ANNA R. DAVIES

URBAN FOOD SHARING

Rules, tools and networks

ANNA R. DAVIES

URBAN FOOD SHARING

Rules, tools and networks

POLICY PRESS SHORTS RESEARCH

FSC MIX Paper from responsible sources FSC® C013604
www.fsc.org

This book is dedicated to Dimitri, Thomas and Elsa.

Contents

List of tables

List of abbreviations

FAO	Food and Agriculture Organization
ICT	information and communications technology
SELC	Sustainable Economies Law Centre
UK	United Kingdom
US	United States

About the author

Anna R. Davies is Professor of Geography, Environment and Society at Trinity College Dublin in Ireland, where she directs the Environmental Governance Research Group and is a member of the Steering Group of the Future Cities Research Centre. Her research interests explore the interface of environmental governance and sustainability and she has published widely in this area. In addition, Anna has advised the Irish government on environmental and sustainability issues as an independent member of its National Economic and Social Council and the National Climate Change Advisory Council. She is a board member of the European Roundtable on Sustainable Consumption and Production Dublin, a founding member of Future Earth's Knowledge Action Network (KAN) on Systems of Sustainable Consumption and Production and the inaugural Chair of Future Earth Ireland. Anna currently serves on the governing board of the International Science Council, which seeks to support a global voice for science, and she also has a long association as a board member with The Rediscovery Centre in Ballymun, North Dublin, a social enterprise that provides a creative space connecting people, ideas and resources around the common purpose of sustainability through resource efficiency and reuse.

Acknowledgements

ONE

Introduction: the significance of food sharing

Food sharing is a fundamental form of cooperation that … is particularly noteworthy because of its central role in shaping human life history, social organization, and cooperative psychology. (Jaeggi and Gurven, 2013: 186)

When was the last time that you ate together with others? Maybe you had breakfast with your family or lunch with your friends. Such food sharing is often part of everyday routines; habitual practices that we rarely reflect on, except when they change. Perhaps an extended daily commute to work in a new job means that breakfast with the family gets replaced with a snack on the go, while the leisurely lunch dates with colleagues might get substituted with lunch 'al-desko' when work demands rise. Certainly, anecdotal evidence in the mass media of growing isolationism around eating is becoming increasingly bolstered by academic studies that show the dangers of eating alone (Dunbar, 2017). Research examining eating trends has found that the average American does not eat with others on a daily basis. Even

more surprising is that one in every five meals is eaten in a car (NPD, 2014). This is concerning when considered alongside analyses that have found that children who do not regularly eat with their parents are significantly more likely to have behavioural issues at school and in later life, and are more likely to be overweight. Meanwhile, children who do eat with their family experience less trouble with drugs and alcohol, exhibit healthier eating patterns, show better academic performance and report being closer with their parents (CASA, 2012).

Food sharing is a foundational human practice at the very core of human civilisation, helping to secure sustenance, cement social relations and permit role specialisation within societal groups. While other species also share food, the patterning, persistence and complexity of food sharing within human groups means that we share food like no others. This has led to a suite of theories attempting to explain why people first began to share (Kaplan and Gurven, 2005). Some of these theories see sharing as a process of natural selection; an instrumental means to ensure reproductive fitness and ultimately the survival of individuals and kinship networks. This is exemplified by the toleration of begging and food theft within groups when food is abundant and the donation of food first to close relatives in times of scarcity. Other theories emphasise the reciprocal dimensions and cooperative demands of sharing, arguing that people learnt to share as a result of numerous push and pull factors (Jones, 2007). For example, sharing can be a pre-emptive response to avoid punitive treatment from others in the group or as a means to improve status within hierarchical social settings. However, much of the research on which sharing theories are based has been conducted within small-scale societies, particularly with hunter-gatherers or groups that combine foraging with simple forms of horticulture. The justification for this focus is pragmatic: foraging societies often share food between families on a daily basis, providing a rich source of data on sharing practices. It is also driven by the disciplinary interests of evolution scholars,

for while foraging as a primary means of food provisioning is increasingly rare and far removed from many contemporary experiences, the majority of human history is dominated by such food provisioning systems, with agriculture emerging only in the last 10,000 years. These reflective studies are certainly important for providing insights into the evolutionary dimensions of food sharing, most particularly with respect to the ways in which sharing performs highly socialised forms of interaction; but are they relevant to contemporary urban food sharing?

Psychologists and anthropologists, extending the work of behavioural ecologists, have also sought to explain how sharing systems persist or transform over time as norms around sharing are negotiated. Here, studies of transitional moments dominate, for example when foraging systems intersect with systems of settled agriculture and waged labour activities (Kaplan et al, 2012). In this context, geographical and cultural diversity are seen as key to the evolution of sharing systems as sharers seek to elevate gains from cooperation and minimise risks from free riding through sharing practices. This is important because such research begins to flesh out the dimensions of complex socio-political and economic phenomena also found in contemporary food sharing, identifying the range of different objectives that sharing fulfils for diverse actors and recognising a dialectical relationship between individuals and structures in how sharing is performed. Despite this, sharing studies are primarily still focused on small-scale and isolated communities functioning on the edge of or outside global trade systems, leaving much of the contemporary landscape of food sharing unexamined.

In response, this book brings attention to food sharing as it is practised and performed in urban settings in the 21st century. For not only is food sharing still occurring in the quiet spaces of home life and through celebratory feasts with friends and family, it is also increasingly facilitated by new technologies such as apps (abbreviation of application, a computer programme designed to be run on a mobile device such as a smart phone

or tablet), websites and social media. These mediators offer new ways to stretch sharing beyond immediate kinship and friendship networks quickly and conveniently, provided you are able to access them. Such has been the optimism surrounding these information and communications technology (ICT)–mediated forms of sharing more widely, particularly in the mobility and accommodation sectors, that some advocates have heralded them as key foot-soldiers of a new societal revolution (Botsman and Rogers, 2010). While others remain critical of this recent appropriation of sharing by commercial tech start-ups and their venture capital–funded initiatives (Belk, 2010), there is still an underlying optimism about the pro-social dimensions of sharing for creating more sustainable communities, leading to calls for a new paradigm of sharing (McLaren and Agyeman, 2015). Yet, beyond interesting case studies of particular food–sharing initiatives, there are few examples that engage broadly with contemporary practices and performances of food sharing. This leaves a gap in our understanding of contemporary food sharing, its impacts and its potential to improve the sustainability of food systems. It is the aim of this book to begin closing this gap, first by exploring a specific cohort of contemporary food sharing, that which is mediated by ICT and which occurs within urban areas, and second by establishing a research framework to further extend this exploratory study into new arenas.

The conceptual and empirical foundations for this book are located squarely within a large-scale, multi–year study of ICT-mediated urban food sharing called SHARECITY that began in 2016. This research resulted in the first international mapping experiment of ICT-mediated urban food-sharing initiatives across 100 urban areas, spanning 43 countries and six continents (Davies et al, 2017a; 2017b). This database was made interactive and placed online, available to anyone to use. The database served multiple functions. It provided a mechanism to select a suite of contrasting urban locations for in-depth ethnographic fieldwork in order to better understand the everyday sharing practices

of such initiatives, but it also provided an open–access online resource. This has enabled the database to function as a site of inspiration for those wishing to get involved in food sharing, as a means to identify what food-sharing initiatives are active and as a direct link to initiatives to promote access to sharing. Key findings of this phase of research are detailed in Chapter Two.

The remainder of the book combines insights from the database with those from a suite of ethnographies conducted in London, Berlin, New York, San Francisco, Dublin, Athens, Barcelona, Melbourne and Singapore. In each urban area interviews were conducted with those who were pivotal in setting up the sharing initiatives and those who are charged with regulating them. Alongside these formal interviews were a suite of engagements with those who shared as they grew, cooked, ate or redistributed food, and it is this research that forms the basis for the remainder of the book: the social, political and legal rules that both shape food sharing and are reshaped by its practices (Chapter Three); the particularities of socio-technical configuration that mediating urban food sharing with ICT creates (Chapter Four); and the connections and interconnections that result from the emergence of ICT-mediated urban food sharing (Chapter Five). The final chapter establishes a set of trends that can be distilled from the research and presents a framework for future research. However, before delving into the empirical data it is important to set out some answers to key questions that shaped the framing of the research: What counts as food sharing? Why focus on urban food sharing? And why focus on ICT-mediated urban food-sharing initiatives?

Defining parameters of ICT-mediated urban food sharing

What is food sharing?

