

How Good Food Became “Real”

In 2013 James Kennedy published a poster titled “Ingredients of an All-Natural Banana” on his blog. Beneath the title, a picture of a banana was followed by an ingredient list packed with unfamiliar, unpronounceable words (Fig. 1). Accompanying text explained that Kennedy, a chemistry teacher in Australia, created the poster to educate people who were concerned about “scary looking ingredients” and push back against the use of words like *pure* and *simple* to describe “natural” products by showing that natural foods are in truth “usually more complicated than anything we can create in the lab.”¹ Within a year his simple teaching aid had gone viral with two million views. By 2016 Kennedy had produced eleven more posters (for blueberries, eggs, strawberries, cherries, etc.), launched a successful clothing line, and sold thousands of copies of the original banana poster through his website. The posters were covered in *Vox*, *Forbes*, *Business Insider*, the *New York Times*, and more and, according to Kennedy, received over 700,000 views on his website, not to mention millions more via social media.² Building on his platform, Kennedy in 2017 self-published *Fighting Chemophobia: The Story of How We Became Afraid of*

AN ALL-NATURAL BANANA



INGREDIENTS: WATER (75%), **SUGARS (12%)** (GLUCOSE (48%), FRUCTOSE (40%), SUCROSE (2%), MALTOSE (<1%)), STARCH (5%), FIBRE E460 (3%), **AMINO ACIDS (<1%)** (GLUTAMIC ACID (19%), ASPARTIC ACID (16%), HISTIDINE (11%), LEUCINE (7%), LYSINE (5%), PHENYLALANINE (4%), ARGININE (4%), VALINE (4%), ALANINE (4%), SERINE (4%), GLYCINE (3%), THREONINE (3%), ISOLEUCINE (3%), PROLINE (3%), TRYPTOPHAN (1%), CYSTINE (1%), TYROSINE (1%), METHIONINE (1%)), **FATTY ACIDS (1%)** (PALMITIC ACID (30%), OMEGA-6 FATTY ACID: LINOLEIC ACID (14%), OMEGA-3 FATTY ACID: LINOLENIC ACID (8%), OLEIC ACID (7%), PALMITOLEIC ACID (3%), STEARIC ACID (2%), LAURIC ACID (1%), MYRISTIC ACID (1%), CAPRIC ACID (<1%)), ASH (<1%), PHYTOSTEROLS, E515, OXALIC ACID, E300, E306 (TOCOPHEROL), PHYLOQUINONE, THIAMIN, **COLOURS** (YELLOW-ORANGE E101 (RIBOFLAVIN), YELLOW-BROWN E160a), **FLAVOURS** (3-METHYLBUT-1-YL ETHANOATE, 2-METHYLBUTYL ETHANOATE, 2-METHYLPROPAN-1-OL, 3-METHYLBUTYL-1-OL, 2-HYDROXY-3-METHYLETHYL BUTANOATE, 3-METHYLBUTANAL, ETHYL HEXANOATE, ETHYL BUTANOATE, PENTYL ACETATE), 1510, NATURAL RIPENING AGENT (ETHENE GAS).

Figure 1. “Ingredients of an All-Natural Banana” teaches the public that even all-natural foods contain complex, “scary-looking” ingredients. Courtesy of James Kennedy, <https://jameskennedymonash.wordpress.com/2013/12/12/ingredients-of-an-all-natural-banana>.

Chemicals and What to Do about It, a book about the “irrational fear of chemicals” and overreaction to “harmless, negligible sources of contamination” that caused people to seek out natural, organic, and chemical-free alternatives, as well as how to “fight” it.³

In 2015 the wildly popular food blogger Vani Hari, better known as Food Babe, was “taken down” in a viral *Gawker* article

written by Yvette d’Entremont, who called herself SciBabe. Blogging since 2011 about health and nutrition, Food Babe initiated a series of campaigns to pressure the food industry into removing harmful ingredients from their products. By 2014 she had amassed a formidable “Food Babe Army,” her blog had received over 54 million views, she had nearly a million Facebook and Twitter followers, and *Time* magazine had named her “one of the 30 most influential people on the internet.”⁴ High-profile campaigns included petitioning Kraft Foods to remove dyes from their macaroni and cheese; asking Subway to remove the chemical azodicarbonamide, also found in yoga mats, from their rolls; and pressuring Starbucks to be more transparent about its ingredients. According to SciBabe, it was Food Babe’s 2014 campaign against Starbucks pumpkin spice lattes that drove her to launch her own blog “dedicated to debunking pseudoscience in the blogosphere.” In “The ‘Food Babe’ Blogger Is Full of Shit,” which according to her website went “massively viral” in 2015, SciBabe introduced herself as an analytical chemist and described Food Babe as a graduate of “Google University” and an “uncredentialed expert in everything she admittedly can’t pronounce.” She claimed that “it’s rare to come across a single scientific fact” on Food Babe’s site and went on to describe the many reasons “she’s the worst assault on science on the internet.” She berated Food Babe’s concerns about the amount of sugar in pumpkin spice lattes, imploring her to look at a “safety data sheet for sugar” she linked to the article, and called her concerns about caramel color ridiculous because the additive was in the same carcinogen class as coffee.⁵

These examples show the Real Facts frame in action and suggest its pervasiveness as a way of thinking about the processed food problem and imagining the public in relation to science. Kennedy and SciBabe were not representatives of the food industry seeking to maintain consumer interest in processed food, but they

shared the worldview of the Real Facts frame in which public concerns about processed food appeared to be the result of misinformation and irrational anxiety. It is true that in the early years of the twenty-first century many people viewed processed food negatively because, among other things, they were concerned about the safety of the ingredients it contained. There were, however, a lot of different questions that could be asked about this. As Gusow reminds us, which questions people choose to ask has a lot to do with the worldview they start out with. For Kennedy, SciBabe, and others immersed in the Real Facts frame, the questions that mattered were those that could be answered by science. These had to do with risk to human health, so they assumed that public concerns had only to do with such risks and dismissed them as irrational because science said the ingredients were safe. Their question thus became, How can we educate the public so they will no longer be irrationally fearful of ingredients they can't pronounce? This chapter explores what this framing missed about the Real Food frame, not by examining the facts in dispute—such as whether the ingredients in question were in fact safe to consume—but by exploring the critical challenges the Real Food frame expressed beyond this narrow view emphasizing health risks and irrational fears.

