Life as Freshness:
A Political Ecology of Food Label Dating

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INTRODUCTION

In the pilot episode of Portlandia, a sketch-comedy television series that first aired in 2011, Fred Armisen and Carrie Brownstein act out a scene in which a Portland couple go to dinner at a farm-to-table restaurant. After scanning the menu, they confront the waitress with a series of questions about the chicken that is in one of the dishes: What breed is the chicken? Is it local? Who certified it organic? USDA or the state? How much roaming space did it have? What's its name? Did it have chicken friends? While Armisen and Brownstein mock the growing social trend of farm-to-table, they poignantly bring awareness to the idea of knowing your food.

While I do not care to ask about how many friends broccoli has or what its name was, I do want to take this sentiment seriously: what do we not see when we interact with our food? This scene challenges viewers to questions how much we know about our food, to which I want to extend: how do we know our food? A restaurant which is cognizant of its local sourcing practices, like that which appears in the Portlandia skit, can answer questions of these sorts, but when food is bought at a grocery store or a food mart, what can we know about a product from its appearance and packaging and what can we never know?

This thesis is a project about the knowledge production surrounding food. Food is an integral part of our lives. It must be consumed for survival, it is the center of many people's livelihoods, it's an object for policing, it's an art, and is a centerpiece on which to build communities. It is a material, tangible good, which interacts with political, environmental, social, and economic systems in ways that are highly malleable and constantly shifting. Here, in this thesis, I want to critically think about interacting with food.

My aim of this thesis is to critically engage with the power dynamic between humans and food. Human ability to assume ownership over food allows a conception that food is subject

3 Harvard Food Law and Policy Clinic and National Resource Defense Council, “The Dating Game:
to its owner and therefore will perform a life of freshness as dictated by a food label date (sell-by, expiration, or best-by date). I came to seriously question the ways in which food is seen or rather, positioned in everyday modern life, in a critical manner while interning at Daily Table between June until August 2015. Daily Table at this time was a startup food business: a not-for-profit grocery store trying to sell groceries and prepared foods at extremely cheap prices to make nutritious, wholesome food affordable and accessible. It was in this space where I came to think about how food is orchestrated by the state and in turn understood by the public, which lead to this project.

**Daily Table**

Daily Table is a grocery store with a unique model. It is a not-for-profit and most of the food sold in the store are surplus, excess products recovered from the food system. Doug Rauch, the founder of Daily Table, had previously worked as the president of Trader Joe’s. Holding a leadership role within a retail food store for over ten years, Rauch saw first-hand how much food was wasted at the retail level. With this troubling him, he attempted to solve the American food paradox\(^2\) (that so much food is wasted, while many go hungry) by creating a food market that would accept donated food or deeply discounted products from other food producers, distributors, or retailers to be sold at extremely low-prices to citizens who did not have access to fresh foods. Come June, 4th 2015, Daily opened its doors to the public.

On June 3rd, 2015, I made my way to the corner of Park Street and Washington Street in Dorchester, Massachusetts, a suburb of Boston. It was my first day as an intern at Daily

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Table. Daily Table had opened just one day after I began working there. On my first day of work, at around 9:30am, I was sitting in the staff break room with the Executive Director, getting a briefing on Daily Table 101, when the Massachusetts Health Department conducted a final walk through, officially clearing Daily Table to open their doors the following day.

Positioned across the street from a Kentucky Fried Chicken, Daily Table’s prices are intended to compete with fast food options. The store sells grocery items such as produce (fruits and vegetables); canned goods; dry goods; and frozen meats, produce, and meals (i.e. pizzas, quesadillas, etc.). Additionally, there are an array of house-made items that are made in the commissary kitchen including soups and stews; ready-to-eat-meals (examples include: oven-baked chicken and potato wedges; curried chick peas and white rice; beef, broccoli and brown rice, or even fish in lemon sauce with zucchini and brown rice), garden salads, smoothies, and sandwiches. And all of the food is sold below retail cost, made possible by the fact that the store is not making a profit. But what truly allows Daily Table to price their food so cheaply is they are not buying it all.

A majority of food that is sold at Daily Table is donated. Grocers donate over-ripe food. On my first day Whole Foods donated beautifully plump, overripe blackberries which meant they were to be eaten that day or the next day, and may be spoiled within a week. And over the course of my three months at Daily Table, bananas were often donated to the store if they were yellow; grocery stores try to sell bananas when they are green or on the cusp of yellow. Farmers donate food that is ill shaped and therefore cannot be sold to retail outlets. Often the store would receive burgeoning heads of lettuce that were too large to fit in a three-pack-bag or from sellers who had excess after a farmer’s market. Manufacturers donated products where their logo was misprinted or had an old logo on it that they were phasing out. Daily Table received a lot of flash frozen fresh pasta from a local Italian food store whose logo had
unfortunately been printed upside down. And some manufacturers donated food that was too close to its food label date or its code date, so grocers wouldn’t accept it. A relationship between Stonyfield Yogurt and Daily Table formed because they could not sell products to grocery stores that were within three weeks of their sell by date, and would otherwise have been thrown out. I’m talking about truckloads of yogurt that would be delivered weekly because they were 3-4 weeks until their sell by date, meaning the packages were marked to be sold within one month. All of the products received by Daily Table were completely safe to eat, delicious tasting, but were considered seconds to the food system which did not want them. Daily Table became a store that accepted safe, wholesome, nutritious food that was rejected by others.

When Rauch dreamed up what Daily Table would look like, he imagined that it would sell nutritious, good food that was either close to or past its code date (i.e. sell by date, expiration date, etc.). In Massachusetts, where the store is located, food is legally allowed to be sold past its code date as long as it is marked as so and segregated from other products (more on this in Chapter One). He imagined that part of the food that would be recovered would be food just past its date. This would work to retell the story of food label dates and educate consumers about their trivialities.

When Daily Table introduced itself to the Dorchester neighborhood, certain public officials and community leaders were hesitant to the idea that this store was selling expired food to low-income people. For Rauch this created a great communication challenge. Because consumers and the media are not familiar with the ways that food label dates are created, they embodied a trust and belief in food label dating, which lead them to question the motives and intentions of Daily Table’s mission. Selling dangerous or ill tasting food to low-income neighborhoods would be problematic, but that is not what Daily Table does or ever intended to
do. While, yes, all of the food that is donated or purchased is screened for safety and quality, the main tenet that Daily Table intended to tackle was that food label dates do not center around safety and are a state manufactured force which leads to a great amount of food waste. Angled as a space to recover food that should be eaten, Daily Table found itself at the center of an epistemic challenge of redefining food by working against mainstream use of the regulatory framework surrounding food label dating.

Yet, facing backlash from the community and the state’s Health Department, Daily Table (as of 2015), does not sell food past its code. Before introducing food past its code date, Daily Table wanted to have a successful opening. After the neighborhood and the store have a mutual understanding of the store’s place in the community and know the delicious quality of the food, then the store would work to introduce past-code food. Standing by as Daily Table wanted to sell foods that were past their code date but feel unequipped to begin the countermovement that will push back on food label dating regulations, I began questioning what the regime of food label dating is made up of. What legal groundings did social stigmas and conceptions of food label dating arise out of?

**Food Label Dating**

The practice of affixing a calendar date on food products to alter consumers of the peak freshness of a product, is the act of food label dating. Food label dates appear in a variety of ways including “best by” dates, “best if used by” dates, “best before” dates, “sell by” dates, “use by” dates, or “expires on” dates. These dates are regulated by a network of state actors as well as manufacturers and producers. This regulatory regime will be fully detailed in chapter one.
Food label dates appear on products using a variety of wording. Sometimes a label date appears solely as a set of numbers while other times they are preceded by a phrase such as “sell by,” “expires on,” or “use by.” The federal government has not issued any regulatory mandates regarding word choice of food label dates; therefore there are discrepancies across states, cities, and industries. The varying possibilities create confusion about what food label dates mean and what they are intending to accomplish. The Harvard Food Law and Policy Clinic attempts to define commonly used phrases printed on labels, while asserting that because these terms are not properly defined by the government, each producer or manufacturer may have their own interpretation of these terms. There is no national or industry agreement on these terms, but the Harvard Food Law and Policy Clinic determined the following definitions:

1. the “production” or “pack” date, which provides the date on which the food product was manufactured or placed in its final packaging
2. the “sell by” date, which provides information to retailers for stock control leaving a reasonable amount of shelf life for the consumer after purchase
3. the “best if used by” date, which typically provides an estimate of the date after which food will no longer be at its highest quality
4. the “use by” date, which also typically is a manufacturer’s indication of the “last date recommended for the use of the product while at peak quality”
5. the “freeze by” date, which is a reminder that quality can be maintained much longer by freezing product
6. even the “enjoy by” date used by some manufacturers, and not clearly defined in a way that is useful to consumers.³

Affixing food label dates on to food products, is a human action which categorizes non-human lives. Exercising control over the life of food, humans intervene in plant and animal lives. By sorting plant and animal lives by their peak-quality or assumed freshness, we (humans) govern the life of food. This practice is conducted for the sake of human consumption; it is centered around human life.

To live is not merely a human activity. Food label dating demonstrates how humans often co-opt other lives into their own, without accounting or attending to the non-human life, in this case food. This is one of the tenets which drives Eduardo Kohn’s *How Forests Think* which looks at the Ecuadorian forest ecosystem to challenge assumptions about what it means to be alive. Simply, “we are not the only selves in this world.” Plant and animal lives which humans consume, are selves too, with agentive properties. Food has a life of its own, which is often commandeered for the life of humans. Eating, as a general practice is not what I mean by commandeering. Eating is a necessary act for we must consume other beings (plant or animal) to sustain ourselves, just as each nonhuman life must consumes other lives as well. It is the act of food label dating, which grants humans the control over plant and animal life trajectories without consent, which I take as a sign of human-exceptionalist behavior.

The practice of food label dating takes up a dichotomous relationship between humans and nonhumans: we have material objects and we have humans “who represent or misrepresent things.” In this way, we can see how food is a material object which humans have come to produce and market as commodities necessary for life in which food label dating has become a technique for selling freshness. We humans have embedded food into our systems of life, often forgetting that plant and animals are lives themselves.

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5 Ibid.
6 Ibid., 9; Also see: Jane Bennett, “Edible Matter” in *Vibrant Matter* (Duke University Press, 2010), 39-51 for a discussion on the agency of food.
The highly political act of dating food products is a means of humans controlling the life of foods. Political governance, which is a system of human agents with designated powers to create laws, dole out authority, and oversee that communities act according to law. This assemblage of human power relations supports the idea that humans are categorically and essentially different to other animals, known as human exceptionalism, as it is a system created by humans for humans. Regarding food dating, regulations protect human desires and safety, and do not account for the life within food. Thinking of ways in which humans and foods can live in symbiosis, accounting for the agency of the non-human in our governance, this thesis aims to rethink the outcome and effectiveness of food label dating.

Federal, state and local regulations which direct food label dating in practice and presentation, work to create a certain knowledge about food. The community of Dorchester feared that Daily Table was bringing spoiled and bad food into lower income neighborhoods, because they believed that food which was past or nearing its code date was “expired.” This understanding came from their indoctrination into the political framework that encourages this belief. While the state does not say that food should not be consumed beyond a food label date, they place a best-by, sell-by or another type of warning on food without disclaiming that food may be perfectly safe and delicious beyond this date. By not taking a stance claiming that food could be safe past this date, they encourage the expiration of food on a label date. My experience at Daily Table led me to question what political actors and actions were constructing food label dates as markers of a food’s life and death. I wanted to question what created food label dates and what they really mean today in a grander context of a modern (read: high-technological) food system.
Overview

This thesis analyzes the relationship between food, the state, and the public by looking at food label dating as an information technology. I begin by exploring what knowledge is located in the state. Food label dating is a practice conducted by the state and the private sector, but I am interested in the state as a governing body which guides the lives of citizens, it is an important site of knowledge production and more importantly, knowledge validation. Then I will look at the ways that technology works to disrupt the process of food spoilage. And finally, I question what our relationship the relationship between humans and food is in light of food label dating.

