

# Introduction

## *Seeing Food Scientism*

In February 2014 I was invited to be a lunchtime speaker at the California League of Food Processors annual Food Processing Expo at the Sacramento Convention Center. The email flyer promoting my talk also advertised a breakfast talk by David Schmidt, president of the International Food Information Council (IFIC), about consumer opinions of processed food and what the industry could do to improve them. Intrigued, I attended the talk. Schmidt began by addressing the tough times food processors in California were facing because of the ongoing drought. He wished it was the only problem facing the processed food industry, but there was another major concern that he wanted to address: misinformation and falsehoods about the processed food industry. He explained that IFIC, which describes itself as “a nonprofit educational organization with a mission to effectively communicate science-based information about health, nutrition, food safety and agriculture,” had been conducting research on consumer perceptions of processed food since 2008 and had found “a pretty negative environment.” The research suggested that across all demographics

there were high levels of negative association with processed food; 43 percent of consumers reported an unfavorable opinion of processed food, and only about 18 percent were willing to say they were positive. Furthermore, negative perceptions weren't just being driven by the media; they seemed to be coming from all information sources. Schmidt also noted that there seemed to be no one talking about the benefits of processed foods. Many IFIC members were even promoting their processed products as "natural."<sup>1</sup>

The rest of Schmidt's talk discussed IFIC's efforts to do something about this negative environment for processed food. The organization started by publishing a white paper reviewing the scientific basis for food processing and processed food with the Institute of Food Technologists (IFT), a professional society representing food science and technology. Building on this, IFIC developed "consumer friendly messaging platforms" and put together an "Understanding Our Food Communications Tool Kit" for communicators and opinion leaders in agriculture, food, and nutrition. Because agricultural biotechnology had become such a "heated issue," IFIC also put together a "Food Biotechnology" communicator's guide that included a chapter titled "Words to Use and Words to Lose." The last initiative Schmidt talked about was the Alliance to Feed the Future, a new organization established by IFIC to "provide a balanced public dialogue about how modern agricultural technology innovation and food production benefits society." The Alliance already had 118 members, including the Northern California League of Food Processors, and Schmidt talked about the success of its first initiative. Responding to "very misleading perceptions of food and agriculture" in the movie *Food, Inc.* and a "multi-million-dollar curriculum being shared in schools right now to further communicate this information,"

the Alliance put together its own educational curriculum for grades K–8, which had already reached 750,000 teachers and 4.5 million students.<sup>2</sup>

Captivated by what I heard that morning, I started to wonder what was really going on with processed food. I didn't need IFIC's research to tell me that perceptions of processed food had become very negative. That was obvious. The question of whether processed food was good or bad seemed an impossibly fraught one, not least because it wasn't even clear what "processed food" was. On one extreme, critics suggested that all processed food was bad and should be avoided, advice that was impossible to follow since it was never clear where the line was between processed and unprocessed food. On the other extreme, advocates argued that all food was processed, so attacking processed food was nonsense; even organic spinach had been washed, and many staples beloved by real food proponents (e.g., canned tomatoes, olive oil, coffee) were processed foods. But Schmidt's talk suggested that the friction over processed food was about more than whether it was good or bad to eat and that it had something to do with the status of scientific knowledge and expertise.

From my perspective, grounded in food studies, negative perceptions of processed food expressed and encompassed a whole range of concerns about the industrial food system, having to do with health, safety, sustainability, and more. But IFIC seemed to think that public concerns about processed food stemmed from scientific ignorance and could be addressed with the facts about food production and processing. The introduction to IFIC's "Understanding Our Food Communications Tool Kit," for example, explained that while many people are concerned about food processing, "some views result from lack of awareness about these processes and foods." The goals of the tool kit were

to “communicate facts about modern food production,” “clear up misinformation about processed food,” and “guide consumers and clients to make the best food choices for health and lifestyle.”<sup>3</sup> The “Food Biotechnology” communicator’s guide described consumer opinions as “based on emotion” and began with a large graphic advising readers to “communicate the facts clearly and concisely.”<sup>4</sup> In 2014 IFIC launched the FACTS (Food Advocates Communicating through Science) Network to “combat the growing tide of deceptive advice, misleading statistics, and alarmist tactics that define much of today’s food and nutrition dialogue.”<sup>5</sup> The next year, the FACTS Network published a three-part series in the spirit of *National Geographic*’s “War on Science” series called the “War on ‘Food’ Science,” each piece featuring experts sharing the science on “commonly miscommunicated topics” such as weight loss, BPA (bisphenol-A), and artificial sweeteners.<sup>6</sup>

Because I have a joint faculty appointment in my home field of American Studies and in the Department of Food Science and Technology at UC Davis, I frequently encountered the idea that public perceptions of processed food were based in irrational fears and lack of scientific understanding. I saw it in the pages of the food industry magazines that arrived in my campus mailbox, the emails I received about educational programming from IFT, the sessions I attended at IFT’s annual meetings, and at conferences and talks I attended on my own campus. Eventually I decided to try to make sense of all this. This book, which is the result of that effort, focuses on the knowledge politics that are at the heart of the friction between the food industry and the public when it comes to processed food. I push back against the food industry’s framing of consumer aversion to processed food as based in lack of scientific literacy and its framing of the processed food controversy as a conflict between science on one side and

antiscience on the other. Instead, I ask what the processed food controversy can tell us about the role of scientific authority in the relationship between the food industry and the public.

