

“The Greasy Killer”

Scientific Nutritionism in late 20th Century America

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Table of Contents

Acknowledgments	1
List of Abbreviations	2
Controversy in Congress	3
Literature Review.....	5
An Introduction to CSPI	9
<i>Nutrition Scoreboard</i> and the Quantification of Dietary Advice.....	14
Reactions	22
Fears of Fat and the Rise of Olestra	25
The Anti-Fat Movement	25
The Rise of Olestra	30
Latour and the Black-Boxing of Food Rules	41
Thinking Beyond Nutrition Science	48
Looking Forward	51
Bibliographic Essay	55
Bibliography	61

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List of Abbreviations

ACSH: American Council on Science and Health

CSPI: Center for Science in the Public Interest

FDA: Food and Drug Administration

NAH: Nutrition Action Healthletter

P&G: Procter & Gamble

Controversy in Congress

On a Thursday in June, 1995, a subcommittee of the House of Representatives held hearings to discuss the Food and Drug Administration's (FDA) approval process for food additives. They met in a high-ceilinged, white-marbled room of the Rayburn House Office Building.¹ Late in the afternoon, the congressional members listened to the following testimony:

My name is Michael Jacobson. I am the executive director of the Center for Science in the Public Interest. CSPI is a nonprofit public health group that focuses largely on nutrition and food safety. We... applaud the subcommittee for holding the first ever hearings on the way in which FDA reviews food additives... We believe it is in the interests not only of the public, but also of every manufacturer who uses additives in its foods, that our nation's system for approving food additives be of the highest quality and beyond reproach.²

Jacobson continued with a history of olestra, a substance developed by a Procter & Gamble (P&G) scientist in 1968 and marketed by the company as a calorie-free fat substitute.³ P&G had been fighting for decades to win approval of olestra as a safe food additive, but the battle turned out to be more complex than expected. Jacobson argued the delays were P&G's own fault, for failing to carry out studies that are "well-designed, well-conducted, and well-reported."⁴ He then

¹ Congress, House, Committee on Government Reform and Oversight, *Delays in the FDA's Food Additive Petition Process and GRAS Affirmation Process*, 104th cong., 1st sess., 1995, 1.

² *Ibid.*, 173.

³ *Ibid.*, 177.

⁴ *Ibid.*

went on to argue that the FDA could accelerate its process if only it were more willing to reject industry pleas. Instead, he said, the administration works “endlessly” with petitioners to patch together “approvable” documents.⁵

At the end of Jacobson’s testimony, Congressman Towns of New York asked for permission to submit questions. Jacobson responded, “Well, I would be pleased to answer any number of questions. I feel a little – after hearing from thirteen industry witnesses and consultants I feel like I’m standing in for consumers here alone.”⁶

This sentiment irritated others in the room, such as endocrinologist Wayne Callaway. The doctor, an advisor to the FDA and the chair of P&G’s scientific review council on olestra, responded: “I think the best consumer advocates are the people who are trained in science... and who have spent their careers in the field... Expert panels... have to face peer review... In contrast... public interest groups go directly to the media.”⁷

Callaway also disagreed with Jacobson on the topic of olestra. While Jacobson vehemently opposed it, Callaway argued that “the newer food technologies hold a great deal of promise.”⁸ Long-term behavior changes are difficult, and fat substitutes are “user-friendly” products.⁹ As he told the listening officials, olestra can help people stick to dietary guidelines that

⁵ Ibid., 176.

⁶ Ibid., 180.

⁷ Ibid., 97.

⁸ Ibid., 96.

⁹ Ibid.

recommend lower fat consumption. He suggested that the FDA streamline its approval process to avoid unnecessary regulatory delays.¹⁰

The controversy highlighted that afternoon was a prominent one in the world of food policy throughout the last three decades of the twentieth century. It played out on many different platforms, not just governmental ones: the media in particular loved to dramatize the fight, positioning CSPI and P&G as figurative boxers in a ring primed to dismantle each other's credibility. The question at play was, on the surface, simple: is olestra safe, and should we permit its presence in the American food supply? In this paper, I will argue that CSPI and P&G both crossed disciplinary boundaries as this issue unraveled. A closer examination finds that the olestra debate, at its core, involved more philosophical and universal questions: ones about whose science is most valid, what constitutes a scientific actor, and in what moment, exactly, a fact becomes uncontestable. At stake in that stately meeting room, then, wasn't just the digestibility of a fat substitute – it was also the accountability and composition of science itself.

Literature Review

Several scholars who have analyzed nutrition science as a philosophical ideology have inspired my approach. The most fundamental work in this field is Gyorgy Scrinis' book, *Nutritionism: The Science and Politics of Dietary Advice*. He defines nutritionism, or nutritional reductionism, as a “reductive focus on nutrient composition of foods as the means for understanding their healthfulness,” accompanied by a “reductive interpretation of the role of

¹⁰ Ibid.

these nutrients in bodily health.”¹¹ In other words, an approach rooted in nutritionism determines a food’s healthfulness on the basis of the nutrients it contains. These nutrients, in turn, are understood to have a simple cause-and-effect relationship to bodily health. Within this paradigm, the presence and absence of a bad foodstuff (like fat) overshadows processing techniques or quality of ingredients.

A key feature of nutritionism that Scrinis identifies is “the claim that there is a clear-cut ‘right’ answer or scientific truth regarding the health effects of nutrients.”¹² Today, it seems like common sense for a Nutrition Facts label to fully inform. Other ways of understanding – cultural, traditional, or environmental, for example – are relevant, but don’t tell us the objective truth. The idea that there’s a right answer to food, and that that answer may be accessed through nutrition science, is one that Scrinis believes is worth examining. And this framework of good-and-bad, he argues, infuses everything from dietary guidelines to nutritional labeling, food engineering to food marketing. It makes products like olestra possible. By labeling the fat substitute a “nutritional techno-fix,” Scrinis highlights its extracted and synthesized nature, “taken out of the context of the role it plays within broader dietary patterns.”¹³

Jessica Mudry’s book *Measured Meals* and journal article “Counting on Dinner” were also helpful in framing my thinking. She delineates a history of quantification and demonstrates how a scientized approach to food becomes normalized. Objective nutrition comes to replace other

¹¹ Gyorgy Scrinis, *Nutritionism: The Science and Politics of Dietary Advice* (Crows Nest, Australia: Allen & Unwin, 2013), 2.

¹² Ibid.

¹³ Ibid., 40.

ideals, she argues, when “fuel value” is allowed to obfuscate seasonality, culture, and familial needs.¹⁴ In her words, nutrition science features a “normative understanding of quality grounded in a discourse of quantity... The scientific community provided the parameters of social knowledge apart from any consideration of public deliberation.”¹⁵

Contextualizing the origins of this scientific authority is John Coveney’s *Food, Morals, and Meaning: The Pleasure and Anxiety of Eating*. Coveney demonstrates how religious, aesthetic, and ethical criteria prevailed in defining a good diet until the nineteenth-century advent of modern nutrition. While this new discipline did point to a new source of authority on food, it didn’t entirely transform the thinking. Instead, nutrition scientists built on their predecessors, who were social reformers rather than scientists, maintaining the moral aspects of eating advice. By providing food rules, Coveney argues, modern medical knowledge constructs, rather than describes, the body.¹⁶

Together, Scrinis, Mudry, and Coveney inspired me to look at CSPI’s nutritional rhetoric more critically. But we diverge in two ways. First, and most superficially, their work establishes frameworks and introduces methods; mine applies them to a specific case study. Second, these authors see modern nutrition as a generally unhelpful way to understand food. In this paper, I will argue that a new understanding and communication of science can position the discipline

¹⁴ Jessica Mudry, "Counting on Dinner: Discourses of Science and the Refiguration of Food in USDA Nutrition Guides," *Environmental Communication* 4, no. 3 (2010): 342.

¹⁵ *Ibid.*, 349.

¹⁶ John Coveney, *Food, Morals and Meaning: The Pleasure and Anxiety of Eating* (London: Taylor & Francis, 2002).

more beneficially in conversations around food. There *is* a space for science in food politics, but that space must be reframed and de-centered.

The historical portion of my work is based mainly on primary source materials. These consist of newspaper archives, past issues of CSPI's magazine *Nutrition Action Healthletter* and other CSPI publications, an interview with CSPI's executive director, Michael Jacobson, and my personal experiences as a summer intern at the non-profit. For larger contextualization, this paper relies largely on scholars Marion Nestle, Harvey Levenstein, and Warren Belasco. These food historians, however, also serve as primary sources because of the clear discrepancies between their arguments. Belasco and Levenstein in particular fundamentally disagree about how to understand the role of CSPI within the larger historical setting.

Belasco's *Appetite for Change* provides a cultural history of food from the 1960s through the 1980s. He details the rising opposition to Big Food, exploring the counterculture movement to understand how resistance to industrial power became amplified during those decades. To Belasco, CSPI is a voice of logic in the midst of a muddled, politicized food landscape. He presents the organization in the conclusion as a reason to be hopeful for the future of food. As he writes, "In addition to exposing marketing shams and offering sensible alternatives in *Nutrition Action Healthletter*, Michael Jacobson's Center for Science in the Public Interest lobbies loudly and relentlessly for stronger federal regulations."¹⁷

Levenstein's *Fear of Food*, on the other hand, is far less optimistic about CSPI's contributions to the world of food politics. His book explores the ways in which eminent

¹⁷ Warren Belasco, *Appetite for Change: How the Counterculture Took on the Food Industry* (Ithaca: Cornell University Press, 2006), 246.

scientific authorities established a national eating disorder, and how both their power and public fears were heightened by modern science. He presents CSPI as a key creator of food anxieties, and is especially critical of their role in the crusade against fat. Levenstein coins the term “lipophobia” to refer to this fear of fat (which I will later lay out), and positions Jacobson as a prominent advocate of its dissemination.¹⁸

This paper understands the organization somewhere in between: not, per Belasco, a beacon of truth, but also not, per Levenstein, a groundless provoker of anxiety. The next section will introduce CSPI and situate it into the messy history that gave rise to and continually shapes the organization.

An Introduction to CSPI

The Center for Science in the Public Interest stands in the heart of downtown Washington, D.C. The offices are clean and minimalistic in design. White cubicles fill the space uniformly, surrounded by large windows that face the busy capital streets. To navigate the departments, the staff refer to the food murals that line the walls – “I’ll meet you by the whole grains,” one might say, or “My computer is by the leafy greens hallway.”

But the two large, well-maintained kitchens are the central gathering places. One is the test kitchen where culinary director Kate Sherwood develops recipes for the nutrition newsletter, the other is for the staff. Every morning, as employees stream in, container after container of salad begin to fill up the fridge. Founder and executive director Michael F. Jacobson explicitly

¹⁸ Harvey Levenstein, *Fear of Food: A History of Why We Worry about What We Eat* (Chicago: The University of Chicago Press, 2012), 154.

asks his staff to avoid bringing junk food (which he defines as overly sugary, salty, or fatty) into the office, lest a surprise visit from a reporter claim hypocrisy.