Chapter One looks at what knowledge about food is produced by the state. It will provide historical context of the food safety challenges from which food label dating emerged. Mapping the current federal, state, and local actors which make up the food label dating regime, I hope to explain the ways that the regime is flawed. By tracing the actors and the system that has been created, I am questioning the epistemic shift in food quality. By organizing dating regulations in a certain manner, the state designs a structure that allows us to recognize foods in certain ways. Rooted within disciplinary questions of science and technology studies, chapter one explores how scientific knowledge around the life of food is regulated in the political sphere. How is knowledge about food produced and who is involved in this production of knowledge?

Chapter Two will then turn to the ontological question of food: what is food today? Because freshness and quality are the criteria on which food label dates are founded, the second chapter examines the dynamism of these terms as they relate to food. This chapter questions
the ways in which technological innovations produce conditions which come to recognized and
associated with freshness have been implemented and hidden in food production.

And finally, Chapter Three will examine the ways that state powers control plant and
animal lives, regulating the ways that humans interact with food. Looking at the state, we can
understand what relations are promoted or discouraged across species, to explore a new species
exchange in which we (humans) see, hear, and understand plant and animal lives as charismatic
lives, rather than a static object solely for human use.

This thesis questions actors’ powers, market controls, the politics of drawing
boundaries, processes of defining quality, and how we have changed political, social and
economic systems to account for the life of food, or rather what we want the life of food to be.
Calling on anthropology, sociology, political science, public policy, science and technology
studies, I will be looking at how the regulatory regime of food label dating structures and
mediates how we as society come to understand and interact with food.
CHAPTER ONE
Political Episteme: How The State Sees Food

As this thesis is inquiring into the knowledge that makes up food, I want to begin with an understanding of my object of inquiry: the food label date. Food label dates, a series of numbers printed on food products, represent a calendar date by which food will have exasperated its peak quality. These labels are a technique of intervention to organize food by its qualitative lifespan. The practice food label dating produces food label dates, a technology through which consumers come to know their food. Consumers aim to buy food with later label dates, as this alerts that the product will be fresher. I want to look at the state as a governing body, which in a way, directs how consumers come to interact with their food. Food label dating is a site to explore the ways government oversight of food is caused by the social perceptions of food, and simultaneously affects the ways in which society comes to understand food itself. The USDA and the FDA do not collaborate effectively with one another and therefore what emerges is a patchwork regulatory state. The attempted transparency created through food label dating actually has manifested confusion.

To ensure the integrity of information on food labels, regulatory authority was organized to govern food dating practices. Food label dating has evolved into a complex system, involving a variety of players and an inconsistent goal. In 2013, the Harvard Food Law and Policy Clinic (FLPC) and the National Resource Defense Council (NRDC) mapped the constellation of federal law, federal voluntary guidance, state law, local regulations, and industry practices, FLPC and NRDC attempt to supply the public with an overview of a masked and convoluted industry practice that is gravely misunderstood by a majority of Americans. The Dating Game report aims to bring awareness to the inefficient and disconnected

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system of dating while also providing policy and industry practice recommendations to create a cohesive date labeling regime.

Why Law?

Because the state system acts to uphold the order of society, examining how food dating is defined by the state illuminates how citizens come to know their food. Whether the state actively creates regulations around the ways that food can be sold or passively does not believe food to be misbranded, the state validates what knowledge about food is acceptable or unacceptable. The food system is upheld by the legal and political systems that produce the foods we eat. By overseeing food production, distribution, and sales, the state is involves itself in the life of food.

Legal and political structures map how citizens are supposed to navigate the world through technologies such as citizenship, passports, car registrations, requirement of permanent addresses on formal paperwork (i.e. ID card, taxes). The law which is authoritative in premise, 9 guides the way we live. Therefore, exploring the legal framework of food label dating: understanding how, where and why the practice of dating fits into the American legal system allows us to understand how the life of food is controlled by our legal system and how the interactions of different life forms’ (human and food in this case) are mediated within the

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9 According to Max Weber’s idea of rational-legal authority, the legal system is authoritative according to our tradition of authoritative organization. See Max Weber, “Three Types of Legitimate Rule” in The Essential Weber: A Reader (New York: 2004) for more on legal power.
inherently anthropocentric legal structure. The political framework encompassing food becomes a site to explore the powers that define and organize food in our world.

The ways that the government regulates food illuminates how the state treats food and in turn provides a paradigm for how citizens interact with and understand food. Exploring the legal structures that permit certain types of foods and the means by which food is consumed is a process of interpretation. Knowing that “there is no uniform or universally accepted system for food dating in the United States,” looking at each legislative or regulatory space will create an assemblage of government insights about the role that food should play in citizens’ lives.

Food dating originated out of consumer unease about the contents of food packages. In the early twentieth century, as Americans moved into city centers, they moved away from food production. This geographic rearrangement of Americans enlisted farmers and the transportation industry with the task of transporting food into these urban hubs so that people could be provided with food. The increased distance between Americans and their food sources took a toll on the quality of the food; Americans came to fear the freshness and safety of their foods because the distance took a toll on the quality of food. Without refrigeration, transporting perishables often resulted in decaying products. The extended “supply chain between producer and consumers” caused consumers to question the freshness of their food. Dates were intended to inform consumers of when their products would be at their peak freshness, an attempt at addressing fears and anxieties of spoiling products. Under these circumstances, in the 1970s and 1980s, food label dating was framed as increased transparency.

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10 I say that the legal structure is inherently anthropocentric because it is constructed by humans for humans.
11 Here, I use the term “power” not in a Foucauldian sense of force, but in a Weberian sense of intuitional forces. I am interested in seeing how power is possessed and exercised within political spheres.
With city dwellers skeptical of food that was being transported from farms into the city, food label dates were supposed to provide a gaze\textsuperscript{14} into the freshness of food products. Affixing labels and information on food packages addressed consumers concern that “cans and boxes concealed colours and odours and prevented shoppers from tasting food before they bought it.”\textsuperscript{15} Providing written information on the packaging of a product produced a greater assurance for customers about what was inside the package.

Label dates are a tool which provide consumers with knowledge about how their food will perform for them. In Xaq Frohlic’s *Accounting For Taste*, he points to a “shift from focus on consumers eating foods to consumers reading foods,” or what he deems “an informational turn.”\textsuperscript{16} Frohlic’s attention to eating versus reading, points to the ways in which eaters are using their senses to engage with their food. By eating, we can assume Frohlic means tasting with one’s mouth, whereas when consumers read their food, they are seeing it with their eyes: affixing their eyes to the words now found on their food products. These labels are demanding the attention of consumers, controlling the ways in which they are engaging with foods. Food label dates can be seen as a technology which engenders a reading of food, changing the ways that consumers interact with their food, or know their food. The ways that the government regulates label dating changes popular understandings of foods and quotidian eating habits.

By increasing amounts of information on food packaging, the state shifted their practices to fit into a broader neoliberal mode of governance. The neoliberal epistemology that

\textsuperscript{14} In *The Birth of the Clinic*, Foucault uses the concept of a clinical gaze to denote the ways medical training provides doctors with knowledge about the workings of the body that they can use to understand patients symptoms without having to open up each body. In a similar vein, food label dates seemingly provide customers with information that is supposed to tell them something about the inside of the food that can not be seen from the outside; it provides information on the exterior that allows a consumer information about the interior. Michel Foucault, *The Birth of the Clinic* (New York: Pantheon Books, 1973), 117–122.


\textsuperscript{16} Frohlic, *Accounting for Taste*, 55.
came about in the 1970s carried a belief in the rationality of markets to function properly and efficiently by individual consumers’ power of self-surveillance. The FDA’s newfound philosophy that more information allowed consumers to make more informed decisions in the market birthed an “effort to adopt a newer ecology of information,” creating a platform for food label dating to emerge from.

The Actors

The state, the private sector and consumers orchestrate the technique of food label dating. In 1979, The Office of Technology Assessment (OTA) reported to Congress three systems for open dating in the United States: private voluntary system, mandatory system, and voluntary/mandatory system. The state opted for a mixed voluntary/mandatory system, which is in place today, meaning that the state provides guidelines and private producers and can (and do) voluntarily date food products. Additionally, some states have adopted certain regulatory requirements for food dating for certain products, but there is not a central food label dating mandate. This means that there is a dynamic relationship between the state and the private sector in shaping food label dating practices. For example, while some states do not mandate food label dates, food products in those states still have dates because there are private voluntary practices. While the state and the private sector both play a role in food label dating, this thesis focuses specifically on state involvement. I hope that by engaging with the relationship between food and the state, this literature will fall into conversation with other academic inquiries into the relationship between non-human agents and the state.

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17 Ibid., 54.
A mapping of the regime’s constellation will allow us to understand how the state views food and sequentially, how the state makes food for the consumer to interact with. The American political system shares and distributes power among federal, state, and local governments. This division of power alleviates the federal government from the direct sovereignty. Additionally, it allows each of the fifty states to act differently; a federalist system provides states with the power to operate in their own way to account for different environmental, economic, or social climates. Because federalism is the reigning mode of political governance in the U.S., a study of food label dating requires an examination of federal, state and local governance.

Federal

The federal powers are lead by The Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA), the two main federal agencies managing food issues. These two agencies have garnered their power from Congress via the Commerce Clause, which allows the agencies to regulate any product sold in interstate commerce. While all foods sold across state lines can be regulated, the only product that is federally required to have a food label date is infant formula. All other products are not federally mandated to be dated. Congress has the legal power to designate a federal dating process but as of yet, they

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19 When a major manufacturer changed their formula recipe in 1978 resulting in a “substantial number of infants” were diagnosed with hypochloremic metabolic alkalosis which affected children’s development. This act classifies infant formula as “special category of food” due to the fact that it may be a child’s sole source of nutrition intake, meaning that there can be “no margin for error in ensuring the healthy growth and development of infants.” The Infant Formula Act therefore regulates recall procedures, quality control procedures, labeling and nutrient requirements. *Infant Formula Act*, H.R. 6940 (1980).
have not intervened to do so. Rather, contemporary food label dating must be understood through a variety of oversights.

While neither the FDA nor the USDA have explicit authority to regulate food label dates, each agency has been granted powers to regulate certain food products and therein the labels on these products. The USDA regulates meat, poultry, and certain egg products, while the FDA regulates all other foods. Additionally, the two agencies share jurisdiction over fruits, vegetables and eggs. With respect to produce, the FDA regulates food safety practices relating to production and harvest of raw fruits and vegetables while the USDA is responsible for marketing, inspection, and certification of fresh fruits and vegetables. For eggs, the FDA regulates shell eggs while the USDA regulates processed egg products and certified shell eggs. The lack of reasonably divided regulatory oversight between agencies leads to governance confusions. For example, animal fertilizer used for vegetable production is one space that is not overseen because it falls between the cracks of power division.

Marion Nestle, in her book *Safe Food*, deems the unclear division of food safety oversight between the USDA and the FDA “illogical.” Nestle pokes fun at the “terrifying complexities” these agencies have imposed upon themselves at trying to regulate foods as

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common as “a sandwich made with bread, ham, cheese, lettuce, and tomato.” While it may seem easy to divide oversight by food types, it does not make logical sense when actually confronted with prepared foods, which are a made up of a mixture of products. Within the context of prepared foods, the division of regulatory powers “breathtaking in its irrationality.” The United States does not have one federal agency responsible of food and therefore food falls at the intersection of oversight, making for a unnecessarily complex regime. The General Accounting Office (GAO) reported to Congress that in 1990 that:

“The federal regulatory system for food safety did not emerge from a comprehensive design but rather a piecemeal, typically in response to particular health threats or economic crises. Addressing one new worry after another, legislators amended old laws and enacted new ones. The resulting organization and legal patchwork has given responsibility for specific food commodities to different agencies and provided them with significantly different regulatory authorities and responsibilities.”

The ambiguity of oversight between the USDA and the FDA exposes the rather non-transparent and rather inefficient regulation system.