There is no agreed definition of what constitutes contemporary food sharing, although more debate has taken place regarding the broader parameters of sharing compiled under umbrella terms

such as 'collaborative consumption', 'solidarity economies' or 'sharing economies' (Martin, 2016). High-profile advocates of these activities, such as Botsman and Rogers (2010), see sharing as a means to liberate under-utilised assets for monetary or non-monetary benefits, which in the food realm might include the selling of surplus food via online communities or gifting it to food banks. It might include person-to-person marketplaces that facilitate the sharing and direct trade of assets built on peer trust (for example, homemade food sales). Others argue that sharing qualifies as 'true' sharing only when socio-cultural dimensions are emphasised, thereby excluding the commercial transactions of large-scale sharing platforms or apps (Belk, 2014). Given this lack of agreement, and to initiate an open examination of the field, a dictionary definition of sharing is used as a lexicological foundation and expanded to focus specifically on food as follows:

> having a portion [of food] with another or others; giving a portion [of food] to others; using, occupying or enjoying food [and food related spaces to include the growing, cooking and/or eating of food] jointly; possessing an interest in food in common; or telling someone about food. (Cambridge University Press, 2017)

Adopting this broad definition as a foundation allows for diverse food-sharing practices to be considered and compared. It provides an expansive opening gambit from which interrogation of what it means to share can be undertaken.

Why urban food sharing?

> Our struggle for global sustainability will be won or lost in cities. (Ban, 2012)

In 2016 the Director General of the Food and Agriculture Organisation (FAO), José Graziano da Silva, called for cities,

big and small, to help construct urban food systems that will be sustainable and resilient in the face of changing climates. In an epoch of planetary urbanisation, cities are significant sites of production, consumption and innovation, not least around food (Davies and Legg, 2018). Certainly, urban food systems will require radical transformation if they are to contribute to the Sustainable Development Goals of zero hunger and sustainable communities and cities, as agreed by the 194 countries of the UN General Assembly in 2015.

Why ICT-mediated food sharing?

Digital technologies are an increasingly visible part of everyday life for many people, with internet penetration globally reaching 50% in 2016. The proliferation of content accessible through these mechanisms has grown exponentially and provides new subjects, objects and networks – essentially new landscapes – for research, as well as new conceptual and methodological challenges for researchers (Hine, 2005). In this book ICT refers to diverse forms of technology, from digital devices to software packages, that make it possible for people to access information and communicate globally (UNESCO, 2002), including website, social media (Facebook, Twitter, Meetup) and apps that can be utilised to share skills, spaces or stuff (for example, food itself, meals, seeds, compost, devices, utensils, tools and so on) related to growing, preparing or eating food. These mechanisms offer possibilities to share food with wider communities far beyond the kinship food sharing that formed the very bedrock of human civilisation in hunter–gatherer communities. Essentially, ICT is stretching the spaces over which food sharing can occur, but how exactly it is affecting the practice of sharing remains unclear.

Where they are accessible, ICTs are already having material effects on how cities and regions are configured, built and managed, from smart buildings to traffic management (Kitchin and Dodge, 2011). As demonstrated by high-profile,

commercial sharing platform economies such as Uber and Airbnb, mobile internet platforms are able to match supply and demand more effectively and conveniently than traditional business models, promoting access and service provision over ownership (Heinrichs, 2013). In addition, ICT-mediated sharing facilitates heightened levels of personal data exchange and new mechanisms for establishing trust between producers and consumers through reputational ranking, reducing transaction costs and informational asymmetries, opening up possibilities for consumers to also be producers (or prosumers) in a multi-sided marketplace. Indeed, such is the level of engagement with ICT that some claim that it represents a structural, unstoppable and disruptive revolution (OECD, 2016). However, while protagonists claim positive social, economic and environmental benefits from these ICT-mediated transactions, concerns are being voiced about how to manage risk, identify responsibility and design appropriate regulation within these new business models (Slee, 2016; Davies et al, 2017a). Tim Slee (2016), in particular, suggests that venture capitalist-funded ICT-sharing businesses damage development by extending free-market practices into previously protected areas of our lives, further colonising the life-world by the instrumental rationality of profit seeking for investors (Habermas, 1987). Rather than liberating prosumers, the fear is that for-profit manifestations of ICT-sharing provide fortunes for a few while pushing vulnerable populations to take on unsustainable risk and precarious work (Davies et al, 2017c). Deeper understanding of the types of sharing being enacted around food is therefore essential. Recognising sharing as a social practice that is replete with rules, tools, skills and understandings is the approach adopted in this book.

Sharing as a social practice

Sharing is not just what people do, it is a coordinated entity, 'a temporally unfolding and spatially dispersed nexus of doings and sayings' (Schatzki, 1996: 89) and a performance – a process of doing – through which sharing as an entity is perpetuated and potentially reshaped. While the benefits of adopting a practice orientation in relation to eating, cooking or growing food is relatively well established (see Warde, 2013; Davies et al, 2014; Meah, 2016), this approach has not been applied explicitly to food sharing. Yet, as outlined above, food sharing is undertaken for and with others; reshaping relations with both human and non-human entities and tangible and intangible resources (Agyeman et al, 2013). It is, as a result, overflowing with habits, routines, tools and technologies; essentially embodying an archetypal practice that is both entity and performance. Food sharing demonstrates routinised ways 'in which bodies are moved, objects are handled, subjects are treated, things are described and the world in understood … [It is] … a "type" of behaving and understanding that appears at different locales and at different points of time and is carried out by different body/minds' (Reckwitz, 2002: 250), with the performative element of food-sharing practice occurring around its enactment. It is only through the performance of food sharing that the interdependencies between elements of food sharing (that is, food sharing as an entity) are sustained or changed. In essence, food sharing is a complex assemblage 'of body–minds, things, knowledge, discourse, and structures carried by agents such as individuals, organizations and institutions' (Jones and Murphy, 2010: 371).

Adopting a practice lens enables examination of broad social and economic processes through the consideration of the actions and meanings associated with food sharing (Davies et al, 2017b). It permits attention to cultural rituals and individual habits that determine (in part) what is deemed appropriate

to share in different contexts and to the rules and forms of power and control that shape the ways in which food sharing takes place. This is exemplified by the mundane practices of government, for example through land-use planning that dictates where and what types of food-sharing activities can take place. It is also visible in the ways in which environmental health and food safety regulations shape legal architectures for how food can be processed, prepared and delivered for consumption.

Conclusion

While for many citizens, particularly those in western, urban contexts, the extent of sharing around food – including growing, cooking or eating together – may have declined, this book is testament to the fact that food sharing beyond friends and family still persists, and its practice is evolving and adjusting to new contexts. As a result, the scope of this book is set by a suite of fundamental questions about contemporary urban food sharing: what is it, why does it occur and how is it performed? Responding to these questions involves identifying and interrogating the rules, tools, skills and understandings that shape food sharing, from legal frameworks to habitual practices, conventions and routines. This book documents, for the first time, the form, function and governance of diverse contemporary ICT-mediated urban food-sharing initiatives from around the world; distilling three key elements – the rules, tools and networks – that shape it and identifying core issues for future research. It fills a sectoral gap in explorations of contemporary urban sharing and explicates for the first time the rise of ICT-mediated food sharing.

TWO

New contexts: mapping contemporary urban food sharing

Food sharing among friends and family remains a common practice in the 21st century, even if we do not know precisely how such sharing is manifest or how it is changing across time and space. There is less clarity around the ways in which food sharing is mediated beyond these constituencies through websites, social media or other digital platforms. This is problematic from both research and practice perspectives. It makes comparisons across sharing events and initiatives difficult and it also means that the initiatives themselves (or potential food-sharing entrepreneurs) can struggle to develop communities of practice and exchange knowledge. The good news is that researchers examining ICT-mediated food sharing have one clear advantage over those focusing on intimate interpersonal sharing among friends and family. ICT-mediated sharing leaves a digital trace that can be identified, collated and interrogated. Finding such digital traces is, however, just the first step in a complex journey of making ICT-mediated urban food sharing visible in order to explore its practices. This chapter considers high-level findings from one mapping experiment that examined contemporary

ICT–mediated urban food–sharing landscapes in 100 cities and constructed an open–access interactive database to share the results online (see Davies et al, 2017a; 2017b for further details of the method and results of this endeavour). Table 1 details the cities, countries and regions involved in this study and provides the number of initiatives uncovered and a ranking of cities according to the number of initiatives present.