CSPI, established in 1971, is a consumer advocacy group focused on food policy, food safety, and nutrition education. Among other projects, it is well-known for petitioning the FDA to reform the Nutrition Facts panel, pushing for inclusion of calorie labeling on restaurant menus, and acting in support of soda taxes.¹⁹ As stated on their website, CSPI's mission is to "educate the public, advocate for government policies that are consistent with scientific evidence on health and environmental issues, and counter industry's powerful influence on public opinion and public policies."²⁰

In its early days, CSPI wasn't focused exclusively on food and nutrition. Instead, it was more broadly interested in government accountability. A 1973 CSPI publication, for example, titled *Evaluating Highway Environmental Impacts*, argues that government officials fail to adequately evaluate the environmental impact of urban highways. They blame this on the fact that engineers, not social or environmental scientists, prepared the required reports.²¹ A similar stance jumps out in CSPI's 1975 report, *A Citizen's Oil Factbook*. The authors write that big oil companies lack hard data and are abundant in corrupt political ties; they conclude that an

¹⁹ "About CSPI," accessed March 2017.

²⁰ Ibid.

²¹ James Sullivan, Paul Montgomery, and Andrew Farber, *Evaluating Highway Environmental Impacts: Two Reports* (Washington, D.C.: Center for Science in the Public Interest, 1973).

independent agency, rather than the American Petroleum Institute, should oversee the research on energy production.²²

This sentiment was very much informed by Jacobson's background. After earning a Ph.D. in microbiology, he moved to Washington, D.C. to work for the Center for the Study of Responsive Law.²³ This non-profit was directed by Ralph Nader, a key political figure vocal in the world of consumer advocacy. His goal was a retreat from 1950s corporatism and materialism and a greater regulation of industry.²⁴ Those who worked in the Center, known as "raiders," were paid a bare subsistence salary and regarded as the ultimate "heroic individualists who bested the corporate moguls and government bureaucrats and then refused the perks of success."²⁵ Raiders preferred to relish in asceticism and to promote an "ultrarationalistic" version of capitalist democracy, using the law and public opinion – rather than protests – as their tools of choice.²⁶

After a few years of immersion in the raider philosophy, Nader encouraged Jacobson to write a book about food additives. In the process, Jacobson was shocked to discover health risks that no one seemed concerned about. It was "like the emperor has no clothes," he said. "Why

²² Andrew Keeler and Albert Fritsch, *A Citizen's Oil Factbook* (Washington, D.C.: Center for Science in the Public Interest, 1975).

²³ Michael Jacobson, interview by author, 12 December 2016, phone recording.

²⁴ Patricia Cronin Marcello, *Ralph Nader: A Biography* (Westport, Connecticut: Greenwood Press, 2004).

²⁵ Belasco, *Appetite for Change*, 170.

²⁶ *Ibid.*, 171.

were people running around saying, *this* isn't a problem, *that* isn't a problem, when the evidence at hand seemed very different?"²⁷

Catalyzed by this alarm, Jacobson and two of his scientific colleagues – James Sullivan the oceanographer and Albert Fritsch the chemist – quickly worked to establish a center of their own. The foundation of CSPI's approach, and their central selling point, is to utilize sound science as the basis for all advice and actions. In an era filled with anxieties about the mess in Washington, D.C., the drive for science to inform was strong. It seemed a discipline uniquely positioned to avoid the entangled and biased web of profit.²⁸

Central to this mission of objectivity, and one of Jacobson's biggest points of pride, is CSPI's financial independence. In order to fund their policy work, the non-profit publishes ten issues per year of *Nutrition Action Healthletter* (NAH). According to CSPI's website, NAH today has over a million readers, making it the largest circulation health newsletter in the world.²⁹

When the magazine first began, its aims, content, and audience were largely different than they are today. The first issue in January of 1974 explains that it intends to educate "nutritionists, dentists, dietitians, and other professionals actively interested in improving the public's health by working at local or national levels to influence governmental and corporate food policies."³⁰ The goal, then, was to create a network for scientists to connect with each other and learn how to be politically active. Nowadays, the readers of NAH are mostly laypeople:

²⁷ Jacobson, interview.

²⁸ Belasco, *Appetite for Change*, 142.

²⁹ "Nutrition Action Healthletter," accessed March 2017.

³⁰ Marcia Cain, "Editorial," *Nutrition Action Healthletter*, January 1974.

primarily white, educated folk in their 50s and 60s who want to support CSPI's work while also learning about how to protect their *own* health, based on the latest science.³¹

Despite these shifting audiences, in both cases CSPI is the mediator between one sphere and another. The initial few issues of NAH locate CSPI between the political and scientific world; later issues locate them between the public and scientists. As Scrinis notes, CSPI is key in “translating controversial scientific hypotheses into definitive nutrient-level advice for the lay public.”³² This perspective is repeated by Jacobson himself, who argues that “Somebody who has a Ph.D. in chemistry can know a lot about food from a label. Someone should be looking out for everyone else.”³³ In other words, CSPI sees itself as the expert go-between between nutrition science and the public, institutions, and government. They weed through the science so that we don't have to, putting it into terms meant to incite individual dietary change or larger political action.

In order to gain credibility, CSPI staff constantly emphasize their scientific background on their website, in interviews with media, and in their magazine. That is, their training matters because it lends authority in CSPI's role as translator. This is important to note because in the story of olestra, which I will soon return to, that is not the case.

³¹ Personal participant-observation.

³² Scrinis, *Nutritionism*, 97.

³³ Belasco, *Appetite for Change*, 144.

Nutrition Scoreboard and the Quantification of Dietary Advice

To better understand CSPI's mission, it is first pertinent to examine its definition of science. This is perhaps most visible in its 1973 publication of a 100-page booklet, titled *Nutrition Scoreboard*. Written by Jacobson and released just two years after CSPI's founding, the publication aimed to enable the lay citizen to quickly and easily assess nutritional quality. Let's walk through it.

Page one of the booklet explains that this is “your guide to better eating.”³⁴ There are two parallel drawings, one of broccoli and the other of a brand-less soda bottle. Below the broccoli is printed “+ 116” and below the soda is “- 92.” But they are painted to look quite similar to each other – same height, same coloring, same positioning on the page. This is reminiscent of Jacobson's overall message: the food industry is trying to deceive you, and you must look at the numerical scores in order to see how different these products *really* are. There is a right answer and a wrong answer, but just looking at the food will make distinctions difficult. A deeper, non-visible understanding is necessary for shrewd decision-making.

On the next page, Jacobson succinctly explains his goal: “We hope that the information presented in this booklet will enable readers... to eat more nutritious food, develop a greater interest in nutrition and health, and understand more fully the priorities of the \$161 billion a year food and beverage industry.”³⁵ Jacobson effectively positions himself here as a trusted authority: he is for the people and against the gluttonous, deceptive industry. We want to trust

³⁴ Michael Jacobson, *Nutrition Scoreboard: Your Guide to Better Eating* (Washington, D.C.: Center for Science in the Public Interest, 1973), i.

³⁵ Jacobson, *Nutrition Scoreboard*, iv.

him because he wants to help us, and because the certainty of his tone is undeniable. He aims to promote smart, effective education, and help us achieve bodily health. CSPI is the good guy, the food industry is the bad guy.

In order to arm consumers with the tools to choose good foods, Jacobson uses a mathematical approach. Every food is assigned a single number to indicate its healthfulness. This number is the result of a formula Jacobson creates. There is a sub-formula for each macronutrient and certain vitamins and minerals; the resulting scores of each are then added together to tell us the overall nutritional score of a specific food. A food's score, then, is based on the quantities it contains of fat, carbohydrates, protein, vitamin A, thiamine, riboflavin, niacin, ascorbic acid, iron, and calcium.

For this formula to make sense, nutrients must be understood in terms of “good and bad.” For example, fiber is good; more fiber means a higher score. Foods receive two points per gram of fiber.³⁶ Sugar, on the other hand, is bad. It lowers the score of a food, deducting 2.5 points per gram per serving.³⁷ This puts foods into very precise, one-dimensional categories, sweeping away nuanced complexities and unknowns. Numbers come to stand in for the foods themselves, replacing any more holistic understandings of balance, beneficial combinations, or the role of taste, tradition, and pleasure.

The booklet also marks a divergence from earlier understandings of food that assumed nutrients were generally good and protective. Before the 1960s, government-endorsed dietary advice tried to make sure people were eating *enough* nutrients, but by the 1970s nutritionists had

³⁶ Ibid., 22.

³⁷ Ibid., 25.

shifted the discourse to the *avoidance* of risky substances.³⁸ This was a deliberate shift, one that Jacobson actively promoted. “Things were so different back then,” he said. “There was no real acceptance or recognition that the foods we’re eating lead to chronic diseases, like heart disease, even though there’s a huge amount of evidence. The standard, from government and media, was that all food is good food. Just eat a variety and you’ll be fine.”³⁹

Compare that sentiment – of a general encouragement of variety – with the kind of advice available in *Nutrition Scoreboard*: “Although poor nutrition is traditionally thought of in terms of... deficiencies, millions of Americans suffer another kind of malnutrition: too rich a diet” characterized by “the tendency to eat too much.”⁴⁰ Suddenly, avoidance is the goal. Rather than a source of nourishment, food is here understood with suspicion. This is a crucial departure from earlier beliefs, because it sets the stage for techno-foods like olestra: calorie-free and fat-free, it is a desirable substance because there are seemingly no consequences.

The formulas presented later in the publication clearly solidify these ideas, since certain foods *lower* one’s nutritional score. By detracting from the score, we understand that fatty, sugary foods also detract from one’s health. What question do these formulas answer? The goal is to concretely list which foods are the most and least healthy, which foods are best and worst, in order to attain a lean and disease-free body.

The rational, scientific confidence of the formulas is hard to understate. The mathematical objectivity seems removed from human factors. Foods with high scores are good

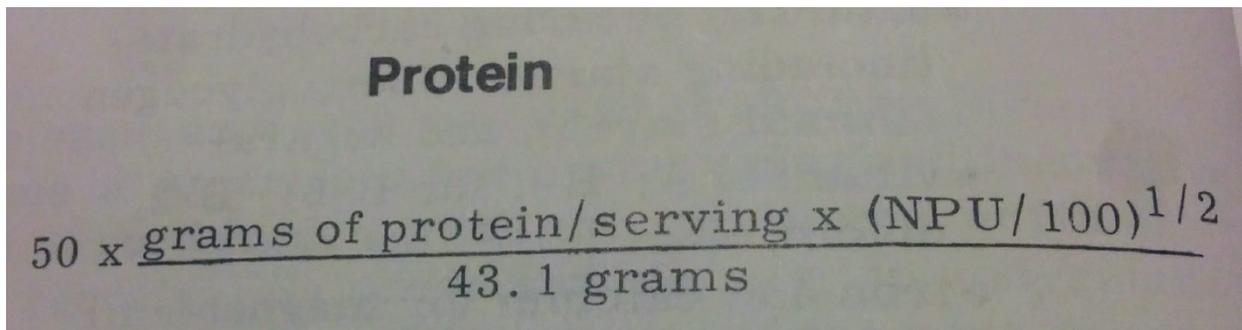
³⁸ Scrinis, *Nutritionism*, 75.

³⁹ Jacobson, interview.

⁴⁰ Jacobson, *Nutrition Scoreboard*, 3.

because the formulas say so, not because any individual is trying to persuade. But it is important to note that the formulas themselves include hundreds of assumptions about how to prioritize.