My real concerns have to do with how the food industry's deployment of scientific authority limits the potential for meaningful contestation over the trajectory of the food system, and I make two central claims about this. I argue that in responding to growing concerns about processed food among both activists and the public in the early decades of the twenty-first century, the food industry leveraged scientific authority to claim and maintain the power to define the questions that mattered and the conversations that were reasonable to have about the food system. I also argue that the food industry imagined and projected the public as lacking the skills and capacities to engage with science and technology or its governance. Doing so has helped justify not taking public concerns about the food system seriously.

During the early years of the twenty-first century, ideas about good food were transformed by growing awareness of health, environmental, social, economic, animal welfare, and other effects of industrial food production, giving rise to changes in individual behavior and a range of well-documented consumer and social movements related to food.<sup>7</sup> I move questions about science and technology to the center of our understanding of the politics of food at this time not only because the food industry marshaled scientific authority in its own defense but also because concerns about science and technology and its governance cut across these movements. Movements promoting organics and farmers' markets, combating obesity, reforming animal agriculture, resisting biotechnology, fighting for food safety, and more took up questions about the uses of technology in food production as well as the role of scientific authority in the food system. At the

same time, these movements were shaped by doubts about the capacity of experts to understand and respond to public concerns about these uses of technology and science and scientific authority.<sup>8</sup> Scholarship addressing the role of science in the friction between the food industry and the public has largely focused on how organizations representing the food industry, such as IFIC, have thwarted effective science communication, emphasizing the potential public health consequences of its manipulation of information about food and health.<sup>9</sup> While this work is important, it focuses on knowledge, or what people know about food and the potential health impacts of particular foods. I contend that it is crucial to also understand the role of knowledge politics, or how scientific authority has been both contested by the public and leveraged by the food industry.

#### PROCESSED FOOD FRAMES

My analysis revolves around how different actors in the food system understood and addressed the problem with processed food differently. For food industry representatives, the problem with processed food was that the public had negative attitudes about it because of misinformation and misperceptions. They were concerned that such attitudes were affecting purchasing behavior, leading to the “deselection” of processed products, in addition to overall negative perceptions of the food industry. But for many others, the problem was with processed food itself. Among those concerned with public health, processed food was a problem because its poor nutritional composition (too much salt, sugar, and fat) combined with its ubiquity seemed to be causing population-wide health problems such as obesity, diabetes, and cardiovascular disease.<sup>10</sup> Another set of activists and activated

consumers considered processed food the troubling product of a troubled food system—detrimental not only because of population- or individual-level health effects but also because of its central place in an industrial food system that was responsible for a litany of environmental, social, economic, and other ills.<sup>11</sup> Among consumers and activists concerned about regulatory laxity and risks related to food production technologies, such as synthetic additives, processed food was considered dangerous because some ingredients were a threat to the short- and long-term health of individuals.<sup>12</sup>

The processed food controversy was, in other words, a framing contest, a competition over credibility, authority, and influence between different frames or different ways of seeing the same thing, leading to different courses of action.<sup>13</sup> The frame I call “Real Food” led to calls to avoid processed food and reform the food system. The frame I call “Real Facts” responded with education and communication designed to address a lack of scientific literacy among the public. But these frames represent more than just ways of thinking about processed food, and though they may appear to compete over correct or incorrect knowledge, my interest lies in looking beyond this.

The Real Food and Real Facts frames resemble the “contending lifeworlds” that Rachel Schurman and William Munro, authors of *Fighting for the Future of Food*, identified among agribusinesses and activists fighting over biotechnology at the turn of the twenty-first century. They describe contending lifeworlds as comprising shared social circles and intellectual communities as well as shared mental worlds, or taken for granted beliefs, judgments, and assumptions. As they point out, shared lifeworlds generate and naturalize “certain broad visions of the world, as well as interpretations of specific phenomena.”<sup>14</sup> Different understandings

of science and its role were important components of these contending lifeworlds. Those promoting biotechnology believed in “the fundamentally positive nature of science,” and they were invested in the idea that “a scientific perspective, which relied on ‘hard facts,’ and empirical evidence rather than on religion, value judgements or emotion, was quintessentially rational.” They also assumed that the public was unable to meaningfully participate in the debate about genetic engineering because it lacked basic scientific knowledge.<sup>15</sup> In contrast, the lifeworld shared by activists centered a shared grievance against agricultural biotechnology that was shaped by concerns about health and environmental impacts as well as power and inequality in the global food system, including the privatization of “the ‘basic building blocks of life’” and “the use of science for private gain rather than public good.”<sup>16</sup> It was bound by shared moral outrage and a commitment to doing something about the new technologies.<sup>17</sup>

Competing processed food frames also resonate with the competing paradigms Tim Lang and Michael Heasman discuss in their “food wars thesis.” They describe a paradigm as “a way of thinking, a set of assumptions from which new knowledge is generated, a way of seeing the world which shapes intellectual beliefs and actions.” Food paradigms are “a set of shared understandings, common rules and ways of conceiving problems and solutions about food.”<sup>18</sup> Lang and Heasman explain that a productionist paradigm oriented toward producing more food dominated food policy throughout much of the twentieth century and that as it wanes two paradigms compete to replace it. The “life-science integrated paradigm” and the “ecologically integrated paradigm” not only rely on different sciences (biotechnology in the former and agroecology in the latter) but also are driven by different understandings of the role of food in the relationship between humans



and the environment (mechanistic vs. holistic) and the role of knowledge in food policy (top down and expert led vs. knowledge as empowerment).<sup>19</sup> Though I use the term “frames” to highlight that Real Food and Real Facts are different ways of seeing the same thing, I am interested in the fullness of values, culture, and knowledge politics informing competing approaches to the food system that are captured in these complementary discussions of “lifeworlds” and “paradigms.”<sup>20</sup>