Table 1: List of 100 urban areas

Region	Country	City	Activities	Ranking
Africa	*Kenya*	Nairobi	10	91
	South Africa	Johannesburg	23	68
	Senegal	Dakar	6	98
Asia	*China*	Beijing	17	81
		Shanghai	11	90
	Hong Kong	Hong Kong	40	40
	India	Bengaluru	27	59
		Chennai	14	85
		Mumbai	17	78
	Indonesia	Jakarta	16	82
	Japan	Tokyo	45	28
	Malaysia	Kuala Lumpur	45	29
	Singapore	Singapore	50	26
	Philippines	Manila	25	64
	South Korea	Seoul	42	37
		Toyama	9	93
Australasia	*Australia*	Adelaide	62	14
		Canberra	37	46
		Melbourne	144	3
		Sydney	108	5
	New Zealand	Christchurch	50	27
		Wellington	56	19

Region	Country	City	Activities	Ranking
Central and South America	*Argentina*	Buenos Aires	70	9
	Brazil	Porto Alegre	4	100
		Rio de Janeiro	9	92
		Sao Paulo	24	66
	Chile	Santiago	39	41
	Colombia	Bogota	23	69
		Medellin	17	80
	Ecuador	Quito	17	79
	Mexico	Mexico City	32	54
Europe	*Austria*	Vienna	42	36
	Belgium	Brussels	31	56
	Czech Republic	Prague	20	73
	Denmark	Copenhagen	23	67
	UK	Birmingham	24	65
		London	201	1
	France	Paris	40	39
	Germany	Berlin	133	4
		Cologne	67	11
		Frankfurt	54	21
	Greece	Athens	15	84
		Thessaloniki	11	89
	Hungary	Bucharest	13	87
	Ireland	Dublin	45	30
	Italy	Milan	43	34
		Naples	22	71
		Rome	38	43
	Poland	Warsaw	18	77
	Portugal	Lisbon	36	50
	Russia	Moscow	13	88
	Spain	Barcelona	106	6
		Madrid	63	12

Region	Country	City	Activities	Ranking
	Sweden	Gothenburg	14	86
		Stockholm	26	61
	Switzerland	Zurich	42	35
	The Netherlands	Amsterdam	29	57
		Nijmegen	15	83
		Rotterdam	18	74
	Turkey	Istanbul	36	48
Middle East	*Qatar*	Doha	6	99
	UAE	Dubai	8	95
	Israel	Tel Aviv	18	76
North America	*Canada*	Montreal	38	45
		Toronto	43	32
	United States	Ann Arbor	36	49
		Asheville	39	42
		Atlanta	52	23
		Austin	62	13
		Berkeley	44	31
		Bloomington	27	60
		Boston	55	20
		Boulder	35	52
		Chicago	72	8
		Cleveland	26	62
		Dallas	31	55
		Denver	59	15
		Detroit	41	38
		Elora	9	94
		Gulfport/ Biloxi	18	75
		Hartford	21	72
		Houston	43	33
		Ithaca	23	70
		Jackson	8	96

Region	Country	City	Activities	Ranking
		Long Beach	29	58
		Los Angeles	57	18
		Louisville	33	53
		Media	7	97
		New York City	185	2
		Oakland	52	24
		Philadelphia	81	7
		Pittsburgh	38	44
		Portland	51	25
		Rochester	25	63
		San Francisco	57	17
		Santa Cruz	37	47
		Seattle	53	22
		St. Louis	36	51
		Vancouver	68	10
		Washington DC	58	16
			Total: 4003	

Source: Adapted from Davies et al (2017b)
Key:
Dark grey = top 10 cities
Light grey = bottom 10 cities

Collating digital traces

One of the lasting legacies of diverse economies research (Gibson-Graham, 2008) is the robust defence that it has given researchers who wish to examine activities beyond the mainstream economy; for those keen to give visibility to alternative modes and means of acting and doing. However, while often providing a rich, contextualised picture of activities in a particular location, this body of research provides fewer guidelines for establishing broader landscapes. Whereas there are relatively simple strategies to secure data on mainstream business activities, it is quite another matter to collate activities such as

ICT-mediated urban food sharing. This is because it incorporates initiatives with a range of organisational forms, some of which are informal and many of which are not included in either company or charitable registers. Recognising this complexity requires a system of identification that is both robust and flexible enough to make meaningful statements about the ways in which urban food-sharing initiatives operate within and across cities. For, while technical tools for scraping data from the internet are available (see Russell, 2014), these rely on the existence of common search terms. The open and contested concept of food sharing demands a more creative process in order to capture the patterns and grammars of sharing.

The initial goal of building a database was to provide a platform on which learning could develop around the practice and potential of diverse food-sharing initiatives to contribute to more sustainable urban food systems; to throw light into the black box of ICT-mediated food sharing. The database was assembled by a core interdisciplinary team of international coders and a supportive social media network of collaborators who assisted by publicising our calls for submissions. First, a typology of food sharing was developed to frame the identification, classification and analysis of initiatives according to what was shared and how it was being shared (Table 2).

Each initiative identified was then coded according to: its location; the goals of sharing (for example, social, economic, environmental); what was shared (for example, the qualities of materials or information); how it was shared (for example, the mode of sharing such as bartering, gifting or selling); the institutional form of the initiative itself (for example, whether it is formally registered as a for-profit or not-for-profit initiative) and the type of ICT used to mediate sharing (see Table 3).

While the questions set out are simple, answering them was anything but. Attending to the mode of sharing, for example, was challenging – not least because of the tensions around what counts as sharing in everyday understandings. For example,

Table 2: Typology of urban food sharing

What is shared	Mode of sharing				
	Collecting	Gifting	Bartering	Selling (Not-for-profit)	(For-profit)
Stuff *From seeds, to unprocessed and processed foodstuffs including utensils, food waste or compost*	Sharing food that has been 'liberated', foraged or gleaned, eg, 510 fruits, USA	Providing food for free, eg, FoodCloud, Ireland & UK	Swapping food and food devices, eg, Adelaide Hills Produce Swap, Australia	Providing affordable food on a not-for-profit basis, eg, 4th Street Food co-op, USA	Selling home cooked food that generates income beyond the costs of production, eg, Homemade, Australia
Spaces *Shared growing spaces, shared food preparation or shared eating spaces*	Guerrilla gardening of public open spaces, eg, Elephant and Castle roundabout, London, UK	Providing spaces for growing for free, eg, The Monroe Sharing Gardens, USA	Providing spaces where food can be exchanged for labour, eg, Community Shop, London	Providing spaces for people to grow food on a not-for-profit basis, eg, Milwaukee Urban Gardens, USA	Providing spaces for supper clubs or dining experiences, eg, Eat With, Global
Skills *The sharing of knowledge and experiences around food from growing to eating and food waste disposal*	Identifying places where gleaning or foraging might occur, eg, Fallen Fruit, Los Angeles, USA	Providing skills around growing, eg, 3000 acres, Australia	Providing opportunities to learn about growing food, swap seeds and produce, eg, Grow stuff, Australia	Providing workshops around nutrition or growing, eg, Hunger mountain co-op, Montpellier, USA	Providing opportunities for travellers to experience home cooked meals with locals, eg, Viz Eat, Global

Source: Adapted from Davies and Legg (2018)

Table 3: Food-sharing database categories

Criteria	Category	Sub-category
What is being shared	**Stuff**	Plants and seeds Fruits and vegetables Meat and fish Food products Compost Tools Kitchen devices Meals
	Space	Land Kitchen spaces Eating together
	Skills	Information Knowledge Skills
Mode of sharing	Collecting Gifting Bartering Selling	
ICT engagement	Website Twitter Facebook App	
Institutional organisation	Non-profit Social enterprise For profit Co-operative Association Informal	

Note: To reflect the uncertainty around forms of food sharing activities, 'other' categories were included in the database for each of the coding sections to allow for hybrid organisations, modes and materials of exchange to be set aside during the collation phase for reflection.

while it is commonly assumed that food sharing is predominantly about gifting, there are many social enterprises that involve an element of monetary exchange around their sharing practices, even if often on a not-for-profit basis. As seen with the rise of sharing economies more broadly (Davies et al, 2017c), there are also for-profit initiatives that call the exchanges they facilitate 'sharing' even though they seek to make a profit from them and focus more on optimising resource use than the dimensions of care or commensality found in many readings of sharing. Another challenging arena was how to describe the mode of sharing found in activities like gleaning, skip surfing, dumpster diving and foraging. These activities do not fit easily into gifting or bartering categories and certainly are not selling. In response, a distinct mode of sharing – collecting – was developed to capture these activities.

Searching for sharing initiatives was structured by a list of 28 keywords. These terms were translated for country-specific searches, although it was recognised that the food-sharing arena presents significant issues of cultural translation (Bhabha, 1994). Searches were conducted systematically via country-specific Google search engines, social networking sites such as Twitter and Facebook and networks of food activists (for example, Boston Food Systems listserv, Food Surplus Entrepreneurs Network, municipal and national Community Garden databases), sharing networks (for example, Shareable), solidarity economy organisations (for example, Solidarity NYC, US Solidarity Network) and international research networks (for example, Community Economies Research Network). This was a reflexive process, with additional information collected about the food-sharing activities that suggested ambiguities or boundary issues related to the established coding and classificatory categories.

The first iteration of the database contained 4,005 initiatives. Without doubt, collecting the information on these initiatives was an intensive exercise, involving more than 5,000 person-

hours of labour. Even so, the resulting database represents only a snapshot of ICT-mediated food sharing in the urban areas examined. Following a review of the database one year from the initial collection, there was a 5% erosion rate, with approximately 200 initiatives no longer active online. Such dynamism is not surprising, particularly with new initiatives, and also occurs in mainstream economic activities. It is not unusual for many start-ups to fail within the first two years of operation, and commonly at rates much higher than this (Cantamessa et al, 2018).