Let's look, for example, at the formula for protein:



Protein

$$50 \times \frac{\text{grams of protein/serving} \times (\text{NPU}/100)^{1/2}}{43.1 \text{ grams}}$$

Fig. 1. Protein formula, from Jacobson, *Nutrition Scoreboard*, 18.

NPU is a measure of protein quality, based on the number of essential amino acids available in the food. 43.1 grams is the recommended daily intake of “perfect” quality protein, as defined by government advice.⁴¹ But what if there are measures of protein quality that science has yet to discover? Is there a limit to how much protein is beneficial? How did the government come to such a precise number; was *that* influenced by external parties? Will every individual body react uniformly to this standardized set of inputs? The pristine formula is meant to be helpful because it simplifies, but perhaps it simplifies to a point that it's no longer helpful.

Furthermore, the formulas replace the notion of food quality with that of quantity. In the protein formula above, NPU is meant to determine protein quality. But instead of examining its larger origin, we move to a smaller numerical scale. That is, the number of amino acids is more

⁴¹ Ibid., 18.

valuable in determining than, say, the environmental conditions of the chicken that provided the protein. This asserts “a new reality” for measuring food’s value.⁴² We are able to compare disparate foods against one another on a single numerical scale, providing order and surety to a field usually marked by its complexity.

The last page of the book exhibits two sample diets. One is that of a nutrition-conscious person, the other of a food faddist (see figure 2). Each food gets an individual score, and the total score is based on that sum. This means a high score could come from a diet high in a single, high-scoring food. A person could eat ten servings of Wheat Chex in a day and nothing else, and get a score of 840: equivalent to the current score of the nutrition-conscious person. Both regimes seem extreme; the first a little bland, the second a little overindulgent. Few people eat this way, so what are we meant to do with this information?

⁴² Jessica Mudry, *Measured Meals: Nutrition in America* (Albany: The State University of New York Press, 2009), 12.

a nutrition-conscious person

	<u>Food</u>	<u>Serving</u>	<u>Calories</u>	<u>Food Rating</u>
Breakfast:	Wheat Chex	1 oz.	120	84
	Skim Milk	8 oz.	90	49
	Grapefruit	1/2	45	45
	Coffee	8 oz.	3	0
Snack:	Peach	1	35	29
Lunch:	Creamed Cottage Cheese with Tomato	1 cup	260	68
	Whole Wheat Bread	1 slice	40	69
	with Swiss Cheese	2 oz.	62	13
	Iced Tea	8 oz.	200	43
			3	0
Snack:	Peanuts	1/4 cup	210	25
Dinner:	Chicken Breast	2.7 oz. (no bone)	155	62
	Broccoli	3-1/3 oz.	26	116
	Enriched Egg Noodles	.9 oz.	164	28
	Skim Milk	8 oz.	90	49
	Fruit Salad:			
	Strawberries	1/2 cup	28	50
	Cantaloupe	1/4 melon	45	99
	Raisins	1-1/2 oz..	82	13
			<i>totals:</i> 1658	842



a food faddist

	<u>Food</u>	<u>Serving</u>	<u>Calories</u>	<u>Food Rating</u>
Breakfast:	Cocoa Krispies	1 oz.	111	38
	Whole Milk	4 oz.	160	19
	Pop Tarts	2	416	42
Snack:	Cracker Jacks	1 box	75	-39
Lunch:	Hot Dog and Bun	1	142	6
	Potato Chips	1	114	18
	Hunts Snack Pack	3/4 oz.	115	8
	Pudding	1	238	-20
	Hi-C	6 oz.	89	4
Snack:	Ice Cream	3 oz.	95	-18
	Mom's Apple Pie	6 oz.	243	-40
	Soda Pop	12 oz.	145	-92
Dinner:	Swanson Spaghetti and Meatball TV Dinner	1	323	80
	Soda Pop	12 oz.	145	-92
	Chocolate Cake	3 oz.	338	-53
Snack:	Snickers Candy Bar	1	240	-23
	Soda Pop	12 oz.	145	-92
		<i>totals:</i> 3134	-254	

Fig. 2. Sample Diets, from Jacobson, *Nutrition Scoreboard*, 102.

But perhaps most striking is that the chart points to a science that is deeply removed from our food choices. Formulas are based on guidelines defined by the government, which underwent a long series of debates and controversies to reach those numbers; those numbers were then distilled into factors that Jacobson deemed most and least relevant; those factors were inserted into formulas; those formulas were applied to certain foods; and finally, a chosen compilation of foods and their corresponding scores are here presented. In this long process, where is the science? Does the mathematical precision make this approach more scientific, or does it distance us from the original scientific process that defined the guidelines? Are the aggregate steps a form of peer review, a fact-checking device, or are they muddying the initial scientific method? Jacobson argues that his role in this process is only to convey ready-made information, but perhaps he too is conducting, confirming, or generating science.

The diets, furthermore, appear out of context: we see the foods, the quantities, and the scores. What we don't see are the diverse and complex roots that might have incited this kind of eating. The relationship between bodies and eating is intricate; it involves lands, places, cultures, and histories. Here, that web is reduced to individual subject-object relationships and a kind of disembodied objectivity. It seems, at a glance, that the only factors differentiating the diets are choice, education, and willpower.

The *Scoreboard* dietary advice, then, asks for a change in personal nutrition choices. This conflicts with the very beginning of the book's introduction, which argues that health problems are correlated with poverty. Structural solutions seem more apt. Yet the scoreboard approach emphasizes the individual – not the larger social, economic, or cultural context in which that individual operates.

The book is primarily addressed towards a lay audience. But quietly slipped into the text, and easy to miss, is the advice Jacobson directs towards food professionals. He argues that “Departments of Nutrition at universities should each have an Information and Action Committee composed of concerned students and faculty members, who would step out of their laboratories.”⁴³ He later includes a quote from Dr. Bleibtreu of University of Arizona, who writes, “Note to nutritionists: in my opinion, you have a choice. Either you are committed to the safety for the American people... or you can retreat to the safety of the laboratory.”⁴⁴ Consistent in these appeals is a very particular vision of science: one whose only place is in the sterile laboratory, over there, performed by academically-trained professionals. While Jacobson does suggest that researchers “step out,” he assumes that science naturally occurs in the lab. Departing would be a deliberate choice, one that falls outside the status quo.

This distanced vision of science is infused into the *Scoreboard* approach, lending an understanding of science that entrenches it as a source of modern authority. The ranked and numbered foods reveal a science that provides clear, black-and-white answers. The formulas reveal a science that involves careful exactness and precisely calculated conclusions. The universal scoring system reveals a science whose suggestions are applicable to everyone. And the sample diets reveal a science that must undergo vast transformation to be useful for the average citizen. This picture is important to keep in mind, because it will become increasingly relevant as we step into the messy world of anti-fat and olestra. There, CSPI suddenly found a different understanding of science was necessary – and perhaps even more compelling.

⁴³ Jacobson, *Nutrition Scoreboard*, 10.

⁴⁴ *Ibid.*, 11.

Reactions

Reviews to *Nutrition Scoreboard* were mixed, but largely positive. Most commended its freshness and truthfulness, arguing that it stands in sharp contrast to the biased announcements of other dietary reformers. A reviewer in *The New Republic* called it “one of those rare, practical guides to living which everyone would do well to have.”⁴⁵ *The New York Review of Books* said the guide is important in “redefining what eating is all about... [Jacobson] gives eaters an easy method of evaluating the relative nutritional worth of foods in the market – the first time, really, that anyone has given people the means to pick and choose and to shun foods intelligently.”⁴⁶ And *The Washington Post* wrote that the book “pass[es] along the facts in the traditional hopefulness of classic social reform – that the citizen will take the one intelligent option when he has all the facts... Buy a copy for your doctor, especially if he or she is one of those nutritional illiterates.”⁴⁷

True across all three of those reviews is the prominent moralistic tone. To possess the right facts, to be nutritionally literate, grants a kind of superiority. *The Washington Post* even praises the book’s advice over that given by doctors, insinuating that it is the practical language of science that matters more than the background of the expert. The facts, then, are understood to communicate on their own: it doesn’t matter where they come from; the assumption is that

⁴⁵ “Nutrition Scoreboard: Your Guide to Better Eating by Michael Jacobson,” *The New Republic*, September 29, 1973.

⁴⁶ Daniel Zwerdling, “Death for Dinner,” *The New York Review of Books*, February 21, 1974.

⁴⁷ Colman McCarthy, “A Trustworthy Guide for the Seeker of Wholesome Food: Book World,” *The Washington Post*, August 9, 1973.

the advice is fully objective because it is in the form of a formula. The newspaper reviewers trust Jacobson because he doesn't *need* to be trusted: the numbers speak for themselves. Recall, however, all the decisions that Jacobson made in constructing the formulas in the first place. Which nutrients matter, and what makes them good or bad? There isn't a single answer (and perhaps that's not the right question), but *Nutrition Scoreboard* makes it seem like there is.

In a recent interview, Jacobson voiced this same faith in facts: "Journalists trust us because we don't try to pull the wool over anybody's eyes. We stick to the facts, rather than trying to adjust or select the facts based on some ideological framework."⁴⁸ Public trust in CSPI, according to Jacobson, is an outcome of the organization's data-driven strategies. But the opposite is also true: CSPI uses these data-driven strategies in order to gain trust. It is difficult to determine, then, whether it is the facts themselves or the language of facts which establishes credibility.

On the whole, CSPI is highly regarded. They are frequently quoted as a source of nutritional expertise in large newspapers, such as *The New York Times*. Talk-show host Oprah Winfrey once said they were "the master-mind critic that sounded the food alarms."⁴⁹ And in 2007, the FDA commissioner honored CSPI with the Harvey W. Wiley Special Citation. The award, named for the first director of what is now the U.S. Department of Agriculture, is "the FDA's highest honor."⁵⁰

⁴⁸ Jacobson, interview.

⁴⁹ "About CSPI," accessed March 2017.

⁵⁰ Sharon K. Zoumbaris, *Nutrition* (Madison: University of Wisconsin Press, 2009), 134.

CSPI's challengers, meanwhile, tend to fall into three camps. One group opposes them because CSPI is simply annoying. In 1995, for example, a *Los Angeles Times* article called the organization "the nation's mom," *The New Republic* wrote that "Michael Jacobson is the closest thing we have to a national nag," and in 1996 *The Philadelphia Inquirer* said they were the "food police... America's culinary conscious."⁵¹ This antagonism is not rooted in scientific details. Instead, the criticism lies in CSPI's pestering tone and incessant alarm-raising.

The second group opposes CSPI because, according to some critics, they use bad science. This is visible, for example, in the hostility from The American Council on Science and Health (ACSH), CSPI's "long-time nemesis."⁵² ACSH has very similar goals to CSPI: they aim to present "balanced, scientifically-sound analyses of current health topics."⁵³ But the two groups frequently collide head-to-head in nutrition issues. An article ACSH published in December of 2016, for example, claims that "instead of relying on timely and accurate research that truly would serve the public interest, CSPI ironically embraces obsolete information."⁵⁴ What is noteworthy here is that this maintains an intact nutrition science. ACSH does not argue that CSPI ignores scientific uncertainties, or ask that they better communicate nutritional nuances.

