RESPONSE TO MONSANTO AND INTELLECTUAL PROPERTY

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“People are food,” Daniel Quinn wrote in The Story of B, and indeed, we require food for our existence. Most people can be expected to want three things in relation to food production (1) nutritious food that is safe to eat, (2) enough food to avert any threat of hunger to themselves and their countrymen, and (3) at least conceptually, sufficient food to prevent famine in other parts of the world. Anything that changes the composition of food or the methods used to produce food could be perceived as a potential threat to our food supply and its safety, and quite rationally, will cause concern among the public.

Thus, one of the more surprising observations about the furor accompanying genetically modified (GM) food was how unaware Monsanto was that people may not want to eat it. As the case study relates, Monsanto saw a golden business opportunity—engineering crop plants as a means to control a large share of the crop seed and herbicide market—and spent several billion dollars to make it a reality. In the process, it overcame significant scientific hurdles, from the insertion of novel genes into plants, to the breeding of varieties with the genes that performed well agronomically. Further, it had to develop a means to prevent farmers from “stealing” its technology. The Monsanto corporation crafted a well-designed research, business, and marketing plan; it treated crop modification as if it were developing a new type of car, and it was very successful in doing so. Although their business model clearly benefitted their investors, the benefit to farmers, to consumers, and to the public at large is much less clear.

Well-meaning proponents of GM crops have argued that their cultivation can positively affect each of the three issues listed above, but opponents have countered that negative impacts would outweigh the benefits. This debate has been vocal and occasionally bitter, yet surprisingly little data attends the discussion on either side. That Monsanto had not addressed these questions sufficiently prior to the release of GM crops was a major fail-
ing on the part of their overall business plan, and one that has dealt a severe blow to the development and commercialization of GM crops in the future.

A good case can be made that most GM crops do not pose a significant threat to human or ecosystem health, although reasoned debate about this continues. However, the manner in which Monsanto proceeded during and after the development and release of GM varieties did nothing to engender confidence in their pronouncements that the crops—and the food produced from them—posed no risk. First, Monsanto’s protection of trade secrets related to the modification process, while an acceptable business practice, obscured the way that the crop was modified and did not instill confidence that the resulting food was untainted. Second, the federal government’s standards used to regulate GM crops were either being developed with industry support or did not have to be applied, making the impartiality and effectiveness of these tests debatable. But perhaps the most confusing aspect was the refusal by Monsanto and others to label food containing GM crops. While labeling would be cumbersome, the refusal to label has given the impression that the industry is hiding something.

Eventually, genetic modification may very well help develop crop varieties that produce more reliable yields under diverse environmental stresses or that have other desirable attributes, and this might help improve food safety and security both in the U.S. and in poor, underdeveloped countries. However, as their business plan clearly indicates, what Monsanto wanted from their initial releases of GM crops was not to address food safety and security issues but rather to focus on improving its return to investors. In other words, the good uses to which genetic modification could have been put were not among the first traits targeted by Monsanto. In this case, GM crops could be likened to television programming: although both could be quite useful ways to make the world a better place, they have not been used that way for the most part. The fact that the rationale for developing these crops was not altruism but profit (and arguably greed) has angered many people and has made subsequent statements by Monsanto that their technology can be used to help poor, disadvantaged people ring hollow, however true they might be.

The primary traits that Monsanto targeted in its initial releases of GM crops included herbicide resistance (to its own herbicide, Roundup) and various pest resistance traits. Some of these traits undeniably make crop management easier, which explains their rapid adoption by farmers. Advances in crop management throughout the Twentieth Century, from chemical fertilizers, herbicides, pesticides, and mechanization have invariably solved old management concerns but caused new suites of problems; in fact, the argument can be made that pest and disease problems are actually becoming worse in
response to our technological solutions. The introduction of GM crops is simply the latest “silver bullet” designed to solve crop production problems that arise as a consequence of simplistic, homogenized production systems. Without a long overdue overhaul of the U.S. agricultural production system, the GM crop solution of today will undoubtedly be tomorrow’s serious problem.

Two of the major crops being engineered and marketed by Monsanto are corn and soybeans. However, the United States is awash in corn and soybeans; in fact, so much of each has been produced in the past several years that “market” prices are at near historical lows. To allow farmers who grow only corn and soybeans to remain solvent, the government subsidizes the market price to a predetermined target. Because the subsidy allows farmers to remain solvent, they only need to grow corn and soybeans, thus exacerbating a vicious cycle. Curiously, not much mention is made about how these subsidies are going directly through farmers to Monsanto and similar “life science” companies. Monsanto’s success is directly related to the widespread cultivation of GM crops; the only reason we produce as much corn and soybean as we do is because the government subsidizes agriculture with billions of dollars per year. It is clearly in Monsanto’s interest to have farmers grow crops that the market does not want. Something to think about.

Two final unsettling aspects that have emerged from Monsanto’s GM project are that free exchange of plant genetic resources has been curtailed for the first time in history and that the historical freedom that farmers had to use their crops as they see fit has been eliminated. The former issue could have negative ramifications for future crop improvement efforts, particularly if little germplasm is freely available for some particular crop. The latter point results from the contractual obligation Monsanto requires farmers who grow their crops to sign. Together, these limitations mean that Monsanto and other agribusinesses have more say over what gets planted in the field and who gets to use the harvested seed than ever before.

The business plan that Monsanto developed to market GM crops was successful at capturing the value of its biotechnologies. But is it equally successful at improving the food safety and security of the world?

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