In their book, *Vaccine Anxieties*, Melissa Leach and James Fairhead show the power of framing public concerns about vaccines in a way that includes not only what people are anxious *about* but also what they are anxious *for*. As they explain, anxieties can be both negative and positive, encompassing not only unease, worry, and concern but also the earnest, focused desire for something or to do something. Focusing solely on the negative anxieties that drive behavior, or what people are anxious about, tends to highlight the public's lack of understanding and trust. A very different picture emerges when the frame also includes positive anxieties,

or what people are anxious *for* and what they *do* understand and desire.⁶ Following their lead, in this chapter I push back against the Real Facts frame’s understanding of concerns about processed food, which has focused on the public’s failure to understand the safety and benefits of processed food and the breaking down of trust in food science. In telling the story of where the Real Food frame came from, I focus on what people did understand and show that the Real Food frame expressed an earnest desire to eat right in the context of a wide range of legitimate concerns about processed food, the industrial food system, and the food industry. At the same time, I show how this alignment of eating right with avoiding processed food was shaped by implicit and explicit challenges to the food industry’s relationship with science and scientific authority. Each of the concerns that shaped the Real Food frame played a part in both redefining processed food as “bad” and challenging the scientific basis of the food industry’s authority by asking questions about food that science alone could not answer.

EATING RIGHT AT THE TURN OF THE TWENTY-FIRST CENTURY

In my first book, I traced a history of what it has meant to eat right in the United States since the late nineteenth century and argued that during the final decades of the twentieth century eating right became more important for identity and status than it had ever been before. This means that concerns about processed food emerged in the context of historically high levels of positive anxiety about eating right. *Eating Right in America* tells the stories of four dietary reform movements from the late nineteenth to the early twenty-first century, revealing a series of changes

in advice about how to eat right, ideas about why people should eat right, and what it meant to be a “good eater.” I found that over those one hundred-plus years, dietary ideals changed and cultural understandings of what it meant to be a responsible person and a good citizen changed, but the relationship between the two remained the same: dietary ideals consistently reflected and expressed social ideals. Therefore, eating right was an important means by which people both constituted themselves and assessed others as responsible subjects and good citizens—or not. Eating right was not simply a matter of biomedical well-being for individuals but also a means of moral self-making that had real social implications. Furthermore, the social importance of eating right increased over time, dramatically so in the final decades of the twentieth century.⁷

At the broadest level, the convergence of neoliberalism and a growing emphasis on chronic diseases during the last few decades of the twentieth century led to increasing pressure on individuals to pursue health through a wide variety of everyday activities, from wearing seatbelts to not drinking too much alcohol. As has been well documented, one of the most striking features of the neoliberalization that occurred over this time was the devolution of responsibility for health to individuals.⁸ Simultaneously, the focus of the health community shifted from communicable diseases, which generally required quarantine, to chronic diseases such as cancer, diabetes, cardiovascular disease, and obesity, which were considered matters of behavior and lifestyle. Through these shifts, the range of activities and habits considered related to health expanded dramatically, and health seeking became an increasingly prevalent part of everyday life. Robert Crawford, scholar of the meaning of health in contemporary American culture, argues that at this time the prevention of

illness became a pervasive standard against which an expanding number of behaviors were judged, and both the problems of health and their solutions were increasingly defined within the boundaries of personal control. Health, as something about which individuals should be informed and seek to change, moved to the center of the middle-class experience, and the pursuit and practices of health became central to identity and status. He explains that “health talk became personal responsibility talk,” and, because personal responsibility was so central to notions of what it meant to be a good neoliberal subject, personal responsibility for health was “widely considered the *sine qua non* of individual autonomy and good citizenship.”⁹

It was in this context that diet became more important to health than ever before and avoiding potentially harmful foods became central to dietary advice for the very first time, factors that together set up the possibility for avoiding processed food to become a central part of responsible self-making. Since the discovery of vitamins in the World War I era, dietary guidance had consistently reflected an “eat more” approach, teaching people how to get enough nutrients every day by understanding the principles of substitution, or how different foods provided similar nutrients. However, as the focus of the broader health community shifted from communicable to chronic diseases, the focus of nutrition shifted from concerns about deficiencies to the role of diet in chronic diseases. Vitamin-oriented nutritional thinking emphasizing the importance of eating a wide variety of health-promoting foods gave way to an “eat less” approach to dietary advice that encouraged people to reduce or limit intake of foods or nutrients—such as fat, sugar, cholesterol, and salt—that were believed to be linked with “the health problems of adults in an affluent society.”¹⁰ As has been well documented, the shift to “eat less” dietary advice, or what Warren Belasco calls “negative

nutrition,” did not go smoothly; industry lobbyists afraid of the impact on consumer purchasing decisions pushed back, ultimately diluting the USDA’s messages to the public (discussed more fully below).¹¹ Nonetheless, dietary thinking was reshaped by the shift to negative nutrition. Avoiding potentially harmful foods became central to eating right just as diet became central to health, and pursuing health became more important than ever before to identity and status.