⁵¹ Geraldine Baum, "Do They Really Enjoy Being Dinner Party Don't-Invite-'Ems?" *Los Angeles Times*, August 6, 1995; Stephen Glass, "Hazardous to Your Mental Health," *The New Republic*, December 30, 1996; Tanya Barrientos, "Is Nothing Healthy? Food Police Stir Outcry," *Philadelphia Inquirer*, October 2, 1996.

⁵² Marion Nestle, *Food Politics: How the Food Industry Influences Nutrition and Health* (Berkeley: University of California Press, 2002), 123.

⁵³ *Ibid.*, 122.

⁵⁴ Alex Berezow, "How CSPI Undermines Science, Nutrition, And U.S. Dietary Guidelines," *American Council on Science and Health*, December 6, 2016.

Instead, ACSH contends that CSPI uses the wrong set of science. CSPI should, ACSH believes, simply shift their gaze to different studies.

Finally, the third group is the one CSPI most often mentions. Many interest groups and large food corporations oppose the non-profit because they would be directly financially harmed by the kinds of regulations CSPI fights to enact. The next section will explore this conflict using the case study of the fat substitute olestra.

Fears of Fat and the Rise of Olestra

The Anti-Fat Movement

The feud between Procter and Gamble and the Center for Science in the Public Interest initially began to heat up in the playing field of dietary fat guidelines. At first, the two found common ground. Both competitors agreed that fat must be reduced. Where they diverged was in the question of how to replace it. But let's backtrack to the initial waves that sparked this quest of national fat avoidance.

A 1996 *Washington Post* article declared that "CSPI has been working to raise fat-consciousness for years... Its general message is, there's way too much fat out there, and it's killing people by clogging arteries and causing heart disease."⁵⁵ Especially towards the end of the twentieth century, the center's *Nutrition Action Healthletter* included recipe after recipe of low-fat meals to guide its readers. In the January 1987 issue, for example, it released a "Guide to a Week of Great Eating" that is almost entirely devoid of any fat at all. Suggested menus include every

⁵⁵ Lawrence Proulx, "What Evil Lurks in Fatty Desserts?" *The Washington Post*, June 11, 1996.

measurement for every meal, like “1 cup grapefruit juice” and “2 Tb. plain low-fat yogurt.”⁵⁶ At the back of the issue, an even more explicit warning stands out (see figure 3). In the image, the first label we see at the top left warns that “all-beef burgers... are 23% fat.”⁵⁷ There is no accompanying explanation, which assumes its readers understand that this number is a cause for concern. This shared legibility of quantification points to a consensus that macronutrients are the correct unit of measurement to understand and evaluate food. It is also striking to notice the parallel between the caption and the public service announcement popular in American television throughout the 1960s, 70s, and 80s: “Do you know where your children are?”⁵⁸ Both this original campaign and its nutritional spin-off explicitly aim to highlight urgency and evoke alarm. Audiences examining this image are tempted to intervene, to stop the boy from digging in.

⁵⁶ Laurie Quint and Anne Montgomery, “The Fresh Food Lover’s Guide to a Week of Great Eating,” *Nutrition Action Healthletter*, January 1987.

⁵⁷ “Do You Know What Your Kids Are Eating?” *Nutrition Action Healthletter*, January 1987.

⁵⁸ “Do You Know Where Your Children Are?” in *Wikipedia: The Free Encyclopedia*.



Fig. 3. “Do you know what your kids are eating?” From *Nutrition Action Healthletter*, Jan 1987.

But this alarm has earlier origins. *The Changing American Diet*, published by CSPI in 1978, argues that the increase in fat consumption is “the most significant change in the American diet in the last 65 years.”⁵⁹ While fat provided 32 percent of calories in 1910, it tells us, by 1976 it had reached 42 percent. After briefly enumerating the health risks of fatty foods, the book asserts that “the general conclusion on fat –any kind of fat – is ‘the less the better.’”⁶⁰

⁵⁹ Michael Jacobson and Letitia Brewster, *The Changing American Diet* (Washington, D.C.: Center for Science in the Public Interest, 1978), 3.

⁶⁰ *Ibid.*, 62.

P&G agreed. In 1991, P&G scientist Carolyn Bergholz began a paper that seemed almost indistinguishable from CSPI communications. She writes that government data reveals an increase in dangerous fat consumption; that experts agree 30% or less of calories from fat are best; that there is “growing concern” about the epidemic of dietary-related chronic diseases.⁶¹ Seven years later, several P&G scientist consultants argue in the academic journal *Nutrition Reviews* that “the accumulated and evolving scientific evidence demonstrated the health benefit” of reducing fat consumption.⁶²

Of course, CSPI and P&G did not create lipophobia on their own. According to Levenstein, fears over dietary fats were at the forefront of the middle-class American consciousness since the 1950s. He argues that the alarm began with the “epidemic” of coronary heart disease, which only rose to prominence thanks to a general decline in infectious diseases.⁶³ Also a factor was simply a change in the way deaths were categorized on death certificates, which arbitrarily attributed a higher proportion of deaths to heart disease.⁶⁴ Medical experts seized this new concern and began to search for the cause of these seemingly random deaths. By the 1960s, most agreed that fat was to blame. Scientists argued that “this yellow, gummy substance [was]

⁶¹ Carolyn M. Bergholz, "Olestra and the Potential Role of a Nonabsorbable Lipid in the Diets of Children," *Annals of the New York Academy of Sciences* 623, no. 1 (1991): 356.

⁶² Donna Porter et al., "Educating Consumers Regarding Choices for Fat Reduction," *Nutrition Reviews* 56, no. 5 (1998): 75.

⁶³ Levenstein, *Fear of Food*, 125.

⁶⁴ *Ibid.*

adhering to the walls of the arteries, creating thick plaques that slowed the flow of blood into the heart.”⁶⁵

This description of thick, obstructing fat was so visual, so visceral, that it took hold easily in media and dietary trends especially through the last three decades of the twentieth century. In a 1970s Senate hearing, the International Sugar Research Foundation argued that sugar is innocent because it’s just “pure calories” and devoid of fat or cholesterol.⁶⁶ To so directly place *dietary* fat in opposition to purity is reflective of broader themes that place an *individual’s* fat in opposition to purity. It is also interesting to note that sugar’s innocence is here established on the basis of the absence of fat, rather than the presence of some desirable substance or taste. This, too, is reflective of a broader narrative of food that focuses on the avoidance of “bad” nutrients. Rather than encourage the consumption of nourishing foods, this discourages the consumption of bad ones. Thus, self-restraint is cast as the goal.

CSPI was crucial in disseminating the image of fat as culprit. They are well-known for terming the phrase “greasy killer,” an immediately legible, well-packaged descriptor that traveled well through mainstream media.⁶⁷ Michael Jacobson once wrote that there is a “mountain of scientific evidence that indicts the high-fat diet as a major killer, a killer of far more Americans than all our nation’s wars combined.”⁶⁸ And yet CSPI rarely conveyed this “mountain of scientific evidence.” Instead, they explicitly aimed to simplify. As in *The Changing American Diet*,

⁶⁵ Ibid., 126.

⁶⁶ Scrinis, *Nutritionism*, 107.

⁶⁷ Ibid., 102.

⁶⁸ Ibid.

communications about fat outlined the fact of rising fat consumption, rather than show the science that proved its unhealthfulness. In other words, the circumstance of increasing ingestion, coupled with the insistence of existing research, was weighed more heavily than letting consumers into the scientific process.

This line of thinking continued through the end of the century. A 1995 *LA Times* article argues that the organization “has been at the forefront of the movement that has embraced a low-fat diet as if it was a holy writ.”⁶⁹ Bonnie Liebman, the Director of Nutrition who has been with CSPI since 1977, is very conscious of this simplified dietary advice narrative. But “she sees no point in changing course now,” the article tells us, “as some scientists have suggested, to warn only against saturated fats and leave the public alone about counting grams of other fats such as olive and peanut oil. It's more practical, she says, to ask the public to lower its total fat consumption rather than ask Americans to totally change their way of eating.”⁷⁰

The Rise of Olestra

In response to these quickly spreading anti-fat concerns, Procter & Gamble revisited an earlier discovery. Olestra, marketed as Olean, is a calorie-free fat substitute that aims to mimic the taste and texture of fat, so that consumers can eat traditionally fatty foods without guilt. P&G researchers accidentally discovered the substance in 1968 while (unsuccessfully) searching for fats that premature infants might be able to digest more easily. It is made up of molecules much larger than natural fats, so normal digestive processes can't break it down. Unabsorbed, olestra

⁶⁹ Baum, "Do They Really Enjoy Being Dinner Party Don't-Invite-'Ems?"

⁷⁰ Ibid.

passes through the intestines without ever metabolizing. It even maintains the cooking properties of normal fats, so in theory it is an impressive, too-good-to-be-true substitute for many commercial and home uses.⁷¹ Fat-free French fries? It comes as no surprise, perhaps, that this became a high-stakes fight.

CSPI became the most vocal opponent to P&G in the fight to get olestra past the approval of the Food and Drug Administration and into the market. Was this a battle of marketing, of science, or of power, authority, and popularity? I argue that the answer lies somewhere in between; it was all of the above, and more. But I also claim that this case study reveals something deeply important and universal: it wasn't that CSPI and P&G employed both rhetorical and scientific tools, and used them separately in a fight for persuasion. Instead, the question of what counts as science in itself turned out to reveal a muddled answer. Science was sometimes a question of authority, sometimes of location, and sometimes of process. The story of olestra shows us how.

The Food, Drug and Cosmetic Act was enacted in 1938, and continues to regulate food safety today (albeit with new revisions). It states that anyone can petition the FDA for market approval of a new food additive; the burden of investigation lies with the petitioner.⁷² Because additives are usually consumed in tiny amounts, the substance does not have to be proven beneficial, only that it won't cause harm. To verify nontoxicity, much higher concentrations – generally hundred-fold levels – are tested in animal models.⁷³ However, this method would not

⁷¹ Nestle, *Food Politics*, 338-357.

⁷² Diane M. Prince and Marilyn A. Welschenbach, "Olestra: A New Food Additive," *Journal of the American Dietetic Association* 98, no. 5 (1998): 566.

work for olestra. Olestra is meant to replace up to one hundred percent of the conventional fats used in savory processed snacks, like chips and crackers.⁷⁴ It would stand-in for an entire macronutrient, not just help preserve or add color. Lab rats cannot consume food in the amounts required to properly test olestra (namely, hundred-fold), so testing in the usual way would be impossible.⁷⁵ The scientific process itself had to change. That meant the FDA and P&G were forced to create a new procedure valid enough to replace it. Over the next thirty years of regulatory battles, P&G and the FDA worked together to establish fundamentally new standards for evaluating safety.⁷⁶

P&G decided to take matters into its own hands, and its company scientists began to conduct scientific studies to prove olestra's safety. They eventually submitted 150 animal and human studies and 150,000 pages of data.⁷⁷ According to physician Henry Miller's analysis, published in a law journal of regulations, "olestra is the most tested food substance in human history."⁷⁸ He cites clinical studies conducted by John Hopkins University and by Hutchinson Center researchers, as well as a report published in the *American Journal of Gastroenterology*.⁷⁹

⁷³ Ibid., 340.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ Nestle, *Food Politics*, 343.

