
Frankenfoods: What to do When the Devil Has All the Good Songs

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I would like to congratulate delegates at this conference for their contributions to helping reverse the erosion of “social capital.” You may have heard of the idea of social capital in the context of a best-selling book entitled *Bowling Alone: The Collapse and Revival of American Community*. The author Robert Putnam (2000) defined social capital as the fabric of our connections with each other in a society. He argued that evidence showed social capital had plummeted in the United States, impoverishing lives and communities. Americans signed fewer petitions, belonged to fewer organizations that meet, knew their neighbors less, met less frequently with friends and socialized with their families less often. They bowl more than three decades ago, but they bowl alone more often.

A similar concern about disintegrating social connection has been voiced here in Canada during the current federal election campaign. Political observers are bemoaning the hollowing out of constituency organizations, once the backbone of political parties.

But opposition to agricultural biotechnology is bucking the erosion of social capital. It has managed to unite people across ideologies, social classes, education, income, and even in disparate neighborhoods. You are as likely to find opponents to agricultural biotech in Toronto’s posh Rosedale as in the grim Jane-Finch corridor, or in Chevy Chase as in southeast DC.

Why? Well, of course, there’s the media.

MEDIA AND PERCEPTIONS OF AGRICULTURAL BIOTECHNOLOGY

As prime minister, Margaret Thatcher famously said, when chastising the British press for reporting IRA attacks, “Publicity is the oxygen of terrorism.” But oppo-

sition to agricultural biotechnology is not simply a media construct, although extensive media coverage adds legitimacy to the opposition. It exists because of public distrust of this technology.

My conversations with people who aren't journalists, nor involved in public policy, lead me to believe that this distrust is visceral, almost primordial. That makes it very difficult to counter. People are not opposed to making agriculture more bountiful, to helping to feed more of the world's hungry mouths at affordable costs. And many would go further. At least in North America, I think (and public opinion polls suggest) that a majority approves of the idea of nutraceuticals.

Consider this contrast. Norman Borlaug, the "father" of the Green Revolution, had widespread name recognition among the public and was generally admired. By contrast, Swiss researcher Ingo Potrykus, the "father" of beta-carotene-enriched Golden Rice™, is largely unknown by name yet either vilified or demonized by his association with this development.

Why?

Correctly or otherwise, Borlaug was seen as working within nature's laws, of not trying to play God. By contrast, much of agricultural biotech (as with Potrykus) has become branded as unnatural, as attempting transformations that nature never intended, of playing God in fact—and without a proper safety net.

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Let me acknowledge right at the start that a widespread ignorance of even the most basic elements of science on the part of many journalists has contributed to this image of agricultural biotech. This lack of knowledge leads to too many journalists taking even the most exaggerated claims of extreme opponents at face value. Activists and axe-grinders can get a free ride on scientific topics that they would never enjoy in sports, business, entertainment and other areas. Even in politics, for instance, we run reality checks during a federal election campaign.

However I should note that two years ago my newspaper, *The Toronto Star*, gave prominent coverage to *Nature's* disavowal of the research that journal had originally published claiming that genetically modified corn had made its way into native varieties in a remote area of southern Mexico. I wrote that retraction story, even though I had not covered the original research in November 2001.

The media's contribution is largely one of omission, of views and issues not reported, of risks not put into context. I will examine the reasons underlying the public distrust of anything that even smacks of agricultural biotechnology, no matter how it is gussied up and sold. Most of these reasons will be familiar to you.

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REASONS FOR PUBLIC DISTRUST OF AGRICULTURAL BIOTECHNOLOGY

The number one reason by far is the skepticism, cynicism and widespread disbelief that governments are equipped to adequately regulate such fields, and the doubt that they would do it, even if capable. There are ample grounds for such distrust. Nationally we had the shameful failure of public-health regulation in the tainted blood scandal. A commission headed by Judge Horace Krever found health officials had conspired to try to conceal their deliberate decisions to roll the dice with people's lives.

In Ontario we had the deaths at Walkerton caused by drinking-water treatment that was well below Third-World standards. Subsequent investigation revealed that a whole chain of public regulatory bodies had fallen down on the job.