This matrix of a growing cultural emphasis on health in general, greater investment in health seeking as central to good citizenship, the focus on diet as a means of seeking health, and the turn toward negative nutrition created a context in which it made perfect sense for people to want to eat right by avoiding potentially harmful foods. They were driven by a powerful positive anxiety comprising a desire to be a good eater and a growing understanding that eating right meant choosing “real” as opposed to processed food. This understanding was shaped by a confluence of concerns about obesity, sustainability, nutrition, and risk. While distinct in many ways, all these concerns raised questions about the role of processed food in the American diet, the impacts of the industrial food system, and the values of the food industry. At the same time, these concerns and the movements that emerged to address them also raised questions about authority and expertise. How do we know what a good diet is? Who gets to decide? Based on what kinds of knowledge and expertise?

OBESITY

Concerns about obesity, which peaked in the early years of the twenty-first century, reshaped ideas about processed food, the food industry, and the relationship between the food industry and scientific authority. Obesity was declared an “epidemic”

in 2001, spurring massive public and private investment in combating it, but different ways of understanding the causes of obesity and what to do about it vied for attention, authority, and dollars.¹² Among these was a public health crisis frame, which emerged in the mid-1990s as concern about obesity in the US spiked in response to a series of studies on population-level weight gain. In contrast to an established medical frame that viewed fatness as a biomedical condition requiring medical intervention and the expertise of physicians, the public health crisis frame looked at fatness as a population-level problem requiring collective solutions and government intervention.¹³ But even as the idea that obesity presented a public health crisis became widely accepted, not everyone agreed about the causes of the problem and therefore what should be done about it, resulting in what the sociologist Abigail Saguy describes as a contest between different “blame frames.”¹⁴

The food industry was among those championing a “personal responsibility” blame frame for obesity, in which individuals were seen as responsible for their own fatness. This frame was powerful and pervasive, in part because it drew on deep cultural reservoirs of individualism, belief in the value of self-reliance, and suspicion of government intervention, as well as more recent neoliberal investments in personal responsibility.¹⁵ The media overwhelmingly portrayed obesity as a result of lack of willpower, irresponsibility, and bad choices, blaming individuals for their failure to maintain an ideal body weight and parents for allowing kids to get fat.¹⁶ Diet and exercise were presumed to be the solution, if only people would muster their willpower, take responsibility, and make healthier choices. Advice from the federal government mirrored these assumptions, with the Surgeon General in 2003, for example, urging Americans to address the obesity epidemic by taking “small steps” such as putting the lid on the cookie jar and taking the stairs instead of the elevator.¹⁷ While taking pains not

to dismiss the seriousness of the obesity epidemic, food industry representatives consistently maintained that exercise and calorie control were the keys to addressing it. Trade associations like the International Food Information Council (IFIC) and the Grocery Manufacturers Association (GMA) defended the industry against attacks by emphasizing consumer choice and blaming parents for being too permissive, negligent, or ignorant to manage what their children eat.¹⁸

Throughout the early years of the twenty-first century, however, researchers and advocates advancing a “sociocultural blame frame” challenged this focus on personal responsibility. The sociocultural blame frame repositioned individual- and population-level weight gain and other health problems related to diet not as the result of individual failures of willpower and responsibility but as the result of sociocultural conditions such as the structure of urban environments, the overabundance of cheap calories, the nature of agricultural subsidies, poverty—and the behaviors of the food industry. Media articles embracing this frame treated the food industry as a “demon industry,” and the sociocultural blame frame was used to support calls for greater government regulation of the industry to protect the public.¹⁹

The sociocultural blame frame gained momentum through a slew of influential articles, books, and films connecting the nation’s health and other woes to factors outside individual control, especially the industrial food system.²⁰ Proponents included activists, authors, filmmakers, and academics, some working at the intersection of the obesity epidemic and a growing “alterative food movement” responding to broader ecological, social, and economic concerns about the food system. High-profile advocates of the sociocultural frame included Marion Nestle, Kelly Brownell, and Michael Pollan, whose work is discussed below, as well as Eric Schlosser (author of *Fast Food Nation*), Greg Critser (author of *Fat*

Land), and Morgan Spurlock (maker of the film *Super Size Me*). I have written elsewhere about how the sociocultural blame frame was not free of pervasive personal responsibility thinking, and I have also critiqued many of its proponents for their normative uptake of the so-called obesity epidemic and its problematization of body size (among other things).²¹ My task here is different, as I focus on influential texts to highlight the role of the sociocultural blame frame in simultaneously redefining processed food as bad and challenging the food industry’s relationship to scientific knowledge and authority.

As the sociocultural frame for obesity developed, it often focused on processed food and fast food as both problematic in and of themselves and emblematic of larger problems with the food system, including power dynamics that favored the food industry and the way the food industry leveraged scientific knowledge and authority to maintain those power dynamics. For example, *Food Politics*, published by the New York University public health nutritionist Marion Nestle in 2001, advanced a way of understanding the causes of obesity and what should be done about it that centered the behavior of the food industry, particularly its use of marketing and its manipulation of dietary advice. Nestle argued that while food companies pushed a personal responsibility narrative, “we do not make food choices in a vacuum.” The emphasis on individual choice and responsibility, she argued, suggested that “nutritionists should be off teaching people to take personal responsibility for their own diet and health—not how to institute societal changes that might make it easier for everyone to do so.”²² Instead, Nestle exposed and critiqued the contexts that created the conditions for individual overconsumption. She argued that obesity and other food-related health problems in America could be traced to “the food industry’s imperative to

encourage people to *eat more*” and their subsequent actions, especially efforts to influence information, knowledge, and advice.²³