⁷⁸ Henry Miller, "Obstructing Olestra," *Regulation* 24 (2001): 12.

⁷⁹ Ibid.

Meanwhile, CSPI aimed to reveal the cracks in this research. In 1987, they submitted a 19-page report to the FDA, asking the agency to deny approval of olestra.⁸⁰ Their main strategy, at first, was to criticize the research designs of those submitted by P&G, and to point out the company's vested interest in the outcome.⁸¹ Jacobson argued that the "FDA allowed P&G to do cancer studies on just one species of rodent, instead of the customary two. That was totally irresponsible. The testing must be considered inadequate until additional species are studied. The time for caution is now, not later."⁸² His colleague, pathologist Melvin Reuber, confirmed that P&G's studies are "riddled with problems in [their] design and execution. Even more troubling, the results indicate that SPE [sucrose polyester, or olestra] is toxic and carcinogenic."⁸³

But pointing out the flaws wasn't enough. To most effectively fight against P&G, CSPI needed data of their own. This was new territory. P&G's scientists, were, in most cases, hired consultants working in labs, conducting large studies in academic spaces, and using double-blind, randomized methods. This was the kind of rigorous evidence CSPI usually endorsed, and the kind of evidence that the FDA valued. But CSPI's Nader-inspired philosophy told them there was something wrong, despite the seemingly pristine production of science. The non-profit decided to turn to knowledge production of their own – to get a weighted voice in the FDA's process, after all, they needed to fight facts with facts. This was a fundamental shift in CSPI's

⁸⁰ "Fake Fat Called Unsafe," *Nutrition Action Healthletter*, January 1988.

⁸¹ Nestle, *Food Politics*, 343.

⁸² "Fake Fat Called Unsafe," *Nutrition Action Healthletter*.

⁸³ *Ibid.*

role. Outside the case of olestra, the staff's scientific expertise matters because it grants them the authority to *decipher* scientific findings. Suddenly, their expertise matters because it grants them the authority to *do* science.

But because CSPI didn't have the time, money, or manpower of P&G, they used methods not usually recognized as conventionally scientific. First, in 1996, CSPI set up a toll-free hotline (1-888-OLESTRA) for consumers to report symptoms after eating any products containing olestra. Next, they ran television and radio ads in the same test markets where olestra-filled Frito-Lay chips were being sold. They warned against the dangers of consuming such large quantities of a highly-refined additive and advertised their hotline.⁸⁴ Within three weeks, CSPI logged almost 200 calls; most were anecdotal reports from people who experienced severe gastrointestinal issues after consuming the chips.⁸⁵ According to a letter to the editor of *Nutrition Today*, written by Jacobson, CSPI received stories like, "I thought I was going to die," and "It was like childbirth."⁸⁶ This is a very different kind of evidence from that CSPI had used in all its previous communications – *Nutrition Scoreboard*, dozens of NAH issues, and other publications conveyed dietary advice informed by science conducted in a detached, closed laboratory. Studies like those rely on isolating variables and controlling for every factor. The phone calls CSPI received, however, pointed to an embodied experience of everyday people in their everyday spaces. Was their hotline a form of science? I argue that it was: CSPI recruited subjects,

⁸⁴ Josh Boyd, "Public and Technical Interdependence: Regulatory Controversy, Out-Law Discourse, and the Messy Case of Olestra," *Argumentation and Advocacy* 39, no. 2 (2002): 103.

⁸⁵ Marian Burros, "Consumer Group Cites Illnesses in Urging Ban of Fat Substitute," *New York Times*, July 2, 1996.

⁸⁶ Michael Jacobson, "Olestra," *Nutrition Today* 32, no. 3 (1997): 135.

examined the consumer reports as an aggregate set of data, and presented it to the FDA as a counter-point to P&G's conclusions. It is the *way* that CSPI used the calls, then, rather than the calls themselves, that makes them scientific.

In the same letter to *Nutrition Today*, Jacobson also argues that a five-month P&G study that the FDA took into consideration was “a poorly controlled *marketing* study.”⁸⁷ He does not explain this notion further, however – is a marketing study simply one conducted by the company hoping to sell the product? Is it one designed specifically to enhance positive outcomes? Whatever the case, CSPI's conclusion is clear: science done by those affiliated with corporate power is not legitimate; only independent studies should inform government approval. The FDA should trust CSPI's situated, holistic data over P&G's set of evidence, despite the fact that the company's methods were more in line with conventional notions of science.

Immediately below Jacobson's letter, *Nutrition Today* printed another letter to the editor on the topic of olestra. It was written by Suzette Middleton, a nutrition scientist at The Procter & Gamble Company. Her approach offers insight into her very different vision of what science is, who can do it, and how it merges with political ideologies. She argues that her employer is simply trying to help people – olestra fits into a healthy lifestyle, and is an easy way to cut fat that doesn't require deprivation. P&G has also followed a “rigorous” and “logical approach,” clearly visible in the public “300 peer-reviewed journal publications.”⁸⁸ In other words, olestra helps consumers follow CSPI's own advice – to eat a low-fat diet – and they prove its safety using CSPI's own traditional vision of science. Middleton also argues that consumers should hold the

⁸⁷ Ibid.

⁸⁸ Suzette Middleton, "Olestra," *Nutrition Today* 32, no. 3 (1997): 135-136.

decision-making power, rather than allowing a watchdog organization to gain control. However, she then declares that the FDA approval process is a meticulous one that shouldn't be questioned (despite the fact that P&G itself helped shape the process⁸⁹).

There are many conflicting threads in both sides of the story. Jacobson outlines few specific problems in the study design, focusing instead on P&G's bias. This seems a question, then, of *who* does the science, rather than how it's done. This idea is further strengthened by his faith in the data collected through CSPI's own olestra hotline. We could easily criticize the scientific rigor of this approach – it is anecdotal, self-selecting, and includes a relatively small sample size. Only people who already trust CSPI are likely to have specifically called. And yet Jacobson uses it as a key piece of evidence in his argument. Which counts as better science: double-blind clinical studies conducted by P&G, or personal reports collected by CSPI? It is clear that the question of good science, as defined by CSPI, relies on the question of who conducts it.

Meanwhile, P&G argues that the FDA has a sufficiently rigorous process to test safety, and that CSPI should stop questioning it. However, they also argue the reverse: this is a matter of consumer choice, and all other entities should not play a role in this battle. They assure the public that the FDA has got it under control while simultaneously pointing out the availability of the published science that individuals can feel free to examine. In other words, they argue that the government is responsible, and that they're doing it right, but also that consumer choice is crucial, and consumers should look at the science themselves. Furthermore, it is worth thinking about whether the question of responsibility *should* play a role here. Consumer choice seems to be

⁸⁹ Nestle, *Food Politics*, 339.

an argument about political ideologies. The safety of olestra seems to be an argument purely about science. Clearly, those spheres are not so neatly detached.

On January 24, 1996, after a decades-long fight, the FDA approved olestra. The sanction came with just a few caveats. Because olestra eliminates fat-soluble substances from the intestine, products that contain it must be fortified with the fat-soluble vitamins A, D, E, and K to make up for potential deficits.⁹⁰ The package label also had to include a warning notice.⁹¹ According to an article published three days later in *The Guardian*, snacks containing olestra became “the first food item in the US to carry a health warning: ‘Olestra may cause abdominal cramping and loose stools. Olestra inhibits the absorption of some vitamins and other nutrients.’”⁹² By 2003, however, the label was no longer required thanks to mounting pressure from industry.⁹³

⁹⁰ Ibid., 344.

⁹¹ Ibid.

⁹² Jonathan Freeland, "Eat Until You Seep," *The Guardian*, January 27, 1996.

⁹³ "Frito-Lay Target of Olestra Lawsuit." *CSPI News*, January 4, 2006.

Who Says What

Criticism		Response
<p>From the Center for Science in the Public Interest</p> <ul style="list-style-type: none"> ■ Olestra inhibits the absorption of nutrients—carotenoids—that almost certainly reduce the risk of cancer, heart disease and blindness. ■ Modest quantities of olestra can cause severe gastrointestinal problems. ■ Studies of olestra's safety are inadequate. 		<p>From Procter & Gamble</p> <ul style="list-style-type: none"> ■ Effect of olestra on carotenoids is small, producing no significant public health risk. ■ There is no significant difference in digestion between eaters of olestra and full-fat snacks. ■ Olestra was found to be safe by the FDA after a nine-year review of 100 animal and 98 human studies.

Fig. 4. "Who Says What," from Raju Narisetti, "Anatomy of a Food Fight," *Wall Street Journal*, July 31, 1996.

Media responses helped frame the controversy as a balanced and scientific two-sided fight. A 1996 *Wall Street Journal* article, for example, included the graphic above (figure 4). But if this were purely about data, why emphasize who says what so explicitly? Why not simply present all the available scientific evidence? In the accompanying article, the *Wall Street Journal* calls P&G "the world's largest advertiser," and they emphasize the fact that the company spent "25 years and \$300 million on olestra."⁹⁴ On the other hand, CSPI is named "a self-appointed

⁹⁴ Raju Narisetti, "Anatomy of a Food Fight: The Olestra Debate," *Wall Street Journal*, July 31, 1996.

watchdog of the nation’s eating habits” who “went on the offensive early.”⁹⁵ The tearing chip bag in the center of the image evokes an emotional spar; one entity against the other, the fat-free chips at their mercy. We aren’t examining the molecular structure of olestra, we’re trying to determine whose arguments should hold more sway.

Today, olestra is still permitted in the food supply, and CSPI continues to fight against it. The substance is listed on their dynamic, continuously-updated webpage titled “Chemical Cuisine,” which describes all known food additives and places them into the categories shown in figure 5. Olestra is highlighted in red and listed under “Avoid.”⁹⁶

Safety Ratings Key



Safe

The additive appears to be safe.



Caution

May pose a risk and needs to be better tested. Try to avoid.



Cut Back

Not toxic, but large amounts may be unsafe or promote bad nutrition.



**Certain People
Should Avoid**

May trigger an acute, allergic reaction, intolerance, or other problems.



Avoid

Unsafe in amounts consumed or is very poorly tested and not worth any risk.

Fig. 5. From CSPI, “Chemical Cuisine.”

⁹⁵ Ibid.

⁹⁶ Center for Science in the Public Interest, “Chemical Cuisine,” accessed March 2017.

In 2006, a 30-year-old woman in Massachusetts experienced severe gastrointestinal symptoms after eating a bag of Frito-Lay “Light” potato chips, which contained olestra. She filed a lawsuit. CSPI aided her in the fight by sending a demand letter to Frito-Lay with intent to sue; in the letter, CSPI’s litigation director highlighted the sheer number of complaints filed over the years to the FDA and CSPI from consumers that experienced “unappetizing syndromes” after consuming the fake fat.⁹⁷ Frito-Lay successfully avoided the lawsuit by designing a prominent banner for inclusion on the “Light” chips packaging that reads, “Made with Olestra.” The company also donated \$150,000 to the Harvard Medical School Division of Nutrition.⁹⁸ That is, Frito-Lay evaded legal consequences by conjuring transparency and goodwill, *not* by arguing for olestra’s safety. What convinced here was not a conclusive scientific study. Instead, it was a shift in branding both the chip bag and the company. Fundamental to this success is the idea that food safety is a consumer’s responsibility; they may *choose* to avoid olestra by reading the label themselves. This scientific fight, then, grew deeply intertwined with political ideologies and with public trust in the food provider.