In the spirit of sharing, the database was converted it into an open-access online searchable tool to provide an enduring and accessible learning resource for sharing initiatives, to provide inspiration for those wishing to share but unsure of where to locate information about sharing opportunities and as a means to foster transnational innovation for novel urban food system interventions. Using Google Analytics it was possible to ascertain that within its first year the database generated more than 5,000 interactions from across 84 countries, including many from countries that have no urban area among the 100 selected for inclusion in the database, such as Iran, Ghana and Kazakhstan. Tracing the impact of the database beyond these locational data points would be challenging and interesting in equal measure. Ultimately, the emergent nature of ICT-mediated food sharing meant that the process of creating the database was a negotiated and collaborative rather than an immediately technical procedure. Decisions about including or excluding initiatives were negotiated between different constituents and across diverse sites both off- and online. More than this, there were ongoing debates about how to understand and how to present data on the food-sharing initiatives in ways that permitted comparison but acknowledged the complexity and richness of experiences taking place in unique contexts (England, 1994). More than simply producing an online record, the process of creating the database represented a transdisciplinary, collaborative and reflexive process of translation that led to the dissection and recalibration of

understandings. The process was performative (Law, 2004) and generative. It created a space for attending to sharing as the unit of analysis, drawing together initiatives from across other conceptual categories such as solidarity economies, alternative food movements, cooperative movements, the non-profit or third sector, as well as for novel activities that are not captured by these existing framings. Essentially, creating the database allowed each of the ICT-mediated food-sharing initiatives to be made more visible both individually and collectively, locating initiatives alongside others that use similar modes or focus on similar arenas of food sharing. The collective aspect is important, for while in isolation individual initiatives may be dismissed as too niche to contribute to reconfiguring urban food systems, collectively they create a landscape of activity in which a host of analysis about food sharing can be undertaken.

Urban food-sharing landscapes

So what did the experimental process of making ICT-mediated food sharing visible reveal across 100 cities, drawn from 43 countries and six continents? The vast dataset provides many options for analysis, but here the focus will be on key questions of motivations for, and geographies, qualities and mechanisms of, food sharing. Before examining these it is pertinent to note the temporal dimensions of ICT-mediated urban food sharing. While it was not always possible to identify the precise date that particular sharing initiatives were established, it is clear that the bulk of initiatives emerged after 2008, when smart, mobile digital technologies became more widely accessible, affordable and easier to use (Davies et al, 2017b). This date is also significant as a reference point for the global recession that impacted on economies and societies around the world from 2007 onwards; a profound economic stressor flagged as a key stimulus to the development of multiple sharing activities alongside technological shifts, rising environmental awareness

and growing social anomie (Botsman and Rogers, 2010). That there are initiatives with establishment dates far earlier than this indicates the continuities of current sharing practices with those of the past, and the ability of initiatives to adapt their activities to emerging contexts and technologies.

Motivations

Establishing the motivations for sharing was relatively straightforward, as many initiatives had clear mission statements or descriptions of goals on their online profiles. It was the social dimensions of food sharing that were most commonly emphasised by initiatives, followed by environmental and economic concerns. Just over a third of initiatives explicitly sought to attend to all three of these dimensions, or explicitly invoked a 'sustainability' goal.

Location

While the database is not representative of the global population of ICT-mediated urban food-sharing initiatives, the scope of coverage provides a useful illustration of different geographies of such sharing. Across the 100 urban areas it is London in the UK that had the most initiatives, with more than 200 identified. Porto Alegre in Brazil, meanwhile, had just four initiatives. Interestingly, the top 10 food-sharing areas in the database by number of initiatives – London, New York, Melbourne, Berlin, Sydney, Barcelona, Philadelphia, Chicago, Buenos Aires and Vancouver – account for just under one third of all initiatives recorded, while the 10 food-sharing areas with the fewest number of initiatives account for just 2%, suggesting a landscape of leader and follower cities in this space, just as in other areas of urban innovation and experimentation (Broto and Bulkeley, 2013). It is challenging to distil precise reasons for this spatial distribution, however, for while the leader cities

are predominantly large, populous metropolitan areas with high levels of GDP (at least compared to the global average) and high levels of internet penetration, if the number of initiatives is examined per capita, the ranking looks very different. In terms of the number of initiatives per capita, the highest-ranked urban area with a population of over one million is Cologne (31st), while London falls to a mid-table position (54th), with one food-sharing initiative for every just under 43,000 people.

Examined through a per capita lens, the top 10 sites of food sharing are all smaller urban areas in North America. Elora, a community in the township of Centre Wellington in Canada, ranks first, with the impressive statistic of having a food-sharing initiative for every 511 people. But what makes this a hot spot of urban food sharing? Without further in-depth analysis there is no obvious answer, but it is certainly an affluent community with a long-standing commitment to food and agriculture. The population has strong links with nearby university towns such as Waterloo or Guelph that provide employment and active research centres, particularly in relation to farming, with the surrounding area a living laboratory for novel agri-food developments. It is also home to a charismatic sharing champion who established Elora Community Share. This initiative provides an ecosystem of support for food-sharing initiatives and facilitates interaction with international sharing hubs through the Sharing Cities Network. Indeed, many of the urban areas with the highest absolute number of initiatives also tend to be active across this and other sharing support networks. While it is impossible to identify a causal relationship, it is not hard to imagine that having an engaged and broadly supportive governing structure for activities that relate to food and sustainability might provide a protective space for innovation around those issues. These issues of governance are revisited in Chapter Three. The 10 urban areas with the least number of food-sharing initiatives are more diverse geographically than the leader cluster, being located across Africa (Nairobi, Dakar), Asia (Toyama), South America

(Rio de Janeiro, Porto Alegre) and the Middle East (Dubai, Doha), as well as smaller urban areas in North America (Elora, Jackson, Media). There is far more diversity within this cohort in relation to population, GDP and internet penetration, although figures are consistently lower across these metrics than for the top 10 cities, particularly in relation to internet connectivity. As statistics do not exist at the city level for internet penetration for the cities in the database, country-level statistics are used as a proxy, which means that these figures are likely to be an under-estimation, as the density of connections in urban areas in these countries is presumed to be higher.

While online data provided by sharing initiatives rarely indicates the scale of participation in those initiatives, or indeed the location of those participants, what it does reveal is the emergence of translocal (for example, active in more than one urban area) and even transnational (for example, active in urban areas in more than one country) sharing initiatives. At present translocal sharing is limited within the 100 areas, with just 5% of initiatives operating in more than one urban area listed in the database (although of course they may operate in other urban areas not incorporated in the sample), and around 1% of all initiatives are active in more than one country. A third of the transnational initiatives, including Viz Eat or Eat With Me, are for-profit and sell meals or host dinner parties often marketed at those seeking more authentic 'home-cooked' eating experiences when travelling or living abroad. Another third are open-data mapping initiatives, such as Falling Fruit, that rely on voluntary, self-organised data collation and management provided through online repositories. Within both of these arenas it is the ICT capability that enables scaling up in the case of mapping and scaling out in terms of connecting diners with home cooks across multiple localities. Clearly, it is very much easier to share information over vast distances than to share material goods, particularly lively materials such as food that has a limited window where it is fit for human consumption.

What is shared?

A suite of categories was developed for classifying what was being shared by initiatives (see Davies and Legg, 2018 for further details of the process). Broad categories of spaces (for example, shared kitchens, eating spaces or gardens), skills (the sharing of knowledge and information) and stuff (material foodstuff and growing, storing and cooking devices that can be shared) were further sub-divided into: land, kitchen space, plants and seeds, fruits and vegetables, meat and fish, food products, compost, tools, kitchen devices, knowledge and skills, meals, eating together – to systematically code the initiatives in the database. However, more than two-thirds of food-sharing initiatives in the database shared multiple things and more than a third of initiatives shared three or more things. For example, the Skip Garden and Kitchen in London, which is part of Global Generation, provides knowledge and skills around community growing and cooking to local planners and businesses as well as involving local residents in food growing in its sites. Its sharing therefore involves food, land, tools, kitchen spaces and meals in addition to skills and knowledge. It is an archetypal multifunctional food-sharing initiative, involving a collection of actions intended to build resilience and reach multiple communities. Often, food sharing in this context is seen as a social accelerant for achieving wider societal changes.

Knowledge and skills are the qualities that are most frequently shared by initiatives, with just over half of initiatives engaging in some form of information-based sharing, as seen in the Open Farm Community in Singapore and the Motoazabu Farm in Tokyo. This category also involves skills sharing in relation to food preparation, as illustrated in the activities of the KinderKüche in Frankfurt, which focuses on teaching children how to prepare healthy meals, and the community kitchen Cozinha Popular Da Mouraria in Lisbon. Knowledge and skills sharing related to collecting includes the provision of

information about how to forage in urban settings, as articulated in Lots of Food in Louisville, United States (US) and Espigar En Madrid in Madrid, Spain.