Nestle’s influential book detailed many ways in which the food industry produced not only food that played a role in causing obesity but also the informational contexts in which Americans understood diet and health and decided what to eat. She described in detail the role food industry lobbyists played in shaping dietary advice issued by the USDA, beginning with the successful efforts of beef and dairy lobbyists to thwart the USDA’s first “eat less” recommendations in 1977. The USDA’s advice would have included clear suggestions to reduce intake of meat, eggs, and foods high in butterfat, sugar, and salt, but after being met with powerful opposition from cattle, egg, sugar, and dairy interests it was revised to be far less straightforward. For example, the statement “reduce consumption of meat” was replaced by “choose meats, poultry and fish which reduce saturated fat intake.” In 1979 the guidance became “choose lean meats.”²⁴ The saga continued over the following decades, with dietary advice consistently embattled by pressure from food industry groups, and as a result, Nestle argued, it ultimately failed to serve the public interest.²⁵

Food Politics exposed and critiqued many other ways in which the food industry influenced the informational environment, detailing the nature and extent of industry investment of financial and other resources in forming partnerships with influential nutrition organizations, funding scientific research, publicizing the results of favorable studies, and supporting professional organizations, journals, and conferences.²⁶ Ultimately, Nestle argued that the facts about a good diet were clear, consistent, and straightforward: people needed to eat more fruits and vegetables and less meat, dairy, and processed food. Confusion about what to eat was produced at the intersection of the media and the food

industry. “The greatest beneficiary of public confusion,” Nestle argued, “is the food industry.”²⁷

While Nestle continued to advance this sociocultural understanding of the causes of obesity and call attention to the food industry’s use of scientific knowledge and authority to distort public perceptions of good food in more books and a long-running blog, others championing this frame included Kelly Brownell, of Yale’s Rudd Center for Food Policy and Obesity. Brownell, named one of the world’s 100 most influential people by *Time* magazine in 2006, built on Nestle’s work in many ways, including by following up on her argument in *Food Politics* that parallels between the food industry and Big Tobacco were “impossible to avoid.”²⁸ Brownell and Katherine Battle Horgen advanced a “toxic environment” explanation for obesity in their 2004 book, *Food Fight*.²⁹ The book argued that the food industry played a central role in creating and maintaining structural conditions that were overwhelming people’s willpower and preying on their biology. Their analysis included the role of increasingly sedentary lifestyles but focused on the fundamental economic conditions they saw as creating the obesity epidemic: the overproduction of calories leading to the food industry’s many strategies designed to sell them. The problem, they argued, was not that people were irresponsible or lacking willpower but that “unhealthy food is convenient, accessible, good-tasting, heavily promoted, and cheap. Healthy food is harder to get, less convenient, promoted very little and more expensive.”³⁰

Given these conditions, Brownell and Horgen explained, it is “perfectly understandable” that people would eat more, exercise less, and gain weight.³¹ But they were also concerned about how the food industry exercised its power, including through trade associations, to discredit critics and undermine public health by

manipulating scientific knowledge and authority. They explained that for critics like themselves, the very idea of “the food industry” evoked the actions of trade groups that worked to lobby on behalf of particular categories of foods. They pointed to trade associations such as the GMA and the National Soft Drink Association, explaining that it was through the actions of such groups—their congressional testimony, websites, journals, and more—that the “the food industry” became an organized and coherent entity, also noting the problem of the notoriously tight relationships between the food industry and regulatory agencies such as the USDA.³²

Both *Food Fight* and Brownell’s 2009 article with Kenneth E. Warner provocatively titled “The Perils of Ignoring History: Big Tobacco Played Dirty and Millions Died. How Similar Is Big Food?” pointed to close political and financial connections between Big Tobacco and the food industry, as well as similarities in how they used science and scientific authority to defend against critics. They argued that, like Big Tobacco, the food industry claimed a commitment to public health while emphasizing personal responsibility, sought to influence policy decisions in its own favor, contributed millions in political donations, disavowed the effects of advertising on consumption, and silenced critics. Like Big Tobacco, the food industry also paid scientists to produce research instilling doubt, criticized science finding harm from their products, diverted attention away from food, and falsely argued there was no nutrition consensus.³³ Thus, the subsequent uptake of the term “Big Food” by proponents of the sociocultural obesity frame, as well as those critical of the food industry for an array of related reasons, was not just about the size and, thus, power of food corporations. It also expressed these critiques of how the food industry behaved like Big Tobacco, manipulating

scientific knowledge and leveraging scientific authority to defend itself from critics and deflect responsibility for obesity.³⁴

ECOLOGICAL FOOD MOVEMENTS

These critical views of processed food and the food industry and its relationship to scientific authority were reinforced at the intersection of ecologically oriented food movements, or “alternative food movements,” of the early twenty-first century.³⁵ Like the sociocultural frame for obesity, these food movements questioned the goodness of processed food and called for new ways of understanding food and health that were broader, encompassing not only things that could be measured by science but also sociocultural as well as ecological factors. While best known for efforts to forge and support alternatives to the industrial food system, these movements also challenged expert authority over the definition of “good food.” They were rooted in not only intellectual and activist traditions around purity and agriculture but also social movements that simultaneously championed real food and contested scientific expertise.³⁶ For example, they rekindled a dormant health food movement that had historically promoted alternative understandings of health and challenged the authority of the mainstream scientific and medical community. Natural food proponents rejected decades of assurances from scientific authorities about the safety of conventionally produced foods, but this was not just a disagreement over the facts. It was also a contest between different worldviews. Natural food proponents have historically raised questions about the kind of knowledge that matters when it comes to food and health, refusing to take for granted the primacy of scientific expertise and emphasizing differences in individual responses to diet rather than statistical

averages.³⁷ The food movements of the early twenty-first century were also influenced by the food and identity politics of the 1960s counterculture, or what Belasco calls the “countercuisine.” As he explains, the countercuisine was shaped by a set of contrasts that expressed ideas about both food and politics, including the politics of expert authority. Proponents embraced “brown” over “white” food and craft over convenience while also championing “improvisation” instead of “specialization,” aligning with the broader countercultural goal of undermining the rule of experts and returning power to ordinary people.³⁸

