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Sharing food and risk in Berlin's urban food commons

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ABSTRACT

Public fridges are open-access community-stewarded spaces where food can be freely and anonymously shared. As such, they are fertile ground for understanding the obstacles and opportunities for governing food as a commons. This paper examines the governance strategies that have developed within and around Foodsharing.de, a grassroots food-rescue network in Berlin, to manage food as a commons. Analyzing the commoning of food in Foodsharing.de provides a novel entry point into the multi-scalar and multi-stakeholder governance processes that shape our broader food system. In this paper, I further develop the concept of urban food commons to specifically analyze the governance of food and risk. In particular, I draw on qualitative research to analyze a conflict between Foodsharing.de and the Berlin Food Safety Authority over the potential health and safety risks of public fridges. Building on this, I show how different governance practices, informed by different risk ontologies and understandings of the common good/hazard of food, come into tension through the everyday practices of sharing food. This paper departs from previous research that has focused on how the *benefits* of food commons are shared and regulated at various scales, to also explore how their *risks* are managed, or could be managed, within an urban food commons framework.

1. Introduction

Food banks and ICT-mediated food-sharing platforms are creating logistics solutions for moving surplus food to where it is needed with the goals of preventing food waste and alleviating food insecurity. While well intentioned, these initiatives often face criticisms for perpetuating inequalities between donors and recipients and redistributing food but not wealth or power, thus treating the structural inequalities of capitalism as logistics problems that can be solved without addressing equity or justice in our food system and economy (Poppendieck, 1999; Fisher, 2017; Caraher and Furey, 2017; Myer, 2013). There is a need for research on food-sharing innovations that go beyond "food moving." Such innovations appear in the SHARECITY database (Davies et al., 2016, 2017a, 2017b) as well as this special issue. They include community gardens, community-supported agriculture groups, Food Not Bombs chapters, and a burgeoning network of public fridges where people can freely share food. Across these diverse modes of sharing, participants co-create the resources they benefit from, in ways that destabilize the boundaries between donor and recipient, provider and client, grower and eater. They are thus exciting ground for exploring the emergence of food commons (Vivero Pol, 2017) and alternative ways in which food can be valued, governed, and shared.

Foodsharing.de is a volunteer-run organization and online logistics platform founded in 2012 to support de-centralized food rescue and peer-to-peer food sharing activities in Germany (Wahlen, 2017, 2018; Ganglebauer et al., 2014; Chies, 2017). In 2014, the organization introduced public fridges (*fair-teiler*) where people can freely and anonymously share food. There are about 350 fridges in the network, with 25 in Berlin. In 2018, the organization had more than 200,000 registered users, and 25,000 trained "foodsavers" who rescued 12,796,298 kg of food (Foodsharing.de, 2018). Foodsharing.de differs from a food bank when it comes to labor, logistics, and governance. There are no paid staff, and the organization is entirely dependent on volunteer foodsavers, store managers, fridge stewards, ambassadors, and web programmers (see Fig. 1).

Foodsavers eat the food they rescue, and decide for themselves how they share the surplus. The network is self-managed through the online platform Foodsharing.de. There are no storage facilities; instead, food is distributed through personal and place-based networks, public fridges, and virtual "food baskets" (online postings to facilitate local peer-to-peer gifting). A hierarchical and distributed governance structure has evolved to manage issue such as trust, labor, sharing, and food safety (Foodsharing wiki, 2018).

Foodsharing.de is made up of numerous commons (defined here as community-managed resources) which include food, fridges, knowledge and skills, and an ICT-platform. Public fridges are examples of open-access commons: they are open to everyone and the food inside is owned by no one. Lowering the barriers for donors and recipients, the

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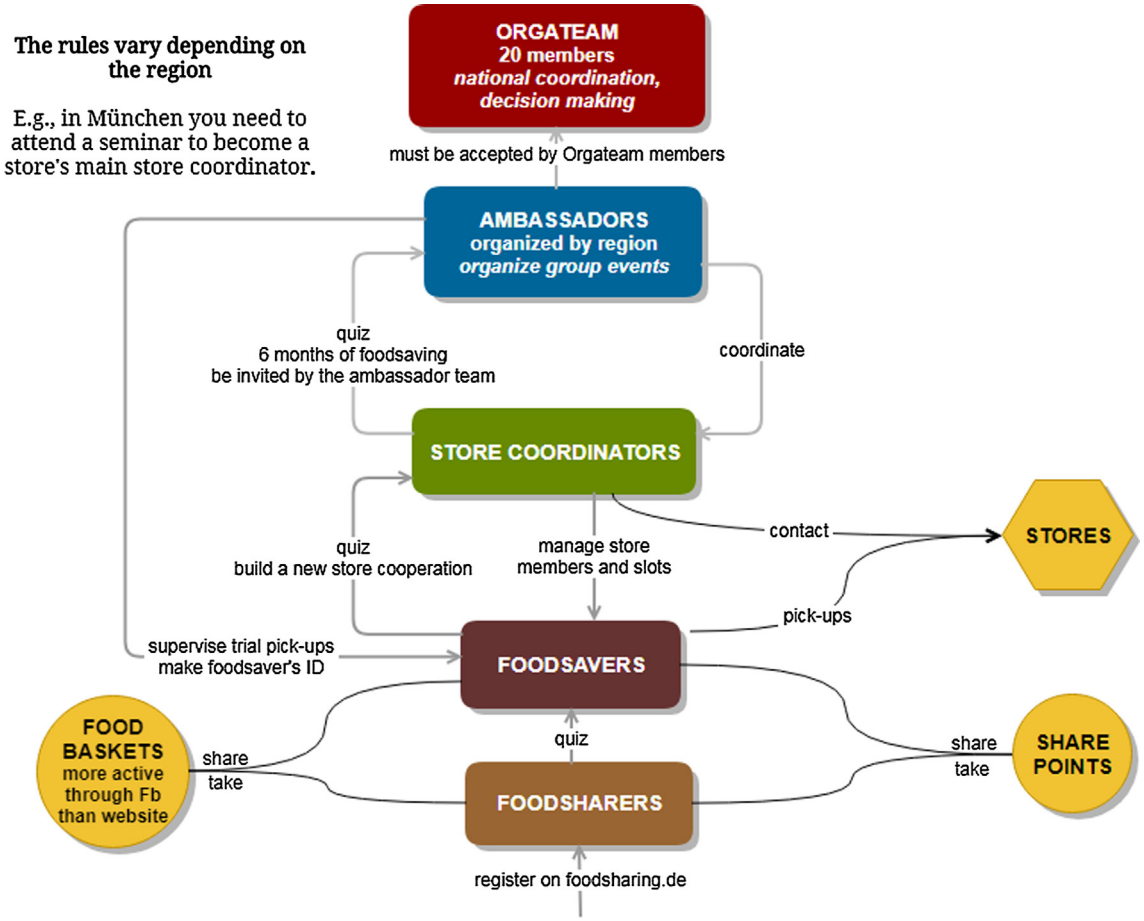

Fig. 1. Foodsharing.de Internal Structure Diagram, by Tais Real (Yunity, 2017).

fridges have become a vital tool for expanding food sharing beyond online peer-to-peer transactions. Participants do not need to provide any personal information or prove they are "deserving" to give or receive food, reducing the stigma of free food. Without these venues, food sharing networks would be restricted to "sharing in" through existing social networks or "sharing out" (Belk, 2010; Schor et al., 2016) through online peer-to-peer exchanges and emergency food networks.

