

accessible and highly readable account of an industry that, by promising shoppers access to distant foods without regard to growing seasons or spoilage, has been viewed as both miraculous and dubious.

Zeide begins each chapter with an iconic canned food, such as condensed milk to describe canning in its infancy during the U.S. Civil War or tuna to describe the 1950s, a decade in which “canners were happy to sit back and observe a trusting nation awash in canned foods” (p.137) (although, Zeide points out, this trust was never complete or permanent). The earliest canned foods, Zeide maintains, fed sailors, soldiers, and explorers—people in remote locations where canned foods were “used mostly in exceptional situations, rather than as part of regular meals” (p.11). While “canned foods enabled imperial conquest, the exploration and settlement of new lands, and the provisioning of armies fighting for national unity” (p.12), supplying field rations provided a technological boost and financial opportunity to expand the reach of canned foods to the civilian market during and after the Civil War. Zeide notes that the production of canned foods skyrocketed from five million cans before the war in 1860 to ninety million by 1880 (p.16). By the twenty-first century, canned foods represented a multi-billion-dollar industry and nearly all Americans had canned food in their homes. Innovative technologies (pressurized cooking, chemical additives during the canning process, improved bacteriological research, and faster machinery to produce, pack, and seal cans) combined with marketing strategies to convince consumers that canned food was wholesome, even when buyers could not see the food contents inside.

Zeide skillfully connects her study of canning to larger developments in nineteenth- and twentieth-century history. Explaining the popularity of canned goods at the turn of the century, she notes that urban migration and housing patterns contributed to the rise of canned, rather than fresh, produce. “Between 1870 and 1920, over forty million Americans moved into cities,” Zeide points out. “Increasing urbanization brought with it smaller kitchens, no root cellars for winter cold storage, and easier access to urban grocers that sold commercially canned goods” (p.27). Canneries themselves “inevitably reshaped human relations ... deskilled labor, creating opportunities in rural areas, and boosting trust in scientific expertise” (p.28). She uses studies of pea canneries in Wisconsin to emphasize the joint efforts of agricultural colleges and corporate canning businesses to improve yields and raise crops intended for canning (indeed, Zeide points out, peas were one of the few crops more likely to be eaten in canned than fresh form). Peas were the product of 1920s botanists “bringing a scientific approach that distinguished” accredited biologists “from

previous sporadic efforts” (p.68)—thus, canneries and the research they sponsored fueled the professionalism of agricultural science which, in turn, boosted the profitability of canneries themselves.

Canned employs a wide range of sources (state and national archives, trade journals, corporate records, popular advertising) to assess nearly two centuries of food history, and in this study Zeide wisely avoids academic jargon to produce a rare find—an academic book that is genuinely entertaining to read. For instance, her discussion of Campbell’s Tomato Soup, one of the most iconic canned foods in history, walks readers through an imaginary supermarket, emphasizing the multiple steps, most invisible to the consumer, involved in getting cans onto store shelves. While researchers in agriculture and food studies will certainly find *Canned* an important text, the book also addresses themes of gender and consumerism, labor (especially the overlap between farm and factory), journalism, and public health. But this book is written in an accessible style that makes it ideal for undergraduate courses and readers interested in contemporary food debates. For instance, Zeide illustrates the long history of government regulators cooperating and collaborating with the canning industries they are charged with regulating and controlling, a pattern that has stimulated scientific research on the one hand, while lessening the effectiveness of governmental oversight on the other. Extending this pattern into the present debate over BPA in canned foods, Zeide concludes that “canned food appears fundamentally flawed and embedded within a regulatory system that fails to fix these flaws” (p.186). Her discussion of marketing research and consumer focus groups in the twentieth century likewise reflects contemporary concerns over how food is advertised and labeled. Above all, Zeide’s book raises fundamental questions about the American diet and the multifaceted relationships among growers, processors, government, and science that collectively determine what ends up in our foods—pressing concerns in the past and present.

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GMOs Decoded: A Skeptic’s View of Genetically Modified Foods

Sheldon Krimsky

Cambridge, MA: MIT Press, 2019

216 pp. Black and white illustrations. \$24.95 (hardcover)

No new technology has ever been as controversial or divisive as food biotechnology, says Sheldon Krimsky in *GMOs Decoded*. He offers a careful analysis of scientific studies on each of the various contentious issues that have made genetically modified

organisms (GMOs) so rabble-rousing. For millennia humans have been fiddling with plant sexuality to purposefully reshuffle the latter's genes. But, since the 1980s, such tinkering has been aided by much more powerful gene-splicing technologies that can insert genes from any species into plants.