In addition to the power granted by the Commerce Clause, the FDA and the USDA can regulate foods which are misbranded (if their labels are false or misleading) under the Food, Drug and Cosmetic Act. The USDA established the Food Safety and Inspection Service (FSIS), a public health enforcement agency, to ensure that meat, poultry and eggs are safe for the public and that they are labeled and packaged correctly. It is the FSIS who takes on the

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26 Nestle uses this phrase “breathtaking in its irrationality to discuss the federally sponsored food safety activities, yet I want extend this reaction to the food label dating activities taking place within federal governance. Nestle, Safe Food, 55.
29 Under the Food, Drug and Cosmetic Act, the FDA has oversight over any food in its purview to be considered misbranded if its label is false or misleading. Food, Drug and Cosmetic Act, U.S. Code 21 (2012) § 331(b).
30 The FSIS is an agency within the USDA which can regulate misbranded products under the USDA’s jurisdiction. The Harvard Food Law and Policy Clinic and National Resource Defense Council, Dating
work that the Food, Drug, and Cosmetic Act requires for food label dating to be ensured. The
birth of the FSIS is an example of the ways in which federal actors (USDA) can create new
actors (FSIS) in which to play out the goals of the federal government.

The Federal Trade Commission (FTC), an agency of the federal government, also plays
a role in the game of food label dating. The Federal Trade Commission Act of 1914\footnote{Federal Trade Commission Act, U.S. Code 15 §§ 41-58.} established the FTC and deemed them “empowered, among other things to prevent...unfair or
deceptive acts or practices in or affecting commerce,”\footnote{Ibid.} which puts food label dating under its
purview. Furthermore the Fair Packaging and Labeling Act grants the FTC and the FDA
authority to additionally create “regulations where necessary to prevent consumer deception”\footnote{Fair Packaging and Labeling Act, Code of Federal Regulations 16 §§ 500-503.}
which includes food label dating. It is under these two acts that the FTC also participates in
federal oversight of food label dating.

There are four main federal agencies that recognize food label dating as one of their
responsibilities. Figure 1, originally published in The Dating Game, illustrates that these actors
derive their powers from eleven main acts. The production of this “piecemealed” system, as the
GAO called it, is the result of a reactive regulatory system that has not reflected upon or
repaired the unstable system federal foundation for which food label dating lies upon.

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authority to the Agricultural Marketing Service, another agency within USDA, to regulate labeling for
eggs under the voluntary grading program for eggs. 21 U.S.C. § 1036(b) (2012); 7 C.F.R. §56.36
(2013).}”
\end{flushright}
Federal Voluntary Guidance

The most comprehensive federal guidance on food label dating is the Uniform Open Dating Regulation, which is designed to aid states in creating more extensive food label dating regulations. This voluntary regulation was written by the National Institute of Standards and Technology (NIST), a non-regulatory federal agency within the U.S. Department of Commerce that is dedicated to ensuring uniform standards and practices of weights and measurements in various departments, among other things. In 1905, NIST established the National Conference
of Weights and Measures (NCWM) to work directly on the task of standardizing practices surrounding weights and measurements. Together, NIST’s Office of Weights and Measures and NCMW create the Uniform Open Dating Regulations, which are published in the NIST Handbook.

The Uniform Open Dating Regulation provides model regulations for local and state jurisdictions of open dating and was most recently published in 2016. The goal of this publication is to “prescribe mandatory uniform date labeling of prepackaged perishable foods and to prescribe optional uniform date labeling that must be used whenever a packager elects to use date labeling on prepackaged foods that are not perishable.”34 Providing states with this guidebook, NIST recommends food label dates on all perishable products and presents guidance for how to word these labels.

First, NIST differentiates perishable foods and semi-perishables as two separate categories. NIST defines them accordingly: perishable foods are those which have “significant risk of spoilage, loss of value, or loss of palatability within 60 days of the date packaging,” and semi perishable foods are those which have a “significant risk of spoilage, loss of value, or loss of palatability only after a minimum of 60 days but within 6 months, after the date of packaging.”35 By differentiating between perishable and semi-perishable, NIST is alluding to the concept that perishability should play a key role in how food dates are handled. Foods that are not as susceptible as others to spoilage should receive differentiated treatment. Yet, what NIST recommends is that perishable products be affixed with “sell by” dates while semi perishable products should be affixed with either a “sell by” date or a “best by” date. In The Dating Game, FLPC and NRDC take issue with NIST’s recommendation of “sell-by” dates, for

35 Ibid.
the confusion that this phrase offers eaters.  

“Sell-by” dates do not offer a clear intention for consumption. Even with this one confusion, NIST Handbook 130 is the most comprehensive guideline for food label dating provided by the federal government.

While the NIST Handbook 130 is an extensive resource that could be adopted into state law, it is highly underutilized. As of 2016, the NIST Handbook 130 reports that five states (Arkansas, Connecticut, Nevada, Oklahoma, and West Virginia) automatically adopt and annually update the NIST recommendations on open dating. And three states (Michigan, South Dakota, and Washington) have adopted previous editions from the NIST handbook. This voluntary regulation is produced from within the federal government but has not been adopted by the federal government, rather it is only law upon state adoption. If each state adopted the NIST Handbook 130, there would be a unified food label dating regulation in the United States.

The FDA’s Food Code also addresses food label dating briefly, but is more seriously a publication regarding food safety. The Food Code is published every four years, and most recently in 2013. Because its focus is on food safety, it only address food label dating as a possible prevention tool for *Listeria monocytogenes*. Because it is centered on safety, it only focuses on shellfish; refrigerated, ready-to-eat, potentially hazardous food; and reduced oxygen packaging. The Food Code speaks most in depth about refrigerated, ready-to-eat, potentially hazardous foods because they present the highest risk of *Listeria* and the Food Code considers food label dates as a device to aid in food safety. The Food Code does not provide guidance on how to determine dates, they only discuss the productive value they could have for refrigerated, ready-to-eat foods. And like the NIST guidelines, the Food Code must be adopted by states into their own legislation or regulation.

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State

Each state treats food label dating differently. Most of food dating enforcement happens at the state level under state departments such as Department of Health, Department of Agriculture, Department of Weights and Measures, Department of Commerce or others. As demonstrated above, looking at federal voluntary regulation, states have a great opportunity to control food label dating. Currently, different state departments have produced state codes with varying degrees of instruction and regulation in regards to food dating. The FLPC’s *Dating Game* reports that as of 2013, 41 states and the District of Columbia “require date labels on at least some food items.” 38 So just over 80% of states demand *some form* of food label date, but this could be on a variety of products. Looking at Figure 2, it is clear that of the states, which require food label dates, milk/dairy, eggs, and shellfish are most common products requiring dates. And there are “nine states [that] do not require them on any foods.” 39

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39 Ibid.
Additionally, state departments have also used their powers to regulate sales of food products after their affixed label date. The NIST Uniform Open Dating Regulation, advises that foods should be sold past their label dates, provided the food is “‘wholesome’ and the sensory quality standards for that food have not significantly diminished” and they are marked
as being past date by a sign, sticker or tag.\textsuperscript{40} And yet, because the Uniform Open Dating Regulation is only advisement, it is not active law unless it is adopted by states. Therefore, The Food Law and Policy Clinic reports that 20 states and the District of Columbia “regulate the sale of food products after some label dates, while 30 states have no such restrictions (See Figure 3). The belief that foods should not be sold after its label date is only agreed upon by 20 states and the District of Columbia. Some states have a date labeling regulations while other states have adopted no laws at all. And each state’s level of comprehensiveness varies. While states have the opportunity to create regulations to promote consistent, safe foods, what is currently at play is an “inconsistent state regulatory scheme that is not necessarily improving public health.”\textsuperscript{41}


\textsuperscript{41} Harvard Food Law and Policy Clinic and National Resource Defense Council, \textit{The Dating Game}, 12.
<table>
<thead>
<tr>
<th>STATE</th>
<th>NO REGULATION</th>
<th>PAST-DATE SALES REGULATED</th>
<th>FOODS FOR WHICH SALE AFTER DATE IS RESTRICTED</th>
</tr>
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<tbody>
<tr>
<td>ALABAMA</td>
<td>X</td>
<td>X</td>
<td>Meat, Class A foods (baby food, infant formula, potentially hazardous foods)</td>
</tr>
<tr>
<td>ALASKA</td>
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<td></td>
</tr>
<tr>
<td>ARIZONA</td>
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<tr>
<td>ARKANSAS</td>
<td>X</td>
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</tr>
<tr>
<td>CALIFORNIA</td>
<td>X</td>
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<tr>
<td>COLORADO</td>
<td>X</td>
<td>X</td>
<td>Eggs</td>
</tr>
<tr>
<td>CONNECTICUT</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>DELAWARE</td>
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<td></td>
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</tr>
<tr>
<td>FLORIDA</td>
<td>X</td>
<td>X</td>
<td>Shellfish and milk/dairy</td>
</tr>
<tr>
<td>GEORGIA</td>
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<td>Eggs, infant formula, shellfish, milk, potentially hazardous foods, pre-packaged sandwiches</td>
</tr>
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<tr>
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<td>X</td>
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<tr>
<td>IOWA</td>
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</tr>
<tr>
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<td>X</td>
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</tr>
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<tr>
<td>MAINE</td>
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</tr>
<tr>
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<td>X</td>
<td>Milk</td>
</tr>
<tr>
<td>MASSACHUSETTS</td>
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<td>X</td>
<td>All food products (special focus on perishable and semi-perishable foods)</td>
</tr>
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<td>Pre-packaged perishable foods, meat, milk/dairy</td>
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<td></td>
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<tr>
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<td>MISSOURI</td>
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<tr>
<td>NEVADA</td>
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<td>Potentially hazardous foods</td>
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</tr>
<tr>
<td>NEW MEXICO</td>
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<td></td>
<td>Milk</td>
</tr>
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<td>NEW YORK</td>
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</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>OHIO</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>OKLAHOMA</td>
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<td>OREGON</td>
<td>X</td>
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<td>Packaged perishable foods</td>
</tr>
<tr>
<td>PENNSYLVANIA</td>
<td>X</td>
<td></td>
<td>Milk</td>
</tr>
<tr>
<td>RHODE ISLAND</td>
<td>X</td>
<td></td>
<td>Packaged bakery products</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>SOUTH DAKOTA</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TENNESSEE</td>
<td>X</td>
<td></td>
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<td>TEXAS</td>
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<tr>
<td>UTAH</td>
<td>X</td>
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</tr>
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<td>VERMONT</td>
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<td>VIRGINIA</td>
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<td></td>
<td>Dairy</td>
</tr>
<tr>
<td>WASHINGTON</td>
<td>X</td>
<td></td>
<td>Perishable packaged foods</td>
</tr>
<tr>
<td>WASHINGTON, D.C.</td>
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<td></td>
<td>Potentially hazardous foods, dairy, meat, poultry, fish, bread products, eggs, cold meats, packaged perishable foods, etc.</td>
</tr>
<tr>
<td>WEST VIRGINIA</td>
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<td></td>
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</tr>
<tr>
<td>WISCONSIN</td>
<td>X</td>
<td></td>
<td>Eggs</td>
</tr>
<tr>
<td>WYOMING</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>

**Figure 3**

States Regulating Food Sales Past Some Label Dates


On March 1st, 2016, David Sefcik called me back. Sefcik is an editor of the NIST Handbook 130. I called David Sefcik who works in the laws and metrics department of National Institute of Standards and Technology to find out why the comprehensive NIST Handbook 130
is only a voluntary set of regulations. This handbook is the most apt literature to create a uniform food label dating system as it addresses which words to use for which products, the intentions of each label wording, and how to handle foods after their label date, and yet it is not federally mandated that states adopt this. After months of drawing up a regulatory constellation, I began to question why the federal government had not used their authority to implement the regulations in the NIST Handbook on open dating.

Sefcick admitted to me that the Uniform Open Dating Regulation “hasn’t been looked at or revised in years and probably needs to be.” When I asked him why the regulations were only voluntary he recalled that they are “not a federal regulation” and that while this document only adds to the “lot of voluntary regulation out there, the way to change it is if there is a federal law” that demands states to enforce food label dating. If that federal law did exist, he reminded me that this NIST Handbook 130 “would provide the proper language for states to regulate food dating. And what is stopping this from being a federal regulation? Sefcik said that “Congress has not felt the need” to create a federal law of such. Alerting me that the Uniform Open Dating Regulation published in 2013 and 2016 are identical and that there in those four years no additional states have their adoption of this regulation, Sefcik did not speak confidently about the effect of this research. For him, it would take Congress “feeling” like need to do something to create a cohesive national regulation.