Pioneering intellectuals and activists who laid the groundwork for the ecological food movements of the early twenty-first century urged people to think about food through new lenses, moving beyond the nutritional framework that had dominated dietary discourse since its emergence in the late nineteenth century. For example, Joan Dye Gussow, hailed by the *New York Times* as the “matriarch of the eat-locally-think-globally food movement,” articulated the ecological ethos of good food as a direct challenge to established forms of nutritional expertise, arguing that averting environmental disaster would require looking through “macrosopes” rather than microscopes.³⁹ In a 1981 essay she criticized her own field of nutrition for looking at ever smaller and smaller aspects of food, breaking it down into microscopic pieces and “looking at the isolated effects of the isolated behaviors on isolated food substances in isolated biological systems.” She argued for the importance of looking beyond connections between nutrients and cells to consider connections between farmers and producers, food policies and environmental policies, the cost of energy and the cost of food, and so on.⁴⁰ While not taking on nutrition as directly, the farmer, poet, and environmental activist Wendell Berry urged people to understand eating as an

“agricultural act” with wide-ranging implications for “how the world is used.” For Berry, eating was a form of politics that was profoundly connected to questions of freedom and democracy. He urged people to resist the role of passive consumer that served the system of industrial food production by understanding the role they played in the economy of food and learning to eat responsibly. He wanted people to think about good food in these broader terms, taking politics as well as aesthetics and ethics into consideration, and argued that the pleasure derived from knowing where food comes from “may be the best available standard for our health.”⁴¹

Building on these legacies and responding to a growing awareness of the ecological impacts of the industrial food system, early twenty-first-century food movements focused on creating markets for sustainably produced food, including by changing the lens through which people thought about good food.⁴² They worked to improve farming and food both by forging more direct connections between consumers and producers and by teaching people to consider the impacts of their food choices far beyond their own health. They urged people to eat in accordance with food system ideals related to sustainability, as well as supporting local economies and communities. Farmers markets, community gardens, community supported agriculture, farm to school programs, and a boom in organic agriculture were all results of these movements. Across these efforts, processed and fast food came to be seen, through these new lenses, as both bad food and emblematic of larger problems in the food system.⁴³ As the food systems scholar Julie Guthman argues, the alternative food movement was one of the most successful activist movements of its time and “in an important sense redefined good food from ‘healthy’ to ‘real.’”⁴⁴

Pollan’s wildly popular writing helped popularize both the idea that “real food” was better than processed and the argument that new lenses were needed for thinking about good food. While I have critiqued Pollan’s views on eating right elsewhere, here I am interested in highlighting how he also brought a critique of nutrition science and its relationship to the food industry into the popular discourse.⁴⁵ Pollan captivated the nation’s attention with his critical perspective on the industrial food system and advice about choosing real food in his 2007 *New York Times Magazine* article, “Unhappy Meals,” and 2009 book exploring the same themes, *In Defense of Food*. That book spent six weeks on the *New York Times* best-seller list, and its core ideas were soon after distilled in a compilation of rules, also published in 2009.⁴⁶ A whimsically illustrated edition with an additional nineteen rules came out in 2013, and in 2015 *In Defense of Food* was adapted as a PBS documentary. The basic advice at the heart of much of Pollan’s work—“Eat Food. Not Too Much. Mostly Plants”—provided a simple, memorable way of thinking about what to eat that hinged on the distinction between “whole foods” and “edible foodlike substances” or “novel products of food science.”⁴⁷ But this advice not only vilified processed food and the food industry. It also expressed a critique of expert authority over questions of good food.

Writing at the intersection of ecological critiques of the industrial food system and the sociocultural obesity blame frame, Pollan echoed many of the arguments about the misuses and manipulation of science discussed in the previous section. But Pollan also went further, drawing heavily on the work of the Australian social scientist Gyorgy Scrinis to directly challenge nutrition’s authority over the question of what to eat. Borrowing Scrinis’s analysis and coinage, Pollan introduced readers to the

concept of “nutritionism,” or the idea that nutrition was an ideology built on the basic assumptions that nutrients are the key to understanding food, that they can only be understood by experts, and that the whole point of eating is biomedical health.⁴⁸ He critiqued the food industry’s influence on government dietary guidelines but also argued that the problem wasn’t just how nutrition was used, but what the science itself was capable of. Like Gussow, he pointed to its narrow approach focusing on single nutrients in isolation, noting that reductionism was perhaps necessary given the field’s tools and objectives, but it was inevitably misleading because “people don’t eat nutrients; they eat foods.”⁴⁹ By removing foods from their context, nutritionism prevented people from recognizing that the larger problems in the food system had to do with not just particular nutrients or foods, but large-scale shifts “from whole foods to refined foods” and “from food culture to food science,” as well as the rise of nutritionism itself.⁵⁰

Pollan argued that nutritionism served the interests of the food industry; its narrow lens was in part why processed food had passed as good food for so long. Because nutrition sees only nutrients, “qualitative distinctions between processed foods and whole foods disappear,” which, Pollan pointed out, was a “great boon” for manufacturers. Nutritionism provided a rationale for both processing food and then further processing foods to align with the latest nutritional theories, for example, by lowering fat or boosting probiotics. Meanwhile, “real food” could not compete under the rules of nutritionism. It could not be reformulated in response to changing nutrition guidance and tended not to come in packages that could bear the sort of single-nutrient health claims that are nutritionism’s hallmark.⁵¹ “No idea,” Pollan wrote, “could be more sympathetic to manufacturers of processed food.”⁵² He challenged his readers to question the outcome of putting “science and scientism in charge of the American diet,” urging them to

seriously reconsider placing “the authority of science above culture” when it comes to deciding what is good to eat.⁵³