In Berlin, making food *public* has attracted the attention of the Food Safety Authority and brought the self-governance practices of Foodsharing.de into tension with local and EU food governance practices. As open-access commons, the fridges are subject to many of the same fears that neo-classical economists have raised about the tragedy of the commons (Hardin, 1968). If no one owns the fridge or the food inside, no one is responsible for it, and there is no one to hold liable for sharing food that is unsafe. But as Ostrom and other commons scholars have pointed out, the absence of (private) ownership should not be mistaken for an absence of rules and responsibilities. The aim of this paper is to make those rules and responsibilities visible by exploring the multiple and overlapping forms of governance that exist in and around Foodsharing.de and their network of public fridges in Berlin. In doing so, it critically evaluates the role of risk in creating obstacles and opportunities for governing food as a commons at various scales, as well as the contradictions, vulnerabilities, and anxieties that public fridges reveal about our broader food system.

In this paper I explore the governance practices, such as food safety and rules for sharing, which exist in and around Foodsharing.de. I draw on ethnographic research and media and policy documents to analyze a conflict between Foodsharing.de and the Berlin Food Safety Authority over the potential risks of public fridges. The first section reviews relevant literature on urban food commons and risk, highlighting a major gap in our understanding of commons-based risk governance. The second section introduces my research methods and context. The third section examines approaches to food governance in and around food sharing. And the final section offers a conclusion by way of discussion of key themes, unresolved issues, and future research.

1.1. Locating risk in the urban food commons

The concept of commons is used to describe resources of diverse material, cultural, technical, and legal forms that are jointly governed, stewarded, and shared by their users. Commons typologies distinguish resources by the material qualities that make them rivalrous or non-rivalrous goods and by the governance processes that affect how exclusionary or accessible they are (Ostrom et al., 1999). Commons scholars are increasingly finding ways to move beyond the dichotomies of public and private, rural and urban, material and immaterial (Bresnihan, 2015). This work has encouraged a shift in focus from the commons as a noun to commoning as a verb; this means moving beyond static property regimes to the dynamic processes through which commons are created and governed (Blomley, 2008). Ownership is just one dimension of commons, and not always the most important one. Equally important are the processes through which benefits, access, and responsibility are negotiated, and care and stewardship are practiced (Gibson-Graham et al., 2013). Governance remains a central dimension of commons, as all commons have (formal and informal) rules and sanctions for regulating practices.

In community economies scholarship (Gibson-Graham et al., 2013), commons are often held up as the bedrock for creating more environmentally and socially just economies. Communities make and share a commons, and the value they generate can be captured to fuel a

variety of economic enterprises. On an everyday level, the "free goods" that commons provide their users can alleviate financial pressures, freeing up time and energy for other pursuits (Huron, 2015). This approach to commoning resonates with the "money-free" ideology of Foodsharing.de, which has its roots in the desire of its co-founder Raphael Fellmer to live well without money (Fellmer, 2014).

The concept of urban commons has been used to analyze how communities can come together to reclaim and collectively manage urban spaces for growing flowers and food (Eizenberg, 2012; Blomley, 2005), practicing art and activism (Iveson, 2013; Bresnihan and Byrne, 2015), resisting gentrification and creating affordable housing (Huron, 2015; Blomley, 2008). In bridging the gap between everyday spatial practices, the production of space, and political claims on urban space, the concept shares much in common with contemporary calls for the "Right to the City," which articulate new forms of urban citizenship based on the right to access and inhabit urban spaces and to imagine and shape their future uses (Lefebvre, 1996; Purcell, 2003).

Urban commons are distinguished from their non-urban counterparts in several ways. They are shaped by the density and diversity of cities, subjecting commons to multiple overlapping uses, competing claims, and diverse constituents. In global cities, urban commons exist alongside and within heavily financialized and privatized spaces, making it necessary to organize community power and capital to "buy back" the commons or wrest them into community ownership by other means (Huron, 2015). In other words, urban commons are typically created through conflict and struggle. For any of this to occur, commons need to be recognized, or at least imagined. As Blomley (2008) warns, the real "tragedy of the commons" might be our failure to recognize them when they do exist. And this is certainly one motivation for naming urban food commons, even as they are imperfect and contested.

Just as urban and legal scholars have extended the commons framework to new objects and spaces of governance, so have food scholars. Jose Luis Vivero Pol (2017) has written extensively on food as a commons. His starting point is that many aspects of our food system are *already* commons – from fisheries stocks, wild edible plants, and seeds; to land for community food production; to recipes and culinary traditions; to food safety and the public health benefits of food security. Vivero Pol argues for the necessity of reconceptualizing food as a commons to foster sustainable transitions, pointing to the widespread failure of capitalist and market based food systems to alleviate hunger or support human flourishing. His work revisits Elinor Ostrom's theory of polycentric governance and examines the particular characteristics of food such as rivalry, sub-tractability, and excludability that make it an "impure commons" but a commons nonetheless (Vivero Pol, 2017).

Urban food sharing presents a novel opportunity to further develop the notion of urban food commons. In this paper I explore how an urban commons framework might be extended to food, contributing to emergent theorizations of food as commons (Vivero Pol, 2017) and the city as commons (Agyeman and Mclaren, 2015; Foster and Iaione, 2016; Ramos, 2016). The paper addresses a gap in previous research on urban food commons which has focused primarily on community gardens (Eizenberg, 2012; Follman and Viehoff, 2014, Colding et al., 2013). Analyzing the commoning of food itself provides a novel entry point into the multi-scalar and multi-stakeholder governance processes that shape our broader food system. The lens of commons highlights the contradictions and vulnerabilities of governing food as a privately owned public good, and the hazards of governing risk through the norms of private property. As a case study, Foodsharing.de shows how the concept of urban food commons is not only useful for imagining post-capitalist food futures but also for critically evaluating food governance practices in the present.

