

CONFIDENCE BUILDING: IN WHAT, FOR WHOM, AND WHY?

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ABSTRACT: Arizona State University's Center for Law, Science, and Technology hosted an all-day workshop on "Confidence-Building Measures for Genetically Modified Foods" on December 6, 2002. The lively discussion covered a range of ethical, legal, and policy implications in a climate of failed confidence and considered the process of confidence building in the products and processes, as well as the implications of doing so. This paper provides an overview and commentary on the central themes of the conference and looks at the contributions of the papers in this symposium.

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On December 6, 2002, the Center for Law, Science, and Technology at Arizona State University hosted an all-day workshop on "Confidence-Building Measures for Genetically Modified Foods." Bringing together a mix of scholars in law, ethics, and biotechnology, Center Executive Director Gary Marchant and Director Sandy Askland stimulated discussion of the complex social and legal issues involved in public reactions to genetically modified foods. In particular, the conference focused on questions about how to develop confidence-building measures.

While scientists push for technological progress, reporting the prospects for frost resistance or using techniques of particle bombardment to inject selected DNA into plants, for example, society must decide which knowledge to use and how to control the use through regulatory policy. The promises are no longer distant and vague possibilities, so we must make choices now. Furthermore, we must do this in the context of increasingly entrenched and polarized positions.

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The oppositions are often only apparent and based on mutual misunderstandings, with many middle-ground positions and many different interested parties, yet we fail to engage in productive dialog. There is serious risk that in the noise of dispute, society fails to realize the good that could come from legitimate biotech development that can help solve real-world problems. Yes, some of the challenges are important and real, and yes some effective system of regulation and oversight will be necessary. But what we need first is confidence in the processes of information exchange and discussion so that each party can trust its concerns are being heard, consumers can have access to the goods they want, and industry respects the concerns addressed to them. This was the motivation for the conference on "Confidence-Building Measures for Genetically Modified Foods," and this collection of papers that follows from that conference.

As Paul Lurquin noted in *High Tech Harvest*, the lack of information and understanding is the major cause of opposition to engineered crops.¹ He saw the problem as clear: to impart to the people themselves the benefits of science that are so intimately embedded in people's lives. After all, he urged, as taxpayers and members of an interactive society, they have the right to know. Only when the public is informed should a decision for or against transgenic engineering be made, he argues, and Lurquin is confident that an educated public will surely choose biotech development as the obvious path. This is one position, but only one.

There is some danger in discussing confidence-building measures when we make the same assumption as Lurquin does and then take that one step further. If biotechnology is a good thing and we assume that if only the public understands its true benefits it will accept the developments, then surely what scientists need is to educate the uninformed and to build confidence in what we know to be good. Making this jump clearly misses much of what is substantive and deeply felt in concerns about biotechnological industrial development.

We therefore need to start with some fundamental background questions. Rather than asking only "How do we build confidence?," scientists must ask also "In what are we eager to inspire confidence and why—confidence to what end?" The first section of this paper addresses these questions. The second part raises questions about evidence and epistemology: what is the epistemic grounding of the claims for which we seek to generate confidence, and what will count as evidence in favor of those claims such that we might deem them trustworthy? Third, since part of the force behind the desire to engage in confidence building and the conviction that it is a good thing rides on moral claims, what are the moral issues and whose views shall predominate? Finally, how far do the implications of this discussion extend? Is this just about genetically modified foods, or to what extent are the issues the same or different for genetically modified nonfood plants? Animals? People? What, in other words, is really at issue in the public's reaction to biotechnology, and in what is confidence really lacking?

1. PAUL F. LURQUIN, *HIGH TECH HARVEST: UNDERSTANDING GENETICALLY MODIFIED FOOD PLANTS* 139 (2002).

I. CONFIDENCE IN WHAT AND TO WHAT END?

“Confidence-building” measures are typically used to promote productive interactions between two parties approaching the same problem from conflicting angles. The approach is derived from international conflict negotiation techniques and is intended not to produce quick resolutions, but rather to act as a vehicle to establish enough trust to take another step. Progress comes when the parties begin to talk and listen; success may be measured in very small steps. Confidence-building measures are applicable at multiple levels: internationally, between the E.U. and U.S., and locally as a strategy to induce communication between farmers and ag-biotech companies or among the public, farmers, and companies. Confidence building may extend beyond two parties, but as the number expands the challenge of getting them all “at the table” and promoting productive discussion obviously increases.

The process always remains the central focus. The goal is to generate confidence in the process and then to develop reliable measures of that confidence. This sounds good. Even though, as Mandel points out in the symposium, some parties may favor destabilization and conflict because it favors their position, in the longer run everyone benefits when warring parties can come to a common table and begin to develop even the smallest bits of common ground.² Also, of course, confidence in others cannot arise from very different conflicting views unless there is some mediating process that the participants will trust. Therefore, the goal of confidence building must center on developing confidence in the process more than on a particular outcome. Participants have to be willing for the outcome to be “wrong” from their original point of view.