In the 1970s and 1980s food label dating had the attention of Congress. At this time, Congress was alerted of the issue that there lacked (and continues to lack) a central agency who dealt with food safety (in which the practice of food label dating is included).⁴² During the 1970s and 1980s, Congress

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“introduced several legislative proposals to institute a uniform open code dating system on a nationwide scale, mostly via amendments to the federal Food, Drug, and Cosmetic Act. At least 10 bills were introduced by the 93rd Congress (1973-1975) alone. The 1975 GAO report encouraged Congress to adopt one of these proposed amendments. The Food and Drug Administration (FDA) also welcomed the potential for an explicit statutory mandate over date labeling, even while maintaining that it already had authority to regulate date labeling under its existing powers to control adulteration and misbranding. However, none of the federal legislative efforts gained enough momentum to pass into law and create a uniform, nationwide system.”

Whether it is labeled as “lack of momentum” or not “feeling” like there is need to act, federal actors are not rushing to reconstruct the food label dating system that today causes confusion, consumption, and food waste.

City

When city governments get involved in food dating regulation, more confusion occurs. Beyond the federal and state governments, city governments can also create local regulations, which is problematic when local regulations clash with the state regulation that the city is located in. For example, until 2010 New York City required “expiration dates” on milk in addition to a manufacturer’s “sell-by date,” while the state of New York did not. Often, consumers found milk cartons with two dates on them, one specifically for New York City (see image 1). In the resolution to dissolve the city regulation, New York City Department of Health and Mental Hygiene reported that they had received less complaints of expired milk

over the past years, that the state of New York had increased regulation of milk production to adhere to the city standards, and acknowledged that “sell by” dates do not put public’s health at risk more than “expiration dates” thus allowing them to repeal the code that required unique city dating.\textsuperscript{44} When cities require different standards than the state level, it creates complications for manufacturers who have to produce unique products for certain locations, like New York City milk, and furthermore, confuses consumers.

\textbf{Private Sector}

Without a unified federal stance on food label dating or consistent state practice, producers and manufactures are active participants in crafting the food label dating landscape. Food label dates protect producers as an instrument of branding. Food label dates do not predict when a food will spoil, but rather alert a consumer of the “peak-freshness” of a product. Therefore, we can assume a food label date marks a date that is before it will spoil. These dates are designed to ensure that food producers can ensure consumers their product is of good quality. Companies who imprint “short codes” will ensure that consumers generally consume their product at its best quality. No longer are dates just about ensuring that consumers don’t eat spoiled products, but they are also a way for companies to create a band image of quality food, not accounting for the systemic affects of their short dates. Food label dates benefit manufacturers and producers as they encourage higher product turnover. When foods are

thrown out in the stores or in the home, the manufacturer does not lose money or their image of serving fresh foods. If a food reaches its food label date, it is likely thrown out.\textsuperscript{45}

For retail stores, waste is understood as a necessary byproduct for business. Doug Rauch admitted that “the reality as a regional grocery manager is, if you see a store that has really low waste in its perishables, you are worried. If a store has low waste numbers, it can be a sign that they aren’t fully in stock and that the customer experience is suffering.”\textsuperscript{46} Rauch exposes this correlation between waste and retailers attempt to curate a consumer experience that promotes freshness. This managerial understanding of food waste is what allows Rauch’s new store, Daily Table to emerge. If food waste is conceived as a natural outcome to achieve proper customer experience, then Daily Table can be seen as an enterprise allowing business to continue as usual, relying on retail waste to recover and sell. It is a private cure to the distributional ills of today’s marketplace; it does not eliminate the initial waste but creates a new marketplace for food to be diverted from the waste stream. The \textit{Dating Game} reports that an estimated 40\% of food produced in the United States goes to waste, although they do not report how much of that is thrown out because of food label dating.\textsuperscript{47}

\textbf{The Role of Safety}

Let us remember that food label dates are supposed to alert consumers of a product’s peak freshness; food label dates are not intended for food safety.\textsuperscript{48} Perhaps the reason why there are so few safety protocols to guide how food label dates are determined is because food label

\textsuperscript{42} \textit{Dive!}, directed by Jeremy Seifert, 2010.
\textsuperscript{47} Harvard Food Law and Policy Clinic and National Resource Defense Council, \textit{The Dating Game}, 5.
\textsuperscript{48} United States Department of Agriculture, “Food Product Dating” fact page.
dates are not intended to measure safety. Different manufacturers have their own definition of shelf life and their own methodology for determining dates. There is no agreed upon method or definition for food label dating, rather it is driven by each company’s idea of their product’s quality and freshness. And freshness is a spectrum-based judgment, meaning there is no one definition of a fresh product, rather freshness is defined in relation to the food it is describing (see Chapter Two).

It must be noted that food label dates can aid in the prevention of *Listeria monocytogenes*. *Listeria* is a bacterium that is often found in soil, water, or animals, which is why it appears at agricultural or food processing sites. *Listeria* causes listeriosis, a foodborne illness which is typically treated with antibiotics, but could be potentially life threatening. Most of the serious cases of listeriosis are found in the elderly, pregnant, or those with compromised immune systems. Listeriosis certainly has serious impacts, and yet this fact should not prevent safety messages from being more effectively targeted to these populations. While the amount of time the product is refrigerated is not a large factor for most foodborne illness, *Listeria* grows even while being refrigerated. Because time is a factor involved in preventing listeria, safety-based label date could be used as a preventative tool.

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42 Nestle, *Safe Food*.


53 National Advisory Committee on Microbiological Criteria for Foods, *Consideration for Establishing Safety-Based Consume-By Date Labels for Refrigerated Ready-to-Eat Foods*.

54 The National Advisory Committee on Microbiological Criteria for Foods defines “Safety-Based Date Label (SBDL)” thusly: “Labeling information regarding storage time to control the risk of illness from psychotropic pathogens. An SBDL maybe a day/month/year or the number of days after purchase or opening and may include other statements such as “keep refrigerated” or “store below 40° F.” *Ibid.*, 176-63.
Safety is not ensured by a label date. If the purpose is to allude to a product’s quality of lack of deteriorate, there are other markers that would be more effective than simply dates. For example, statements such as “Food can be sold after its code date provided the food is wholesome and the sensory physical quality standards for that food have not significantly diminished,” could encourage an interpretation of food label dates as a suggested date for when the food will no longer be edible, rather than a confirmation that food is unsafe to eat.

I have tried above to illustrate the inconsistent and rather senseless constellation of actors involved in the food label dating oversight in order to expose how the system undermines itself. While state law differentiation, as assumed by a federalist system, makes sense to account for social, political or economic differentiations, no state appears to have a higher threshold for spoilage than any other state. With government acknowledgement of the shortcomings of their work, or rather underutilized and therein ineffective, food label dating is a tool governed by food politics. The knowledge of food produced by food label dating regulatory regime begins at the federal level but bleeds heavily into state and private practice.

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CHAPTER TWO
Producing Freshness

Since food label dates are not about safety, but about ‘peak freshness’ we must ask: what is fresh? Attempting to draw up a definition of fresh food challenges ideas of aesthetic, gustatory, as well as aromatic states of food. Until the early 20th century, fresh food could simply be thought of as a measure of time. A fresh tomato was identifiable by the amount of time that lapsed between its picking and its consumption. Color and texture were directly correlated to how recently produce had been attached to its roots. Fresh food could be determined by how lively it appeared. Ideally, this appearance would also be in sync with its smell and taste. Yet, today this simple logic has been complicated by a series of technologies that have been innovating, and continue to change, the ways that food travels thousands of miles. These technologies extend the temporality of food by controlling the environment which they inhabit. They work to keep food fresher longer. When storage techniques began to integrate into the market, the ways in which “fresh” could be measured began to shift. The development and implementation of technology into the food system has complicated our understanding of food and has changed ways in which “fresh” can be conceptualized.

Reorienting freshness, considering the alterations in how food is grown, processed, sold and eaten is a task necessary for the shaping of social, political, and economic underpinnings of the food system. Food is a social good, necessary for human survival and therefore many people have opinions about how food should operate in society. Public concern around food stems from issues of taste, health, and the economy. And yet, food is not a public commodity. Private, financially-driven actors have much say in food and desire control over freshness of food. In 2000, when the FDA convened to reconsider the term “fresh” as a descriptor for foods that are processed with alternative technologies, a lobbyist for the American Fresh Juice Council
beautifully state that “fresh is not a measurement,” but rather, “fresh is a state of being.” This lobbyist, (surprisingly) philosophically, nods to the idea of the changing climate of the food system and how it has enabled food to embody a “state of being” rather than just an attribute.

Following this thread, this chapter will explore ways in which technologies have evolved and integrated in the food system requiring a reevaluation of the terms which we can use to describe our food. Fresh food, which most think they know it when they see it, is hard to define. Conflations of aesthetics, taste, and even location often confuse understandings of what fresh food is. The concept of “fresh” can be reexamined by incorporating narratives of the technologies in our current food system that promote and protect food from perishing, and therefore alter foods to feign natural, aesthetic, images of “freshness.”

**Sustaining Breathe: Keeping Salad Greens Fresh**

Shelf life is a term used by producers and grocers as a way to understand how long a product can sit on the shelf before it will perish or not be “good enough” to sell. Shelf life asks how long will a product be fresh? For produce, shelf life is judged by spoilage, or the aesthetic view of “freshness.” If something looks archetypal, or pure, it appeals to our conception of fresh. Because produce is sold in a raw state, visible to the consumers, its appearance will promote or

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56 Freidberg, Fresh, 287 n1.
57 Freidberg continues: “He was hoping for an “industry definition of freshness: mass produced, nationally distributed, and constantly refrigerated. Far from a natural state, [the juice] depended on a host of carefully coordinated technologies, from an antifungal sprays to bottle caps to climate-controlled semi trucks” Freidberg, Fresh, 2.
58 Frohlic says: “Food” is a subject that, at first glance, everyone is certain they would know and recognize, and yet which they discover upon further scrutiny is a social category open to dispute. In this sense it is not unlike Justice Potter Stewart's awkward but honest effort to define "porn" as distinct from "art" in 1964 Supreme Court case: "I shall not today attempt further to define the kinds of material I understand to be embraced... [b]ut I know it when I see it..." Jacobellis v. Ohio, 378 U.S. 184, 197 (1964). Frohlic, Accounting for Taste: Regulating Food Labeling in the ‘Affluent Society,’ 1945-1995,” 38.
debilitate its ability to sell. For produce, such as salad greens, finding ways to retain the aesthetic quality of produce to elongate shelf life emerged as a profitable venture. The freshness of produce rests on the visual appeal of the product. Susanne Freidberg’s book, *Fresh*, positions freshness within a history of preserving, proposing that fixing the aesthetics of produce through reengineering packaging which intervenes in the relationship between deterioration and time, manipulates understandings of freshness.

Spinach as well as other salad greens used to be sold "naked," or loose, out of baskets at food stores. Throughout the 1920s and 1930s, bagged salad greens emerged as a new product. The simple act of selling greens in a bag, rather than loose, created new possibilities for the produce market. Much of the appeal of the bagged lettuce was its pre-pricing, making it easier for consumers to know the unit price of their food (opposed to price per pound). The ways that produce was grown, sold, and experienced shifted with the integration of plastic into the market. Grocers claimed it was “easier to buy, display, and track; it looked neat, sold faster, generally kept longer, and suffered less ‘consumer abuse.’” Technological improvements to this plastic began to emerge in the mid-1900s, changing the ways in which produce could continue to breathe and live from within a bag. By extending the breathe of produce, it could continue to respire, keeping its color and shape longer. Deterioration was delayed, therefore extending produce’s freshness.

In 1961 Bud Ante, a grower in Salinas, debuted plastic wrapped iceberg lettuce. Ante’s plastic wrapped lettuce became popular with customers because of its convenience. Growing convenience for consumers as well as salespeople ignited a growing Positive consumer ratings

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59 Freidberg, *Fresh*, 186.
60 Ibid.
spired the production of different product packaging, eventually leading supermarkets to create the message “package or perish.”