Previous research on Foodsharing.de has analyzed their activities as sites of community economy and neoliberalism (Arguelles et al., 2017), collaborative consumption (Wahlen, 2017, 2018), human-computer interactions (Ganglebauer et al., 2014), and commons (Chies, 2017). But the conflict over public fridges in Foodsharing.de raises critical questions about the governance of risk that have not yet been sufficiently explored. This paper departs from previous research that has focused on how the *benefits* of commons are shared and regulated at various scales, to also explore how their *risks* are managed, or could be managed, within an urban food commons framework.

Risk theorists draw attention to the relations through which risk is produced, tracing how and where it emerges, and through what social and power relations. Ulrich Beck (2009) explores how the quality of risk has changed in late modernity. We are not living in a riskier society, he argues, but "new risks are qualitatively different from old risks in that they tend to be more global than personal; they are faced without people's knowledge and consent; they escape laypeople's perception and ability to calculate them; and they tend to originate from the oversupply rather than the undersupply of hygienic technologies" (Gille, 2012, 31). Beck's theory of risk is especially relevant to understanding EU food safety regulations which have developed around a scientific process of risk assessment, as applied by experts, corporations, and the market – rather than laypeople.

Food waste scholars have tied risk and anxiety to the institutional and everyday production of food waste. This extends from the economic risks shouldered by farmers in the global south (Gille, 2012, Friedberg, 2004); to the legal and liability fears that prevent businesses from donating food (Gille, 2012); to the mundane act of throwing away expired food (Watson and Meah, 2012, Jackson et al., 2013). As Gille (2012) writes, "food today raises feelings of anxiety that speak to a new constellation of risks, uncertainties and threats to health and subsistence. Paying attention to risk and uncertainty not only recognizes billions of people's relationship to food…but also forces us to recognize how risks themselves are a key aspect of power" (p. 31).

In an era of seemingly constant food scares, it sometimes seems that more is being done to assess risk and assign blame than to prevent food hazards from occurring in the first place. Food policy scholars have noted a qualitative shift in how risk and safety are conceptualized in EU food safety law. Critically, food safety is never defined in EU General Food Law 178 (Edinger, 2014), which relies on a negative definition of "unsafety"[1] that is determined through scientific risk assessment. While the science and ethics of this assessment remain debated (Ducket et al., 2015), it opens the door for regulatory agencies to make decisions using the precautionary principle (Edinger, 2014; Szajkowska, 2009; Giorgi, 2013; Leinen, 2012). And as Demeritt et al. (2015) observe, the transition to risk-based food policy can come into tension with institutional practices that are meant to prevent hazardous foods from entering the market in the first place.

Under current regulations, the potential unsafety of food is determined by a risk assessment process which may have little to do with the materiality of the food or its immediate and long term effects on the body (Edinger, 2014), and more to do with the chain of traceability and liability that follows the food. This allows food safety authorities to protect consumers (and ensure functioning markets) without reforming agri-food systems in ways that would actually make them healthier or more sustainable. Parallel research in the U.S. on the Food Safety Modernization Act shows how risk-driven food safety regulations can disproportionately burden small-scale food producers who lack the resources to demonstrate compliance (Hassanein, 2011; Delind and Howard, 2008; SELC, 2011).

Risk is rarely examined in commons scholarship, but risk matters to commons. Perceptions of risk can undermine the trust that is necessary for governing shared resources, and numerous risks have commons characteristics, e.g. public safety and climate change. However, as Stern (2011) notes, risk scholarship has not sufficiently engaged with the

[1] I use the term "unsafety" to highlight the limitations of food regulations that cannot foster healthy, safe, and sustainable food systems – but merely calculate and minimize the risk of unsafety within systems that are recognized as hazardous and unsustainable.

commons. To fill this gap, he examines the challenges of managing the common pool hazards that might result from new technologies. Common pool hazards differ from resources like water, forests, and fisheries because their risks are not always perceptible to their users.

> Because of the knowledge barriers facing self-governance of technological hazards by the affected parties, it is not surprising that decisions are normally made by elites, advised by technical experts... when designated experts make technological choices on behalf of affected populations or all of humanity, their choices are not necessarily widely accepted as legitimate, and they may even neglect important decision relevant information that is known to others (Stern, 2011, 227).

A similar conclusion can be drawn about food safety. Our food system has become so complex that decisions about safety, risk, and hazards have been left to experts. Yet, we are all stakeholders because we all eat, and we are all at risk of being exposed to the hazards of an unsafe food system – even if we cannot understand, taste, feel, or smell those risks. Those most affected by risk-driven policy – including consumers, producers, and even Foodsharing.de – are not meaningfully incorporated into the risk assessment process that governs food safety.

In this paper I further develop the concept of urban food commons to analyze the governance of food and risk in and around Foodsharing.de. I show how different governance practices, informed by different risk ontologies and understandings of the common good/hazard of food, overlap and come into tension through the everyday activities of sharing food.

2. Research design and context

The data presented in this paper is drawn from three months of ethnographic research with members of Foodsharing.de in Berlin, Germany, in 2016 and 2017. The research is part of an international collaborative project examining the sustainability potential of ICT (information and communication technologies) mediated food sharing in cities. This has included the development of an interactive database and map of food sharing initiatives in 100 cities, city profiles, and the completion of multiple case studies in each city. Berlin was selected following the development and analysis of the SHARECITY database (Davies et al., 2016, 2017a, 2017b) and a city profile detailing the governance and policy priorities (Davies et al., 2017c). Foodsharing.de was chosen as an innovator in grassroots and ICT-mediated food sharing.

As a participant observer in Foodsharing.de I developed a member profile that identified me as a researcher, received food from neighbors through online food baskets, gifted and received food from public fridges, attended local meetings, participated in shared meals, studied the rules in numerous attempts to become a foodsaver, observed food pickups, and conducted semi-structured interviews with six foodsavers and three food safety experts. This ethnographic data is complemented by policy and media analysis of websites, wikis, blogs, Facebook pages, and local, national, and EU food safety regulations. Interviews were conducted primarily in German, and transcribed interviews were analyzed in N-Vivo using a broad coding scheme that included the nodes "risk and uncertainty" and "policy rules and regulations." All interviews have been anonymized.[2]

Berlin is the most active Foodsharing.de city in Europe, with the largest membership and the most food rescued. The growth of Foodsharing.de in Berlin has been supported by a DIY culture of sharing that has persisted in squats and community spaces since the 1980s. Public fridges (*Fair-Teiler*) were introduced in Berlin by Foodsharing.de in 2014. They were created with the goal of making Foodsharing.de more accessible by creating public spaces where food sharing could take place. At the time of writing, there are about 25 public fridges in Berlin, and they come in all shapes and sizes. They exist on public and private property, outside in car parks, and inside community centers. All public fridges have the same rules: do not share microbiologically sensitive foods (e.g. raw meat and fish); respect the cold chain; and do not share anything you would not eat. The fridges are meant to be accessible 24 hours a day, and the food inside is open to everyone. Each public fridge is stewarded by local foodsavers who take turns cleaning, throwing out food, and restocking it. They are also monitored through the Foodsharing.de platform where users are encouraged to provide updates on their neighborhood fridge, post pictures of what is inside, and describe what they have dropped off. According to research participants, no one has ever reported getting sick from a public fridge.