In identifying and analyzing the processed food controversy as a framing contest between Real Food and Real Facts, my intention is to highlight how these different ways of thinking about and acting in relation to processed food are linked to struggles over authority—not just right or wrong knowledge, but the kinds of questions and expertise that matter when it comes to food, health, and the food system. Decades ago, in her President’s Address to the Society for Nutrition Education, the celebrated nutritionist, educator, author, and gardener Joan Dye Gussow made a compelling case for paying attention to how certain questions about food came to matter. Gussow argued that while conflicts over processed food and the industrial food system may appear to be about data, or what is true, they are actually about what the facts mean and what should be done with them. She went on to explain that these are questions that research cannot answer: “Only when we keep the whole system in mind and decide which arrangements of the relevant facts make the most sense, only then can we decide which facts about any isolated piece of the system are relevant, and in that sense ‘true.’”<sup>21</sup>

As in the lifeworlds, paradigms, and frames discussed above, Gussow argued that the really important issues have to do with which questions about the food system are deemed worth asking. What questions people consider worth asking, she argued, tends

to be shaped by the views they start out with. To use her example, when faced with the same information about fiber, health, and the effects of processing on food (i.e., fiber is important to health, and processing removes fiber), whether someone deems it important to ask, “In what form should we be fortifying food with fiber?,” or “In what ways should we be modifying our processing methods so as to retain more fiber in food?,” has everything to do with assumptions they already have about the aims and trajectory of the food system. Those asking the first question assume the food system will continue to pursue greater efficiencies through processing, while those asking the second assume that this trajectory cannot continue because of growing pressures on food production and the wastefulness of taking things out of food only to then put them back in. In other words, whether particular questions about food are deemed worth asking is shaped not by data—or questions research can answer—but by frames, worldviews, and paradigms.<sup>22</sup>

#### THE PUBLIC UNDERSTANDING OF SCIENCE FLIP

While this book explores the dynamics of the contest between the Real Food and Real Facts frames, the analysis is not symmetrical. This is not a comparative analysis of competing frames but an exploration of how Real Facts emerged in response to Real Food, how it framed the issues, what kinds of knowledge as well as social and political values and commitments these framings embodied, and their effects.<sup>23</sup> The Real Facts frame was centrally shaped by the deficit model of the public understanding of science, reflecting a dominant cultural narrative in which public skepticism about science and technology was believed to be caused by a lack, or deficit, of scientific knowledge or understanding. Despite research arguing that public concerns about technology are not

caused by ignorance and showing that more information does not necessarily lead to greater acceptance, the assumption has persisted that if the public understood science better, it would accept and celebrate the role technology plays in food production rather than question it.<sup>24</sup> The questions I ask go against the grain of these assumptions and the questions that are normally asked about science and publics.

Rather than look at the public's understanding of science, I explore how food industry actors understood the public, especially vis-à-vis their relationship to science. I think of this move as the "public understanding of science flip," and it builds on the work of scholars in Science and Technology Studies (STS) who have made the case for the importance of understanding "scientific" representations of the public. As the sociologist of science Brian Wynne has famously argued, such representations are themselves often based on misunderstandings that cause more, not less, alienation among the public.<sup>25</sup> Importantly, the public understanding of science flip reframes the problem of public mistrust in science as a problem of how the public is imagined by science. In this case, that means reframing the problem Real Facts proponents are facing in the midst of the processed food controversy from an ill-informed and even "antiscience" public to how they themselves imagine and interact with the public.<sup>26</sup> Taking inspiration from Claire Marris's work on synthetic biology, through this flip I hope to open the taken for granted expectations and "tacit normative commitments" embedded in the Real Facts frame to both understanding and appraisal.<sup>27</sup>

A central insight of the book is that food industry actors expanded and entrenched "food scientism," evoking and deploying scientific authority to assert and justify their own normative commitments, including commercial interests in the processed products of the industrial food system. Scientism describes

claims and assumptions about the primacy of scientific ways of knowing. It includes the assumption that the only questions that matter are those that can be understood through science as well as the use of references to science or scientific authority to frame assertions of values as beyond reproach, debate, or even dialogue.<sup>28</sup> Another form of scientism has to do with “using science as a source of authority in ways that extend beyond scientific and technical domains.”<sup>29</sup> Wynne describes a shift in the role of science, especially since the 1950s, from informing to defining policy issues.<sup>30</sup> Writing with Ian Welsh, Wynne notes that this type of scientism “generates contestation and confusion as the normative commitments built into references to science are presented as if they involve no normative choices, only the findings and declarative authority of science. When others question the normative commitments authorized by science in this way, they are then deemed to be anti-science.”<sup>31</sup> As this description suggests, scientism goes hand in hand with the deficit model of the public understanding of science. In the case of the processed food controversy, the Real Facts frame’s assumption of scientized authority goes hand in hand with its imagined and projected perception of the public as lacking knowledge and understanding of the science and technology involved in food production.