While packaging began as a simple convenience for customers allowing for pre-pricing as well as easy transport, fresh food was still a measure of time. Produce spoiled quickly prompting producers and sales people desiring ways in which food could have a longer shelf life. It wasn’t until 1988 when Steven Taylor developed the Keep Crisp bag, which enabled carbon dioxide to leach out while still allowing oxygen to enter, that packaging crossed a threshold from convenience to life sustaining. The packaging’s ability to control levels of oxygen and carbon dioxide are what lead to this technology’s life sustaining properties; it is regulating the environment in which spinach (or other produce) was able to respire, or breathe. This Keep Crisp Bag reshaped the industry of pre-packaged produce and caused Fresh Express to rise to the top of the market. With the introduction of the “breathable” bag, Fresh Express’s sales rose from $80 million in 1989 to $1 billion in 2000. The technology of the Keep Crisp Bag has led to many more new iterative products including a “Fresh Hold” package which has micropores allowing the transfer between oxygen and carbon dioxide and “Intellipac,” a product of Ladec, which is a polymer that senses change in temperature and then alters the rate of exchange of carbon dioxide and oxygen. It becomes more or less permeable as a response to the detected temperature. Altering the ways in which produce is packaged and presented was a process to prevent produce from deteriorating.

Food label dates are a tool to inform customers about a product's shelf life. These dates are supposed to inform customers of a product’s ‘peak freshness.’ Yet, as demonstrated, plastic wrapping has the ability to manipulate the temporality of a product, deeming it fresh for much

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61 Freidberg, Fresh, 188.
62 Freidberg, Fresh, 190, Fromartz, Organic Inc. Natural Foods and How They Grow, 128
63 Freidberg, Fresh, 191.
64 Brody, What’s Fresh In Fresh-Cut Produce Packaging?, Brand Packaging.
65 Ibid.
longer. Fresh is no longer a subjective measure of time since something has been picked, but also a reflection of how it is being stored. Today, consumers “looks for such characteristics as novelty, convenience, taste, eye appeal, nutrition, and health benefits” when shopping for produce. Consequently, adaptations in the produce industry have been integrated to appeal to consumers.66 Innovations in packaging have changed the aesthetic of produce sales, and also altered the interactions between consumers and their foods. The integration of breathable plastics have shifted ideas about shelf-life and freshness through consumer experience. Fresh produce, which used to be a measure of an items newness, now involves the temperature at which produce is transported and stored in as well as how technologically advanced packaging was used. “Fresh” is a production of “progress.”67 In the case of produce, controlling respiration rates by intervening in packaging has distorted the temporal life of produce. Fresh produce is no longer solely a natural phenomena, but also a product of our technologically controlled state.

Masking Blemishes: Fresh Beyond Aesthetics

By recovering food which does not appeal to conventional market standards of vitality, but smell and taste fresh, Daily Table is an organization rewriting the narrative of food as it is produced and distributed. If it assumed that fresh food is that which appears or reads fresh, Daily Table is shifting the paradigm of fresh to also include aromatic, tasty, and healthy food which may appear imperfect. This store allows customers to engage with foods such as freckled apples, yellowing bananas, or extra-large heads of lettuce, in a new way that is more accepting to the diversities of food production.

67 Freidberg, *Fresh*, 186.
One of the facets of the business is the commissary kitchen which can repurpose foods which will perform poorly in our visual paradigm of freshness such as a bruised zucchini which can have its bruise removed and get sautéed into a side dish. Bruised or dented products which will not pass a customer’s scrutiny, can be taken into the kitchen and be cooked into products which allow it to be presented in a new form. In an alternative process, Daily Table aims to invisibles blemishes to redefine food as fresh beyond imperfections.

**Does Fresh Mean Safe?**

While produce often exposes a predominantly visual paradigm of freshness, milk unveils purity and sanitization as social and politically driven influences shifting conceptions of freshness. Today, milk sold in the United States is almost entirely sold as pasteurized although raw, or unpasteurized milk can be found at farmer’s markets or is sometimes sold on farms. Pasteurized milk is raw milk which has been heated to kill bacteria, ensuring its safety. Both rhetorically and in practice, raw milk is the natural state of milk and pasteurized milk is processed. Recalling that the FDA states that labeling an item of fresh “implies that the food is unprocessed,” how has pasteurized milk become the gold standard of fresh milk? Processing or cooking, which involve interference with a natural state of food, seem antithetical to fresh, if thought of as “recent.”

If unpasteurized milk is considered in a raw state, can pasteurized milk be thought of as cooked? Claude Levi-Strauss posits a rhetorical culinary triangle in which he draws distinctions between the raw, cooked, and rotted. He proposes these three categories act as the vertices of

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69 Oxford English Dictionary
the triangle which organizes the culinary.\textsuperscript{70} Mapping freshness onto Strauss’ culinary triangle, fresh would reign over the raw sector. Looking at the triangle as a life cycle, raw food moves to the rotted with time (raw $\rightarrow$ rotted), but rotting can be delayed with heat, or cooking (raw $\rightarrow$ cooked $\rightarrow$ rotted). Altering the state of raw produce by cooking produces a product previously antithetical to the idea of “fresh.”

Pasteurized milk, which is heated in order to destroy bacteria, is essentially cooked, and yet operates as a fresh product, often considered “more fresh” than unpasteurized raw milk. Pasteurized milk complicates the idea that fresh is the raw state of food. Where produce is controlled for its aesthetic, milk is controlled for its microbial environment. Pasteurization works to alter the state of milk for the sake of its safe consumption. The process of pasteurizing milk can be seen as a case in which political and social priorities shifted and reframed what is fresh.

As urbanization reorganized the American population out of the countryside and into cities, milk sales began to move off of farms. Milk began to be transported to urban spaces via railways in the 1840s and 1850s. The mobilization of milk offered consumers great convenience but also lead consumers to fear the quality and safety of their milk.\textsuperscript{71} The more distance milk traveled, the time it took to transport, and the number of people milk passed between the farm and the consumer decreased “public confidence” that deterioration and adulteration of milk were not occurring.\textsuperscript{72} Trust in the food system had been instilled upon transparency of where food was coming from but as citizens moved away from farms and received food that arrived by

\textsuperscript{71} Freidberg, \textit{Fresh}, 204; Wright and Huck
train, they no longer knew where their food came from. Transparency of the food system was lost with the mobilization of food.

Not only did consumers not know where their food was coming from, disease outbreaks were appearing all over the nation as well as globally. In 1857, a typhoid outbreak in Penrith, England was traced back to a single case in a family of a milk producer. Over the next century, epidemics of scarlet fever, and diphtheria were traced back to contaminated milk supply. Following these epidemics an overflow of legal cases arose which can be read as a public cry for regulation of the milk supply.

What is Pasteurization?

When Louis Pasteur, a French chemist and microbiologist, reintroduced microorganisms to the scientific community as the carriers of disease rather than the consequence of disease, he altered the way that disease was understood. Presenting bacteria as contagions, social and political actors began to regulate the spread of disease, in the name of public health. This lead to government regulation of food production in order to purify the public’s food sources.

Pasteurization, made possible by Pasteur’s new conception of microorganisms, requires heating a liquid to a temperature, typically between 145 and 162 degrees Fahrenheit, in order to kill bacteria. Pasteur found that the heating of perishable foods, which prevented against the growth of harmful bacteria, rendered the foods safer, and therefore extending the shelf life of

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73 Association, American Public Health. 1921: 236. Wright and Huck, 2002
the product. Originally Pasteur used wine to demonstrate the effects of pasteurization, although soon after, milk became subject to pasteurization as well. By raising the temperature of milk, its safety was improved without “destroying desirable nutritional and sensory characteristics.”

Pasteurizing milk was positioned by the public health community as the way to ensure the safety of the national milk for its citizens. The government quickly adopted pasteurization as a tool to combat public fears of the national milk supply. Pasteurization began to be encouraged by city and state regulation. Urban areas and cities were the first to mobilize milk regulation. Boston, New York, Milwaukee, New Orleans, and Los Angeles were some of the first cities to create ordinances. By 1920, milk regulations were common across the nation. To centralize the many states and municipalities working to maintain a safe milk supply, the U.S. Public Health Service published the *Standard Milk Ordinance*, which was not mandatory, rather it was upon voluntary adoption by State and Local Milk Control Agencies. These regulations worked to systematically normalize pasteurized milk by means of government regulation, attempting to weave pasteurization into the social fabric of milk. Pasteurization became a mechanism to sanitize the public milk supply, to ensure the safety of all consumers.

Although pasteurization was welcomed by public health officials and government agencies working to ensure that the public was not put in danger by consuming milk, aversion to pasteurization surfaced from a number of people within the medical community, the dairy industry, dairy technologists, and the milk-consuming public. Those opposed believed that

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79 Note: This code has been revised 29 times, most recently being published in 2011 as “Pasteurized Milk Ordinance”
pasteurization would not be necessary if milk was handled properly. Similarly, consumers feared that reliance on pasteurization would allow producers to sell lower quality milk. Also, there was uncertainty of the effect pasteurization had on the nutritional value of milk. Many who opposed pasteurization believed that measures could be taken to reduce the distance milk was traveling, lessening the risks associated with transporting milk, while others believed that transporting milk was necessary and technology could render it safe again. Opposing methodologies to keep milk safe was underpinned by different understandings of what it was that rendered milk fresh.

Raw milk, milk in its original state, is alive with bacteria. Pasteurization acts to control the state of milk by eradicating harmful bacteria that could fester. It is important to note that not all unpasteurized milk is harmful but the process of pasteurization acts to kill potential organisms that spread listeriosis, typhoid fever, tuberculosis, diphtheria, and brucellosis, thus acting as a preventative measure. Destroying harmful bacteria with the use of heat renders the product safer than it was in its raw state. The social and political climate regarding the national health has come to dominate the rhetoric around food. Regulating the production of milk, primarily promoting pasteurization of milk for its ability to render milk safe, has come to be the dominant milk practice today. Technologically intervening in milk production to purify and sanitize the product, transforms raw milk into pasteurized milk.

In 1999, the CDC declared safer and healthier food one of the “Ten Great Public Health Achievements in the 20th Century.” Noting pasteurization of milk as one of the many tools that the government implemented into the food system in order to ensure a safe food supply for the nation, the prioritization of health and safety of the nation’s food is reinforced. Through the

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81 Freidberg, Fresh, 212.
course of public cries regarding disease outbreaks, uncertainty about technological intervention in food, and finally government enforcement for the sake of the health of the people, freshness arose to define the safety of the product. Raw milk, while rhetorically “fresher” due to lack of processing, does not ensure safety to the public. Pasteurization reduces the risk of illness from milk. Continual enforcement across the 20th century to naturalize pasteurized milk, eventually lead to an FDA regulation in 1973 requiring all interstate commerce of milk must be pasteurized.\textsuperscript{82} The state is behind the production of technologically mediated food for the safety of the public. Pasteurization is a case in which the safety of food makes it fresh.

\textbf{Invisibilization of technology/sanitation}

For anthropologist Robin Nagle, America’s relationship to sanitation is a story of visibilization to invisibilization. Her book \textit{Picking Up: On The Streets and Behind The Trucks With the Sanitation Workers of New York City} looks at the ways that the New York Department of Sanitation (DSNY) fits into a greater the social fabric of a central American city, Nagle joins the DSNY to explore the dangerous, physical, and socially-ignored work. In 1895 Colonel George E Waring Jr., a civil war veteran was brought to New York to change the department of sanitation. One of the many changes he made was to require all sanitation workers to wear uniforms that were all white. As Nagle puts it “[\textit{Waring}] knew that clean streets meant an immediate boost to public health, and he wanted the public to associate the DSC workforce with hygiene and cleanliness—thus the white suits.”\textsuperscript{83} These uniforms meant to visibilize the men who cleaned and sanitized the city to protect the city. Colonel Waring intended that the

\begin{flushright}
\textsuperscript{83} Robin Nagle, \textit{Picking Up: On The Streets and Behind The Trucks With the Sanitation Workers of New York City}, 108.
\end{flushright}
white suits “make every man realize that he was being observed.”