Public fridges are valued by food-sharers for their accessibility and potential to politicize food waste while de-stigmatizing free food. As a form of food commons that are co-created by their users, they do a great deal to destabilize the boundaries between donor and recipient, and to normalize sharing as a regular part of DIY urban infrastructure that includes little free libraries, free stores, tool libraries, community clothes closets, and other spaces of community-managed sharing in Berlin. Public fridges are also more than places for simply sharing food. They are places of encounter, connection, and generosity, as one foodsaver remarks:

> *It also has a social aspect. Because you often meet people there, actually really always. People who are also bringing something or picking something up, and then one gets to know the people who come regularly, and then you stand there and chat for a bit and it's totally nice. I find it wonderful really that it's not the anonymity of the big city, it means a lot to me, that I actually feel much more anchored in my neighborhood (FS IV5).*

The fridge she is describing is located in the unlocked vestibule of her apartment building and is accessible 24 hours a day. A free table has sprouted up next to the fridge for people to give things they no longer need. Right next door is a community center that hosts shared meals, a community clothes closet, activist meetings, and art exhibitions. This arrangement is quite typical. Nearly all of the public fridges I visited were woven into the community fabric, often co-located with community and cultural centers or social-service organizations where they interlinked with other forms of sharing. This type of sharing ecosystem can play a critical role in supporting the emergence of new initiatives (Edwards and Davies, 2018).

In 2016, Foodsharing.de became too big to ignore, and the Food Safety Authority in Berlin began inspecting and closing public fridges. The fridges were sealed shut with a red sticker declaring them unsafe and unhygienic. And community centers that hosted fridges received letters threatening fines if the fridges stayed. The closures relied on two assumptions. First, food that is open-access is dangerous because people cannot be trusted to freely and anonymously share. Second, people do not have the knowledge and skills to determine if food is edible and safe. However, this reading of public fridges as "ungovernable" overlooks a multitude of self-governance practices put into place by Foodhsaring.de itself, which regulate people, fridges, and food. It is these governance practices that I turn to next.

3. Governing food sharing

This section analyses the results of the research, examining the governance of food sharing across multiple scales. I reflect critically on just what these various rules are governing and what kinds of economic practices and risk regimes are normalized through these practices. The food commons that are shared through Foodsharing.de and their network of public fridges are subject to multiple and overlapping rules that govern everything from food safety, to rules for sharing, to risk and liability. These rules exist at EU, national, urban, neighborhood, and

[2] Interviewees are identified as "FS" for Foodsavers, and "FSA" for Food Safety Experts.

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Table 1
Multi-level food sharing governance.

Concerns	Governance			
	EU 178/2002 (General Food Law) EU 852/2004 (Food Hygiene) Federal BGB 13 (consumer protection) (*macro*)	Berlin Senate Fair-Teiler Ruling (*meso*)	Foodsharing.de rules (*meso*)	Personal and interpersonal (*micro*)
Trust	Trust in the EU risk assessment process, the European Food Safety Authority, and other member states.	Trust in food safety laws, expiration dates, local food safety authority, and the Federal Institute for Risk Management.	Trust rewards and violation reports, Food-sharing rules and quizzes, being known by others.	Trust in community and altruism. Trust your gut.
Safety	Food that is not unsafe or injurious to health (EU178), Following cold chain, HAACP procedures, and Codex Alimentarius (EU852).	No microbiologically sensitive foods. Must maintain cold chain	No microbiologically sensitive food. Must maintain cold chain.	Dependent on smell, taste, texture, feeling, know how.
Quality	Not specified.	A responsible person must inspect food for quality.	Do not share anything you wouldn't eat.	Relational and dependent on tastes and preferences.
Traceability	Total traceability, 1 step forward 1 step backwards (EU178).	A responsible person keeps records on what goes in and out, when, and with whom.	Social and place-based networks. Online message board and crowdsourced updates on the fridge.	Social, online, and place-based networks.
Responsibility (Liability)	Liability carried by food businesses (from production to consumption). (EU178, EU852, § 13BGB),	Individual responsibility and liability	Collective responsibility for following rules, communicating, sharing well, keeping positive relationships, and maintaining public fridges. No liability.	Personal responsibility to use "common sense."

bodily scales. They include formal and informal governance structures as well as self-governance, personal habits, and tastes. What interests me about these rules is the degree to which they enable or constrain practices of commoning. Table 1 provides a summary of the rules that affect Foodsharing.de across various scales of governance, in terms of trust, safety, quality, traceability, and responsibility.

Each of the concerns described above relies on different ontologies of risk, but all are affected by a dominant risk regime that relies on personal responsibility, market mechanisms, and legal sanctions. Foodsharing practices seek to step outside of this neoliberal frame by promoting practices that increase collective responsibility and trust within the organization. But they also depend on individuals taking personal responsibility for understanding and managing risks by disciplining themselves and others through sanctions and rewards.

3.1. EU and federal rules

EU 178/2002, the General Food Law, regulates food risk from "farm to fork," in food production, processing, storage, transportation, distribution, and redistribution. Two elements of the law bear directly on food sharing. The first is the definition of a food business, as any organization that handles food. As a business, Foodsharing.de must designate one individual who is responsible for the contents of each fridge. The second is the mandate for total traceability. This means that businesses must be able to trace every food they are responsible for one step backward and one step forward. EU 178 departs from previous food safety rulings by embracing a negative definition of food safety and the scientific process of risk assessment. The law does not so much regulate food as the institutional processes through which food risks are governed, monitored, and communicated.

EU 852/2004, Food Hygiene, regulates food risk as well, but is explicit in describing food safety best practices including HAACP systems, the cold chain, and Codex Alimentarius standards. Like EU 178, it applies to food businesses and excludes private and domestic practices. EU regulations aim to be broad yet responsive to diverse local contexts. EU 852 does this, noting that exceptions are necessary for direct supply of small quantities of primary products to the final consumer, as well as small businesses and traditional techniques. Foodsharing.de may warrant such an exception, as it is comprised of non-market transactions between private individuals. But local regulators have opted for a strict interpretation of EU guidelines in their definition of a food business.