Yet surely it also matters a great deal what the outcome is. Researchers engaged in developing genetically modified crops—to enhance nutrients, reduce pest infestation and pesticide use, or even to introduce “edible vaccines”³ into developing countries—believe in what they are doing and are passionate about the benefits of their work. As Bratspies says of the ag-biotech business, researchers have deep confidence in the scientific process and its products.⁴ They want confidence building so that the public will come to see the genetically modified “goods” as the researchers do.

As speakers at the conference repeatedly discussed, legal and political scholars emphasize the need for development of regulations and regulatory oversight that the public can trust and that researchers and commercial developers can accept, along with development of the biotechnology. Even though in the United States the Environmental Protection Agency (EPA) and Food and Drug Administration (FDA) have developed systems of regulation for transgenic crops, there are continual calls for more stringent constraints to protect both human and

2. Gregory N. Mandel, *Confidence-Building Measures for Genetically Modified Products: Stakeholder Teamwork on Regulatory Proposals*, 44 JURIMETRICS J. 41 (2003).

3. Edible vaccines are plants that serve as “factories” in producing vaccines, though those vaccines are then administered in the normal way.

4. Rebecca M. Bratspies, *Bridging the Genetic Divide: Confidence-Building Measures for Genetically Modified Crops*, 44 JURIMETRICS J. 63, 65 (2003).

environmental safety and to hold developers in check. Confidence in the regulatory elements will help promote confidence in the products and in the democratic process that certifies acceptability of those products. Yet policymakers have to weigh the costs of the strong regulatory measures that might be needed to elicit public trust and whether this is even possible with regulatory measures alone. It is not necessarily a lack of stringent regulations that makes GM foods unsettling, but also a lack of knowledge of what GM foods are and a lack of trust in the information available, the process, and the players.

Of course, some extremists see genetic engineering as a nonconsensual experiment that desecrates the natural world and will accept nothing but complete prohibition; some even argue that discussion with opponents is unacceptable. Yet, in a climate of respect for divergent ideas and open information, such extremism remains rare. It is on those who are willing to engage in discussion and who are capable of having their confidence built that we must therefore focus in order to move to such a climate of respect. What will help these people come to the discussion table?

Labeling, for example, would help provide a transparent flow of information. It might also address reasonable criticisms that industry tried to hide problems by changing names of unpopular products (for example, the same tomato was renamed in 1997 after a failure to sell from "Flavr-Savr®" to the less descriptive names of "McGregor" and "Garguilo Farms").⁵ Philanthropic projects to "feed the hungry" or "vaccinate the world" utilizing GM crop technologies, rather than focusing on selling more seed to Iowa farmers, could help promote trust in the willingness of industry to look beyond corporate profit interests and to care about the world.

The challenge of reconciling these different demands, not just about what product is acceptable but also about what will count as an acceptable process of certifying each product, is formidable. Opposing arguments are not unique to genetically modified food, of course, but the conflicts are aggravated by widely disseminated images of saving the starving underprivileged masses with golden rice or the horrors imagined for "Frankenfoods." As a result, any serious effort to build confidence will have to begin with an open and transparent discussion asking confidence in what and to what end? We will have to acknowledge up front that, in a democracy, people might reasonably make what any one of us considers "wrong" choices and do "wrong" things, even if they do them a right way that leads to confidence.

II. WHAT EVIDENCE AND EPISTEMOLOGY?

Inherent within much of this discussion lie questions about whom to trust. Who should be counted as an expert, what should count as evidence, and what epistemological norms should we expect or demand? If the goal is to build confidence in both the process and results, how do we go about that? Several

5. MARC LAPPE & BRITT BAILEY, *AGAINST THE GRAIN: BIOTECHNOLOGY AND THE CORPORATE TAKEOVER OF YOUR FOOD* 115 (1998).

speakers at the conference called for public "education." Bratspies, for example, calls for improved company websites,⁶ though we might well ask what would count as neutral and reliable "information" and who will certify it as such. Others, including Powell, urge that farmers can and should invite the public to tour and to attend education programs.⁷ The media are exhorted to do a better job of informing the public about the benefits of GM foods.

But to get to the heart of the matter, what do we really mean by education, and what will this improve? Whose claims about "information" and "educational materials" should the public trust? What should we trust them to do, and why should society trust them? Of course, education is good in principle. Of course, all parties involved need to be more open, to engage in wider public discussions, and to have the provenance and constitution of the products they will consume explained in clear and effective terms. Yet education is not value-free; claims of knowledge cannot be neutral. Even the presentation of "information" depends on matters of convention and choice.