Colonel Waring acts as a representative of the state who worked to produce a visible infrastructure of sanitization.

When Nagle joined the DSNY, she found that today, society ignores the sanitation workers. They are “not physically invisible” and they are treated as if they are “not-there…” a status given to them by a larger culture. When going about their everyday chores, sanitation workers are willfully unseen. Juxtaposed to 1895, Nagle paints a narrative of a society working to invisibilize the sanitization infrastructure, calling the workers “garbage faeries” alluding to the illusiveness desired by these laborers. In a similar light, we can see the production of freshness as being invisibilized or as Nagle says “unseen.” By concealing modes of sanitizing, the effect is a naturalization of the antiseptic. By shifting away from a system of sanitation workers which wear a white uniform in pride to a system of “unseen” workers, sanitation becomes invisibilized and taken for granted. Sanitation workers are unmarked, unappreciated “fairies” whom have become natural pieces of the cityscape.

In the same way that there have been technological advancements in sanitation programming such as regular trash removal systems and sewers, we see a parallel movement in the food system such as the above example in which microbes are killed to ensure safer milk. Technologies allow us to move and organize bacteria and bacteria which when organized correctly (or incorrectly rather) can harm humans. This social and state desire and attempt to invisibilize sanitation infrastructure naturalizes it as a human protection mechanism.

Power to Define Life: To Give or Take It

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Ibid.

Nagle, Picking Up, 11-27.

For a critical look at the racial history of how white has come to represent cleanliness, see: Carl A. Zimring, Clean and White: A History of Environmental Racism in the United States.
Food label dating is a technology over life and death. This chapter has discussed technologies which produce freshness, which is the operating force for food label dating. But additionally, food label dates act as a technology: a mechanism which changes the ways that consumers interact with, understand, and use food. By marking when food is fresh before, they decide on the lifespan of foods, on how long a consumer will perceive it as edible.

Rhetorically, an expiration date is an extreme and aggressive statement. If a human expires, they are dead. If a driver's license is expired it is no longer accepted by the state and is out of commission. Yet, foods are often still edible and even nutritionally satiating after an expiration date. When a doctor is overseeing the life of a patient, they are granted the expertise to declare a time of death, when they announce that the patient has “expired” or died. Similarly, food label dates predict the time of death of food. But, rather than checking for signs of death, retail stores follow these guidelines, throwing out food that is past its date. And Daily Table aims to intervene in this exact scenario, when food is declared dead before its utilitarian value has truly declined such as the case with yellowing bananas. The state has enabled producers and manufacturers to declare the time of death of food products.

Food label dates are a visible technology which assume conceptions freshness as liveliness. Yet, paradoxically expired, spoiled, non-fresh foods are “more alive” as they have more bacterial growth. When we pull out a loaf of moldy bread, we are often exposed to the sight of blue, green, or white fuzzy mold that has grown on our food. Here we are presented with a product that is no longer fresh or has “expired.” Yet, a semantic paradox is present. This bread is not dead as expiration may allude to. Rather, this bread is full of bacterial life. Rather than categorizing this bread as expired, one could say it is more alive. But this food label date, operates as a technology of political and economic vibrancy alive in the food system. Fresh as a
state of being—a state of social currency. Marking dates on food defines foods’ lives that are worth living; lives that are worthy of a consumer's purchase.
CHAPTER THREE
Entangled Lives

While engaging with the politics of food, I here find myself tracing the powers which organize food. Quite often, public narratives tell us that our tastes are our own, for taste is highly personal. Taste is perceived by our tongue but smell, texture, temperature, and appearance all help build our tastes. But it is your own tongue, nose, and eyes which judge tastes, thus it is often assumed that tastes are our subjective creations and judgments. This chapter will look at the impersonal, or universalizing forces which overlay the state’s control of what lives (of food) we can interact with.

Regulating (Micro)life

For Michel Foucault, the ways in which the state comes to regulate the population introduces a new form of power, a framework of administration, which shape the boundaries of life itself (birth and death): biopower. Rooted in the ideology that the state should make life and let die, Foucault’s concept of biopower focuses upon the shift in state powers that enable lives to be made and formed rather than taken away. This shift is marked by an increase in managing or “investing” in lives through political mechanisms including economic and medical control over the effectiveness of bodies as well as measuring the biological processes such as life, death, longevity, or health levels. This management of life transitioned away from “direct” state power over life in which a state’s power laid in its power to execute. Sovereign power, which operated on the logic of “to take life or let live,” gave life to everyone and therefore could take it away.

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from people. Foucault explains this altering conception of power as a mark of modernization. This shift changed the conception and reach of political spaces. It repurposed the state into an institutional and regulatory body rather than an executioner.

Yet, human lives are not the only lives affected by the biopolitical state. Extending upon Foucault’s biopower, anthropologist Heather Paxson has offered the term *microbiopolitics*: “the creation of categories of nonhuman biological agents; the anthropocentric evaluation of such agents; and the elaboration of appropriate human behaviors given our entanglement with microbes engaged in infection, inoculation, and digestion” (Paxson 16). Paxson encourages us to think of Foucault’s idea of biopolitics on a microbial level as a way to examine “debates over food quality” which often prompt the state to “recognize and manage human encounters with the organic agencies of bacteria, yeasts, fungi and viruses.” Following Paxson let us think about microbial life as emerging within food. Microbiopolitics is positioned atop the idea that microbes have the power to produce great flavors and tastes and therefore the state should work to create a world in which nonhuman biological agents are able to live in tandem. And yet, microbiopolitics questions if indeed the erasure of sovereign power, that Foucault posits to have been replaced by a biopolitical state, has in fact occurred. Reading Foucault’s biopolitics through the lens of microbiopolitics, accounting for other forms of life, sovereign power is revealed as still being at play.

When the state assumes its role as the power to foster life, it must act at the level of the collective body. A biopolitical state aiming to regulate bodies and manage lives oversees health of the nation. Facing illness, the government asserts its power to protect the health of the population in the name of *letting live*. This power discursively emerges as public health, which

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places the individual as one in the collective population. The role of the individual must assimilate into the health of the public or it will create friction. One could ask, why do we need public health? What does a healthy population do? The governing state, which has a great stake hold in the functionality of bodies, assumes that a healthy public will allow a functional and sustaining population. Bodies that thrive, or rather, remain functioning, have the capacity to work and keep the state productive. To shift away from a sovereign power, which could execute bodies that infect the population, public health works to maintain the public’s health through a web of regulation, as to foster life.

To be free from something posits that there is an object (human or not) that could be oppressing the subject. Health is a state of being, free of illness or injury. And yet, bodies are permeable to their outside surroundings, and therefore an individual body is at risk of illness interacting with the external world of bacteria and viruses. Other bodies, other living things, and other animals all could possibly put the individual body at risk. Friction between a body and the surrounding environment enact a relation of power between the individual body and the state (state as a physical space and the political state).

Alternatively, health can be examined as a relation between human life and microbial life. It was in the mid-1800s when Louis Pasteur was credited with linking microorganisms to the cause of disease. Thinking about Pasteur and germ theory, we can read (public) health as a power relation between the state and the microbe. Building on Foucault’s notion that “power is situated and exercised at the level of life,”91 I want to think about how power of human health is situated and exercised at the level of microbial life. As Pasteur rose to fame for his work on germ theory, risk of bacteria and microorganisms climbed to the top of the public agenda, creating a national climate which fostered the erection of the Food and Drug Administration

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91 Foucault, *The History of Sexuality: Volume One*, 137.
(United States) was formed, a body which regulates the safety of food and drugs. The FDA, which emerged in the 1930s out of the 1906 Pure Food and Drugs Act, is positioned in society as an arm of the state which is “responsible for protecting the public health by assuring the safety, efficacy and security of human and veterinary drugs, biological products, medical devices, our nation’s food supply, cosmetics, and products that emit radiation.”92 The emergence of a government body aimed at keeping the population safe through the regulation of foods and ingestible products, is a manifestation of the biopolitical state. Specifically, let us look at the state’s regulation of food label.

Food label dates can be understood as an effort to protect bodies from eating spoiling foods. Expired foods assume the presence of bacteria which have enabled the deterioration of the food, and therefore prompts us not to consume the product. Food label dates attempt to reflect the bacterial life of a product to ensure eaters are eating high-quality, fresh products. Food label dates operate on the ideology that bacterial growth is to be avoided. The microbiopolitical regime aims at protecting the nation’s bodies, or the collective body.

Arranging Microbes

In Mary Douglas’ *Purity and Danger* she discusses the ways in which we analyze objects, people, and ideas along a the dichotomy of good or taboo. She traces the ways that sacred and dirt emerge in different contexts which leads to her exploring how we organize our social worlds. By framing the world as operating along this binary, she allows us to think about the ways that microorganisms are positioned alongside human life. Douglas believes that there is

92 This is part of the FDA mission statement which is published on their website. Accessed on March 18th, 2016 at http://www.fda.gov/AboutFDA/WhatWeDo/
no “absolute dirt,” rather she says some dirt “offends against order.”93 If we take ordering as a socially produced practice that aids in mutual discussion and knowledge production,94 that which “offends against order” is of our own delineation. How we categorize our world works to produce that that is sacred and that which is obscene. Social organization has long been a rich area of study in anthropology95, for how we create structure, maps how we navigate and perform96 in the world.

Food is a rich study for Douglas who finds fascination in the ways foods are demonized or praised in different religious settings. Douglas looks at an array of religious ceremonies and practices as modes of governing populations. Each culture defines order and purity by dividing up the world, inevitably marking some foods as unclean. Bacteria, which are common to all foods, is more present in fresh foods as opposed to shelf-stable foods (think produce versus chips). Bacteria, which have the capacity to spoil foods (and indeed do spoil foods) are categorically disparaged by food label dating. Objects and subjects that disrupt social order are strategically categorized as dangerous, including microorganisms.

**Imagining Boundaries**

The ways that bacterial growth can produce delicious tastes and flavors challenges the narrative that bacteria are offensive. Exploring the diverse bacterial activity in cheese, Paxson

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95 See: Emile Durkheim, Claude Levi-Strauss, and Marcel Mauss
examines the “imperfection” of the sixty-day rule, a federally imposed safety rule requiring raw milk cheeses to be aged for a minimum of sixty days.\textsuperscript{97} This rule imposed by the FDA “homogenizes cheeses as belonging to the same class of food, treating them as microbiopolitically equivalent, when different families of cheeses embody quite different microbial ecosystems (based on acidity and moisture as well as microbial populations) and thus constitutes different risk for human eaters.”\textsuperscript{98}

While some foods operate on a linear timeline of bacteria threshold as relating to safety, some fermented foods benefit from bacterial growth (and time) which give rise to certain tastes such as cheeses, beer, kimchi, kombucha and many others. Paxson reminds us that there is great variety \textit{within} each of these food items. Take cheese for example. Camembert has a different acidity and “local ecology” as feta cheese and therefore cannot be accounted for in the same way. Her examination of the sixty day rule is of importance because it is another state imposed food regulation which operates on a generalized understanding of bacterial growth. The levels of acidity and bacteria play such a great role in the safety of cheese that to say all cheeses are safe after being aged for sixty days is imperfect. Many cheeses need far less than sixty days, but this boundary defined by the state makes regulation possible, even if it is an oversimplification of the bacterial development of cheese. Paxson, following many cheese makers, positions bacterial life as a complex life form that often clashes with the microbiopolitical regime of the FDA, which oversimplifies bacteria as a danger according to a food’s life span.

The FDA declares that with time microbiological growth in food expires food, disillusioned to the idea that certain growths can be benign. The state has organized the microbial world upon a bacterial threshold measure to determine freshness or expiration.

\textsuperscript{97} Paxson, \textit{The Life of Cheese}, 174.
\textsuperscript{98} \textit{Ibid.}
Challenging the bifurcation of food into good/fresh/healthy and bad/expired/dangerous, Paxson presents the bacterial life of/within cheese as a way to challenge the state produced ethics of eating. Because cheese often requires time for certain microbes or molds to grow in order to obtain certain flavor profiles, cheese defies the FDA’s message that foods peak quality is made possible by limiting a product’s shelf life.