As Wynne argues, a deficit model of the public understanding of science is “almost preordained” as a function of scientific assumptions about the nature of the issues at hand. Critics of the deficit model take for granted that deficits of information and understanding exist but reject the assumption that deficits explain public skepticism about or opposition to projects that, they point out, are justified in the name of science but based on unacknowledged value commitments.<sup>32</sup> While his and others’ critiques of the deficit model of the public understanding of science have become widely accepted, Wynne observes that deficit thinking refuses

to die. He describes the deficit model as constantly “buried with great self-congratulatory ceremony, then almost in the same breath reincarnated in some new form.”<sup>33</sup> He lists a repertoire of ten public deficit models for the mistrust of science that have been “abandoned, but reinvented” since the 1990s. These include “public ‘deficit’ of understanding of scientific knowledge,” which presumes that the public mistrusts science because it doesn’t know the facts; “public ‘deficit’ of trust in science,” which is presumed to be correctable by more transparency and explanation; and “public ‘deficit’ of knowledge of the benefits of ‘science,’” for example, genetically modified crops will “help feed the global starving.” All models were accompanied by what Wynne describes as an underlying assumption that public responses are emotional, “epistemologically empty,” and susceptible to misinformation.<sup>34</sup> Building on Wynne’s observations, I argue that deficit thinking is central to the Real Facts frame and track how the deficit model of the public understanding of science has both evolved and remained resilient within the food industry’s imaginary of the public. Chapter 4 looks specifically at how deficit thinking persisted even in the face of the industry’s own growing concerns about the limits of a scientized, deficit-driven approach to communicating with the public. I am especially interested in what is accomplished by this ongoing deficit thinking and the educational efforts that stem from it, despite its failure to produce the uncritical public embrace of science and technology in the food system that it presumably seeks.

#### ANTIPOLITICS

In accounting for how the food industry responded to the Real Food frame, I pay attention to unintended effects of industry efforts to educate the public about processed food, arguing that

among them was antipolitics. My analysis reveals an “antipolitics machine” similar to one that James Ferguson uncovered in his well-known work highlighting the “side effects” of “failed” development projects in South Africa. The “antipolitics machine” he describes was produced in the process of experts “insistently reposing political questions of land, resources, jobs, or wages as technical ‘problems’ responsive to the technical ‘development’ intervention.” It was the result of plans, conceptions, discursive systems, social institutions, and systems of thought that he describes as “an anonymous set of interrelations that only ends up having a kind of retrospective coherence.”<sup>35</sup> My analysis highlights the side effects of campaigns to improve public perceptions of processed food, which were also composed of plans, discursive systems, social institutions, and systems of thought and appear, in retrospect, as the Real Facts frame. The “side effects” I discuss include the entrenchment and expansion of scientific authority over questions about processed food and the uses of science and technology in the food system more broadly, or food scientism, and the depoliticization of the Real Food frame, or antipolitics. The food industry insistently re-posed political questions “of land, resources, jobs, and wages”—and more—as technical “problems” responsive to the application of modern food production technologies.<sup>36</sup> At the same time, it insistently re-posed political concerns about the food system, including its aims and driving purposes, as technical problems of misunderstanding or misinformation amenable to the intervention of the kind of communication efforts this book explores.

I consider the Real Food frame a “practice of politics” in Tania Li’s sense: “the expression, in word or deed, of a critical challenge” that often “starts out as refusal of the way things are.”<sup>37</sup> In her analysis of development projects in Indonesia, which builds

on Ferguson's work, Li notes that the process of translating "the will to improve" into specific plans and projects entails two inseparable practices. Problematization identifies "deficiencies that need to be rectified" and "rendering technical" poses problems in a way that aligns with the expertise of those positioned to address them. As Li explains, rendering a problem technical also renders it nonpolitical because of what must be excluded for the problem to match the available solutions. In the case of the food industry's response to the Real Food frame, problematization was shaped by the deficit model of the public understanding of science. When food industry actors set out to correct the problem they identified as the public's lack of knowledge and understanding, they excluded the salient questions about the food system raised by the Real Food frame and confirmed their own authority over the problem at hand. "Rendering technical" also creates certain kinds of social relationships, confirming the authority of experts and the boundary between those "with the capacity to diagnose deficiencies in others . . . and those who are subject to expert direction." At the same time, it both generates and responds to the possibility for contestation; this is "a boundary that has to be maintained and that can be challenged."<sup>38</sup> In the case I explore, the boundary between experts and those who were subject to their direction was in constant tension. The Real Food frame presented ongoing challenges to taken for granted ideas about both good food and expert authority, and the food industry responded with the dynamic, evolving efforts I describe.

STS scholars have long expressed concerns about the troubling political foreclosures enacted by the deficit model of the public understanding of science, arguing that how experts imagine and project the public in relation to science shapes whether or to what extent it seems reasonable or necessary to take its concerns

seriously or to include it in decision making.<sup>39</sup> Wynne, for example, describes scientific representations of risk as embodying tacit projections of human subjects, including their “agency and capacities,” and elsewhere talks about how the public is “imagined, constructed and projected in reflection of the unspoken needs of the institutionally powerful.”<sup>40</sup> Building on the premise that deficit-driven imaginaries of the public have real consequences for the possibility for the public to be included in decision making about technological governance, Marris looks at how public attitudes about synthetic biology have been imagined and projected as a major threat to the field that needs to be overcome so that it can deliver its public benefit.<sup>41</sup> Looking at the field’s efforts to address ethical, legal, and social issues (ELSI work), she found persistent “synbiophobia-phobia” among the experts, or fear of the public’s fear of the new technology, arguing that supporters of synthetic biology advocated “communication and dialogue, but not debate where people could disagree about what is at stake.”<sup>42</sup> Similarly, the Real Facts frame imagined an irrationally fearful public whose misperceptions had to be overcome for the public benefit of the industrial food system to be delivered. While food industry actors were very much focused on communicating with the public about processed food, by imagining and projecting an irrationally fearful public lacking the skills and capacities to understand the science of food production, they closed down rather than opened up the possibility for meaningful debate where people could disagree about the issues or what was at stake.

