, and a major difference between US and European practice, the USA regulating the product and Europe the process. The authors go on, in chapter

2, to defend the new biotechnology as a continuum of currently available techniques, grappling immediately with some of the concerns that have dogged development: the fear of the unknown, faulty research (outlining the claims made by Arpad Pusztai and their refutation) and other well-known scares about the technology – for example, the monarch butterfly. Chapter 3 describes the development of some of the early regulatory control mechanisms, and in particular the use, and misuse, of the term ‘substantial equivalence’. The authors criticise industry for its role in over-regulation, blaming the biotechnology industry for creating ‘a Frankenstein monster – over regulation’. The authors buttress their case by a number of examples, somatotropin being an obvious one. They state quite firmly that over-regulation sends the wrong messages, that it has a financial impact and that too often bad science has been used to justify it. Specifically they criticise reports from committees working under the auspices of the National Research Council, the National Academy of Sciences research arm. To quote, they are ‘plagued by bias, and unable to conclude that heightened risk arises from the new biotechnology, they produced conflicting and problematical recommendations.’ The authors continue by criticising the Environmental Protection Agency (EPA), saying that it is ignoring the lessons from conventional plant breeding, and they go on to list a number of what they call ‘fatal flaws in the EPA approach’. They criticise the composition of committees as being ‘fixed’ by stacking their membership with those known to support unscientific and excessive regulation, and accuse the scientific community of ‘surrendering the high moral ground’. Their position is clear: they want minimal regulation.

In chapter 4 the authors continue this theme, in particular attacking the precautionary principle, commenting that it is ‘precaution without principle’. The EU’s attitude is described and comes in for fair criticism. They accuse regulators

of such excessive action because of self-interest, saying baldly that ‘the precautionary principle opens the door to political manipulation’, and heads a section ‘Precaution as an attack upon freedom’ with subtitles of ‘The real motivation for the activists’ agenda and ‘Biotechnology and the brown shirts’. I think that this is over the top.

Chapter 5 is a catalogue of ‘The vagaries of US regulation’, finishing with a subheading with the title ‘The real reasons for unnecessary regulations’. Chapter 6 on legal liability issues, written with Drew Kershen, is more constructive and makes a number of valuable distinctions. The authors continue in chapter 7 to describe their view of ‘The vagaries of foreign and international regulation’. The opening sentences give the feel:

Although the U.S. government’s biotechnology policies are unscientific and inconsistent, their shortcomings pale in comparison with those of many other countries and international organizations. Although they are grossly overregulated, products do move through the American regulatory pipeline and a handful of gene-spliced commodity crops have been commercialized and become hugely popular with U.S. farmers. Likewise, there has been a trickle of approvals and great popularity for the products in Canada, China, Argentina and a few other countries. However, attempts by mostly U.S.-based technology firms to move gene-spliced crops more broadly into global markets have encountered intense resistance from foreign regulatory officials, anti-biotechnology activists, and public opinion.

This leads them on in chapter 8 to describe the ‘European resistance to biotechnology’ where they fairly point out the influence of mad cow disease in building public sensitivity in Europe to food scares and the pressure on European politicians to avoid risk. They go to

describe the looming US–EU trade conflict and comments critically but helpfully on a number of the major issues that resolution of that conflict must entail. They discuss the Cartagena Biosafety Protocol and the Codex Alimentarius Commission and conclude the chapter by pointing out some of the effects of delay in approval, not so much in Europe, but in the developing countries which are seriously short of food both in the shorter and longer terms.

In the final ninth chapter, the authors argue forcefully for a new approach to regulation. Their concern is mainly directed at regulation in the USA but what they say is even more relevant to the situation in the EU. They argue that there is no reason to treat products derived from genetically modified plants as different in kind from their natural counterpart, and that it is the product not the process which should be regulated. They do not deny the need for regulation, but make the point well that regulation costs money and is inhibiting technical progress. So although regulation in the life sciences is necessary, it is costly, and nobody knows what the cost is! I agree with much of this, but certainly in Europe, their proposals are non-starters; the political world would not accept them for the voice of science is seen as only one of many voices that politicians have to respond to.

Absolute freedom from risk is obviously impossible, and politicians who demand it or pretend to provide it are either ignorant or fraudulent. But who decides what level of risk is acceptable? What is the proper balance between promoting safety, on the one hand, and cost, bureaucracy, invasion of privacy and

loss of innovation and competitiveness on the other? And is there any way in which we can set the drive for regulation against its costs, financial, social and ethical, including the opportunity cost of options foregone or innovations suppressed? It looks to me as if the demand for more regulation will never stop because it appears to cost nothing. But it does cost, and Europe is paying heavily for it by loss of competitiveness. I suggest, as one possible way forward, that the cost of regulation should be made explicit as a percentage of the price, like VAT. Then consumers would know what regulation is costing them.

The book is valuable in a number of ways; it is readable and well referenced so all readers have an opportunity both to read the original claims and to follow later developments. It is a helpful summary of much that has happened in this field over the past ten years. It argues passionately for a simpler view of regulation and that voice should be heard as society scrambles to over-regulate almost everything in sight, without considering the cost. But I conclude that their voice will not be heard, in Europe at any rate, because in the light of what happened over BSE, no politician in Europe can defend the introduction of a product whose risk is unknown to an increasingly worried public. But full marks to Miller and Conko who put their view so well; read the book and think about it, to see if we can get a more level playing field about regulation versus risk.

Derek Burke

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from 1989 to 1997*