Similar to the sixty day rule, food label dates are the state’s attempt at defining an acceptable threshold of bacterial growth. Food label dating, attending to the freshness of food, accounts for bacterial growth. Label dates are presented in the form of calendar dates for they hinge upon an axis of time; they assume that the more time that food sits in a pantry, on a shelf, or in the refrigerator allows for bacterial growth. Simplifying freshness to an axis of time, the state does not solely discriminate against dangerous bacteria (i.e. listeriosis) but all bacterial growth.

Paxson’s microbiopolitics postures that when accounting for microbes, the state devolves through the use of sovereign power choosing to maintain human lives over other types of lives. Foucault’s biopower, which operates as a means of controlling the population, enables the killing of many benign microbial lives for the health of the human population. Framing expiration dates as the death of food items, as they are no longer deemed viable/edible/worthy for the population, we see that the government (United States) executes a form of sovereign power by encouraging the expiration, or execution date, of food items. According to Foucault, the biopolitical state is supposed to be a modernizing shift away from sovereign power and yet microbiopolitics understands that it is still active. The state’s power to date food is an act of sovereign power, of taking life. The state operates from a belief in human exceptionalism.99 For

Paxson, this represents a Pasteurian microbiopolitics in which the state perceives the “natural world as dangerously unruly and in need of human control.”\textsuperscript{100} What Paxson calls for is a post-pasteurian microbiopolitics in which microbes and humans can live in “cooperation.”\textsuperscript{101}

**Embedding Lives**

Pushing beyond the human, *The Multispecies Salon*, a collection of essays which help birth multispecies ethnography, questions “which beings flourish, and which fail, when natural and cultural worlds intermingle and collide?”\textsuperscript{102} Paxson, who writes also contributes to *The Multispecies Salon*, pursues the fragile classifications which currently frame how human and microbes develop together or diverge. Following this discursive challenge, I want to overlay Paxson’s research on cheeses to food label dating, examining the lives of food as they come to coexist with and in humans.

By acknowledging ways in which some microbes need time to develop for the certain foods to form, *microbiopolitics* draws awareness to bacterial life within a biopolitical state. Microbiopolitics, as Paxson posits “calls attention to the fact that dissent over how to live with microorganisms reflects disagreement about how humans ought to live with one another.”\textsuperscript{103} Analyzing the relation between microbes and humans not only highlights ways in which microbial life is not (or improperly) accounted for, but also exposes ways in which human-to-human relations are troubled. Paxson’s calling of attention to the relation of power between humans and microbes is a space to reflect on the troubled relationally or power dynamic between humans as well. Examinations of how lives (human-human or human-microbe)

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  \item \textsuperscript{100} Paxson, *The Life of Cheese*, 161.
  \item \textsuperscript{101} Ibid.
  \item \textsuperscript{102} Eben Kirksey, *The Multispecies Salon* (Duke University Press, 2014), 1.
  \item \textsuperscript{103} Paxson, “Post-Pasteurian Cultures,” 16.
\end{itemize}
uncover ways in which society is operating along lines of power which act to divide and organize the world. And while Foucault posits that biopolitics aligns with a modern form of government, microbiopolitics brings light to ways in which certain lives are not given the same luxury of made to live and left to die as Foucault believes in our modern state. Paxson draws on interspecies relations to draw attention to troubled intraspecies relations.

Humans both require an ecosystem and are an ecosystem. For Anna Tsing, it is this pluralism of ecological communities which allow for a fruitful discussion of food chains as they connect the land, the environment, human labor, and eaters. Tracing mushroom picking in a post-disaster, radioactive-contaminated Japan illuminates that “radioactive materials are easily incorporated into living bodies.” Ecosystem thinking, as Tsing is prompting, or network thinking following Latour, attends to the agentive qualities that food has on eaters. Plant, animal, and bacterial lives, which make up food are part of human’s everyday lives and are highly influential. Radioactive mushrooms which have become poisoned by industrial activities representative of economic activity, exposes the ways that eating is embedded in political and economic activity. Just as Paxson distinguished pasteurian and post-pasteurian views of microbiopolitics, Tsing cautions “we need to be able to differentiate between forms of disturbance that are inimical to all life and those that offer multispecies opportunities.”

Human exceptionalism could lead us to treat all other species as possible sources of violence, but ecosystems thinking reminds us that humans too are just as destructive and often, as

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104 I borrow this phrasing from Tsing who writes: “It is not enough to say that matsutake require an ecological community; matsutake are an ecological community” in Anna Tsing, “Blasted Landscapes (and the gentle art of mushroom picking)” in The Multispecies Salon, 91.

105 Ibid., 108.


107 I borrow this term embedded from Karl Polanyi who used it to discuss economic activity’s ability to interact with non-economic activities. Inversely, I use the term to point to the way eating interacts with economic and political activity. Karl Polanyi, The Great Transformation: The Political and Economic Origins of Our Times (New York: Beacon Press, 2001).

radioactive mushrooms illuminate, we create the harm for other species. Examining ecosystems from non-human centered positions attends to other life forms (forgive my ironically anthropocentric statement) which in turn tells us more about us, as we come to eat other lives.

The microbiome is a space in which human and microbial life becomes entangled. For Paxson, the production and consumption of cheese exposes the entangled ecologies of food. By examining the inefficacies and injustices embedded within the classifications of cheese, which serve as the foundation for FDA regulations of cheese production,\footnote{See Paxson, \textit{The Life of Cheese}, 173 for her re-categorization of cheese cross-listed by hardness, acidity, and pasteurization} Paxson presents new categories accounting for the ways that microbes perform in cheese. By reorganizing the categories for which we discuss cheese, she pushes the conversation to also focus on the ways cheeses are made, shifting the conversation to also include the agency that makers have on food products. For Paxson, microbiopolitics also incorporates “recognition that human social relations are frequently threaded through microbial bodies” which can alter the production and final cheese product.\footnote{Paxson, \textit{The Life of Cheese}, 180.} Microbial lives are highly affected by the human agents who control their lives in the production process; making cheese requires the involvement and cooperation of human and bacterial lives. Using cheese as an example, in food production “microscopic organisms” are “never fully separate from human enterprise.”\footnote{Paxson, \textit{The Life of Cheese}, 161.}

Each time that we eat, we digest millions of microbes, many of which will find home within the digestive tract. It is in the gut that the plant and animal lives that we eat enter us and the microbes in and on them enter our bodies. Our guts are impregnated with microbial life which become part of our gut. In July 2010 The New York Times picked up a story about Dr. Alexander Khoruts, a gastroenterologist at the University of Minnesota, who was treating a patient for a gut infection of Clostridium difficile, which left her with persistent diarrhea.
forcing her into diapers and a wheelchair. Dr. Khoruts treated this patient in an unexpected way. He performed bacteriotherapy, which is a fecal transplant. Recording her gut flora before and after the procedure, he found that the bacteria in the fecal transplant colonized quickly and returned “normal bacteria” back into her gut which cured her Clostridium difficile. The patient’s gut microbiome was lacking certain microbes which interfere in her bodily functions. By introducing healthy flora of bacteria, her gut microbiome was replenished. Additionally, there are studies which look at the ways in which babies are brought into the world (vaginal birth versus caesarean section). It has been found that the vaginal canal is ripe with microbes and that babies born by caesarean section have higher risk of developing asthma and obesity because they are not exposed to the vaginal microflora that is biologically produced to envelope babies as they pass through the vaginal canal.\textsuperscript{112} To correct for these missed microbes, affecting our microbiome, doctors are “bathing” newborn children in microbes, swabbed from their mothers vaginas in order to “[harbor] skin, gut, anal and oral bacterial communities” that develop from the microbes in the vaginal canal.\textsuperscript{113} This study and the broader area of microbiome research establish that the microbes that colonize within our gut do in fact create our health outcomes. I introduce these two cases to highlight the ways in which the human microbiome, our microbial make up, is this symbiotic site in which our bodies becomes hosts for the microbes and they in turn, make us up. Our bacteria define who we are in a sense by controlling the ways our bodies perform in the world.

Often microbiologists and nutritionists speak of feeding our gut microbiome. What we eat has the ability to produce a healthy (or unhealthy) microbiome inside of us. Foods such as yogurt, kimchi, sauerkraut, miso, or kombucha are recommended because they are rich with probiotics, bacteria that promote a healthy digestive tract and gut microbiome. But when we

\textsuperscript{112} Ewen Callaway, “Scientists swab C-section Babies with Mothers' Microbes” \textit{Nature}, February 2016.  
\textsuperscript{113} \textit{Ibid.}
speak of feeding our guts, we find that the line between our gut bacteria and our selves becomes blurred.

**Modes of Entanglement**

Donna Haraway proposes “contact zones” as sites to foster multispecies thought. For Haraway, dog agility competitions expose contact zones where her dog and she “meet,” becoming entangled species; running the race together they become synced and bonded. In this vein, we can also examine the gut, where digesting food arrives, as a contact zone meshing human life with bacterial lives. The gut microbiome is a physical location where the microbes in the foods are transferred into our own body and colonize; the foods we eat actually come to make us up. Yet, the gut diverges from Haraway’s understanding of a contact zone because this zone is actually within one of the lives. For Haraway, the dog’s track becomes the space where her dog and her are entangled, a space where her dog and her each arrive at. What is at stake to call the human gut a contact zone if it is not a third space, separate of the two species? When Haraway discussed contact zones she was examining zones independent of the species themselves but here, I am proposing an intriguing case, which requires a new reading of contact zones. I allign with Harraway believing that contact zones are spaces where “biological species assemblages”\(^1\) come together. Yet, here I am delicately proposing that the human body is a contact zone where human and bacterial life come to coalesce as assemblages, but also (be)come together\(^2\).

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\(^1\) Haraway, *When Species Meet*, 218.

When plant and animal lives are consumed by humans and their bacteria colonizes in us, we are in fact becoming our food. Attending to the biological processes which occur in the gut, we can see that plant or animal lives become a part of us. Here, I use the word become both literally, when food is eaten the bacteria is transferred from a plant or animal host to a human host, but also in a Deleuzian and Guattarian sense as a process of merging within assemblages. Following Deleuze and Guattari, Katherine Wright offers a clarification that to “become” is not necessary a literal transformation but “the proliferation of multiple identities and ways of being in the world.” The awareness that consuming animal and plant lives is a means of coming together, acknowledges that the human life is made with other lives for “to be one is always to become with many.” We become who we are because of and with the help of other life forms.

By segregating different lives we are able to draw up regulations which prioritize human lives over other lives. This nearsightedness allows for a human-centric narrative of premier quality and food safety to emerge in the political space, unconscious to the ways in which other lives make up our health. As nutritionists, gastroenterologists, microbiologists and others find the health benefits of diversified bacterial interactions a tension arises between the medical suggestions of probiotic and prebiotic foods and the state’s regulatory sanitization, and borrowing Paxson’s term, Pasteurian food system.

The practice of food label dating relies on the binary between human and bacterial life. The framing of federal, state and local regulations around reporting the freshness of food, which implies the lack of spoilage or bacterial growth, hinges on the distinction between our life and microbial lives. Yet, when we acknowledge that within us, microbes in fact construct us, this division is collapsed. When we eat, our digestive systems break down foods into nutrients that fuel us. Microorganisms are intimately us. Paxson insists that “microbes defy the

116 Katherine Wright, “Becomings,” Multispecies Salon Online.
117 Haraway, When Species Meet, 4.
boundaries humans attempt to shore up, whether material or classificatory.”¹¹⁸ The state builds this binary between human and plant or animal lives in order to organize, and yet upon social and biological organization the arbitrariness of boundaries is confirmed. In the introduction to Eduardo Kohn’s book, *How Forests Think*, which attends to the perspective and thinking that the environment participates in, he attempts to locate his work within the discourse of post-humanities¹¹⁹ multispecies thinking. He paces himself alongside Haraway, Latour, Kirksey and Helmreich, Deleuze and Guattari, and Bennet in believing that “social science’s greatest contribution— the recognition and delimitation of a separate domain of socially constructed reality— is also its greatest curse.”¹²⁰ The state’s food label dating regime is made possible by the distinction of microorganisms and human lives, and yet the two domains of life do not operate exclusively. Bacteria rely on human bodies to host them and humans rely on bacteria to remain healthy (although some bacteria can cause illness to). As I have shown, the ways that microorganisms and humans co-habitate, they make life possible for one another and make life together. Our attempt to regulate microbial life is in fact, just regulating who we are. The state, acting as a regulator, while intending to regulate another form of life, is in fact regulating us.