As Wynne explains, scientism causes public rejection of things done in the name of science to appear as a rejection of science because it “has already so falsely narrowed its moral imagination to the idea that support for the policy stance is determined by scientific fact, that no alternative is left.”<sup>43</sup> Ultimately, there



becomes little to no reasonable ground for public refusal. My analysis reveals the ways in which the Real Facts frame produced the public as antiscience, showing that the conflict over processed food appeared to be about science itself because of the ways in which the food industry drew on scientific authority—and scientific assumptions—to defend its own interests. It’s a sleight of hand that played on and played into existing science wars and broader national politics concerning the status of truth, so heightened during the Trump and COVID-19 years. Crucially, in so doing, it obscured or distracted from important questions about the future of the food system and the ends to which science and technology are used within it.

This sleight of hand by the food industry was part of the “antipolitics machine” I explore, as were its scientific underpinnings. Wynne and others have shown that scientific assumptions lead to the mistaken belief that public concerns are primarily related to risk, or the impact of technologies, rather than the aims and driving purposes of innovation. As Melissa Leach, Ian Scoones, and Wynne put it in their introduction to *Science and Citizens*, “The assumption is that public concerns are focused on risk and consequences rather than on the unstated and unaccountable human purposes, aspirations, priorities, expectations and aims that drive innovation oriented scientific knowledge.”<sup>44</sup> Similarly, in *Seeds, Science and Struggle*, Abby Kinchy describes a “scientization” of public debate about biotechnology in which social conflicts were transformed into debates among scientific experts and risk assessment was elevated over questions about the social desirability of the technology. She argues that while conflicts over genetically engineered crops were “disputes about the social order,” scientization narrowed the public debate to questions about evidence of risk,

occluding the bigger question at stake: “What kind of agriculture do we want?”<sup>45</sup> Writing about the policing of food safety concerns in Japan in the wake of the Fukushima nuclear meltdown, the sociologist Aya H. Kimura notes that scientization gave science “the final word on controversies, obfuscating their social and cultural roots and consequences.”<sup>46</sup> She argues that “food policing” constrained the ability of citizens to engage in contamination issues by condemning their concerns as antiscience, leaving little space for the expression of views that might “form a basis for figuring out social and political, not necessarily scientific, solutions to the situation.”<sup>47</sup> In the context of the processed food controversy, the Real Facts frame narrowly construed the issues at hand as having only to do with risk, or the safety of the processes, ingredients, and technologies that the industry used to produce food. It too focused the public debate on questions about risk and scientific evidence, leaving little room for the expression of views that might lead to social and political solutions to the situation. The Real Facts frame enacted antipolitics by occluding both public concerns about the aims and driving purposes that science and technology serve and the bigger question that was at stake: What kind of food system do we want?

#### STRUCTURE OF THE BOOK

The book begins with a chapter that explains how good food became “real” at the beginning of the twenty-first century. Each subsequent chapter analyzes an encounter between the food industry and the public, or the imagined public, in which experts responded to “real food” with “real facts.” The first encounter, described in chapter 2, takes place in the classroom, where two curricula competed to teach American schoolchildren where their

food comes from. The next encounter, the focus of chapter 3, takes place in the marketplace and the regulatory arena, where trade groups, corporations, and the public wrestled over the meaning of “natural” when it came to food. The third encounter, analyzed in chapter 4, revolves around the question of how communication between the food industry and the public should evolve as it became clear that established methods, described in the previous chapters, were not working. I selected these three encounters from the vast array of possibilities to highlight both the primary domains in which the food industry responded to changing perceptions of processed food and the primary discursive themes that shaped these responses. My early exposure to IFIC discussed at the beginning of the introduction suggested two of the important domains to pay attention to: communication aimed directly at the public, such as the FACTS Network, and efforts within the food industry to develop new communication strategies, such as the “Understanding Our Food” communicators tool kit. But I also came to understand the marketplace as a critically important domain in which the food industry sought to address the public’s attitudes about processed food, which is why one of the chapters focuses on the market and its associated regulatory arena. The discursive themes I identified—understanding where your food comes from, naturalness, and transparency—were initially championed by the social and consumer movements resisting the industrial food system and were then taken up in the food industry’s response to them. While the time periods the chapters cover overlap, the main events they discuss proceed loosely chronologically.