In the field of agricultural biotechnology in particular, the reasons for public unease about regulatory rigor were laid out extensively in a report in February 2001 from an independent Expert Panel set up by the Royal Society of Canada at the request of the federal Health Department. In the United States, a similar review process is operated by the National Academy of Sciences.

The Royal Society panel concluded that the basic approach of federal regulation of agricultural biotechnology products was "scientifically unjustifiable." The review by federal experts was too often cursory, almost always secretive and overly dependent on unverified material supplied by the parties who stood to benefit directly. This flawed approach exposed Canadians to potentially severe health risks, including toxicity and allergic reactions.

The Royal Society singled out the overly cozy relations between federal regulators and the biotech industry, and the virtual co-opting of many university researchers by industry funds. Both arrangements led to excessive secrecy and contributed to "the general erosion of public trust in the objectivity and independence of the science *behind the regulation of food technology.*" [emphasis added]

Maybe this report would have been a two-day wonder, and passed quickly from the public consciousness, except for the reaction of the top officials in the federal health department. They attacked the fifteen experts on the panel, saying they hadn't grasped how the regulatory system worked and how thorough and rigorous it was.

Consider that as a tactic in winning the public's confidence; you invite outside experts to examine your system, expecting some suggestions for a minor tune-up

here-and-there, but overall anticipating the Good Housekeeping Seal of Approval. Instead you're told that the system may have worked so far but it's inadequate for the next generation of products entering the pipe-line.

Your response is to call the experts "dumb." Think of the message this sends to the public. If a Royal Society expert panel isn't competent to make a considered judgment, then who is? Only the Health Department itself, and maybe also their good friends in the agricultural biotech industry? The public distrust and suspicion only grew when it became clear that the federal health officials had not given the Royal Society experts access to some key material about their major misgiving—the application of the principle of substantial equivalence.

Barely mentioned in the Royal Society report was another reason for public suspicion of the government's commitment to rigorous regulation. The fox is guarding the hen-house. One of the biggest promoters of agricultural biotechnology is the federal government itself. Admittedly the promotion and regulation functions are in different departments. But the same perception issue with nuclear power was addressed by setting up an independent, arms-length regulator, the Canadian Nuclear Safety Commission.

That was all three years ago. No outside review of federal regulation of agricultural biotechnology has been done since, so there is no independent evidence that anything has changed.¹

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A second reason for public suspicion of this field is the presence of so many large multinationals, mostly American in origin. As must be evident after the Enron scandal, Michael Moore's movies and the revelations of falsehoods at the *New York Times*, few in North America have reason to trust large corporations to tell the truth or to act ethically. And when corporations divide the Supreme Court of Canada 5–4 over the right to patent plant genes, they may have won a legal battle, but they are well on the way to losing the public relations war. Without even taking into account beating up on someone with an inoffensive name like Percy Schmeiser.

¹However, on October 5, Prime Minister Paul Martin announced a 10-year, \$35-million federal grant to establish the Canadian Academies of Science. One of the chief tasks of the Academies is to continue the Expert Panels begun by the Royal Society, one of the three constituent members of the new body.

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Third, there is cognitive dissonance between the avowed goals of agricultural biotechnology, of feeding more people at lower cost, and the reality of the existing applications. As the FAO (2004) noted in an overview report in May, corn, soybean, cotton and canola aren't leading crops in much of the developing world. Yet those crops are where most of the agricultural biotechnology effort has been centered.

Modifications like genetically engineered herbicide resistance in crops have largely cut input costs for participants in a sector already heavily subsidized by the public purse, and boosted profits for all concerned. They have not substantially improved agricultural output in many areas. In countries like Argentina, genetically modified soybean has produced an environmental crisis through overuse of herbicides. This may be a mishandling of the technology rather than an inherent fault of the technology itself. But as the nuclear accidents at Three Mile Island demonstrated, that's a distinction that usually gets lost where public distrust is concerned.

Fourth, we get to the actual title of this talk, the topic of popular culture. When General William Booth, founder of the Salvation Army, was asked why he instituted the famous "hallelujah" bands he declared: "The Devil has no right to all the good tunes!"