This definition of a business is supported by the German civil code for consumer protection § 13 BGB, which relies on a strict distinction between businesses and consumers. The underlying logic is that consumers can only be protected if businesses can be held liable for the goods and services they provide. Yet, as Purnhagen and Wahlen (2017) argue, this analogue civil code is out of step with the digital world of peer-to-peer sharing where the line between producers and consumer is increasingly blurred. Sharing economy platforms also seek to protect themselves from legal and financial risks by shifting liability back onto individuals and consumers. Risk governance and liability beyond the market have not been adequately considered, this creates obstacles for community-based sharing and may expose participants to unknown risks.

3.2. Berlin rules: food safety authority & senate administration for consumer protection

EU 178 and EU 852 are enforced at the local level by a Food Safety Authority (FSA) in each borough of Berlin. FSA officers inspect local food businesses by performing site visits where they review records and policies to ensure compliance with the law. All food that leaves an enterprise must have a paper trail, whether it is sold, donated, or discarded. These same levels of rigor are reproduced by local food banks, whose records must trace each donated item to its final distribution point.

In my interviews with the FSA in Berlin, it became clear that, while food hazards are everywhere, their risks are rendered manageable through high levels of traceability. Such measures are necessary for marshaling a swift and targeted response to public health threats, such as *E. coli*. In 2011, despite these measures there was an outbreak of a virulent strain of *E. coli* across Germany that caused 4000 people to become ill, and 53 fatalities. After a few misses, including mistakenly assigning blame to Spanish cucumbers, the Federal Institute for Risk Management was able to trace the *E. coli* to Egyptian fenugreek seeds used in German-grown organic salad sprouts. As this incident shows, risk-based food policies cannot guarantee food safety, but they can help regulators respond when hazardous foods do enter the market. This minimizes the risk of food unsafety, but does not guarantee safety.

The FSA's biggest fear is that they will not be able to respond effectively to the next food safety crisis. In media statements and interviews, regulators make reference to the *E. coli*-tainted sprouts of 2011 as a potential presence in the public fridges. Although the condition of the fridges, their accessibility, and their cleanliness have little to do with the actual hazard of *E. coli*. The fact that such hazards exist in the broader food system makes the very idea of a public fridge risky to regulators.

> *And then, you remember for example this E. coli thing... If they [Foodsharers] had a container of sprouts with them, and then they were sick. Then no one can say, where did they come from? And that is potentially life threatening, and then you don't know, that maybe 15 students have eaten the sprouts. And when they are sick, we don't know that either, where it came from... And when you think about how hard it was with these sprouts with the E. coli, until we finally knew, oh it was the fenugreek seeds, that takes a lot of time, and it is a lot of work (FSA1).*

Food safety law takes the precautionary principle and seeks to quantify and minimize risk wherever possible. The open-access features of public fridges that make them potentially powerful tools for lowering the barriers to food also make them hard to regulate, despite being host to numerous organizational and interpersonal rules and regulations.

The crackdown on public fridges prompted the Berlin Senate Administration for Consumer Protection to meet with food safety authorities from 12 boroughs and develop their own ruling that codified EU 178 and EU 852 around the particular situation of public fridges. The ruling released in January 2017 demanded that Foodsharing.de follow the same food safety rules as businesses, including naming an individual who is responsible for the contents of each fridge and their traceability (see Table 2). The Berlin ruling does not make reference to German laws concerning food safety or consumer protection, but instead jumps scales by appealing to EU regulations for authority and legitimacy.

Some of these Berlin Senate rules are already part of Foodsharing.de, they include not sharing microbiologically sensitive foods and ensuring that the fridge is kept clean and free of spoiled foods. However, there is one element of the ruling that is particularly controversial for Foodsharing.de and that even food safety regulators feel is impossible to meet. This is the requirement that a responsible individual be named, and that they take full responsibility for the contents of the fridge.

> *FSA1: And if anyone would ask me..."would you agree to take over this refrigerator, would you show yourself responsible for it?" I would keep my distance. I would not do that.*
> *Author: Although ... you know everything!*
> *FSA1: That's why I would not do it.*
> *FSA2: But as the saying goes, ignorance does not protect against punishment.*
> *FSA1: That's right.*
> *Author: You would not want to take personal responsibility for a public fridge in your area?*
> *FSA1: No, certainly not...If you know what's going on and what can go wrong there and so on, I would not do that in any case.....Because I cannot control it. If I'm responsible for something, then I want to be able to control it. And if you cannot control it, then you will not find anyone who will be responsible for it. And of course we want to have someone responsible for it, and that's the crux.*

In this exchange, the food safety regulators find the personal risks of assuming responsibility for a public fridge unacceptably high. This is partly because of everything they know from their work. But it is also common sense: if you cannot control it, why would you want to take responsibility for it? And this is the crux of the conflict for Foodsharing.de – the individualization of responsibility for a resource that is in fact collectively managed and used.

3.3. Foodsharing.de rules

Foodsharing.de has extensive rules that govern the practice and safety of food sharing. These rules were developed over several years by the association, with input from local ambassadors and foodsavers. Rules for sharing have always existed in Food-sharing, even if informally. For interviewees, the most important rules were that you take everything that is offered, redistribute the surplus, never sell rescued food, and never share something you would not eat. With the enormous expansion of Foodsharing.de membership in Berlin and other cities, it became necessary to codify these rules into an online wiki and develop an online quiz to ensure that people really understood the rules and responsibilities of a foodsaver.

> *The number of members grew so rapidly, and we just had these cases of people who came and were greedy, were reckless, really did not behave properly...They just took care of themselves, and left the garbage behind... And if you feel like people are coming, and they're always looking to get the most, it just doesn't belong...Or people who just sign-up and then don't show up at all, which is also a big problem. (FS1)*
> *The quiz does two things. One thing: it makes sure that you really understand. Most people fail the first time because some of the questions are a bit tricky. Even if you really understand the rules, sometimes you don't understand the question. So it really makes you read and re-read all the documents in the wiki. And then it also gives the food-sharing community this confirmation that by doing this quiz you accept liability for what you do. You take the liability away from the shop and you sign this waiver. That's part of what the quiz does. (FS2)*

Prior to the quiz, the rules were shared person to person with lower barriers to entry. Not everyone is happy with the quiz, and both native and non-native German speakers have expressed so much frustration about the tricky and exclusively German-language questions that ambassadors have established monthly tutoring sessions to help people beat the quiz.