The work of responding to the public’s changing perceptions of processed food has been conducted largely by trade associations representing the food and agriculture industries, so the chapters

focus on the efforts of such groups. Trade groups have historically played an important but overlooked role in the relationship between the food industry and the public. In her history of the canning industry, Anna Zeide notes that food industry trade groups emerged alongside canning in the early twentieth century. Cannery established the first trade associations to promote confidence in the new technology and used the language of science to “build consumer trust and taste.”<sup>48</sup> Over time these associations came to represent the broader processed food industry and became one of the most powerful but overlooked players in the food system. The power of trade groups representing the food industry has only intensified since the 1980s, as the industry has become increasingly consolidated into fewer, more powerful companies joining forces to amplify and exercise their influence through trade associations.<sup>49</sup>

Sarah Heiss, who has written about the Sugar Association and the Corn Refiners Association, notes that while many scholars have looked at the role of trade associations in framing risks and shaping health policy, few have looked specifically at their role in the context of food risks.<sup>50</sup> According to Heiss, industry is a “stakeholder in risk negotiations,” seeking to shape how risks are identified and managed, and many organizations participate in trade associations to “ensure their voice is heard.”<sup>51</sup> Heiss explains that such associations aggregate the already significant resources of their members to negate risk, shape the public conversation about issues, influence policy, and burnish the public image of the industry they represent.<sup>52</sup> They lobby and conduct public relations and marketing campaigns, activities that blur the boundaries between research, education, advertising, and advocacy.<sup>53</sup> Thus, she argues, trade associations should be understood as “discursive landscape architects.”<sup>54</sup>

While trade associations inherently blur the boundary between research, education, advertising, and advocacy, some of the food industry organizations whose work I analyze operate closer to the murky boundary between trade groups and what critics refer to as front groups. While trade groups tend to be up-front about who they represent, front groups are easier to mistake as having other purposes, such as educating the public to help them make sound consumption choices or helping clear up confusion about the benefits of modern food processing. They operate more in the public relations domain rather than through lobbying and tend to have names that don't directly indicate who their funders are.<sup>55</sup> It's clear who the Corn Refiners Association represents, for example, but "International Food Information Council" is not a name that readily reveals the fact that the organization is funded by corporate members that control much of the global food system. Like trade groups, a main goal of industry front groups is to control the public discourse.<sup>56</sup> The Center for Food Safety, an organization describing itself as "at the forefront of organizing a powerful food movement that is fighting the food industry model and promoting organic, ecological and sustainable alternatives," published a critical guide to food industry front groups in 2013. It argued that instead of working to fix problems in the food system, the industry uses front groups to "change the way these problems are talked about, to downplay them, to discredit critics, and otherwise make the problems disappear from the public's eye."<sup>57</sup> I look at three examples of how trade groups representing the food industry sought to shape the discourse around processed food by framing the problem as the public and its misunderstandings.

The chapters are not organized around specific food system issues, nor do they address empirical questions about the food system issues that are raised. One of the defining characteristics

of the Real Food frame is that it emerged from several distinct concerns that converged around the idea that processed food should be avoided. The Real Food frame is itself an abstraction and an amalgamation of concerns about food, the food industry, the food system, and the role of scientific authority. In each of the encounters I explore, distinct issues such as obesity, biotechnology, chemical additives, pesticides, and animal welfare are conflated as they are contested by advocates of both Real Food and Real Facts. Each of the issues that converged to redefine good food as “real” are pressing and the subject of some level of scientific controversy and debate. The question of whether processed food is good or bad can only be answered by disentangling these issues, exploring the scientific evidence, and putting this in relation to social, cultural, political, and economic contexts and impacts. But that is not a task I take on here. It is not a goal of this book to take a stand on the many empirical question that are raised within the encounters I explore. Rather than evaluate empirical claims and counterclaims, I focus on how knowledge and expertise are contested through these claims, as well as their political stakes. This book is also not about the role of science in food production, the manipulation of scientific research by the food industry, or how science has also been deployed by food industry critics and advocates of alternative agriculture, all important topics that have been addressed by others.<sup>58</sup>

## CHAPTERS AND METHODS

To draw out the political stakes of efforts to educate the public about processed food, this book describes a coherence that emerged, in retrospect, from my observations of a messy landscape of discourses and actions. The idea that this landscape could be understood as a framing contest between “Real Food” and “Real

Facts” occurred to me early in the process as I immersed myself in what was going on with processed food, casting a wide net that transcended the contents of the chapters in the book. I thought with the frames as I wrote up some preliminary findings, but the framing contest concept was not an analytic that I deployed throughout the research and analysis. Each data set I collected called for a different methodological approach, described in more detail below, all of which involved some form of inductive coding that led me to distinct analytical themes. I approached the data with questions about how actors in the food industry thought about, represented, and interacted with the public, and my analytical process involved looking for patterns that would help me understand that. Only in retrospect did the frames become coherent in my understanding of what I was seeing across the data sets and central to how I presented them for readers.

Chapter 1 has two central aims. The first is to contest the food industry’s framing of negative perceptions of processed food as the result of irrational fears, lack of knowledge, or misunderstandings by tracing the historical changes through which processed food became “bad” and good food became “real” at the turn of the twenty-first century. The second is to show that in redefining good and bad food, the Real Food frame also challenged established forms of scientific authority over food as well as the food industry’s relationship to it. To resist the Real Facts frame’s deficit-driven imaginary of the public and reframe Real Food as a practice of politics, I focus on what people understood, desired, and were anxious *for* rather than what they were anxious about or afraid *of*.<sup>59</sup> The chapter begins by looking at how it became more socially important than ever before for people to eat right, just as dietary advice turned to avoiding potentially harmful foods and nutrients for the first time. Then I explain how the Real Food frame emerged from a confluence of overlapping

concerns about the industrial food system that also challenged its scientific underpinnings, imposing new ways of thinking about “good food” that necessarily encompassed more than science could account for.