¹¹⁸ Paxson, *The Life of Cheese*, 186
¹¹⁹ The notion of post-human was introduced by Donna Haraway in her “Cyborg Manifesto: Science Technology, and Socialist-Feminism in the Late-Twentieth Century” in Simians, Cyborgs, and Women: The Reinvention of Nature (New York: Routledge, 1999), 149-181.
CONCLUDING THOUGHTS

On Risk

“The estimation of risk is a scientific question, and therefore a legitimate activity of scientists in federal agencies, in universities and in the National Research Council. The acceptability of a given level of risk, however is a political question to be determined by the political arena.”

- Phillip Handler, the former president of the National Academy of Sciences

Over the past year as this project has come to be, I have been privy to observe many friends as they encounter spoiled foods in their fridges: cartons of milk that have curdled, bags of green beans that have slimed and grown white spores, cheese which has been engulfed with mold, bread which has grown stale or lively with mold, and the list continues on and on. Each of these brushes with plant or animal life, in which food has exceeded its typical presentation, has left me further questioning human interactions with the life of food.

Encounter One:

One evening when my roommate opened a new bag of green beans from Trader Joe’s that emitted a strong odor, appeared wet and slimy and were covered in white spores she shuttered in frustration that her product was unusable. Curious to her irritation, I asked her: Who are you angry at right now? The farmer? The green beans? The store? I was struck with curiosity regarding who is at fault for spoilage. The federal government’s powers rest upon ensuring that products are not misbranded (including their sell by date), but inevitably all food will naturally spoil and for that, whom do we blame if it occurs when the products are in our possession. For, at the end of the day, we all die, plant and animal products included. So do we
blame the seller? The farmer? Ourselves, for not consuming the food sooner? Or, can we accept that food spoils naturally and it can’t always be predicted?

**Encounter Two:**

Arranging his cereal in the bowl, my boyfriend opened his milk and poured it in the bowl intending to have his favorite cereal with milk for breakfast. Yet, when the milk slowly oozed out in curdles rather than a rapid silky stream, he let out a vigorously angry sigh. “Why are you angry?” I questioned. I imagined that because he had been following my project for over nine months at this time he would be accustomed to decay. Yet, his discontent with spoilage seemed surprisingly innocent to the processes of food decomposition. Although he knew that milk dates were assigned by the manufacturer and were really a guess at best to when the product would spoil, he was angry that his milk carton told him that his milk would be good for four more days and here he was pouring out curdles.

These vignettes remind us that food spoils. While these past chapters have attempted to question the framework which preempts and feigns a death of food, it must be acknowledged that food does deteriorate. Milk curdles. Cheese molds. Fish and meats produce an odor. Food is not a static object which escapes the naturally occurring processes of biological deterioration. Food is vigorously animated, filled with microbial life. Technologies have shifted the ways foods perform, delaying spoilage, but eventually foods do deteriorate. Because of the ways that foods are mediated to not decay, consumers are used to interacting with a stable product. Or rather, they assume foods to be stable. We operate on a binary of good or bad, rather than understanding the dynamic states of food. Plant and animal lives respond to the ways that we handle and interact with them. Through a dynamic understanding of the responsive and
liveliness of plant and animal lives, we can come to a new ontological understanding, one which will move us beyond the food label dates as bearers of utilitarian life.

**Freezing Dated Foods: Tensions between Daily Table and the State Health Department**

When Daily Table first opened, a company offered to donate hundreds of pounds of frozen fish that they had. But, Daily Table found itself entangled with the Massachusetts Department of Health who was skeptical of the product. When the fish was caught, it was marked with a label date by the company, assuming they were going to sell it fresh. When they realized they wouldn’t have the market to sell the product, they transferred it to their production freezer. They had extensive records of when the product was transferred, by whom, and at what temperatures. This frozen fish still sat in their freezer and they wanted to donate it to Daily Table, for it was excess product that they weren’t going to be able to sell that they wanted to get eaten. And yet, Daily Table and the Massachusetts Department of Health were not in agreement that the fish was safe to sell if it was frozen. Because the fish was marked with a label date that had passed, the Health Department did not immediately believe the fish was safe to consume. And yet, the Daily Table team pushed back, saying that if the fish had been frozen days before its “sell-by” date and therefore should hold the same properties it did when it was fresh; it is still freezer safe. This frozen fish challenged the State Health Department because it was food that had clearly passed its food label date, but had been frozen before its label date.

This case brought up compelling questions that could only emerge within this new space that Daily Table was creating. While the state of Massachusetts allows the sale of food “past-date,” if:
(1) It is wholesome and its sensory physical qualities have not significantly diminished;
(2) It is segregated from food products which are not "past date";
(3) It is clearly and conspicuously marked either on the package or through the use of shelf markers or place cards, as being offered for sale after the recommended last date of sale or best use.\textsuperscript{121}

the state had not accounted for this specific scenario. While the Daily Table team was highly confident that the sale of the fish was in accordance with the federal and state regulations on food sales, they complied with the state agreeing to form protocols for this scenario which exceeded the legal framework, exposing a loophole in the system.

This scenario was a disagreement over the perceived risk of frozen fish. The Health Department insisted that the fish had to be tested by a microbiology lab for safety. Unfortunately, as a start-up company Daily Table could not afford to pay for testing and therefore had to pass on that specific donation. Moving forward, Daily Table is going to put forth protocols for handling, selling frozen, and cooking foods which have been frozen by producers or manufacturers before a marked food label date. The Massachusetts Department of Health will collaborate on these protocols until they are acceptable for the Department. This set of protocols will allow the use of safe food which has been frozen to escape spoilage.

\textbf{What does the system do?}

Food label dating is a technique which protects the consumer against spoiled or deteriorating foods and any negative experiences that could come with that product (i.e. financial loss, bad taste, or possible illness). Nestle, in a discussion of food safety, proposes two

\textsuperscript{121} Labeling, 105 Code of Massachusetts Regulation (2013) 520.119.
approaches to evaluating risk: “science-based” and “value-based.” “Science-based” risk evaluations “balance risk against benefit and cost,” while “value-based” risk evaluations “balance risk against dread and outrage.”

Through this framework, food label dating, as handled by the state, appears to have transitioned from a science-based risk assessment to a value-based approach because of the changing state of the food system. When spoiling milk was causing illnesses in the early 1900s, food label dating later emerged as a risk reducer, framed as quality insurance. With meats and dairy products unrefrigerated, unpasteurized or not preserved properly, food label dating balanced the benefit of quality food to the risk of spoilage. Yet today, with a range of technological mediation (recall chapter 2), food label dates assume food to have a “foreign,” “hidden” or “uncontrollable” risk. The current foodscape illuminates food label dating as a value-based risk assessment.

<table>
<thead>
<tr>
<th>“Science-Based”</th>
<th>“Value-Based”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counts and calculates:</td>
<td>Assesses whether risk is:</td>
</tr>
<tr>
<td>- Cases</td>
<td>- Voluntary or imposed</td>
</tr>
<tr>
<td>- Severity of illnesses</td>
<td>- Visible or hidden</td>
</tr>
<tr>
<td>- Hospitalizations</td>
<td>- Understood or uncertain</td>
</tr>
<tr>
<td>- Deaths</td>
<td>- Familiar or foreign</td>
</tr>
<tr>
<td>- Costs of the risk</td>
<td>- Natural or technological</td>
</tr>
<tr>
<td>- Benefits of the risk</td>
<td>- Controllable or uncontrollable</td>
</tr>
<tr>
<td>- Costs of reducing the risk</td>
<td>- Mild or severe</td>
</tr>
<tr>
<td>- Balance of risk to benefits</td>
<td>- Fairly or unfairly distributed</td>
</tr>
</tbody>
</table>

Figure 4: Comparison of “Science-Based” and “Value-Based” Approaches to Evaluating The Acceptability of Food Safety Risks

Source: Marion Nestle, Safe Food, 17.

Decaying food has become politicized as a risk to society. In Ulrich Beck’s Risk Society, meditating on the ways that risk has emerged in our modernity, he declares an “end of the antithesis between nature and society.”

The two no longer stand in opposition or in sync for

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122 Marion Nestle, Safe Food, 17.
123 Ulrich Beck, Risk Society, 80.
they can not be “outside of one another.” The two concepts are embedded in one another, their boundaries erased and blurred. Modernity has found itself a nature which is produced by society and a society produced by nature. Beck continues to explain the state of nature as the social:

“… the destruction of nature, integrated into the universal circulation of industrial production, ceases to be ‘mere’ destruction of nature and becomes an integral component of the social, political and economic dynamic. The unseen side effect of the socialetalization of nature is the socialetalization of the destruction and threats to nature, their transformation into economic, social and political contradictions and conflicts.”

If we think of decomposition as a mode of destruction, food label dating is illuminated as an “economic, social and political contradiction and conflict” within the political ecology of eating. Food label dating is a means of mediating the risk that decomposition of food may cause to consumers.

Over the past decades, food production has changed dramatically. Today, with technological advancements, such as pasteurization and refrigeration, and microbial-based production protocols regarding safety and quality, the food system has changed immensely thus placing food label dating into a new environmental context. In the early and mid-1900s, food quality was temporally constrained by the lack refrigeration in homes or on trucks and train cars. Milk was spoiling before reaching consumers. Spoiling milk was making children sick, converging food quality issues with food safety issues. Today food illness outbreaks most often occur because of contamination issues at the site of production, rather than by spoilage. In Marion Nestle’s Safe Food she argues that the convergence of food production

124 Ibid.
125 Ibid.
126 Ibid.
facilities in our globalized food market have led to a “[vulnerable]...centralized food supply” which threatens our safety more than ever.

The issue of quality and safety are no longer one in the same. Today, safety issues are mainly centered at production and quality issues are mainly aesthetic, olfactory, or gustatory considerations. According to Food Safety News, the three most harmful Foodborne Illness Outbreaks of 2015 (according to the number of people who died and were ill) were:

1. Salmonella Poona from Cucumbers, 4 deaths and 838 sickened: The FDA did not identify the direct cause of contamination, but investigators found concern with “concerns with waste water management, equipment design of the pre-wash area, and storage of packing material” at the site of production. United States Food and Drug Administration, “Outbreaks—FDA Investigated Multistate Outbreak of Salmonella Poona Linked to Cucumbers.” Accessed: http://www.fda.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm461317.htm

2. Cyclospora from Cilantro, 546 sickened: The FDA declared that “sources of contamination may include fecal contamination of growing areas, irrigation of fields with water contaminated with sewage, cleaning or cooling produce with contaminated water, and/or poor hygienic practices of workers that harvest and process the produce, and lack of adequate cleaning and sanitizing of equipment that comes in contact with the product.”

128 There are estimates that one contaminated beef carcass will contaminate eight tons of ground beef. Centralized production facilities have created a modern food safety issue in an age of refrigeration which aids with challenges of spoiling food in transport. Nestle, Safe Food, 18.


3. Salmonella from the Boise Co-op, 290 sickened: The deli at the Boise Co-Op was found to have cross-contaminated raw turkey meat with tomatoes, causing those who ate the tomatoes raw to fall ill.¹³²

The ten most harmful foodborne illness outbreaks (including these three) were all linked to contamination at the site of food production, poor sanitation, or improper food handling by servers at establishments all of which are not scenarios in which food label dating can mediate for safety. Aligning with Nestle’s ideas in Safe Food, our largest modern food safety challenges arise from production, rather than transport or storage.

This calls back into question the role of food label dating in our modern political, social and ecological landscape of food. Food label dates, while they may attend to the perishability of food and natural decay, do not play a large role in food safety today. Fresh food and safe food require different mechanisms of intervention in a modern food system. It is time to reorient ourselves in relation to food and the risks it poses. We must think of the life of food otherwise.

¹³² Cathy Siegner, “Update: Salmonella Cases Linked to Boise Co-Op Total Approximately 290, Four Lawsuits Filed” Food Safety News.
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