

Review of *Welcome to Biotech Nation* by Moira A. Gunn

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MOIRA A. GUNN, *Welcome to Biotech Nation*, New York: American Management Association, 2007, 255 pp., \$24.95.

From its relaxed conversational style, dialogue formats and extended quotations, someone skimming *Welcome to Biotech Nation* can easily be fooled into thinking it is a novel. In fact, the book is a memoir of a radio interviewer by the name of Moira Gunn. Her syndicated National Public Radio programs *Biotech Nation* and *Tech Nation* ran weekly on 200 affiliated stations as well as satellite radio and American Forces Radio International, where the shows were heard in 133 countries. Gunn hosted interviews for over ten years.

The author entered the biotech media culture rather serendipitously. While she had no previous background in the biological sciences, Gunn was the first woman to graduate from Purdue University with a doctoral degree in mechanical engineering and also worked as a computer analyst for NASA.

Gunn's initial naiveté about molecular genetics seemed to have two impacts on her role as NPR radio interviewer. First, it made her more receptive to the often exaggerated claims of the biotech advocates. After all, venture capitalists do not want to fund half-hearted claims. They may understand investment risks, but they don't want the scientists involved in the project to be diffident about the outcome.

Second, it allowed her to raise disarmingly simple questions that only an outsider can ask but that an intelligent novice communicates so well to a general audience. For example, Gunn writes, "How did we suddenly get all this genetically engineered food in our supermarkets?" From her radio guests she learns that GM food on our dinner table can be traced back to Vice President Dan Quayle, who headed President George H.W. Bush's Council on Competitiveness. When faced with the decision of whether foreign genes introduced into traditional food constituted a food additive, the U.S. Food and Drug Administration demurred, opening up Pandora's box of transgenic food products.

In between the chit chat about the cocktail parties the author attended at biotech trade shows and the cult of science personalities she interviewed, there are a few stories that stand out. Gunn interviewed Gurinder Shahi, CEO of Bioenterprise Asia in Singapore. "I asked him how long it would take to do proper clinical trials on the effects of genetically modified food." His response: "My hunch is that the kinds of changes that people make in creating genetically modified organisms are so minimal that you're not going to see a massive impact in any of these types of conditions. But to reassure the public, I guess there is a real need to say that 'yes' we're done testing and we can show that it doesn't have this impact or that impact ... Of course, it's a hunch. There's little science" (p. 41).

Gunn leaves the reader in mystery both about her appraisal of GM foods and about the state of the science for assessing the risks. In contrast to the elites she interviewed, her intuitions seem to support a healthy skepticism.

Another telling story can be found in a chapter titled "The Amazing Chakrabarty" which reports on her interview with Ananda Chakrabarty, inventor of the oil-eating strain of *Pseudomonas*. It was Chakrabarty's patent application while at General Electric that resulted in a Supreme Court ruling that a genetically modified microbe can be patented *sui generis*, independent of the process used to make it. The author is wowed by Chakrabarty's inventiveness. "He's as involved as ever, relentless and constantly thinking, And he wants to do so much good in the world. He is truly the epitome of an inventor." (p. 104). But Gunn loses the opportunity to discuss the impact that *Diamond v. Chakrabarty* had on the growth of patents on living organisms, cell lines, and human genes. His invention was too risky to commercialize for cleaning up oil spills. Ironically, it led to a path of intellectual property protection that many believe has thwarted innovation. The monopoly ownership of genes has resulted in exclusive use and has preempted researchers from engaging in some important investigations in public health and genetic disease.

Other discussions in the book include stem cells, viral therapy to treat cancer, genes that are believed to regulate appetite, and the author's personal account of amniocentesis.

Throughout the book, Gunn plays with the question "Is no evidence of harm, evidence of no harm?" She writes about an African scientist she interviewed who recalls a question he heard from a local farmer. "If the corn borer dies when feeding on the Bt maize, am I not going to die when I feed on the Bt maize." To her credit, Gunn sees the power of this question and also puts her finger on the contradiction. Reflecting on this question she writes, "But the policy of the first Bush administration was that genetically modified foods were safe ... there being no scientific evidence to the contrary. Was that the science that Dr. Rebe [her African interviewee] was talking about?" (p. 231). I published a scientific paper on the epistemic foundations for the government's approval of GM crops. Among the criteria, the one I found most interesting and least persuasive was "the principle of ignorance", namely that the product is safe because we have no evidence that it is harmful. Ironically, the same issues were raised over fifty years ago when synthetic organic pesticides were introduced into agriculture. Farmers were assured that only the insects would be harmed, not the farmers or the consumers. Today we know some of those claims were false. Until the proper testing was done, assurances represented blind trust.

I cannot recommend this book to scientists or scholars of biotechnology. *Welcome to Biotech Nation* reveals more about the recollections of a radio host journalist and her effort to make sense out of the claims and counter-claims of biotechnology than it does about the successes, failures and potential of the field. While I noted a few interesting stories, most were unenlightening, bordering on journalistic gossip.

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