NOVA

The argument for using a broad lens to assess food quality, encompassing far more than what nutrition or any science could account for, was eventually taken up and codified into dietary guidance by Brazilian public health researchers. Primarily driven by concerns about obesity, researchers at the University of São Paulo led by Carlos Monteiro challenged the established nutrition paradigm by introducing a new food classification system called NOVA, meaning “new” in Portuguese. Applying a “macroscopic” rather than microscopic lens, NOVA centered processing as a way of thinking about good food while also taking factors such as marketing into consideration. Monteiro first introduced the ideas behind NOVA in a 2009 article in *Public Health Nutrition*, the title of which captured the paradigm-shifting contention that would remain at the heart of this work: “Nutrition and Health. The Issue Is Not Food, nor Nutrients, So Much as Processing.”⁵⁴ The article acknowledged and recommended the work of Michael Pollan, and Monteiro and Scrinis would ultimately become collaborators. The following year, Monteiro published a commentary in the journal of the World Public Health Nutrition Association that began with this striking sentence: “The most important factor now, when considering food, nutrition and public health, is not nutrients, and is not foods, so much as what is done to foodstuffs and the nutrients originally contained in them, before they are purchased and consumed. That is to say, the big issue is food processing . . . and what happens to food and to us as a result of processing.”⁵⁵

Monteiro went on to explicitly name the epistemological crisis caused by the obesity epidemic and the failure of nutrition science

to prevent or curtail it. “To be blunt,” he explained, “our science has become somewhat discredited,” in part because it had retained obsolete food classifications.⁵⁶ He also noted that the theory he was proposing could not be proven precisely because the field of nutrition had historically grouped foods according to their chemical constitution (i.e., food groups), with little to no attention to processing. In other words, the science needed to prove his theory had not been done, but, he argued, “there are occasions in public life that are so urgent, important and critical, that action must be taken before all the evidence that makes scientists and civil servants comfortable is in.”⁵⁷ He described the new mode of dietary guidance he proposed as using a “big picture approach” for thinking about good food. Therefore, it required types of evidence and kinds of expertise not usually considered relevant. Understanding good food would require taking seriously evidence produced by the so-called soft social sciences, and identifying nutrition as a “social, economic and environmental discipline.”⁵⁸

The classificatory system Monteiro proposed would replace established guidance based on food groups with a focus on processing, yet moved beyond the vague idea that food processing in general was a public health issue, instead specifying “the nature, extent and purpose of processing, and in particular, the proportion of meals, dishes, foods, drinks and snacks within diets that are ‘ultra-processed.’” Anticipating the reaction of the food industry, Monteiro assured readers of his 2010 commentary that it was not meant as an attack on the food industry, noting the many benefits of modern methods of food production, manufacture, distribution, and sale. He did note, however, that the piece was “indeed implicitly sharply critical of the current policies and practices of food and drink manufacturers, caterers and associated industries, whose profits currently depend on the sale of what are termed here ultra-processed products.”⁵⁹

Monteiro and his collaborators’ central claim was that the rapid rise of ultra-processed food and drinks since the 1980s was the primary cause of the global rise in obesity and related diseases because of their energy density, appeal, and availability.⁶⁰ They initially outlined three categories of food: unprocessed or minimally processed, processed, and ultra-processed. Later iterations of the system would have four groups but remained focused on identifying the characteristics of those foods most important to limit in pursuit of better population health, that is, ultra-processed foods. Monteiro and coauthors described ultra-processed foods as “edible and usually very palatable” but “not real foods,” yet distinct from other forms of processed foods. What set ultra-processed products apart was that they “are not made from foods. They are made from ingredients,” some of which are derived from foods (e.g., oils, fats, flours, and sugars) but most of which are additives that “make the product look, smell, feel and taste like food.”⁶¹ They called the impact of such products a “public health catastrophe” not just because of how they were made but also because of how they were consumed: “any time, everywhere.” Ultra-processed foods were energy dense, hyper-palatable, very easy to consume, falsely seen as healthy, and aggressively advertised and marketed.⁶² By 2014 the NOVA classification was being used by researchers around the world to track and analyze changes in dietary patterns, assess the impact of industrial food processing on overall quality of diets, and study the availability of ultra-processed products in urban settings. It was also incorporated into the Brazilian Ministry of Health’s official Dietary Guidelines.⁶³

It didn’t take long for Monteiro’s ideas to be picked up by the US press and taken up by the many advocates for food and health reform who were already embracing a “big picture approach,” raising alarm about problems with processed food, and challenging established nutritional expertise. A week after

Monteiro’s commentary was published, CBS News published an online article, “What a Junk Food Diet Tells Us about the Dismal State of Nutrition Science,” describing Monteiro’s “chiding” of fellow nutrition scientists, introducing readers to the term “ultra-processed food,” and making connections to the work of “food industry nemesis,” Michael Pollan.⁶⁴ Over the next few years the concept of ultra-processed food went from unknown to part of the vernacular of eating right. Uptake of the term and concern about ultra-processed foods spiked in 2016 following the publication on *BMJ Open* of a study by Monteiro and his team in collaboration with researchers from Tufts showing that ultra-processed foods made up more than half of all calories consumed in the US and contributed to nearly 90 percent of all sugar intake.⁶⁵ An *Atlantic* article covering the study opened by noting that Pollan’s advice “that people should ‘eat food, not too much, mostly plants’ is oft-quoted, less oft-followed.” It went on: “Once again, research has demonstrated that Americans actually tend to eat food, too much, mostly things that are no longer recognizable as plants, if they ever were,” and ended by making up a “Pollan-esque mantra” for cutting out “ultra-processed sugar bombs” like soda: “Drink liquids, not too sugary, mostly water.”⁶⁶ While the term “ultra-processed food” referred to a category of foods that public health professionals deemed particularly dangerous to eaters, like “Big Food,” its meaning and salience were rooted in critiques not just of highly processed food itself but also of the limits of nutrition science as a way of knowing good food.