The following chapters explore the three encounters between the food industry and the public introduced briefly above. Chapter 2 picks up on clues from Schmidt’s talk at the Food Processing Expo, focusing on the K–8 curriculum put together by IFIC’s Alliance to Feed the Future. The curriculum is an example of communication aimed directly at the public, and because the lessons aimed to teach students about the “journey from farm to fork” it also highlights the discursive theme “knowing where your food comes from.” Because the Alliance put together two different sets of educational materials that together comprised over forty lessons plus posters and take-home pages, this example offers an unusually rich and detailed archive for examining the Real Facts frame in action. The Alliance curriculum was designed to respond broadly to negative perceptions of processed food, but Schmidt described the Alliance as forming in direct response to a curriculum that was being used in high schools alongside the highly critical film *Food, Inc.* Therefore, the chapter puts these two sets of educational materials into conversation with each other, showing how they were shaped by the Real Food and Real Facts frames. The overarching argument of the chapter is that the Discussion Guide designed to be used alongside *Food, Inc.* centered political contestation and sought to prepare students to become active citizens working to shape the food system, whereas the Alliance lessons centered scientism and sought to prepare students to become future consumers of the products of the industrial food system. The methods used in this chapter are quite straightforward, involving a little background research on each



curriculum but primarily focusing on a close reading of the *Food, Inc.* Discussion Guide, as well as the film chapters it was meant to be used with, and the educational materials that were designed by IFIC's Alliance to the Feed the Future.

This example also gives me a chance to highlight the work of IFIC, which has been at the forefront of the industry's effort to counter negative attitudes about processed food. IFIC is a "sister organization" of the International Life Sciences Institute (ILSI), whose efforts to influence research and policy have been the subject of several recent studies. Less is known about the work of IFIC, which focuses on media and communication, though a recent study using documents accessed under transparency laws looks at how it works on behalf of its funders to oppose dietary health interventions. As mentioned at the outset, IFIC is a trade association focused on "communicating scientific evidence related to nutrition, agriculture, and health" to policy makers and the general public. While technically split into two organizations, the trade association and a charitable organization called the IFIC Foundation, the leadership is shared between the two, and it is difficult to discern which organization is behind any given activities.<sup>60</sup> Members and funders of the two organizations include the most powerful food companies in the world, such as Cargill, Coca-Cola, Danone, General Mills, Mendeley International, and Pepsico.<sup>61</sup> The US Department of Agriculture (USDA) was also a funder of the IFIC Foundation.<sup>62</sup>

Chapter 3 looks at how the food industry responded to the Real Food frame with "natural" and "clean label" offerings while also perceiving and representing the demand for these products as driven by public misunderstandings and a threat to both established product development practices and the very basis of the industry's scientific authority. Focused on the domain of the

marketplace and highlighting the discursive theme of naturalness, the chapter begins by looking at how consumers of food products marketed as “natural” were imagined in the pages of two high-circulation food industry publications, *Food Processing* and *Food Technology*. The second half of the chapter looks at how hundreds of food industry trade associations imagined and projected the public in the comments they submitted to the Food and Drug Administration (FDA) in response to that agency’s 2015 proposal to regulate the use of the term “natural” on food products. It also looks at comments submitted to the FDA by the public and consumer advocates. I contend that while individual members of the public and consumer advocates argued for “natural” to be defined in a way that would help people act on their concerns about the food system in the marketplace, industry actors deploying the Real Facts frame argued that the term should instead be defined by experts, regardless of whether the result aligns with consumer expectations.

Methodologically, this chapter tracks the Real Facts frame across two different data sets, both quite large. The first half, focusing on media analysis, reflects background research I did collecting and inductively coding about 125 relevant articles in mainstream news sources that mentioned “natural food” between what appeared to be the first relevant appearance in 1976 and the time the research was conducted in 2017.<sup>63</sup> I also thematically coded relevant articles about “natural food” in two influential food industry publications, about 120 in *Food Processing*, which claims it has a worldwide audience of more than 736,000 industry professionals, and about 50 in *Food Technology*, produced by IFT, which describes it as “the leading publication addressing all facets of food science and technology.”<sup>64</sup>

To obtain and analyze the comments submitted to the FDA in response to its request for comment about regulation of the term

“natural,” I had support from the Digital Scholarship Lab (now DataLab) at UC Davis. After using an automated process to extract all the comments submitted to regulations.gov, those submitted directly into the portal were subjected to a topic modeling process that used word proximity to identify the twenty-five most prominent “topics,” or conversations, taking place across the comments. I coded the top ten to twenty comments in each topic (until saturation was reached), identified the central conversation in each, and then grouped the conversations into the themes that informed my analysis. The comments submitted as attachments were handled separately for technical reasons, but because attachments were used by experts who submitted longer comments on company letterhead, the process sorted the data in a way that worked well for my research questions, allowing me to analyze corporate comments separately from public comments. I organized the attachments by submitter type (certifiers, government entities, nongovernmental organizations, professional societies, corporate entities, trade groups, and cooperatives) and captured key pieces of information for each one in a database, including what the comment recommended the FDA do, how it defined “natural,” and its point of view on processing, while also thematically coding the attachments using an inductive, or emergent, process.