> *I think now food-sharing is not as open because of this quiz, and many people do not quite understand it. Because there are so many words in there, that are more technical or not everyday, it's not accessible to a lot of people, unfortunately (FS1).*

Only trained foodsavers who have passed the quiz can access the network of businesses who have made donation agreements with Foodsharing.de. Food-sharers who have not passed the quiz can still participate in peer-to-peer sharing via online food baskets, attend community events, and patronize public fridges. Despite some grumbling, almost everyone I spoke to understood that rules are necessary in such a large, decentralized, and volunteer-led organization.

> *I accept the rules, and I model them, because for me they serve a purpose. I don't follow rules for the sake of following rules. I have a very anti-authoritarian instinct, and actually I want as few rules as possible. But these rules that we have, I wouldn't change any of them. They are all necessary (FS5).*

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Table 2
Berlin Senate Rules for Initiatives Against Food Waste with Public Fridges (Berlin Senate, 2017).

1.	Der Betrieb ist gemäß Art. 6 der Verordnung (EG) Nr. 852/2004 (Lebensmittelhygiene) zwecks Registrierung bei der zuständigen Behörde zu melden.	The business must Register with Food Safety Authority as required by Article 6 of EC 852/2004.
2.	Es ist eine verantwortliche Person zu benennen.	They must name a responsible person.
3.	Der "Fair-Teiler" hat geschützt in Geschäftsräumen zu stehen und muss sich unter ständiger Aufsicht einer verantwortlichen Person befinden (Schutz vor Manipulation der sich im "Fair-Teiler" befindenden Lebensmittel und Sicherstellung der Rückverfolgbarkeit)	The public fridge must be in a closed building under the supervision of a responsible person to guard against misuse and ensure traceability.
4.	Lebensmittelspenden dürfen nur von der verantwortlichen Person entgegengenommen werden; sie müssen einwandfrei sein, einschließlich der Kennzeichnung der Lebensmittel.	Donated food must be given to the responsible person, and the food must be intact, closed, and clearly labelled.
5.	Fair-Teiler/Food-Sharing darf in keinem Fall zu Lebensmitteln "zweiter Klasse" führen, Missbrauch/Ulk muss unterbunden werden (Salz statt Zucker, Manipulation von verpackten Lebensmitteln, Abgabe von gesundheitsschädlichen oder verdorbenen Lebensmitteln, Informationen z. B. zu Allergenen müssen gegeben werden können).	Public Fridges/Food-sharing cannot under any circumstances distribute Second Class food, Spoiled food, Manipulated packaging, Hidden ingredients, or mislabeled ingredients. All allergens must be clearly labelled.
6.	Der Lebensmittel-Spender und das gespendete Lebensmittel werden in eine Liste eingetragen, um die Rückverfolgbarkeit sicherzustellen.	Food donors, and donated food must be entered into a list – to ensure traceability.
7.	Die verantwortliche Person prüft die Lebensmittel und stellt das/die Lebensmittel erst nach einer Prüfung in den "Fair-Teiler".	The responsible person must examine the food for quality before it is placed in a public fridge.
8.	Die Einhaltung der Lebensmittelhygiene durch betriebliche Eigenkontrolle (u. a. im Hinblick auf den hygienischen Zustand des Kühlschrankes oder der sonstigen Abgabeeinrichtung (leichte und einwandfreie Reinigungsfähigkeit; Reinigung und Desinfektion; einwandfreie Umhüllung mit für Lebensmittel geeigneten Materialien; Schadnager-Sicherheit; usw.).	There must be food safety compliant in-house cleaning and inspection procedures for the fridge and its contents.
Food Qualities "what cannot be shared"	Es dürfen keine Lebensmittelspenden von privaten Personen angenommen und in den Verkehr gebracht, die: • mikrobiologisch sensibel/leicht verderblich sind (z. B. Fleisch- und Wurstwaren, Fisch) • selbst hergestellt wurden und mikrobiologisch sensibel sind (z. B. Kartoffelsalat, Nudelsalat) • in angebrochenen/geöffneten Verpackungen/Flaschen sind	Private individuals may not donate the following: • Microbiologically sensitive foods, (e.g. meat or fish) • Home-made microbiologically sensitive foods (e.g. potato salad, pasta salad) • Opened packages or bottles

The rules promote food safety best practices, such as not sharing microbiologically sensitive or expired foods, and following the cold chain, as well as good behavior, like showing up on time, being courteous, taking everything that is offered, not being greedy, cleaning up after yourself, and resolving conflicts appropriately. They ensure that foodsavers understand the risks and accept liability for the food they collect. The German-only rules and quiz are understandably interpreted as exclusionary (Arguelles et al., 2017), but without them the organization could not manage the risks of sharing food as a commons. The rules establish a basic level of food safety, ensuring that members share a common purpose and continue to share responsibility for the food commons they have co-created.

The rules of Foodsharing.de are enforced by the membership through self-monitoring and peer surveillance. If a foodsaver is late for a pickup, for example, it is the responsibility of their pickup partner to put a "violation" badge on their online profile. Violations and conflicts are also mediated face-to-face with the help of ambassadors. But if conflicts cannot be resolved and a foodsaver accumulates too many violations, they are demoted to food-sharer and lose their food-rescuing privileges. If on the other hand a foodsaver shows themselves to be exceptionally trustworthy, a peer can offer them a virtual "trust banana." Food-sharers can also earn trust by being "known" to other food-sharers. These tools offer a glimpse of the ways in which the reputational economy of ICT-mediated sharing might be harnessed to promote self-governance in commons initiatives.

> *So you can click on 'I know this person' once you've picked up with them or once they've picked up with you…If this person seems normal and nice enough and not dodgy I would click on 'I know this person'…The next one is this Vertrauens [trust] Banana…you can give people a banana if you really totally fully trust them… you say 'I trust this person like myself. I know this person is reliable. I know that their food-handling is safe. I really know this person.' And then you give them a banana. So you can collect bananas and in that way show that you're a trustworthy person (FS2).*

3.4. Personal rules

Behind all of these more formalized rules for food safety, sharing, and participating in Foodsharing.de there are also more personalized rules that develop around food and sharing. These rules are informed by taste, class, interpersonal relations, and habits which affect eating and wasting practices across the food system (Bourdieu, 1984, Evans, 2012, Jackson et al., 2013). They inevitably inform how foodsavers understand and interpret the formal rules of Foodsharing.de.

One example is food quality. Everyone has different thresholds for what foods they deem edible. This means assigning new value and qualities to food that has been deemed waste. Food-sharers are often making subjective decisions about food that has passed its "best-before," but not its "use-by," date. They sort edible from inedible food, and the shareable from the un-shareable. Sorting food together, foodsavers practice a relational sense of taste that is informed by the feelings and tastes of others, i.e. potential recipients. For example, I met several adventurous eaters who were very cautious about what foods they shared but would happily eat some expired meat at home.