Despite this ongoing battle, olestra is much quieter in dietary news today than it was in the 1980s and 90s. The FDA still does not require a universal warning label, but “since consumers don't seem to like the taste, texture, or side-effects of olestra, the marketshare for olestra-containing chips has diminished.”⁹⁹ As of March 2017, Google Trends showed U.S.

⁹⁷ Stephen Gardner to Lori Perlow, 4 January 2006, “Demand for Relief Pursuant to Massachusetts G.L. c. 93A, Section 9,” Center for Science in the Public Interest.

⁹⁸ “Frito-Lay Agrees to Label Fake Fat Olestra More Clearly on its ‘Light’ Chips,” *CSPI News*, June 1, 2006.

⁹⁹ “FDA Caves in on Olestra,” *CSPI News*, August 1, 2003.

searches for the term at 18% of what they were in 2004. This is perhaps linked to the decreased fat phobia, a shift to villainizing sugar, or more nuanced ideas about which kinds of fats are unhealthy. The question of olestra's safety has not been officially resolved by government.¹⁰⁰ What allowed for its decreased popularity, then, had more to do with a larger social context than with a scientific answer.

Latour and the Black-Boxing of Food Rules

As the story of olestra shows us, the creation of a fact is much messier, and much more human, than we expected. Philosopher of science Bruno Latour provides a helpful framework to understand how a fact becomes constructed. I will briefly diverge from the world of fat substitutes and into a more philosophical one, so that we may later come back to olestra with a renewed perspective.

First, Latour suggests that we take the “back door of science in the making, not... the more grandiose entrance of ready made science.”¹⁰¹ It is only by diving into the messy specifics of the past that a current credibility can become visible. In the book *Science in Action*, Latour demonstrates the inseparability of humanness in science. We think of science as an isolated, truth-seeking machine that happens *over there* and ejects knowledge into society *over here*.¹⁰² But

¹⁰⁰ Brittany Robins, “5 Foods Banned Outside the U.S.,” *NY Daily News*, October 23, 2015.

¹⁰¹ Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press, 1987), 4.

¹⁰² Ruha Benjamin, “Race for Cures: Rethinking the Racial Logics of 'Difference' in the Life Sciences,” Lecture, Yale University, December 7, 2016.

as Latour argues, all science (just like any other discipline) is performed by people in a certain place and a certain time. That doesn't mean the scientific pursuit isn't helpful, but it does mean it isn't detachable from social and historical contexts. For example, while CSPI was fighting against olestra's FDA approval, they were likely also working to increase their own credibility. It was during the early days of the non-profit, and gaining public trust was crucial. In determining olestra's fate, then, both the integrity of the organization *and* the safety of the food supply was at stake.

Latour warns that this "back door" entrance into "science in the making" should come with a blaring overhead sign that asks us to "abandon knowledge about knowledge, all ye who enter here."¹⁰³ Inside the lab or on the field we find a complex world. Grant proposal deadlines matter as much as molecular structures. If a scientist is crunched for time, she might use a different procedure than she would have otherwise. And it is these kinds of questions, about the context in which the scientist is working, that help us understand or persuade. It isn't very useful to categorize scientific conclusions as either simply good or simply bad (just as it isn't very useful to categorize certain foods in this way). Instead, it's more interesting – and more helpful – to look at the mechanisms by which that knowledge is produced. The task is not to fight facts against facts, it's to examine their origin. Rather than trying to determine whether olestra is good or bad, then, I ask whether "good or bad" is the right measure for dietary fat, and what this history tells us about the nature of science.

¹⁰³ Latour, *Science in Action*, 7.



Fig. 6. “Black Box,” from *Wikipedia*.

To understand this approach, we must first study the black box. A black box is a piece of knowledge that is so sealed we don’t need to understand anything about its complexity, history, or academic and commercial networks. What matters is only that it’s true. We simply need to insert inputs into the box and read the outputs. Latour argues that this is actually a goal of science and a marker of its success: “work is made invisible... Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become.”¹⁰⁴ He uses the example of DNA shapes to better illustrate this notion. Scientists now perform studies and experiments with the assumption that DNA strands are double-helices. That fact is a sealed black box; we can use the double-helix strand without examining what, where, or who makes it true. But the history of Jim Watson and Francis Crick is full of controversies and uncertainties – fights with their boss in the lab, marketing interests, renewed fellowships, and other such factors that have nothing to do with the DNA.¹⁰⁵ Are those obstacles scientific ones? To Latour, the answer is yes: they are a large and important part of “science in the making.”

¹⁰⁴ Bruno Latour, *Pandora’s Hope: Essays on the Reality of Science Studies* (Cambridge: Harvard University Press, 1999), 304.

Black boxing is very helpful for the scientific community, because if we were to question the people and processes behind every single fact, a building accumulation of knowledge would be impossible. But sometimes boxes are sealed pre-emptively. Sometimes they obscure important, useful information. This is a problem because it makes the constructed seem like an unquestionable reality, while also eluding the possibility for criticism. What if the fact only holds up under certain conditions, but we assume universal credibility without question? A quickly sealed box also becomes a problem when we imagine that black boxes travel on their own, without the help of a human communicator. But the presenter is crucial. If we listen to facts about fat from CSPI, and then from P&G, we'll gain very different conclusions. Black boxes are more malleable than they present themselves to be.

Turning back to olestra demonstrates what this kind of understanding of science does to its use in political debates. CSPI's very direct, uncompromising rhetoric helped seal a black box that, perhaps, was not ready to be sealed. Inside the box was the idea that dietary fat must be avoided for good health.

¹⁰⁵ Latour, *Science in Action*, 1-4.

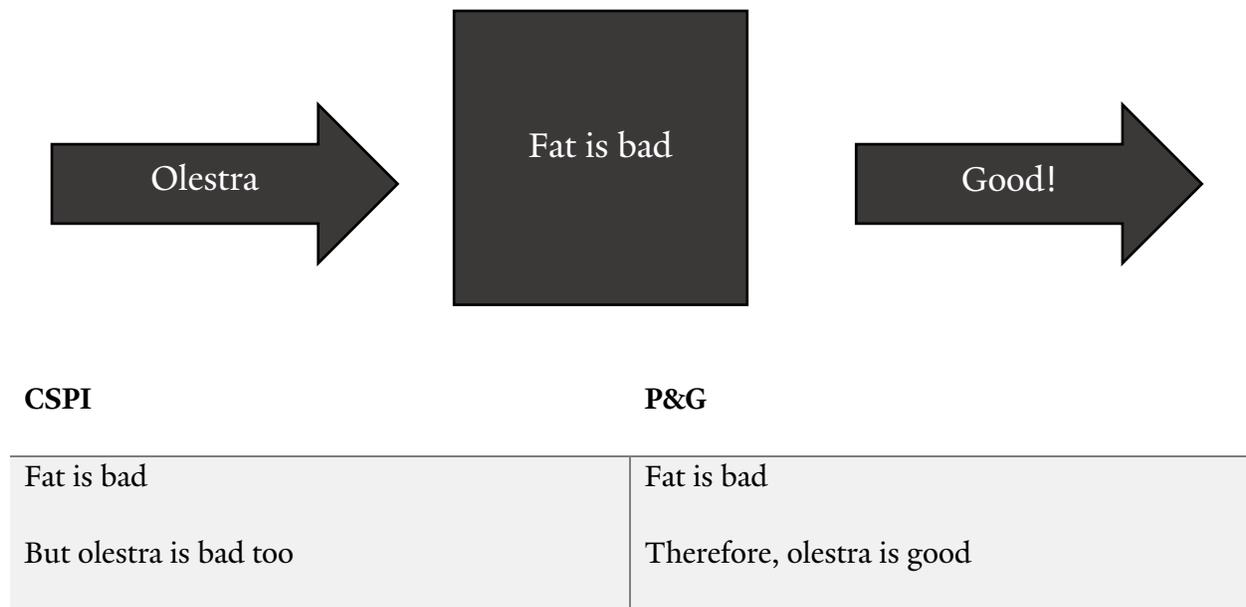


Fig. 7. Black boxing “fat is bad.” Designed by author.

CSPI was actively working to seal the black box of “fat is bad” in the late twentieth century. The formulas in *Nutrition Scoreboard* left little room for debate or nuances; fat subtracts from the score, and there’s nothing left to it. Meanwhile, headlines in the *Nutrition Action Healthletter* included those such as “McHeartbreak: Cardiologists Underscore Danger of a High-Fat Diet” and “Caution: Donut Eat.”¹⁰⁶ While the research on fat was still uncertain, CSPI’s communications were sweeping and confident.¹⁰⁷

In a black box, only the inputs and outputs matter; therefore, P&G’s argument was strong. They, like CSPI, agreed that fat is bad. Inputting olestra into this box means the output is approval. If fat is bad, it makes sense for a fat-free substitute to be a better alternative. With this

¹⁰⁶ *Nutrition Action Healthletter* archives, 1974 – 2005.

¹⁰⁷ Levenstein, *Fear of Food*, 129.

lens, P&G looks benevolent; they are simply trying to help the public more easily stick to dietary guidelines. And this is exactly what P&G representatives argued to House members on that June afternoon: the FDA must speed up its approval process, because it is only inhibiting the public's ability to adhere to scientific, anti-fat advice.¹⁰⁸

Meanwhile, CSPI's argument looked far less logical. If fat is bad, why is olestra also bad? CSPI's opposition to olestra is more complex than their opposition to overall dietary fat: it relies on a holistic understanding of bodily health, one that isn't so formulaic about meeting nutrient quotas. Olestra is unhealthy, they argued, for nuanced reasons – it's too processed, anecdotal reports include vomiting and diarrhea, it's not real food, it's a deceptive and profit-driven product. But their fight against fat was purely about fat consumption, as measured in grams: the lower the number, the better. Against that backdrop, olestra looks ideal.

Furthermore, the kinds of evidence that CSPI used in the olestra opposition were incompatible with those used in their fat opposition. Anti-olestra arguments rest on data found outside the lab, like reports of personal bodily experiences and knowledge of industry corruption. This is an expertise located beyond professional scientists. But the claim of "fat is bad" is rooted in a more narrow understanding of science, in which only those with formal training get authority. Missing from the black box was all the complexity, like the kinds of questions presented in the image below (figure 8).

¹⁰⁸ Congress, *Delays*, 47.