Transgenic crops engineered to resist herbicides or insert a pesticide gene have been the main GMOs. The first type is Roundup-Ready crops, a reference to Monsanto's trademark herbicide; and the second type is Bt crops, so named for the insertion of *bacillus thuringiensis*, an insecticide. Other crops have been engineered for both purposes. A huge increase in the use of the herbicide glyphosate and pest resistance to Bt has befallen with the surge of GMOs. Multiple corporate mergers also have occurred, with large chemical and pharmaceutical companies buying seed companies to produce transgenic seeds.

The regulatory approaches of the European Union and the United States concerning GMOs differ. In the United States it is assumed that the *process* of producing new plants is irrelevant, as long as the *product* shows to have "substantial equivalence" with their relatives produced with traditional breeding. With substantial equivalence, crops are "generally regarded as safe" or GRAS. In the European Union, substantial equivalence has to be demonstrated with studies.

Krimsky presents a long summary of studies that show the nonharmful health effects of GMOs in humans, but all are short-term, focused on chronic effects. Critics would like to see omics studies (on the distinct classes of molecules), in vitro tests, and long-term animal feeding studies, to reduce uncertainty around the unanticipated effects of GMOs. For instance, it is possible that nutritional content has changed in comparison to non-GMO variants, but this is entirely unexplored. The most favorable studies have been funded by industry, with a narrow focus on health risk, but no database exists on adverse effects of GMOs. Pro-GMO scientists and industry are quick to ignore or dismiss studies showing adverse effects, arguing, for instance, that their sample sizes are inadequate. The point, suggests Krimsky, is to sow doubt that any adverse effects exist (p.89).

Industry successfully lobbied the U.S. government to prevent GMO-content labeling laws for food: "agribusiness used a First Amendment argument that requiring food labeling makes manufacturers 'speak' against their will" (p.99). This stand goes against 90 percent of the population who would like to know what is in their food (p.150).

The official response to risk by corporations and regulatory agencies has been to focus on "scientific risk assessment" (p.130), leading to "uncertainty intolerance." Krimsky rightly indicates that the root of the opposition to GMOs, though, is

monopoly control of the world's food supply (p.134), seen as an enormous assault on democracy. In the European Union, patenting life is seen as immoral when material that is critical to the common heritage of humankind is at stake. Still, even in Europe, "patenting of life forms *sui generis* became the new normal" (p.134). Patents are thus the means to monopolize control of germplasm and achieve hegemony (domination, really) in agriculture. Farmers become serfs (p.135). Opponents distrust the GMO enterprise, as Krimsky cites, in part because studies of scientific articles have found a "strong association ... between author affiliation to industry ... and study outcomes" (p.136).

Krimsky does a fine job of synthesizing the scientific risk assessment literature on GMOs, but can seem overly concerned with being perceived as unbiased at the expense of challenging certain of the literature's more questionable assertions, sometimes exaggerating in coming off as unbiased. For instance, he could take a firmer stand on issues for which there are clear grounds for critique, such as yield. The most credible study he cites, based on macrodata from the UN Food and Agriculture Organization, compares corn and soybeans yields in the European Union and the United States from 1961 to 2010. If anything, the EU yields were higher, although use of GMOs was much lower in Europe (p.145). The scientific paradigms of regulatory agencies are evidently molded by industry lobbies, so the entire risk-assessment enterprise is made to serve agribusiness.

Although Krimsky presents biotechnology as "revolutionary," he does not specify in what sense. If it is not in increased yield or risk elimination, what makes GMOs revolutionary? I have argued elsewhere (Otero 2008) that biotechnology's main impact has been on the agrarian social structure, which coincided with the neoliberal turn in Latin America. This combination firmly established agribusiness multinational corporations as the undisputed rulers of what we eat, bankrupting smallholder farmers and peasants.

Nutritional changes could be related to the rise of junk food, Krimsky suggests, and this could be why people are getting fatter in the United States and beyond. In *The Neoliberal Diet* (Otero 2018), I found that mainstream explanations of obesity argue that people simply eat too much "energy-dense" food while exercising too little. According to such arguments, swap the chips and sodas for fruits and vegetables, exercise more, and the problem would be solved.