> *Exactly, no raw [fish or meat]. And no products that are past their use-by date. That is really important that we distinguish between the best-before date, which has no significance, and the use by date. Where someone has established that past this date it is really a risky product. Of course I personally take products like that home, that ground beef that expired yesterday, and then I decide for myself if I want to eat it or not, but I do not want anyone else to get it, the risk is too high (FS5).*

Of course, not all foods tell you when they are safe to eat. By refusing the authority of the best-before date or cosmetic appearances, foodsavers must develop other modes of determining what is good to eat. They rely on their cooking and food preparation skills to determine if "waste" can become food again, as well their sense of taste, smell, and gut feelings to tell them when something has gone off (see also Edwards and Mercer, 2007).

We believe that mature citizens are capable of deciding for themselves whether or not to take something out and we also think that one can usually use one's own sense organs to find out if a food is still enjoyable or not. Plus common sense, so we always say no one should put something in the fridge, which he would not even eat (FS5).
Each foodsaver is different. There I'm pretty picky, I say, products that are mouldy, for me these are no longer edible, especially watery products. And I don't want to take the risk, so they go in the bin (FS5).

The broad rule—"share everything you can't eat and don't share anything you wouldn't eat"—leaves a lot of room for interpretation. Some foodsavers take the least appealing food for themselves, and share only the best with others, even baking mushy bananas into breads before sharing them.

The ideal food-sharer would do as I described – you take the food for yourself that you can't hand to others. So the good stuff goes to other people.…Because of course part of food-sharing is educational. So if you go around and you say, 'Now, I've got this bag full of, say, organic bread loaves from yesterday,' it's very educational because people see, wow, it's a lot of perfectly good food that is now going to waste. But if I go around offering food waste to people, like really mushy bananas, they would say "this is waste" … So the very best food I usually use to offer it to people who haven't been in touch with Food-sharing yet, to show them this is something that would have been in the bin (FS2).

For others it is the reverse: they keep what they like to eat, and share the rest.

Well, there are certain things that I do not necessary want to eat anymore, which I then pass on to social institutions, including white bread.… but everyone has such different habits when it comes to food, and then you just share what you do not eat yourself (FS6).

Food-sharers also practice different geographies of sharing, creating multiple and overlapping food commons in Berlin. For some sharers it has become important to share locally first, with friends, housemates, and neighbors. One foodsaver has a free-box she keeps on her apartment landing for sharing with neighbors; they stop in to see what is "in stock" before going grocery shopping. Other foodsavers make a point of traveling out of their neighborhoods to parks and train stations where they can share directly with people in need. Online food baskets posted to Foodsharing.de have the potential to stretch the geographies of sharing, and facilitate more "stranger sharing" (Schor, 2014). But, in practice, off-line sharing was the first preference, since the logistics of online sharing often felt too time consuming.

It depends. Since I live in the same building, where a public fridge is, often I go straight to the fridge on my way home. Sometime I take everything upstairs first and look and see what I would like to keep for myself. Sometimes I also ride… directly to Alexanderplatz on the daily evening distribution, because I know, that there are always people who will take things from me, then I don't ride home with anything (FS5).

Almost all foodsavers I spoke with had extensive personal networks of people and organizations who would accept and utilize surplus food. Without these networks foodsavers would not be able to meet their obligation to redistribute whatever they cannot eat.

3.5. Resisting enclosure

Food-sharers fought the fridge closures and evictions, which could affect fridges across Germany, in a number of ways. They began an online petition, in which they pointed out the inconsistency with which the EU law was being enforced across localities. They pointed to a municipally sanctioned public fridge in Vienna to contest the universality of EU regulations that could be so easily manipulated by an overzealous local food safety inspector. Their petition identified three requirements in the Berlin Senate ruling that would be impossible for the 100% volunteer-driven organization to meet. That a responsible person supervises the fridge at all times; inspects food before it goes in the fridge; and keeps records on donors, recipients, and donations. The Tafel, the local food bank, employs a full-time food safety expert in order meet these stringent food safety requirements.

And there it goes directly back to the EU regulation, and always this traceability of food, that requires documentation, of who put what in the public fridge. And that is where we draw the line, and say that it's not possible (FS6).

Foodsharing.de collected more than 25,000 signatures, and presented their demand to the Berlin Senate that the fridges be declassified as businesses and recognized as "private transfer locations." They also used health and safety arguments, citing existing regulations such as following the cold chain, not sharing microbiologically sensitive foods, and keeping the fridges clean and well cared for (Foodsharing.de 2016, 2017). As well as making appeals to a basic level of common sense in personal eating choices.

The expectation is that we'll follow these food safety rules, to avoid someone getting sick. That is of course our interest as well. We aren't "blue eyed and dumb" [naïve], we did develop rules together with a food safety expert to decide which products should not be shared in the public fridges. For example [not sharing] products that are microbiologically problematic, to avoid the risk that someone gets sick. When there are additional regulations that in our opinion are pointless, in that they don't necessarily protect the public from the hazard. Then we say that that it's pointless, and we don't see why we should hold ourselves to those rules (FS5).

Regulations that affect the materiality of food itself (e.g. following the cold chain, not sharing microbiologically sensitive foods) are recognized as legitimate, while those that seek to regulate abstract risks are ignored. Foodsavers and food regulators are acting on vastly different scales and temporalities of risk. Foodsavers think about risk from the point of collection to the point of eating in the city of Berlin, while regulators are thinking about risk in the entire global food system. For foodsavers, risk is managed by having rules for respecting the material properties of food and disciplining those who break the rules, while respecting their own bodily sensations and visceral reactions towards food. For the Food Safety Authority (FSA), risk is managed through the legal and institutional frameworks that make it possible to assign liability and blame for risks that are increasingly recognized as inevitable and systemic. At the same time, FSAs are inclined to portray the public fridges as riskier than the broader food system they are embedded in.

Author: How do we make the food system safer?
You only ever hear about the scandals ….When all goes well, you hear nothing. You can see what quantities of food pass through the market. And if you compare that with the amount of offending or really harmful foods it's vanishingly small. In that sense, I would say that in Germany we have a good system and produce very safe food…You always have to distinguish between risk and hazard, the hazard is always there, but what is the probability that you are exposed to this hazard, that is the risk and the risk is quite low (FSA1).

4. Discussion and conclusion

4.1. Privatizing fridges, privatizing risk?

The survival of the remaining public fridges in Berlin has meant reframing them around existing regulations that do not recognize the legitimacy of collective forms of ownership and responsibility.