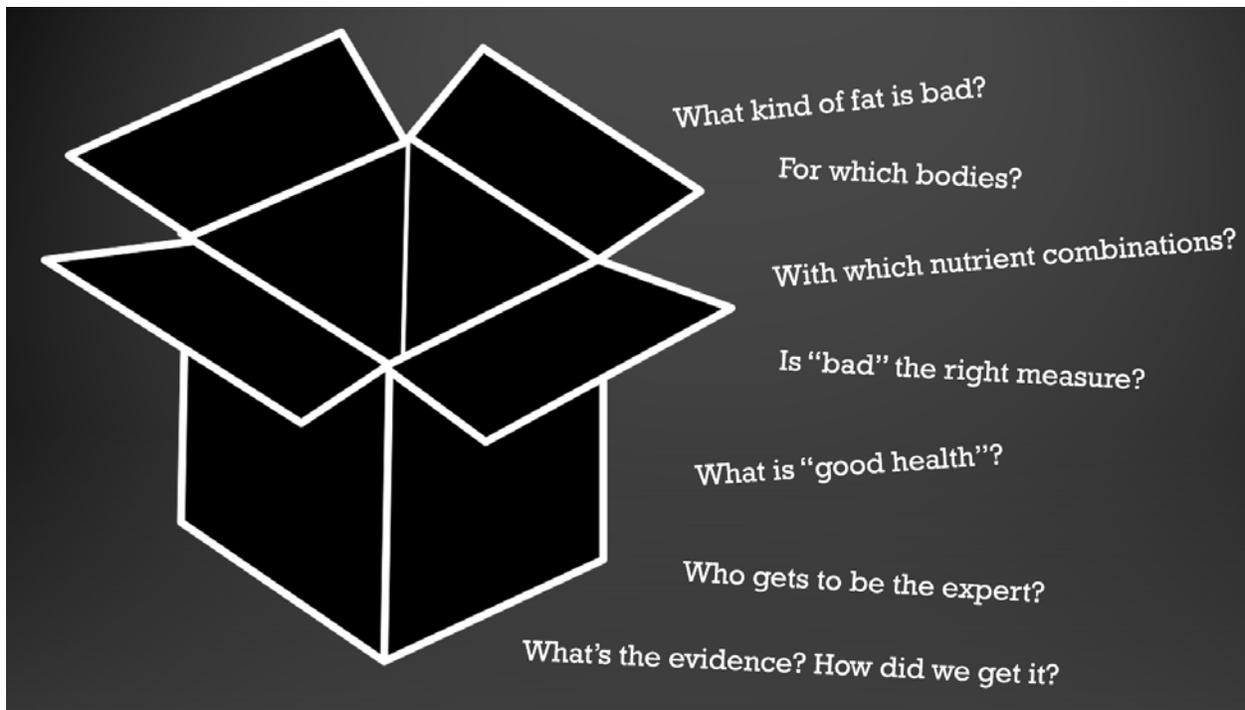


Fig. 8. Opening the black box of “fat is bad.” Designed by author.

When the box is opened, we can suddenly ask different kinds of questions, ones that would strengthen the opposition to olestra. If the problem with fat is that it’s usually present in too-large quantities in overly processed foods, then industrialized food is the problem, not fat itself. And when industrialized food is a problem, then olestra – a highly processed, synthetic substance itself – suddenly can’t be the solution. Shifting the culprit to overly refined ingredients, a fast food culture, or obsessive quantification makes an anti-olestra fight more compelling.

When fat is not so certainly bad, then olestra is not so certainly good. A more effective anti-olestra strategy requires a shift away from reductionist nutritionism. Moving away from a purely quantified understanding of health also opens the possibility for new kinds of evidence. If

numbers aren't the only measure of some objective truth, then the anecdotal reports that CSPI collected could carry more weight.

An open box, moreover, leaves room for a kind of specificity that wasn't possible when it was closed. We can, as Donna Haraway would say, "situate" knowledge in its human context so that a seemingly selective idea of what constitutes good science is no longer problematic.¹⁰⁹ That is, CSPI can sometimes prefer science produced in a lab and sometimes advocate for cruder evidence, like that streaming into their hotline. Data will never be perfect, so picking the lesser of the evils requires a kinder and broader understanding of science – an understanding that it happens here with us, is done by people, is never complete, and must be understood in *conjunction* with the social forces that envelop it.

Thinking Beyond Nutrition Science

While a more modest understanding and retelling of science could play an essential role in food fights, we must also consider that nutrition science is not like other sciences. It is not like the double-helix of Watson and Crick. We have a relationship to food independent of evidence-based research. It is a relationship entangled with familial ties, memory, body, taste, pleasure, seasonality, and much more. Yet the question of olestra was always about whether or not science tells us it is safe. For CSPI to full participate in the fight, they had to generate new data rather than make arguments about, for example, the degraded forms of labor that the large-scale production of Frito-Lay Light chips likely involved.

¹⁰⁹ Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14, no. 3 (1988): 575-599.

In order to more critically analyze nutrition as a science, scholar Julie Guthman argues that “it is vital to defamiliarize nutrition, to undo its taken-for-grantedness.”¹¹⁰ In the controversy over olestra, the language of food was replaced with that of nutrition science. Look back to the graphic from *The Wall Street Journal*: CSPI spoke of carotenoids; P&G of the number of studies it performed. Without inquiring who was more correct, I want to think about the underlying assumption that nutrients and studies are the appropriate language for evaluating food. In the hundreds of letters, reports, and studies, there is never a mention of other factors, like taste or environmental impact. Scientific research does inform dietary advice for good reason, but perhaps it is worth reexamining that decision and the actors who came to make it.

The process that entrenched the decision begins to emerge in olestra’s story. Without the authority of science, P&G perhaps would not have held so much sway in the FDA’s verdict. P&G is an enormous corporation. Its goal is profit, not public health. CSPI is a small non-profit that aims to work towards evidence-based nutrition policy. Shouldn’t that alone determine olestra’s fate? But P&G used a scientific language that made olestra look like a logical, inevitable marker of progress. And the FDA’s acceptance, despite both scientific uncertainty and P&G’s tenuous intentions, cemented the power of scientific rhetoric even further. Science is granted authority because it’s what the FDA uses to make decisions; the FDA uses science because it has authority.

CSPI, on the other hand, although well-intentioned, also contributed to the hegemonic discourse. As Foucault argued and Guthman interpreted, “efforts to investigate, control, and focus desire are generative of more discourses about the object of inquiry. In other words, the

¹¹⁰ Julie Guthman, "Introducing Critical Nutrition," *Gastronomica: The Journal of Critical Food Studies* 14, no. 3 (2014): 3.

public conversation may not be responding to a problem as much as it is generating one. And the problem I would argue it is generating is yet more anxiety about a food system gone awry.”¹¹¹

CSPI presents its work as addressing the problem of an unhealthy food supply. But it tells us the problem lies in informing nutrition with bad science, rather than in informing *food* with *reductive* science. To solve the issue of a corporate, chemical food supply, perhaps we need to use a language beyond that of corporate-informed chemical science.

In general, to determine a study’s efficacy, CSPI uses the following metrics: is it funded by an unbiased institution, like government or academic institutions? Was it a randomized, double-blind study with a control group? How many participants were included? How many other experts have confirmed its results?¹¹² Rather than introduce a fundamentally new epistemology, then, CSPI seeks to measure the level of objectivity in science. This creates a scale of least to most objective, and assumes that the least biased study exists. But a deeper question remains: must a study be objective to be helpful? And are studies always the right way to evaluate food?

In reactions to CSPI, several different kinds of opposition appear. Some resist the tone, others say the organization uses bad science, a few argue against their political motivations. But what none question is the underlying belief that hegemonic nutrition can be bracketed off from other ways of knowing, and that this scientific gaze is the truest way to evaluate food. Both CSPI and its dissenters, then, work within the same epistemological paradigm: that a standardized set

¹¹¹ Ibid., 2.

¹¹² Personal participant-observation.

of nutrition knowledge, coming from a body of experts, is the correct way to inform dietary guidelines.

Look back to Callaway, addressing members of Congress on Capitol Hill in 1995. He refers to olestra as a “food technology.”¹¹³ Perhaps the fight would never have ascended at all if other ways of knowing were also valued. What if Jacobson had resisted by arguing against the idea that a technology can nourish? What if he had argued that decisions about other bodies shouldn’t be determined solely by powerful entities in an exclusive, marbled hall? Those arguments are much more powerful, and much harder to sweep away than sets of detached data.

I want to be clear: nutrition science is extraordinarily helpful; in treating disease or malnutrition, for example, its utility cannot be denied. But as anthropologist Emily Yates-Doerr so nicely summarizes, “Nourishment is not cybernetics; it is not mathematics; it will never be ‘a modern fact.’ No matter how hard educators work to distill the flesh of experience from the black boxes of nutrition, nourishment will remain the domain of bodies and lives.”¹¹⁴

Looking Forward

Historian of science Ruha Benjamin argues that data requires responsible caretaking.¹¹⁵ The work does not end after the facts leave the labs. Referring to Latour’s scholarship, Benjamin writes: “science reporters opt to present ready-made science rather than science-in-the-making

¹¹³ Congress, *Delays*, 96.

¹¹⁴ Emily Yates-Doerr, “The Opacity of Reduction: Nutritional Black-Boxing and the Meanings of Nourishment,” *Food, Culture & Society* 15, no. 2 (2012): 310.

¹¹⁵ Benjamin, “Race for Cures,” Lecture.

and researchers wait to engage other disciplines until after the... facts have been established,” which leads to “a broad spectrum of controversies that the field is unable to resolve.”¹¹⁶

This is clearly visible in the case of CSPI. Their communications on food only present “ready-made science,” and only look beyond scientific ways of knowing as an after-thought. The result is a nutrition science that distances people from food instead of helping us more holistically nourish. Benjamin advocates for an interdisciplinary approach that begins further “upstream as questions and methods are being formulated.”¹¹⁷ This means we shouldn’t wait until the notion that “fat is bad” creates mental anxieties or “olestra is unsafe” creates physical discomforts. Instead, it is crucial to engage diverse voices *as* the facts become established.

The benefits of a multidisciplinary approach are many. For example, during a food history conference, Marion Nestle explained that nutrition science research is very difficult to conduct, because humans make bad subjects – sometimes we lie about what we eat, we all have complex and diverse bodies, and there are infinite confounding variables that make the accuracy of cause-and-effect conclusions dubious.¹¹⁸ Using scientific data in conjunction with other ways of knowing could alleviate the pressure on science to confidently and singularly prescribe; kitchens and communities could help the lab suggest menus that are balanced and delicious. Elizabeth Hoover, a professor of indigenous food movements at Brown University, points to a

¹¹⁶ Ruha Benjamin, “The Emperor’s New Genes: Science, Public Policy, and the Allure of Objectivity,” *The Annals of the American Academy of Political and Social Science* 661, no. 1 (September 2015): 134.

¹¹⁷ *Ibid.*, 140.

¹¹⁸ Marion Nestle, “The Politics of Food” (roundtable discussion at the Smithsonian Food History Weekend, 28 October 2016), The National Museum of American History, Washington, D.C.