For me, increased obesity does not result merely from individual food and lifestyle choices. Since the 1980s, the neoliberal turn in policy and practice has promoted trade liberalization and retrenchment of the welfare regime but also continued agricultural subsidies, particularly for transgenic corn and soybeans in

the United States. Neoliberal regulation has enabled agribusiness multinationals to thrive based on highly processed foods, many of them originating in these crops, a diet loaded with refined flour and sugars—and meat. This neoliberal diet has been exported around the globe, often at the expense of people's health.

Sheldon Krimsky offers a fine synthesis of risk analysis of biotechnology, with its narrow focus, points to huge lacunae in long-term studies, and points to larger socioeconomic impact analysis of a food system controlled by oligopolistic structures. How social movements and the state can change them for a healthier diet should be at the center of future studies.

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Still Hungry in America

Photographs by Al Clayton, Text by Robert Coles,
Introduction by Edward M. Kennedy, New Foreword by
Thomas J. Ward, Jr.
Athens: University of Georgia Press, 2018
136 pp. 101 photographs. \$32.95 (paper)

Still Hungry in America, originally published in 1969, emerged out of a July 1967 hearing before the United States Congress's Subcommittee on Employment, Manpower, and Poverty. Al Clayton's photographs were produced to support Dr. Robert Coles's congressional report illuminating food and health conditions among the poor in Appalachia, rural Mississippi, and Atlanta, Georgia. Taken together, the words and pictures create a powerful—and at times heart-breaking—statement about poverty and malnutrition in the United States. This reissue with a new foreword by Professor Thomas J. Ward, Jr., a historian of health and poverty in the American South, provides an insightful history and contemporary statistics to give this volume new context and relevance.

Most readers will likely be struck first by the photographs. Many of them, including the cover image, cause one to wonder whether or not they are from the seminal body of work created by the Farm Security Administration (FSA) in the 1930s. The impulse to compare Clayton's work to that of the FSA is both helpful and harmful, accurate and inaccurate, but also inevitable. The FSA photographs of Depression-era

America attempted to make difficult stories and struggling, overlooked people more visually palatable to the public in order to be seen widely and taken seriously. It was a noble photographic endeavor that changed the cultural landscape. Exceptionally skilled and well-intentioned photographers harnessed the aesthetics of (mostly) black and white photography to make extraordinary portraits and record devastated landscapes. Dorothea Lange's *Migrant Mother* has become an iconic American image—so much so that we have come to fetishize and revere images like hers that ennoble the poor and destitute. Today, we might dub it “poverty porn.”

This is our burden as contemporary readers. We need to look closely and open our hearts to Clayton's stark imagery. His photographs differ from the FSA to some degree, but they are linked via the persistent illustration of dilapidated shacks without indoor plumbing or electricity and porches populated by people in threadbare clothes. It is an upsetting visual cue that by the 1960s, and even in 2018 at the time of the book's reissue, the state of poverty and food insecurity in the United States has not changed much for some since the Great Depression. Clayton's photographs are not accompanied by captions to ground the reader with names, ages, locations, or other bits of description. What information one can find is within the text. As a result, the images become archetypes and general representations, while sometimes offering very specific visual details of health conditions. The faces and gestures of his subjects echo the voices Coles incorporates in the accompanying text. They are the faces and bodies of the starved and hungry, the wary child and the weary parent. His subjects are self-aware, stoic, and often resolved. However, mixed in are tight hugs, gentle hands, and hopeful smiles that indicate all is not lost for the subjects' futures (or for the readers' hearts).

Coles's writing is a frank and direct description of the physical conditions of the people and environments he encountered. However, while the reader senses that his impulse is to be clinically descriptive, as would be expected of a Harvard research psychiatrist and professor, Coles's compassion is also apparent. Much of his writing includes direct quotes of those he interviewed, a signature style for which he would later be known. He allows those who are hungry and living in poverty to have a voice in describing their situations. In doing so, the reader is often presented with thoughtful, dignified, and resolute perspectives from the subjects themselves. They speak directly of the impact of industrial agriculture and mechanized mining. The trickle-down effect that large corporations had on many communities included toxic chemicals and other byproducts ruining accessible water; taking away people's land; and pushing individuals out