It's collective ownership. And the German law has a real problem with that, because we're not defined. So we don't have a Vorsitzender [chairman]. We don't have anyone in charge. And this kind of

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community model where you have 800 people who co-own a hairdryer, there's no legal framework for that! (FS2).

In press and media campaigns, food-sharers have sought to reframe public fridges as private "club goods" that are exempt from EU regulation. The remaining fridges have become much more private, few are accessible 24/7, and several have combination locks whose code is shared privately through Foodsharing.de. While keeping the fridges alive, this response jeopardizes the accessibility that has made public fridges a vital tool for destigmatizing free food, expanding sharing, and raising awareness about food waste.

Foodsharing.de has also hung signs on the fridges declaring that they are not a business, and that the food inside is not regulated. Therefore, anyone who uses the fridge is "eating at their own risk."

We don't have the staff, where someone can stand next to the fridge and we don't see the point. We have, for that reason, large signs on the fridges that say "We are not a food business, we are not regulated by the food safety authority, and the control of food safety is at your own risk" (FS6).

At the same time, there is also a strong desire to keep the fridges open and accessible, and to resist attempts to make the fridges comply with the problematic legal binaries of public and private. Instead, the fridges should be used as starting points for changing the "frame" – or changing the law. Changing the law could support other forms of commoning that extend well beyond food and fridges.

Our public fridge is a new social phenomenon. An innovative phenomenon. It cannot be pressed into existing screens and stencils, and that's exactly what they're trying to do. Both the policy and the authorities. In existing legislation, which provides only private or commercial and nothing in between, it has simply not been thought of when formulating these regulations…that there might be something else, out there, out of the ordinary. And that is why the framework has to adapt to reality and not reality to the frame (FS4).

4.2. What is right? What is legal?

In the meantime, food-sharers still have to deal with the very real and immediate threat of legal liability. This has generated tensions between neighborhood Food-sharing groups and the Food Safety Authority (FSA), as well as tensions between Berlin Food-sharing and the national non-profit association in Cologne. For Food-sharing Berlin, the core objection has always been to the demand to name an individual who is responsible for what is actually a collectively managed resource. This is a requirement that they object to on practical and ideological grounds. Foodsharing.de is a social innovation, an experiment in managing food as a commons that demands collective responsibility for food safety and sharing. The notion of individual legal responsibility is antithetical to their approach.

Food-sharing Berlin has responded to the FSA's requests to designate an individual by offering the names and contact details of their entire neighborhood Food-sharing group. The risk of legal liability is too great for one member to assume, nor does it reflect the collective management of the fridges.

Yes, we are in liability … but we refuse to act as an association, where individual people can be held liable, because we stand as a community. We are all together liable for it and not a single person. I think that would be very unfair if individual persons have to be held liable (FS6).

However, the broad refusal of individual liability could expose the non-profit Foodsharing.de to liability. Because of this risk, there is increasing pressure on local Food-sharing groups to register as non-profit associations. Food-sharing Berlin have categorically refused this request. It is more important for them to change the law to reflect their practices. They are critical of the pressure to formalize, and fear what new legal, financial, and bureaucratic demands becoming a non-profit association might entail.

That's another question of definition, how to understand law. Whether law is interpreted in the narrow legal sense or not. So we claim different rights, we say somehow, we do what is meaningful and necessary and that is why it is our right to do that… we're just so outrageous that we take that right because we think it's right (FS5).

4.3. Conclusion

Following the rules in and around Food-sharing offers a novel window on risk within the multi-scalar geographies of food governance. It also reveals multiple scales of commoning, that range from private peer-to-peer sharing, to open-access fridges, to the public health benefits of a safe and secure food system. Seen through the lens of commons, the food safety conflict over public fridges is in fact a food governance conflict between different scales of governance, conceptions of food, and ontologies of risk. As urban food commons, public fridges exist in a dense tangle of place-based and online communities; public, private, and community infrastructures; and personal, local, and regional regulations. The regulatory anxieties the fridges provoke stem from a fear of unknowable risks. These fears are stoked by a technocratic risk regime that places trust in businesses, scientists, and markets, but not the public. As urban public spaces, fridges are represented as sites for risky encounters between anonymous and unaccountable strangers. Food-sharers offer a counternarrative to the city as a space of self-interest and consumption, by creating places where people can give and receive freely and care for a commons, expanding the right to the city and its fruits. But without the legal tools to distribute risk or remove liability from sharing, the default of individual liability persists, which may enclose the food commons and put individual food-sharers at legal risk. Failure to develop commons-based strategies for managing risk means that food is commoned, while risk remains privatized.

Sharing food thus reveals the fundamental contradiction of governing food as a privately owned public good as well as the vulnerabilities of our broader food system, where risk is governed through liability. Assessing risk does not guarantee safety, but allows markets to function as if this were so. When such contradictions surface in the wake of a food crisis, the regulatory response is to follow the chain of traceability, assign blame, and remove the food from circulation. Underpinning these regulations is the tacit acceptance that food is first and foremost a commodity, and that hazards are an inevitable feature of global industrial food systems. Even when food leaves the market and is shared as a commons, the legal and liability structures of private property, capitalist enterprise, and commodity exchange still follow. Food can be shared, but risk cannot. This risk creates waste. If European cities are to make significant strides in preventing food waste, it is necessary to develop appropriate regulations that reflect the diverse ways in which food is produced, harvested, distributed, and consumed.

Governing risk through the market poses barriers to non-profits with slim budgets and allows for the criminalization of grassroots forms of sharing. EU 178 transforms every enterprise that touches food into a business and harbors capitalocentric (Gibson-Graham, 1996) assumptions that are inappropriate for community-based forms of sharing. These assumptions force practices of collective ownership and care into the mold of private property and liability. Unreflexively treating all food organizations as businesses puts individuals at legal risks that are out of proportion with the safety risks of the food they share. It ignores significant differences in scale, structure, and governance and creates unnecessary obstacles for organizations who are trying to feed people in safe, democratic, and sustainable ways. Compliance with the law will require new forms of professionalization or force these activities to go underground and become exclusive club goods.

However, the roots of this conflict, and its potential solutions, go well beyond food. Governing risk through the norms of private property

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and individual liability creates legal and financial barriers for commons initiatives that seek to pioneer new forms of collective ownership and sharing in cities – such as tool libraries, community gardens, and community kitchens. How can we share if we cannot afford liability insurance or if we fear being sued? On a cultural level, risk governance contributes to the reproduction of self-governing risk-averse subjects who fear sharing, cannot trust strangers, have dwindling faith in the commons, and must own the conditions of their existence. The privatization and individualization of responsibility is a problem for sharing cities of the future, and makes collective approaches to food sharing that go beyond mere "food moving" harder to realize.

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