Lakota community that already uses these approaches symbiotically. The Rhode Island group developed a food wheel that takes both traditional practices and current food access into account (see figure 9).¹¹⁹ Called the Four Winds Nutrition Model, it is in the shape of the Sacred Medicine Wheel “because of its cultural significance and the traditional knowledge about balance” and “is one of a growing number of Native nutrition models that have risen in an effort to teach nutrition while preserving the cultural knowledge of traditional food systems.”¹²⁰

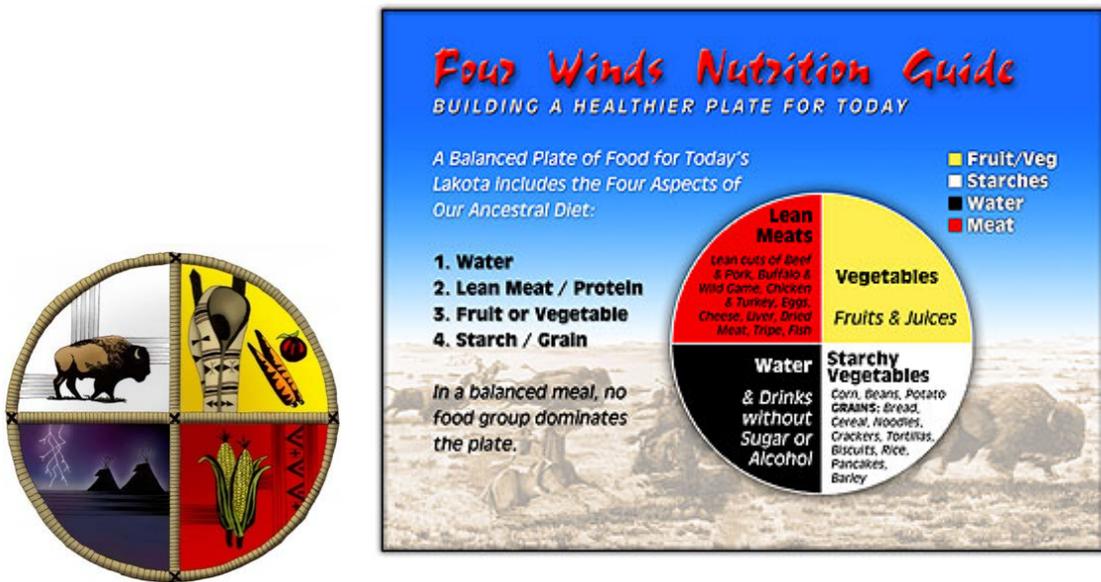


Fig. 9. Left, traditional Lakota Food Wheel. Right, contemporary Four Winds Nutrition Guide. From the *Tomaquag Museum Blog*, March 23, 2016.

¹¹⁹ Elizabeth Hoover, “The Politics of Health” (roundtable discussion at the Smithsonian Food History Weekend, 28 October 2016), The National Museum of American History, Washington, D.C.

¹²⁰ Esmeralda Lopez, “Food as Medicine,” *Tomaquag Museum Blog*, March 23, 2016.

Today, we are perhaps facing a similar fight to that of olestra. Sucralose is a non-nutritive sweetener, sold commercially as Splenda to help consumers lower their sugar intake.¹²¹ There are many parallels between olestra and sucralose, if only that CSPI lists both under “Avoid” in their “Chemical Cuisine” chart, both are calorie-free versions of a villainized macronutrient, and both faced delays with the FDA before eventual approval.¹²² Perhaps, then, this is a site to begin experimenting with different methods of dissent. We could begin by toning down the anti-sugar cries and opening many sealed black boxes; we could then wonder about social and environmental costs of production; and then, and only then, we could take a deep and situated look at the studies that inform. This requires a very engaged form of citizenship, one that not everyone has the luxury to partake in. But it also begins to shift the narrative away from the experts – whether those in the laboratory or the House hearing room – and back into the “domain of bodies and lives.”¹²³

Word count: 12,447

¹²¹ V. Lee Grotz and Ian C. Munro, "An Overview of the Safety of Sucralose," *Regulatory Toxicology and Pharmacology* 55, no. 1 (2009): 1.

¹²² Center for Science in the Public Interest, “Chemical Cuisine.”

¹²³ Yates-Doerr, “The Opacity of Reduction,” 310.

Bibliographic Essay

A key criticism of nutrition science in my paper is its lack of contextualization and abundance of sweeping authority. This comes from Donna Haraway's "Situated Knowledges," which argues that it is crucial to be more humble about our assertions and more transparent about our process. With that in mind, I hope the following can help situate my own ideas within all the threads that influenced my thinking.

I began to think about the history and philosophy of nutrition science as an intern last summer at the Center for Science in the Public Interest. But it took a long and circuitous path to land back on the organization as the focus of my research. Initially, I planned to look at the origin of nutrition as a modern science. I was interested in what it replaced, how it gained authority, and who was understood to be a scientific actor. The first source that guided me through these ideas was Helen Zoe Veit's *Modern Food, Moral Food*. This 2013 book argues that a newly scientific approach to diet in the early twentieth century radically altered what Americans ate and how they thought about what they ate. I found Veit's work profoundly engaging, and decided to focus my own research in the same time period: the Progressive Era (1890 – 1920). I was especially interested in thinking about the parallel threads of immigration and scientization; was dietary advice linked to larger efforts of assimilation, and how did scientific rhetoric play a role?

In her book, Veit mentions that the National Archives' Food Administration Collection houses much rich material that has yet to be analyzed, so I traveled to Washington, D.C. during fall semester to explore those sources. Unfortunately, that collection had just been shipped to archive facilities across the country. Luckily, the visit coincided with the Smithsonian Food

History Weekend. At the conference, I had the chance to meet Veit in person, as well as many of my other food historian heroes. Conversations with them challenged me to think critically about how expert nutrition advice informs daily social practices, and I began to wonder how the food moralism of the 1890s continues to emerge in today's nutrition rhetoric. In fact, this idea came up explicitly: during a roundtable discussion between Marion Nestle, Warren Belasco, and culinary historian Adrian Miller, they agreed that the Progressive Era and the 1970s exhibit many similarities. Both, they said, accentuate a distancing from and control over food.

These talks pushed me to think about my experience at CSPI in new ways, and I began to understand CSPI's strategies within this larger historical continuum. I decided to shift my focus forward into the 1970s, informed by my time at the organization. As an intern for the *Nutrition Action Healthletter* team, I wrote literature reviews for the cover stories, compiled nutritional data for popular food products, researched FDA labeling guidelines, and transcribed interviews between the NAH writers and external scientists. I chose this internship because I wanted to understand the strategies involved in public health advocacy and to learn from CSPI's relentless commitment to generate change. But that summer, I also found myself disheartened by the patronizing language of NAH. While the food policy team was working hard towards structural change, it felt like the simplified, quantified language of the magazine was undermining those very efforts. Reducing food to its nutritional qualities – to such an extent that macronutrients come to stand in for taste, culture, and community – felt counterproductive. We can't gather and organize and share around grams of fat; we can bond through and be nourished by homemade bread. In my professional career, I want to re-think food systems, but not through the purely scientific rhetoric of nutritionism. This senior essay became a quest to discover alternative paths.

To more productively understand my discontent, I found the lens of science studies to be incredibly energizing. As a student in Professor Radin's classes (*Biomedical Futures Since 1945* and *Problems in Science Studies*), I was exposed to questions about the nature, origin, and authority of facts. This framework helped me critically analyze CSPI's work without simply discarding their methods. I didn't want to do away with nutrition science or a faith in facts altogether – but I did want to learn how to be more thoughtful about the scientific process and the kind of knowledge and expertise it grants to certain groups or individuals.

As it turns out, CSPI has a deep well of materials that could inspire many, many theses. They were extremely gracious and open in sharing their publications. My former supervisor scanned and sent me dozens of issues from the early days of the magazine – one from every year between 1974 and 2005. Yale's libraries housed many of the booklets CSPI published in their early days, like *Nutrition Scoreboard* (1973) and *The Changing American Diet* (1978). And CSPI's director, Michael Jacobson, agreed to an interview. Our conversation was very fruitful; I asked him about how CSPI initially worked to establish trust, his personal interest in consumer advocacy and nutrition, how he converts studies into advice, and barriers to his work. Jacobson was open and generous in sharing his thoughts – I only wish we had talked longer.

In my secondary sources, I found the controversy over olestra. Marion Nestle in particular devotes a whole chapter to the messy regulatory battle in her book *Food Politics*. It seemed like a concrete case study to examine the ways in which science is deeply intertwined with the social, political, economic and, well, *human* world. While Nestle's work was a helpful compilation of background information, and a great starting point for my research, she seemed to draw an unwavering line between science and not-science. For her, olestra is a case study in

food industry corruption, not in the creation of a fact. Applying HSHM scholars to her work was, for me, a productive and eye-opening venture.

As a participant and observer at CSPI, I had the chance to become immersed in the non-profit's framework for understanding science. I found there was a dichotomy between conversations inside the office and the presentation of science in the magazine. For example, one of my largest projects over the summer was to help compile the annual review for multivitamins, to be included in NAH. The final product is a chart that advises readers on how to choose the best pill by promoting a specified range of numbers to look for in each micronutrient. But our meetings to determine which numbers to publish weren't so focused on rigorous studies; instead, they focused on reducing confusion among a lay audience, analyzing what is available in the market, and looking back on what NAH had advised in past years. This is, in many ways, reminiscent of the methodology presented in the 1973 *Nutrition Scoreboard*, and it points to larger questions about what counts as scientific. When science is packaged in this neatly concise way, what does that do to our conceptions of what it can and should do?

Reading Latour in HSHM classes after that experience was like seeing a light bulb turn on. His explanation of black boxes seemed to speak exactly to my questions. In my paper, I used his terminology loosely – he uses the black box to refer to the formation of facts in the lab, and I use it to look at the formation of facts in science communications and in the public mind. But I think his ideas *can* and *should* be broadly applied, to help us dive into the messy specifics of science instead of sweeping it all away.

To look beyond and imagine new possibilities, I was then inspired by Donna Haraway and Ruha Benjamin, two historians of science that suggest humility and kindness in our

approach to science. I found that their work intersected with that of Gyorgy Scrinis and Jessica Mudry, who write on nutritionism as an ideology, in very interesting ways. All ask, I think, for two changes: (1) a broader understanding of scientific actors, and (2) an upstream engagement with disciplines beyond science. In other words, a fundamental HSHM approach can inspire new ways of relating to and valuing food. My paper aimed to combine the critical approach to nutrition that Mudry and Scrinis offer with the broader solution-driven lens that Benjamin and Haraway propose.

Of course, there are many gaps in my research. Given my three months at CSPI and my lack of engagement with P&G, this paper is highly skewed towards CSPI materials. While I tried to gain the Procter & Gamble perspective by reading their side of the story in government hearings, letters, and other published documents, I am sure my project leaves holes in the debate. There are likely also holes in the CSPI side of the story – because of Jacobson’s busy schedule, I only had one interview with him, and would have loved to ask more questions had there been more time. It is also worth noting that I broadly present CSPI and P&G as, respectively, having single-minded visions, but I am sure that there was nuanced controversy *within* each organization as well. Unfortunately, that information is less accessible than curated, public-facing facades.

If I had more time, I would have loved to think more broadly about the role of citizen science in regulatory debates. It would be interesting to examine olestra in the context of other similar controversies, to understand how the government validates science produced by certain groups and not others. Another route for further research is to engage more deeply with CSPI materials – their participation in congressional hearings and their ongoing magazine publications

present a rich site in which to examine changes (or similarities) in diet advice over time. *Nutrition Action Healthletter* alone could help ground an analysis of how science gets communicated. And it will never become irrelevant to continue thinking about ways of doing nutrition differently. Whatever the route, it is clear that this paper is only the beginning of a much longer conversation, one I hope to continue long after graduation.

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