While students of science and of scientific interactions with society may be personally happy with a scientific epistemology, and more likely than the average citizen to accept researchers' data, statistical analysis, and interpretation of research results, many members of the lay public are not so confident in science or in scientists. Despite substantial trust in the scientific research community and despite the fact that the public accepts food additives and other engineered products without substantial protest, there is also significant distrust. For that large percentage of the U.S. public who are uncomfortable with scientific thinking, they are not likely to trust a result or a claim just because it relies on scientific epistemology or is a purportedly special category of knowledge called "science." A powerful anecdote or personal experience is typically far more salient than piles of scientific data and purported evidence.

During the conference, as speakers pointed to farmers as educators, scientists as experts, or biotech and agribusiness companies as potential contributors to education, they raised a specter of competing claims of expertise. In fact, such a situation could work only if, anecdotally, "the farmer and the cowman can be friends." Humming this tune from "Oklahoma" reminds us that just wishing everybody would get along or singing about it is not going to get past deep core values and commitments to educate and communicate effectively. Just exhorting every party to provide information and education will not by itself take us far.

Powell's story of citizens on their neighborhood farm preferring GM corn because it tastes better is instructive, but what does it tell us about what the citizens really trust?⁸ The message seems to be that in a relatively rural setting where people get to know their local farmer over years and where the children visit and enjoy the farm, if they are given choices, they will trust the farmer and

6. Bratspies, *supra* note 4, at 75.

7. Douglas A. Powell et al., *Enhancing Consumer Confidence in Agricultural Biotechnology and Genetically Engineered Foods*, 44 JURIMETRICS J. 139 (2003). Powell attended the conference and presented the argument there.

8. *Id.*

take the product that looks better and is the best value. Better-looking and less pest-infested corn for the same price sounds like a rational preference. Consumers trust their suppliers because they know them. But how would this play out in a big city supermarket? How could we even move from such a small-scale and locally contingent case to larger-scale studies? What if the GM product costs more? To what extent is it important simply to give people choices and a sense of control over the situation? In other words, in what is it that consumers have confidence?

Perhaps it is worth recalling some history. With the introduction of hybrid corn in the United States in the 1930s, farmers did not trust the seed companies. Companies did not trust farmers. Farmers worried about other farmers, and companies about other companies. Governments worried about the impact of major changes in farming. In this case, the county agent was the major factor in moving U.S. farmers very rapidly toward acceptance of the new biotechnology. Farmers, companies, and government all trusted the apparently neutral expertise of the county agent, typically known to local folks and also connected with the state. County agents became a network of local experts. They changed the food supply rapidly and with great economic advantage to the U.S.

Before confidence building can progress further, therefore, it will be necessary for participants to discuss and agree on epistemological standards and rules of evidence as well as on who will be accepted as relevant experts. This will help set the parameters for what will distinguish education from marketing, what will separate information and assessment from propaganda and hype, and what standards will be developed to certify knowledge claims.

III. MORAL CLAIMS

Let us suppose that transgenic plants can be differentiated from stem cells, cloning, or the sorts of infertility treatments that the U.S. "bioethicist in chief," Leon Kass, has declared to be repugnant and that have elicited such lively public debate and demand for regulation or prohibition.⁹ Although these cases share the same controversial issue concerning the acceptable degree of human intervention through genetic modification in a natural world, perhaps GM crops possess such an overriding utilitarian value to those human beings already born that we might argue for a greater moral force in favor of developing them. Perhaps while citizens of wealthy countries debate the legitimacy of such fertility interventions or engage in wars for land or oil or violated treaties, we should also have a moral injunction to consider the majority of third world countries' citizens who are hungry and dying of preventable diseases and who could be saved if only there were money to provide them with nutrition, vaccination, and basic health care. If genetically engineered crops can help solve these problems, do we not have a moral imperative at least to pursue the possibilities?

9. As chair of President Bush's Commission on Bioethics, Leon Kass relies on the intuitionist approach that he calls the "wisdom of repugnance," according to which some things are just innately repugnant and must be avoided. Leon R. Kass, *The Wisdom of Repugnance*, NEW REPUBLIC, June 2, 1997, at 17. Supposedly we all know what those are. See, e.g., LEON R. KASS, TOWARD A MORE NATURAL SCIENCE: BIOLOGY AND HUMAN AFFAIRS (1988).

Besides providing an inexpensive factory to produce subunit vaccines, transgenic plants hold perhaps the best chance to produce the highest economic value by enhancing salt and frost tolerance or reducing pests and pesticide use. Furthermore, the probability may be highest to improve human health through such essential factors as manipulation of micronutrient and fat content. For the estimated 4.5 billion people worldwide at risk for iron deficiency and 1.7 billion at risk for iodine deficiency,¹⁰ technology offers a promising treatment—but only if we choose to use it.