That's one thing that sustains public doubts about agricultural biotechnology once they have been planted. Your field doesn't have many good songs. You don't even have any catchy titles. As a wordsmith, I appreciate that proponents might wince at genetically *engineered* foods, in the same way that *nuclear* magnetic resonance was a big turnoff in the health-imaging field. But the health folk replaced "NMR" with "MRI." I'm afraid "products/plants with novel traits" just does not cut it. Not against " Frankenfoods," that's for sure.

Genetically modified (GM) foods are seen as the first step on a slippery slope that leads, inevitably, to the genetic manipulation of animals and humans.

Nor does such language stand a chance against the assault from *Oryx and Crane*, the most recent bestseller by Canada's Margaret Atwood. Some people abandon this book because they can't bear the thought of a world where everyone has been

genetically modified. But Atwood is an example of the cross-pollution that affects agricultural biotechnology. Already we have the production of a mouse starting with genetic material from only two female mice. Few people who follow the field believe that cloned humans will be far behind, despite all the supposed regulations to control it. And if we are unable to fend off cloned humans, are Frankenfoods really so hard to believe?

This cross-pollution works both ways too. Earlier this year, I carried out several interviews with researchers in British Columbia working on the genomes of the Atlantic salmon and the Cabernet Sauvignon grape. They repeatedly emphasized that they were not attempting any genetic manipulation. Just the initials GM were considered a kiss of death for the salmon and wine industries.

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The last reason for public suspicion is the tardiness and miserliness in funding research into what I'm going to call "public good" applications of biotechnology in the food area, and into the ethical, societal and legal dimensions of agricultural biotech. Both these areas were essentially unfunded in Canada until a year ago when the Advanced Foods and Materials Network was established, one of the Network of Centres of Excellence established across the country. The food network has just \$22 million funding over five years to support the work of more than eighty researchers from government, industry and academia. You can do the math and figure out just how much your project could count on.

One of the network's goals is to pool the best Canadian scientific capacity "to do the research that will lead to new discoveries and new, socially acceptable, value-added products and processes." As far as I can tell, this November 4, 2003, announcement from the University of Guelph marks the first time in Canada that any agricultural biotechnology initiative has conceded that social acceptability is something that has to be earned by the nature of the research, rather than by the size of the profit.

Those are six elements that help nurture and sustain public distrust of agricultural biotechnology. Now add to those some institutional peculiarities of the media.

- Among most reporters and editors in North America, there exists a deep-rooted ignorance of basic scientific and technical information.
- Journalists are even more suspicious than the general public of the government's competence to regulate agricultural biotechnology.

- Journalists assume that regulators are often captured by the industries they regulate.
 - Struggling daily to express complexities in plain language, journalists react badly to “jargon” or specialized polysyllabic words. They see this as elitism, laziness or deliberate obfuscation. They’re usually right.
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Come up with some better songs.

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Accentuate the positive.

WHAT RECOURSE?

Is there anything you can do about all this—the widespread public distrust and the media’s own peculiar take on agricultural biotechnology? Even if this is all misperception, rather than reality, you still have to tackle it. Here are some ideas:

Come up with some better songs.

Lobby for an arms-length regulatory body for agricultural biotech, perhaps modeled on the Canadian Nuclear Safety Commission.

Accentuate the positive. Energetically publicize the involvement of industry and academic partners in undertakings like the Advanced Foods and Materials Network.

Convince the gatekeepers in the media that their reporters and copyeditors could profit from workshops on some of the scientific concepts underpinning agricultural biotechnology, including risk analysis. Facilitate the workshops but don’t control them. Buttress your case by noting that the Canadian Broadcasting Company is now running a Critical Skills course internally for its employees that includes segments on basic science and risk.

Of course, I could be dead wrong about all this. As you likely know, there’s an active branch of research pursuing the concept of selecting various dormant gene-expression patterns in organisms. I think the public could see this as far more natural than inserting genes from a foreign organism. And all of the industry’s problems would be solved. Just don’t let anyone dub these new organisms with a disparaging name as catchy as frankenfoods.

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