However, the apparent dominance of knowledge and skills sharing around food requires further unpicking, for rarely did initiatives communicate where the bulk of their efforts were allocated in their online profiles. So, while initiatives might post 'how-to' guides for shared growing – thereby sharing information – that might make up just a small proportion of their efforts around food sharing, which might also include shared growing spaces and the sharing of seeds or garden tools. Also, there are many more categories of material foodstuff that were coded than for other types of sharing. If the nine food 'stuff' categories are combined, for example, knowledge and skills then comprises only a quarter of activities across the 100 areas, while with the combined sharing of material, food stuff makes up 63% of everything that is shared.

What is shared where?

Examining the database regionally, general patterns of what is shared are remarkably similar, particularly when examined through the broader lens of skills, spaces and stuff. For example, while sharing skills is lowest in the Asian urban areas covered by the database, it is just 1% lower than levels in European urban areas and 2% lower than those found in North American areas. Meanwhile, in the Middle Eastern urban areas nearly a third of initiatives involve skills sharing, which is the largest proportion of all regions. Reasons for these variations need to be further unpicked, although hypotheses might start by examining the availability of physical and technical infrastructures, or land-governance systems.

Only 3% separates all regions in terms of sharing spaces for growing, cooking or eating (from 12% to 15%), with North American urban areas experiencing the lowest incidence of

this form of sharing. Explanatory analyses here could examine patterns of population density and land enclosure systems. For example, Australian and New Zealand–based urban areas tend to have the highest incidence of space sharing and low population densities. The greatest regional divergence (10%) occurs within the food stuff category. Here it is the Middle Eastern areas that exhibit the least sharing of food stuff, with both the European and North American urban areas topping the field.

Conclusion

The food–sharing database discussed in this chapter provides, for the first time, the capacity to conduct consistent analysis and identify patterns and trends within ICT–mediated urban food sharing across diverse cities, countries and continents. It makes food sharing more visible within and beyond individual urban foodscapes, potentially enacting a process of scalecraft (Fraser, 2010). There are conceptual and pragmatic reasons for considering the performance of social practices such as urban food sharing at scales beyond the local when seeking to inform systems of governance that routinely privilege quantitative and large–scale studies over individual qualitative cases. The database functions as a tool to reveal, quantify and further understand the range of ICT–mediated food–sharing practice across 100 diverse cities.

In this vein, the ICT–mediated urban food–sharing database can be seen as a form of methodological pragmatism offering a different way of exploring sharing practices that complement rich case studies and that can build an extensive (if not in–depth) body of foundational data from which to explore how and why certain practices persist and others retreat. While it is inevitably a snapshot of food sharing in the urban areas involved, the database provides a springboard from which patterns and assemblages can be identified and sites and spaces – material and otherwise – where people and food stuff, spaces and skills come together

in tentative or evolving ways. The following chapters flesh out some of the nuances and details that lie behind the online profiles of ICT-mediated food-sharing initiatives, to explore their conception and performance around three key themes: rules, tools and networks.

THREE

Rules: governing urban food sharing

> Sharing food with another human being is an intimate act
> that should not be indulged in lightly. (M.K. Fisher, 1954)

Food sharing is replete with rules; rules around when, how
and with whom it is socially, politically and legally acceptable
to share. These rules are not fixed, they can change over
time, space and in relation to the actors, materials and entities
involved in sharing. While formal rules, for example around
land-use planning or food safety, are generally explicit (even if
not necessarily intimately known by citizens), social rules of
sharing are largely unspoken and, as a result, can be difficult to
navigate and easy to transgress (Fitzmaurice and Schor, 2018).
This chapter interrogates just some of these rules through analysis
of ICT-mediated food-sharing initiatives that operate in different
urban contexts and are subject to diverse governing regimes.

Key areas of policy emerge – particularly around food safety
– as significant in shaping how food sharing is practiced and the
experiences of food-sharing initiatives are used in this chapter to
exemplify the differentiated roles of supranational (for example,
European Union (EU)), national and urban governments in

identifying, codifying and regulating both food sharing activities and the urban spaces in which those activities take place operate. First, examples are given from the US of how particular food-sharing practices – such as direct selling from producer to consumer through farmers' markets or marketplaces for home-cooked food, seed sharing and surplus food redistribution – can come into tension with, resist or reinforce these governing frameworks. Attention is then paid to the internal governance choices made by food-sharing initiatives and the ways in which the rules that initiatives set for themselves emerge and change over time in relation to initial goals and subsequent impacts. It is in this section that the social rules around sharing are considered – although, of course, these permeate all moments of sharing. This is followed by a more considered examination of salient governance issues that particularly affect the redistribution of food surplus within the EU.

Governing urban food sharing: cases from the US

ICT-mediated food-sharing initiatives often reside in relatively unsettled legal territory between private and commercial exchanges. As with other arenas of sharing that intersect with tightly regulated sectors, this regulatory uncertainty has led to clashes between sharing initiatives and those who are charged with enforcing legislation. However, food-sharing start-ups often feel that they are left with few options when navigating regulatory regimes. They can cease their activities because of uncertainty about the legality of their actions, or they can ignore the existing laws in the hope that by demonstrating the viability and safety of what they do they can reshape legal frameworks. Commercial sharing-economy companies, such as Uber and Airbnb, have adopted this latter strategy to significant effect. In 2015 Uber, already a multibillion-dollar company, launched a successful campaign enrolling lobbyists and media advertising to resist attempts to limit the company's expansion

which were being spearheaded by New York City's mayor at the time (Dawsey, 2015). In the same year Airbnb responded to state efforts in San Francisco to restrict short-term rentals with a multimillion-dollar campaign against the proposals (Somerville, 2015). However, the legal challenges for these companies came once they were already powerful players in their sectors, as is indicated by the significant funds that they were able to invest in lobbying. This has led to concerns bring raised about a differentiated system of justice where successful sharing platforms like Airbnb and Uber can develop their own regime of privilege that gives them significant power and influence in decision making (Pasquale and Vaidhyanathan, 2015); although of course, uneven access and influence over others is nothing new in the policy world (see Davies, 2001). Others have called for legislation to be designed expressly for experimental activities like sharing that might be applied temporarily while the impacts of activities are demonstrated (Kessler, 2016). In other situations there have been calls for mandated requirements (sometimes called sunset provisions) for legislative bodies to actively undertake reviews of existing policies over time in order to reflect on their relevance in the light of emerging technologies (Doménech-Pascual, 2016). While these regulatory debates are most heated around how best to govern commercial sharing-economy activities, food-sharing initiatives with a range of organisational structures are also being shaped by and seeking to reshape governing landscapes. The following section draws out a few cases to exemplify these ongoing processes.

Scale matters (1): the Underground Market

While food-sharing initiatives have yet to reach the global visibility of high-profile sharing companies in the housing and transportation sectors, small-scale food trucks and community farmers' markets have long endured legal battles in order to operate legally. For example, San Francisco's Underground

Market was established in 2009 as a reaction to the exclusionary requirements to starting a food business in the area. Initially the monthly Underground Market operated from a private house, with seven vendors and around 150 eating participants. It was recognised by the city's health department as a private event, with the participants required to become members and to accept that events involved the sale of uncertified food. By 2011 the market had grown to incorporate more than 400 vendors and more than 50,000 members. It had become undeniably visible and, in the eyes of the health department, therefore public and thus subject to the full procedural requirements of a food business. In July of that year the Underground Market was closed down by the city health department. It reopened in June 2012 to celebrate the raising of $150,000 through the Kickstarter crowdfunding platform, which was used to open a professional shared kitchen described as an incubator for food crafters.

The Underground Market was explicitly selling food, albeit artisanal, home-cooked or small-batch cooking, so it is not hard to see why the public health officers felt that they had to intervene when the event scaled up dramatically. In other areas, however, such as community seed swaps, the relevance of applying regulation designed for commercial activities to small-scale not-for-profit initiatives is less obvious.