TECHNOLOGICAL RISK AND DEREGULATION

Ideas about good food, in flux for all the reasons described above, were at the same time transformed by changing attitudes about the use of technology in food production that reframed

processed food as risky and added to growing skepticism about the food industry and its relationship to scientific authority. After decades in which science and technology were understood to make naturally occurring risks manageable, toward the end of the twentieth century, people became increasingly aware of, and sensitive to, risks generated by science and industry.

As Ulrich Beck has famously argued, during this time risk became a defining attribute of Western societies, as people became increasingly aware of the negative effects of scientific and technological developments, the benefits of which they increasingly took for granted.⁶⁷ Unlike danger, which was perceived as outside one's control, risk was a unique state in which harm seemed imminent, and something should be done about it. While identifying and avoiding risk became a shared preoccupation, risks were complex and largely invisible. Navigating them required reliance on scientific expertise, but the public lost faith in experts to both manage risks and communicate with the public about them. In this context defining risk, and the questions about risk that were important to ask, became increasingly politically fraught.⁶⁸

It was within these broader dynamics of risk that the public became especially sensitive to risks associated with food production, including agriculture and processing, and increasingly skeptical of information about food-related risk provided by science, industry, and the government.⁶⁹ Concerns about the purity and safety of the food supply had been around for a very long time, but technological changes that accompanied twentieth-century industrialization, such as the growing use of chemicals in food production and the industrialization of agriculture, raised new concerns about risks related to everything from chemical additives, preservatives, and packaging to the use of antibiotics in animal agriculture.⁷⁰ The internet emerged alongside these changes, providing new means of communicating about food

risks, while traditional media sources also paid increasing attention to claims and counterclaims about food risks.⁷¹

Agriculture technologies, such as genetic engineering and pesticides, and food processing technologies, such as artificial ingredients, were all called into question. All of this led to changing understandings of good food; where people had previously associated risk with natural foods, they came instead to associate risk with processed food and healthiness with “real” food.⁷² But public concerns about the role of technology in the food system were not simply about healthiness, or even food safety.⁷³ They also included the ecological impacts of the ongoing pursuit of efficiency and productivity through technological solutions, as seen in the food movements described above. And they included growing skepticism about expert claims related to new technologies in the food system. The use of biotechnology in food production, for example, became highly politicized at the intersection of concerns about health, environmental effects, power, and inequality in the global food system and doubts about the ability of experts to understand public concerns and effectively regulate risks.⁷⁴

At the same time that the public became more sensitive to risks from technologies used in food production, the regulatory landscape for food in the US loosened and responsibility for self-protection was largely shifted to individual consumers. These changes reflected neoliberalism’s privatization of state functions and deregulation of markets.⁷⁵ But the regulatory system for food in the US was already built around a “proof of harm” model that favored industry. In *Better Safe Than Sorry*, the sociologist Norah MacKendrick describes this as a “safe-until-sorry” approach because it required evidence of harm to accumulate before restrictions were put into place. This contrasts with a policy approach

based on the precautionary principle, in which regulators prioritize preventing harm to human health or the environment, even when evidence is inconclusive. While this model has been at the center of European environmental policy since the 1970s, the US has taken a “hostile approach” to the precautionary principle, which has been framed by business interests as a threat to innovation and economic growth.⁷⁶

According to MacKendrick, during the 1990s a regulatory system already favoring industry through its proof-of-harm orientation turned decidedly toward encouraging innovation and profit rather than environmental protection and public health.⁷⁷ When it came to agricultural pesticides, the 1996 Food Quality Protection Act (FQPA) adopted an unusually precautionary approach and was designed to ensure reasonable certainty of lack of harm from pesticide residues in food. However, as MacKendrick explains, it was never implemented in a way that would allow it to achieve these aims. The FQPA was meant to consider aggregate exposure to pesticides from food and other sources, but only a small amount of food was tested, tolerance levels were set higher than those in the European Union (EU), and testing and monitoring were split among agencies and divisions within agencies. For example, the USDA collected data on residue but was not able to use it for regulatory purposes, and the FDA was not required to test for all tolerances set by the Environmental Protection Agency (EPA). According to the US Government Accountability Office, testing methods used by the FDA and the USDA were “insufficient for safeguarding public health.” In response to the poor implementation of the FQPA, environmental groups worked to raise public awareness about insufficient monitoring of pesticide residues on food and provide tools to help consumers avoid them. The Environmental Working Group (EWG), for example,

began publishing its annual “Dirty Dozen Guide” calling out fruits and vegetables with high residue levels in 2004.⁷⁸

As MacKendrick notes, the 1990s were also a turning point for the regulation of chemical additives used in processed foods. To lessen a backlog of applications from companies seeking to introduce new chemicals, the FDA expanded GRAS (Generally Recognized as Safe) certification, originally intended for additives known to be safe, to allow processors to bypass formal review of new additives (except colors). GRAS was created as part of a 1958 food additive law that assumed all new substances would go through a rigorous review process but established a list of substances that were generally recognized as safe, such as spices, salt, and yeast. The process of getting new substances onto the GRAS list was far easier than getting them approved through the review process, and many companies took advantage of this. But in 1997 the FDA made a change to the rules that opened the floodgates and basically sidelined the more stringent process. Rather than petition the FDA to review an item that a company wanted to add to the list, in the new process companies only needed to notify the FDA after making their own safety assessment. Companies were supposed to adhere to guidelines for making those assessments, but they were nonbinding and the agency provided no oversight regarding the qualifications of those enlisted to conduct the reviews.⁷⁹ A 2011 report on food additives by the Pew Charitable Trust found that a third or more of the ten thousand chemicals that could be put in food were never formally reviewed by the FDA.⁸⁰ An updated report published by Pew in 2013 determined “the FDA regulatory system is plagued with systemic problems” that prevented the agency from ensuring that additives allowed in food are safe. It noted, among other things, that it was impossible for the agency to connect an additive to health problems

because it had not been notified of an estimated one thousand chemicals used in food, had not been informed of actual usage for all chemicals, and had not been alerted to studies suggesting previously unknown potential health effects.⁸¹