Chapter 4 focuses on the work of the Center for Food Integrity (CFI), a nonprofit organization supported by industry members and considered a front group by critics, whose mission was to help “today’s food system build consumer trust.”<sup>65</sup> The CFI is an example of food industry initiatives to develop and promote new ways of communicating with the public in response to the challenges posed by the Real Food frame, and this chapter highlights the discursive theme of transparency, which the CFI promoted as a way to win back the trust of consumers. The CFI challenged the food industry’s established approach to communicating with

the public through facts and expertise by advancing new approaches that centered values. The group's work reflected broader changes in science communication, allowing me to track what these changes meant for communication between the food industry and the public.<sup>66</sup> After an introduction that includes details about the history and structure of the CFI, I explore how the CFI developed and disseminated an evolved approach to imagining and communicating with the public that challenged the Real Facts frame, looking at how it trained members of the food industry to communicate with the public through shared values and transparency instead of foregrounding scientific facts and expertise. I argue that while the CFI's aim was to move beyond established approaches to communication between the food industry and the public, the strategies it advanced remained shaped by food scientism and the ever-resilient deficit model of the public understanding of science. I also look specifically at how the CFI enacted antipolitics through its approach to building trust through transparency, as well as its advice to the food industry to focus communication efforts only on segments of the population whose opinions were likely to be moved in a desired direction. Methodologically, research for this chapter is drawn from the CFI's extensive publications, webinars, and training programs, as well as an interview with its founder and CEO.

I focus on the CFI because it was, and is, a dominant actor in this space. It took the lead in pushing the industry to reconsider its relationship with the public and shaped discourses about food, trust, and science in both the business press and popular media while also having a direct impact on how companies approached communicating with the public. I am not aware of any other critical scholarship that has explored the CFI's work. Members, board

members, and funders include and represent many of the most powerful companies in food and agriculture. A 2017 membership list recorded fifty distinct organizations, over half of which were trade groups or commodity boards representing large segments of the food and agricultural industries, including the American Farm Bureau Federation, Bayer, Cargill, Costco, Dairy Farmers of America, Kroger, National Pork Board, Starbucks, and Sysco.<sup>67</sup> Board members have included representatives from across the food and agriculture industries, including Corteva Agriscience, Costco, Grupo Bimbo, and Dairy Farmers of America.<sup>68</sup> In 2015 the CFI published a list of leading companies that had used its new “transparency index” that included giants such as the Campbell Soup Company, ConAgra, DuPont, Kroger, Monsanto, Tyson, and more.<sup>69</sup> The CFI has had a powerful influence on popular and professional discourses about the relationship between the food industry and the public. Between 2009 and 2019 the CFI and its work were quoted, cited, or otherwise favorably discussed in approximately 175 articles in local newspapers (e.g., *Santa Monica Daily Press*, *Grand Rapids Press*, and *Iowa State Daily*), national media outlets (e.g., NPR, CNBC, CNN, *The Atlantic*, *USA Today*, *Forbes*, and *Fortune*), and food industry trade publications (e.g., *Food Navigator*, *Beef Magazine*, *Corn and Soybean Digest*, and *Food Processing*). During the same period, authors affiliated with the Center for Food Integrity published numerous articles in academic journals, including *Rural Sociology*, *Science Communication*, and *Food Technology*, and the work of the CFI was favorably discussed or cited in a handful of other academic articles.<sup>70</sup>

The concluding chapter follows the Real Facts frame into the future in two ways. First, it looks at how a new agri-food tech sector, influenced by Silicon Valley-style approaches to innovation and finance, promised transformative disruption in the

food system. Focusing on the illustrative example of Impossible Foods—maker of animal-free burgers promising to taste, smell, cook, and even “bleed” just like meat—I ask whether the deficit-driven food scientism of the Real Facts frame was also disrupted by the entrepreneurs, innovators, and investors fueling growing investments in alternative proteins. This analysis is based on extensive research on the agri-food tech sector that I participated in as part of the University of California Agri-Food Tech Research Project (UC AFTeR Project), funded by the National Science Foundation.<sup>71</sup> Between 2018 and 2022 our project team conducted participant observation at just over eighty agri-food tech events. We also conducted nearly one hundred interviews with agri-food tech sector actors, including entrepreneurs, investors, and leaders of tech incubators and accelerators, in which we asked about perceptions of the public. Finding that the Real Facts frame and its antipolitics live on in these future imaginaries, the rest of the conclusion revisits the side effects of the encounters explored in the previous chapters, looking at both the power and the limits of the Real Facts “antipolitics machine.”

While this book is very much about the processed food controversy in its specificity, the themes I explore will be familiar because they both resemble and overlap with so many other pressing issues. The processed food controversy has been shaped by, and to a significant extent includes, the contest over genetic engineering that has galvanized activists and shaken scientists and policy makers for decades, and it bears many of the same hallmarks.<sup>72</sup> It also bears the marks of long-standing conflicts over vaccines, and vaccine anxieties, that became exponentially more fraught during the years I was writing this book, which included the Trump presidency, the emergence of post-truth politics, and the COVID-19 pandemic.<sup>73</sup> It is not unrelated to struggles

over climate science, the 2017 March for Science, and the proliferation of yard signs affirming that households believe “Science Is Real.”<sup>74</sup> While each of these conflicts is generally taken to be over facts, or what is true, like the conflict over processed food they need to also be understood as contests over the questions that matter. They are produced in the friction between different ways of understanding both science and the public. The idea that people are “antiscience”—whether it’s in relation to vaccines, GMOs, or climate change—is a blunt tool that misdiagnoses the problem at hand, reduces public concerns to ignorance and emotion, and creates more, not less, alienation and mistrust between the public and scientific institutions. This book suggests that what is needed instead is a sensitive understanding of the knowledge politics that shape these controversies, with attention to how scientific authority, not just science, is deployed and how publics are imagined and projected, not just how much they understand science.