Scale matters (II): community seed sharing

While community seed sharing has been practised since the advent of agriculture it has been largely supplanted by commercial models of exchange in the 20th century. In the US the industry has consolidated to the extent that three companies control more than 50% of the commercial seed market (SELC, 2016). At the same time, the UN Food and Agriculture Organization (FAO) estimates that 75% of the world's plant genetic biodiversity in the 20th century has been lost, in part due to this consolidation and other market

practices (FAO, 2010). Yet studies show that genetic diversity among seeds is a key element of ensuring that our agricultural systems are resilient in the face of a number of social, political and environmental threats (Ramsey, 2018). While informal seed sharing providing free access to seeds has continued on small scales alongside this market evolution, organised community seed swaps and the formation of public seed libraries helped scale-up seed sharing activities and made them more visible for potential participants and regulators alike. According to the Sustainable Economies Law Centre (SELC), a California-based not-for-profit initiative providing legal support for community activities and grassroots economic empowerment, more than 450 seed libraries, and countless more community-based seed exchanges, exist in the US alone. However, in 2014 state regulators began threatening these activities with closure, due to concerns over potential biohazards that they could be creating. Essentially, community seed swaps were being held accountable to legislation designed to manage commercial seed practices, with requirements for permits, testing and labelling of all seeds to demonstrate quality and reduce risks from contamination with weeds and invasive species. These actions were felt to be tantamount to constructive closure for community seed initiatives, with such requirements being far in excess of what volunteer-run initiatives could feasibly respond to with their limited resources. In response, SELC scoured the seed laws and summarised key issues for community seed swaps in a publicly accessible database called the Seed Law Tool Shed. It drafted sample legislation and local resolutions in an attempt to create a clear legal space for non-commercial seed sharing. Working in parallel with grassroots petitions and advocacy work, SELC was able to help pass state laws protecting seed-sharing activities in a number of jurisdictions. In 2015 Minnesota became the first state to amend its state seed law to exempt non-commercial seed sharing from the full suite of procedural requirements, with other states following suit. In 2016, for example, the governor of

California signed into law the Seed Exchange Democracy Act, exempting non-commercial seed sharing from onerous testing and labelling requirements. This represents a significant step in policy realignment, recognising the qualitative and quantitative differences between the activities and goals of community seed swaps and multinational agri-food companies. Scale certainly matters in this case, but the regulatory changes are also a reflection of the scope and intention of the community-level activities involved. The combined efforts of community groups and skilled advocacy organisations in championing the benefits of local seed swapping have created the possibility of enhanced food democracy, at least among those who are able to participate.

Scale matters (III): selling your wares

The exchange of home-cooked food for money faces similar challenges to those posed to both the farmers' markets and the seed savers: essentially, commercial legislative frameworks are applied to small-scale industries. For example, selling food of any sort in California requires you to have a suite of specified kitchen facilities, requiring significant financial investment. Meanwhile, even commercial shared kitchens can be out of financial reach for entrepreneurial home cooks looking to test the waters for their products. While many states in America have some variant of a cottage food law to meet the needs of home cooks looking to sell their wares, many restrict such sales to designated foods such as baked goods, dried fruits and popcorn, which are considered to be low risk or non-hazardous.

Advocates for the weakening of legislation for home cooks argue that the key issue at stake is not whether food safety is important but whether the current system for managing risk is any more effective as a result of restricting public food preparation to commercial kitchens. It is argued that people purchasing food from a home can see the kitchen for themselves and meet the person who has prepared it, creating higher levels of trust and

personal accountability. For Josephine Cooks, a San Francisco meal-distribution platform for home cooks, the uniqueness of home cooking was fundamentally about these relationships. However, from the perspective of public regulators, inspecting the activities of a burgeoning number of small businesses was seen as creating a legislative headache, and city officials informed Josephine Cooks that its operations (and the cooks who participated) were breaking the law. In a similar fashion to the Underground Market, Josephine Cooks then required people to become members of its initiative before buying a meal, emphasising the origins of the food in home kitchens on its web platform and calling for cooks to use commercial kitchens for meal preparation while the initiative explored permitting options with local authorities. However, health regulators at the local level had no authority to compromise with Josephine Cooks and no legal discretion about whether to enforce the law. As the company attempted to roll out its activities across the country it faced a range of local legal challenges, encountering variations of cottage food laws from state to state. Frustrated, Christina Oatfield, the non-profit's policy director, asked '[h]ow can we decriminalize neighbourhood-based sales of homemade meals in a way that disrupts corporate control of the food system … rather than simply adding a few tech giants to the map of corporate control of the food system?' (Oatfield, 2016).

In 2018 the chief executive officer, Charley Wang, concluded '[at] this point, our team has simply run out of the resources to continue to drive the legislative change, business innovation, and broader cultural shift needed to build Josephine' (Albrecht, 2018). However, as Josephine's doors closed, other ICT-mediated initiatives remained focused on pairing home cooking with the sharing economy, particularly through marketplaces for home cooks to sell eating experiences with others. Attention to these activities, particularly the experiences of sharing food through multinational meal-sharing platforms such as Eat With and Viz Eat, is further developed in Chapter Four. In the next

section the organisational rules that initiatives adopt in order to share food are considered. This includes examining the diverse modes of sharing that they adopt, from gifting to selling, the institutional models they create in order to do this and the social, cultural and ideological rules that shape the decisions about how they wish to function.

Internal governance of food sharing

While it is the commercial end of the sharing spectrum that has caught media attention in other arenas of sharing such as mobility and accommodation, gifting has been shown to dominate many urban food-sharing landscapes (Davies et al, 2017b). The same research indicates that selling remains a common form of exchange for food-sharing initiatives, with around a third engaged in monetary transactions of some sort. However, these transactions occur in familiar mainstream markets as well as in alternative settings occupied by social enterprises and cooperatives. Certainly, at present, commercial for-profit market transactions do not dominate the food-sharing exchanges and interactions, with the exception in the database being urban areas in Asia, which show 43% of initiatives selling their sharing experiences, as compared to 41% gifting. Across the study, only 9% of sharing initiatives involve collecting food through processes of gleaning or foraging and just 7% adopt barter as their mode of sharing. These lower levels of activity might be explained, in part, because they tend to be territorially delimited and therefore less open to the scaling benefits of ICT mediation.

Identifying and analysing the organisational form of sharing initiatives internationally was a challenge because terms and definitions vary from country to country, as do the legislative frameworks that govern particular forms. Non-profits, for example, which make up nearly a third of all sharing activities, were taken to be mission-driven organisations that

have a charitable or non-profit tax status (for example, 501 C3 organisations, one of 29 types of non-profit organisation classified in the US). The goal of such organisations is not to generate profit, so donations and grants often form a large portion of their operating budgets while labour is often provided by volunteers alongside a limited number of waged employees. Clubs, associations and networks, which account for just under a quarter of sharing, were defined as organisations that require membership, while cooperatives include formally registered consumer, worker and producer cooperatives as well as businesses that self-identify as cooperatives. While only 5% of all sharing is conducted by cooperatives, more than half of these cooperatives are also associations. In contrast, for-profits, which made up just over a fifth of sharing activities, are formally registered businesses. Informal initiatives, which make up a considerable 17% of all sharing activities in the database, comprise of loose networks of people. They are not formally registered entities and, as a result, their activities may go unnoticed and therefore unregulated. Social enterprises, meanwhile, tend to adopt a business model and organisational form that blurs the boundaries of traditional business, state or non-profit approaches because they explicitly seek to generate social and environmental benefits from their activities. They may, for example, apply commercial strategies such as selling to reach social and environmental goals. Globally, the definition and associated legislation around social enterprise is still in development and social enterprise status is available in only a handful of countries, such as the United Kingdom (UK) and Australia, which explains why only 5% of sharing collated in the database is currently conducted through this organisational form.

Despite the overlap indicated previously between associations and cooperatives, the majority of initiatives in the database adopt a singular organisational form. Multiple organisational structures within a single initiative are most commonly employed by organisations operating outside the mainstream market economy

(for example, non-profits and cooperatives) as a means to provide multiple ways to access funding and resources and to overcome legal restrictions on certain types of activities. For example, in some jurisdictions charities are required to be independent of political parties. In the UK a charity cannot be established for a political purpose, but a charity may engage in political activity or campaigning to achieve its purposes.

Even acknowledging that the database provides only a snapshot of the food-sharing landscape, it is clear that mainstream market transactions do not dominate. While for-profit food-sharing platforms and apps are present, including a few venture capital-funded start-ups, the vast majority of initiatives and their exchanges are more easily accommodated into what have been variously called alternative market, alternative capitalist, non-market or non-capitalist economic activities – collectively captured under the umbrella concept of diverse economies (Gibson-Graham, 2008).

The choices that initiatives make about their mode of sharing and their organisational form were interrogated during in-depth ethnographies, and the connection between these choices and the underlying goals of initiatives were often tightly woven together. This is most clearly visible when initiatives seek to destabilise the mainstream system of commodified food and open it up to commoning practices, as with Ripe Near.Me in Melbourne, Australia, which works to map urban harvests for all (see Chapter Four for further discussion of this initiative), and the network of public fridges developed by Foodsharing.de in Germany and in Austria (Morrow, 2018). These underlying values are also often translated into internal rules around sharing for the initiative that align with their world-views and goals. These may seek to challenge mainstream social norms and values around sharing food, as with O Allos Anthropos (The Other Human) in Athens, Greece, an informal initiative that shares kitchen spaces and meals to break down barriers around food insecurity. Espigoladors in Barcelona promotes awareness of

the waste created by aesthetic criteria for food and redistributes aesthetically imperfect produce that is currently unacceptable to the market in order to demonstrate its edible qualities, reduce food waste and promote the consumption of fresh produce for all.