Also in the 1990s, the first genetically modified food—the Flavr Savr tomato—arrived in US stores with no labeling requirement. While the EU, oriented to the precautionary principle, restricted the use of genetically modified organisms in agriculture beginning in 2001, the US was far more permissive. In the absence of restrictions, US consumers and environmental groups began to demand labels that would allow them to at least decide for themselves if they wanted to consume foods produced using biotechnology. The nonprofit Non-GMO project was launched in 2007 and by 2017 had verified the absence of genetically modified organisms in over forty-three thousand products. Meanwhile, food industry trade groups spent decades successfully lobbying against mandatory labeling.⁸²

Within this confluence of heightened risk awareness and regulatory laxity, food became an acute arena of risk negotiation for both the food industry and the public. Working largely through trade associations, the food industry sought to downplay risks related to food, while individual eaters decided for themselves what to put into their own bodies or feed to their families.⁸³ Pressure to avoid technological risks related to food was especially acute for women, as powerful ideologies of motherhood made them responsible not only for their own health but also for the safety and purity of children. MacKendrick and others have found that women across the class spectrum experienced intense pressure to produce both healthy children and a healthy planet by providing “safe” and “clean” food.⁸⁴ Mothers sought out what they thought of as “organic” food, which was not necessarily certified

organic but considered “pure, uncontaminated, and lacking the chemicals used in conventional industrial agriculture.”⁸⁵ In the absence of a precautionary regulatory environment, they adopted time-, labor-, and resource-intensive shopping routines to provide the safest possible food for their families.⁸⁶

Meanwhile, guides, labels, and shopping environments evolved to help shoppers avoid technological risks but at the same time amplified risk awareness and the pressure to avoid potentially dangerous ingredients. A steady stream of consumer guides, such as the “Dirty Dozen,” were designed to help people avoid harm but also raised awareness of potential risks. MacKendrick found over twenty-seven organizations publishing consumer guides to help people avoid chemical toxins in food. Together, they recommended over sixty actions that consumers should take to protect themselves. Choosing certified organic fruits and vegetables was among the most common recommendations, but the guides also urged shoppers to avoid synthetic additives (artificial colors, thickeners, and sweeteners), stay away from canned food, and cook from scratch to avoid processed food.⁸⁷ Retail environments, such as Whole Foods Markets, also amplified concerns about risk in the context of helping consumers navigate them. Their quality standards and the free-from claims on packages up and down the aisles simultaneously established reasons for concern and sold solutions to them.⁸⁸ According to MacKendrick’s interviews, women shopped in these curated retail spaces and looked for certified organic food and other promises of purity “as a reaction to the increasing complexity, invisibility and secrecy that characterizes the industrial food system.”⁸⁹ They understood that choosing organic and “real” food was an inadequate response to risk, but “it remain[ed] their only option.”⁹⁰ These shoppers, striving to negotiate heightened risk related to food

production in order to be good eaters and good mothers, were the very same ones imagined and projected as irrationally fearful, misinformed, and even antiscience by Kennedy, SciBabe, and other Real Facts frame proponents.

The Real Food frame I describe here was not itself a social movement but the result of distinct yet overlapping movements that converged to change commonly held ideas about good food while also challenging established scientific ways of knowing about food and health. The activists, advocates, and social movements that raised and sought to address concerns about obesity, the ecological impacts of food production, the health effects of highly processed food, and the confluence of technological risk and deregulation offered a shared piece of advice for people wanting to “eat right”: avoid processed food and choose real food instead. While the idea that good food was real came from these distinct concerns and movements, it also took on a life of its own, loosely reflecting a generalized skepticism about processed food, the food industry, and the industrial food system.

Told through a focus on what people understood and desired, rather than what they were anxious about, the story of how good food became “real” is not about ignorance, misinformation, and the internet run amok. It shows that the Real Food frame expressed a sociocultural view of good food that included and was inseparable from political issues. These included how the food industry leveraged its power to influence scientific research and the public’s access to information about food, the impacts that eating had beyond individual health, the structure of the food system, and regulatory laxity. The Real Food frame didn’t just challenge the goodness of processed food. It also challenged established scientific ways of thinking about good food

by insisting on the importance of questions that could not be answered by science: What role should the food industry play in promoting a healthier sociocultural environment for food choice? What could a food system look like if it was driven by ecological and cultural knowledge and values? How can dietary advice help people understand food, beyond what nutrition can measure? Can experts be trusted to understand public concerns about technology and effectively manage risks? Thus, the Real Food frame was not antiscience, but it did challenge food scientism and the food industry's investment in it.

It was this insistence on broadening the lens for understanding good food and asking questions that science could not answer that Real Facts proponents insistently reframed as the result of deficits of scientific knowledge. Focusing on the negative anxieties propelling Americans away from processed foods and drawing on established deficit models of the public understanding of science, representatives of the food industry treated people seeking to avoid processed food as irrationally fearful of things they did not understand: the science of food formulation and processing, the fact that all foods are made from chemicals, the reality that nature is not benign, and so on. The rest of the chapters highlight how the Real Facts frame foreclosed possibilities for the questions about food, the food system, and scientific authority that drove the Real Food frame to be taken seriously.