The more we in our comfortable world delay implementation in order to build our confidence and address our qualms, while resolving social, ethical, and legal conflicts, the more we are—once again—exercising our own preferences and ignoring those of others in the world. Citizens of nations developed and developing should be allowed to become participants in the decisions as well as be given the autonomy and education to make their own choices. As Vandegrift and Gould explain, the European Union has a very different approach to engineered organisms than the United States, and the economic impact of their precautionary approach has already been considerable.¹¹ In addition, as Redick shows, African countries like Zambia worry that accepting American food donations will jeopardize the acceptability of their own exports to Europe because of the possibility that the adventitious presence of genetically modified materials may “pollute” their crops.¹² Furthermore, Redick demonstrates that other countries and groups such as the World Trade Organization emphasize the need for “stewardship” over food crops.¹³ Yet how do we consider the interests and alternative positions of other markets and other populations? How do we build confidence when different populations and governments elect, respectively, to promote new technologies through investment, to permit and tolerate, to urge precaution, or to seek preventive regulation?¹⁴

The confidence-building and decision-making processes are obviously more difficult with more interests, more parties “at the table,” and more competing urgent interests. Again, scientists have to allow that the decision-making processes may lead to results that we may not like. There is considerable challenge in developing a process that leads to confidence in the process even in cases where we are unhappy with the product, as noted earlier. In that majority of cases where not everyone is happy, what moral claims will be allowed to prevail, and with what authority do they achieve their moral force? Are there ever circumstances where we would go through the process of building confidence,

10. World Health organization, *Battling Iron Deficiency Anaemia*, at <http://www.who.int/nut/ida.htm> (last modified Sept. 3, 2003); World Health Organization, at <http://www.who.int/ut/idd.htm> (last modified Sept. 3, 2003).

11. Serina Vandegrift & Christine Gould, *Issues Surrounding the International Regulation of Adventitious Presence and Biotechnology*, 44 *JURIMETRICS J.* 81, 83 (2003).

12. Thomas P. Redick, *Stewardship for Biotech Crops: Strategies for Improving Global Consumer Confidence*, 44 *JURIMETRICS J.* 5, 14 (2003).

13. *Id.* at 5.

14. See ROBERT L. PAARLBERG, *THE POLITICS OF PRECAUTION: GENETICALLY MODIFIED CROPS IN DEVELOPING COUNTRIES* (2001).

reach a duly developed result, and then overrule it because we decide that some other values prevail?

If the European public had followed a public process that resulted in great confidence for that process and nonetheless sought to restrict world trade of genetically modified foods that might help feed or provide vaccines for the world's population, could we properly say that they were wrong? Or what, conversely, if we were absolutely persuaded that the risks were too high in developing such products, perhaps because of high risks of contamination during field trials? What if some feel absolutely morally certain and can persuade a significant and sizable minority that their view is reasonable? Are there ever times when some moral position should prevail, even if the decision process initially led to a different conclusion? In seeking to build confidence, we need considerably more discussion of what moral views should prevail and assessment of the full range of legitimate moral issues.

IV. WHERE DOES THIS TAKE US?

Much of the literature about confidence building concerns confidence in political and regulatory processes. We want citizens to feel confidence in their government's abilities to produce a stable balance of risks and risk controls. The public largely has come to trust—at least to accommodate—the government's ability to control airline safety, prescription drugs, hospital safety, or air quality. About some matters we have not achieved such accord, and the most contested issues concern life itself, including issues of abortion. There, as with genetically modified organisms (whether crops, animals, or humans), the primary fears identify recombination as “playing God” in ways that humans arguably ought not to do. For those who believe this, nothing will change their minds. For others who fear that we do not know what we are doing and are likely to make mistakes or those who urge caution, regulations and oversight could make a difference. For those who distrust our ability to contain the effects of research rather than fearing the research itself, it should help to include them in the development of policy so that their concerns are respected, understood, and addressed.

Science, technology, and their products should be the center of much wider and more robust public discussion. All-too-common knee-jerk assumptions that what we read is capitalistic propaganda (whether that is regarded as good or bad), that regulatory systems must be negligent (at least when they fail, though at other times we complain about over-regulation), and that we cannot trust businesses or the government to listen to the public produce a climate of mistrust that erodes the public's faith in scientific responsibility and even in science and technology themselves. Confidence-building measures like those suggested in these papers may lead to a healthier balance of acceptance and responsible questioning. The process will bring considerable challenges, and we likely will make mistakes. Yet we must continue to work toward building trust and confidence: one agribusiness, one farmer, one public participant, and one regulation at a time.