In some cases, as with Himmelbeet, a community garden in Berlin, initiatives have explicit internal rules for participants. Himmelbeet is a signatory to the Urban Gardening Manifesto, which was developed by a collective of gardening activists within the city to explicitly state personal, social and political commitments to the importance of freely accessible public spaces in the city, as well as to flag the importance of urban nature in creating positive ecological and inclusive urban environments. In particular, the manifesto sought to stimulate greater social discourse on the significance of community gardens and to highlight to decision makers in politics, planning and public administration the lack of legislative protection for their activities. Certainly, community gardens in many jurisdictions face challenges in terms of their lack of fit with standard urban government departments. Community gardens offer opportunities for recreation, including mental and physical exercise, but they are rarely designated as public parks or leisure facilities. They offer diverse opportunities for learning, but they are rarely seen as part of the educational department's remit. The implications of this governance gap are illustrated further in Chapter Five.

Himmelbeet adopts an explicit code of conduct to mediate relations around sharing within its garden. This is important, given the goals of the garden to foster inclusive, intercultural interactions between people and with non-human nature. The code calls for mutual respect for all who come into the garden, and for people to pay attention to each other and to animals and plants, behaving in such a way as to do no harm to anyone. Working together in the garden is a core feature of the code, and participants are reminded to be aware of others'

needs and to offer help when needed (although Himmelbeet notes that it is legitimate to accept or politely refuse such offers). Most importantly for the inclusive intercultural dimension of Himmelbeet's mission, the code of conduct calls for acceptance of difference among participants and for everyone to embrace the learning that can emerge from interacting with people who have different life experiences. In the spirit of inclusivity and learning, the code of conduct also allows for rules to be changed and new rules added.

In addition to formal rules, food-sharing practices are inevitably mediated by broader social and cultural rules around trust, taste and disgust. This is particularly so with respect to surplus food redistribution, which involves moving food along that has been deemed waste by its previous owners (Weymes and Davies, 2018a; Davies, 2019). Food sharers may have to rely on their cooking and food-preparation skills as well their sense of taste, smell and gut feelings to tell them when something designated for the bin can become food again (Edwards and Mercer, 2007). However, social rules also pervade many other arenas of food sharing, such as food swaps (Fitzmaurice and Schor, 2018) and meal sharing (Marovelli, 2018). Alice Julier, for example, argues that commensality, the act of eating together, can dramatically reshape people's perspectives, reducing perceptions of inequalities around race, gender and socioeconomic backgrounds (Julier, 2013). Attempts to explicitly operationalise such possibilities around eating together, such as Open Table in Melbourne and Be Enriched in London, which both convert surplus food into community meals open to all ages and ethnicities, also support the idea of food sharing as a catalyst or accelerator for greater unity within communities (Edwards and Davies, 2018). Even food sharing that is mediated by ICT is ultimately relational, an evolving process of setting boundaries around intimacy and distance, inclusivity and exclusion, manners and hospitality. Subverting

structural inequalities in class, race and gender in such settings is, of course, no easy matter (Fitzmaurice and Schor, 2018).

Redistributing free food

While the gifting of food to others has long been a key feature of food sharing when it occurs beyond the confines of friends and family, it is a practice that is not free from regulatory oversight. Indeed, in August 1988 nine volunteers from the informal food-gifting movement Food Not Bombs were arrested by the entrance of Gold Gate Park in San Francisco, California as they were about to share lunch with others (Spataro, 2016). By September of that year nearly 100 arrests had been made for such publicly displayed food-sharing practices, with police intervention highlighting that those involved in the public gifting did not have the required licence for their actions (Parson, 2015). This led to a string of legislative processes to establish a system of temporary permits, including health permits. However, only a legal challenge by Food Not Bombs brought the process of defining the terms of such a permit to an end so that the initiative could demonstrate its compliance with the requirements and seek a health permit. A health permit was subsequently issued in September 1989, with another permit to operate being issued six months later, in March 1990. However, by July of that year (1990) the San Francisco Recreation and Parks Department had deleted the permit process for sharing free food in the city's parks. The city government then granted an injunction against Food Not Bombs, banning the group from sharing food without a permit. Yet the initiative's multiple applications for a permit were not being progressed. Frustrated by these regulatory obstacles, Food Not Bombs food sharers continued to gift food in public places, and hundreds were arrested.

According to Spataro (2016), the food-sharing events of Food Not Bombs, similar to many initiatives delineated in Chapter Two, are multifunctional in nature, their actions being conceived

as simultaneously 'street demonstration, political theatre, grassroots organizing, and community meal all in one ritual use of public space' (Spataro, 2016: 192). As Heynen (2010), among others, has noted, Food Not Bombs employed a deliberately public spatial strategy to flag concerns about food injustice, poverty and violence. Food Not Bombs felt that it was these political dimensions of its actions that underpinned its struggles to serve free food legally, rather than the concerns stated by public officials that focused on food safety or the appropriate use of public parks. As a result, since 1995 the initiative has adopted a policy of not applying for or accepting a permit for the gifting of public food, stating that the sharing of food should be an unregulated gift of compassion (Henry, 2018).

Thirty years after the first arrests of Food Not Bombs food sharers, new legislation for public food gifting is being considered in San Francisco so as to formally recognise such practices, termed limited service charitable feeding operations. This provides for a new category of regulated food facility exempt from the many requirements of other commercial food operations. However, concerns remain among groups focused on hunger, regarding how the legislation would restrict the operation of volunteer-run initiatives and how local officials could potentially utilise the legislation to shut down community efforts to feed people who are hungry.

It is not just overtly political food-sharing initiatives like Food Not Bombs that are encountering legislator pushback. Since the turn of the century increasing awareness of the scale of edible food going to waste has stimulated a wealth of diverse initiatives seeking to redistribute this edible surplus away from landfill and towards those who are hungry (Davies, 2019). The food-sharing database identified more than 400 surplus food redistribution initiatives across 100 cities (Weymes and Davies, 2018a; 2018b). While the majority of the redistribution initiatives that connect donors and recipients are non-profit organisations of some description, many jurisdictions, including

the EU, consider all activities that redistribute food to be 'food business operators, placing food on the market' (EC, 2017: 6), irrespective of their institutional models or the sharing modes adopted. Redistribution activities are seen as engaging in retail, and charities that receive food are considered to be conducting mass-catering activities and, therefore, have the same obligations as commercial operators (EC, 2017). Both redistributors and charities are required to record the suppliers of products that they receive (one step back) and the recipients of the products they redistribute (one step forward), except with respect to the final consumer. This system for traceability occurs under the auspices of technical systems of food risk and safety governance, such that the beneficiaries of surplus food redistribution are afforded the same procedural protection as consumers in mainstream marketplaces. So, while redistributing surplus food has been flagged as one potential means of generating improved access to food for those in need, the food is still required to be of sufficient quality and quantity to meet needs in 'sustainable' ways (UNESCO, 1999: 3). Similarly, the EU food donation guidelines published in 2017 make it clear that food is to be traceable and edible, although they do not specify the relative roles and responsibilities of the various actors involved in ensuring that this happens. As detailed elsewhere (Davies, 2019), questions remain about who should provide and pay for the new logistics infrastructures required for the expanded volumes of surplus food redistribution, and who should evaluate the qualities of surplus food and its appropriateness for consumption. With no clear answers to these questions, activists and scholars alike are concerned that lubricating the flow of surplus food through legislation is currently focused primarily on limiting the liability of donors rather than on resolving the underlying causes of either food poverty or food waste (Caraher and Furey, 2017).

In the burgeoning landscape of redistribution there are a number of pinch-points where tensions around existing governance frameworks and suggestions for their reconfiguration

are emerging. Many of these revolve around the coincidence of technical approaches to food risk and safety with procedural assumptions about the locus of power and responsibility. One such example is the phenomenon of public fridges, envisaged as open-access spaces where food can be freely and anonymously shared (see Dowdall, 2017 and Morrow, 2018). However, while the concept of public fridges is straightforward, their operation varies widely and, despite their admirable goals of reducing waste and hunger, they have been labelled unhygienic and a threat to personal and public health (Zurek, 2016).

Public fridges in Berlin (Fair Teiler in German) were among the first to open in Europe (Rombach and Bitsch, 2015). These include fridges run by the non-profit ICT-mediated initiative Foodsharing.de in Germany, which operates a number of food redistribution activities, including decentralised food rescue and peer-to-peer food-sharing activities (Ganglbauer et al, 2014). Foodsharing.de was established in 2012 as a self-managed online platform. It has no storage facilities, but a community of volunteer food sharers and savers who rescue or redistribute food. This redistribution can be through personal networks, as virtual food baskets posted online or by deposit in public fridges. By 2017 Foodsharing.de had a network of 25 fridges in operation in Berlin alone (Marshall, 2016), and a total of 350 fridges across Germany, making it the largest global public fridge network at that time (Morrow, 2018). However, in 2016 Foodsharing.de was ordered to close two of its public fridges when food-safety officials judged them to be a public health hazard (Marshall, 2016). At the crux of this regulatory decision lies interpretation of EU and German regulations that require all food donations to be logged and an individual to be designated as the person responsible for upholding food safety (Davies, 2019). Meanwhile, Foodsharing.de argued that its public fridges constitute private exchange sites and therefore should not fall under the EU regulations for food businesses (Chies, 2017). This contestation is ideological in relation to Foodsharing.de's

views and practices of food commoning, but it is also practical. As a volunteer-run organisation, Foodsharing.de has no paid staff and therefore has limited capacity to resource, monitor and check the numerous sites that the public fridges occupy. It is not that the initiative is disorganised, however. It operates a rules-based, hierarchical system of volunteer registered users or food sharers (around 200,000 in 2018) and trained food savers (just under 38,000 in 2018), and a number of store coordinators and ambassadors who liaise with the original founding group. Each step up the organisational ladder requires further commitment and attendance at training events so as to ensure that participants understand the initiatives, goals and methods around food safety and responsibility.

As detailed by Morrow (2018), the public fridges of Foodsharing.de were intended to be exemplars of open-access commons, being accessible to everyone, and the food inside owned by no one. However, herein lies the crux of anxiety for regulators. If no one owns the fridge or the food, who should be held accountable if the food inside is unsafe and if someone becomes sick as a result of eating it? For governing actors, food risk is managed legally and institutionally, with rules guiding behaviour in relation to food, procedures for identifying the causes of any food-related incidences and systems for assigning blame to individuals as a result. Collective forms of ownership and responsibility are, at least as far as food-safety authorities are concerned, inherently risky.

What is yet to be fully explored in the realm of public fridges is the role that ICT and other smart technologies could bring to meeting the existing demands of regulation. For, while Foodsharing.de is ideologically unwilling and physically unable to identify a single responsible person for monitoring, other forms of sensors, scanners and digital management systems make it technically feasible for food items to be tracked in and out of the fridges in other novel ways. Already there are sensors that read temperatures and record times from harvest,

and scanners to detect the cleanliness of hands working with food. Essentially, the Internet of Things (IoT), including ICT, is being increasingly enrolled to support the current food-safety system. Indeed, industry stakeholders are suggesting that policy developments, such as the US Food Safety Modernization Act, may demand that the use of the IoT for food safety moves from being a niche innovation to a mandatory requirement. However, such technological fixes are designed to support and extend the current food risk–regulation framework rather than to challenge its internal logics. Extending such demands to voluntary and not-for-profit initiatives that handle and seek to redistribute donated food would require them to develop or acquire additional technical capabilities and devices. Many of the food-sharing initiatives would simply be unable to meet such demands, pushing their activities into the realm of illegality and confrontation with enforcement officers, as with Food Not Bombs, or simply forcing them out of operation. Any technologically augmented legislation would need to carefully consider the implications of such demands for grassroots innovation and food democracy within the urban food system.

Conclusion

Whether current approaches to food regulation are fit for purpose in relation to surplus food redistribution, or indeed any other type of food sharing, remains a moot point. This chapter has revealed a suite of ways in which rules and regulatory regimes affect the practice of food-sharing initiatives. In particular, a one-size-fits-all approach to regulating food risk, which is currently in place across many urban areas, does not discriminate on matters of scale or purpose, meaning that a volunteer-run public gifting initiative is required to conduct itself in a similar fashion to a multinational food retailer. However, as illustrated through a suite of case studies, governing risk through the norms of private property and individual liability creates legal

and financial barriers for initiatives ranging from seed swaps to community kitchens and from farmers' markets to those selling home-cooked food. These barriers are significant, with the activities of many grassroots, non-profit initiatives being considered illegal under existing regulations; but these initiatives have little ability to change their activities to fit the legislation, and limited power and influence to demand regulatory review. Food risk and safety regulations are not the only formal rules that affect sharing initiatives. Planning policies that relate to access and security of tenure with respect to urban spaces also affect many shared growing and eating initiatives, and some illustrative cases of this are elaborated in Chapter Five.

In many ways it is the unconventional nature of food-sharing initiatives, their modes of sharing, organisational models and multifunctional foci that evade easy capture and containment by existing regulations. Echoing Davies and Evans (2018), further research is required to identify and better comprehend the differentiated roles and impacts of international, national and urban governing actors in codifying and regulating both food sharing and the urban spaces in which it operates. This research needs to include public, private and civil society actors in order to fully flesh out what are considered to be appropriate collective actions and exchanges around food in particular places, and why. Nonetheless, food-sharing initiatives are certainly pushing the boundaries of regulation, and in some cases are forcing a reconsideration of appropriate governing frameworks. Regulation is certainly shaping food sharing, but food-sharing practices are also causing regulatory ripples. Calls are increasing for experimental spaces where new types of regulation that address the concerns of ICT-mediated food sharing might be trialled and evaluated. Certainly the regulatory soup that Janelle Orsi (2010) of the SELC identified around the governance of food sharing provides both opportunities and challenges that need to be crystallised and confronted. The simple transactional dualism that lies at the heart of much food regulation – of

exchanging things for free and things for money – simply does not reflect the diverse landscape of food sharing, where there are many ways in which entities and qualities are being given and received.

FOUR

Tools: socio-technologies of urban food sharing

While digital divides persist both within and across territories, internet penetration and the use of personal computers and smartphones have increased dramatically in many urban areas around the globe (Graham, 2011; ITU, 2017). Such technologies are increasingly integrated into the fabric of urban residents' everyday lives, so it is unsurprising that they are also being adopted and adapted by food-sharing initiatives, from crowd-mapping sources of publicly available wild urban foods, such as Ripe Near.Me (Edwards and Davies, 2018), to the algorithmic architecture of apps that help to connect retailers with surplus food to community groups who are looking to provide a food service within their activities (Midgely, 2018; Weymes and Davies, 2018b). This chapter examines how these new technologies facilitate and shape both familiar and novel forms of exchange through sharing and explores the resulting connections between sharers. While ICT mediation (and intermediation) is enabling unparalleled interactions between strangers around food sharing, in terms both of the rapidity and number of exchanges and of their territorial reach, the impacts

of these remain underdetermined. Drawing on case studies of initiatives from contrasting urban settings, this chapter explores the diverse ways in which ICT is helping to construct new sites, moments and experiences of food sharing.

Outlining a landscape–level analysis of ICT-mediation across the database initiatives, this chapter also presents a deeper dive into the ways in which ICT is being used by food–sharing initiatives. It focuses first on a number of initiatives that have integrated more complex forms of ICT such as websites, interactive platforms and apps into their activities, as it is the functionality of these tools that has been touted as holding the most transformative potential for sharing activities and that has gleaned the most media attention. Examples are drawn from contrasting initiatives that provide the technological means to map excess urban harvests and those that utilise complex ICT to provide opportunities to eat together with others. The third section focuses on surplus food redistribution, which has seen considerable attention from policy actors concerned with food waste and activists concerned with ongoing food insecurity. It presents a critical analysis of the disruptive potential of such ICT-mediated surplus food sharers, particularly drawing on the experiences of an initiative established in Dublin that has scaled internationally.

ICT-mediation in urban food-sharing initiatives

All initiatives in the SHARECITY study are ICT-mediated in some way, as this was a required feature for their inclusion in the research. The three different classifications of ICT considered – websites, social media platforms (including Facebook, Twitter and Meetup, as these particular forms of social media offer an online space for connections to be made between potential sharers) and apps – all provide online spaces where potential sharers can connect, but they also represent a range of ICT in terms of resource and skill requirements (van Deursen et al,

2014). Websites dominate the sample of urban food-sharing initiatives in the database, with 9 out of 10 initiatives using this form of ICT mediation. Websites are used to mediate every form and mode of sharing. Far fewer, but still more than half of the initiatives, have a Facebook page, and just over a third operate a Twitter account. Given the level of technical knowledge and skills required to construct them, and also the investment required to develop the critical mass of users to drive the necessary network effects for sustaining activity, it is unsurprising to find that only 1 in 10 of the initiatives utilises an app to share around food. It is also the case that food-sharing apps have struggled to replicate the successes of sharing ventures in other sectors, such as accommodation-sharing and shared-mobility platforms, despite several receiving venture-capital investment. A number of high-profile, commercial first-mover food-sharing initiatives, such as Cookisto and Grub With Us, have been wound down or repurposed.

Given their high levels of internet penetration, it is unsurprising that North American and European food-sharing initiatives account for two-thirds of all app-based activities. Within the 100 urban areas covered in the database, New York City is the most app-mediated food-sharing territory, followed by Seattle and Barcelona. Only 14 urban areas in the database have no app-mediated food-sharing initiatives whatsoever, although this is primarily due to the presence of transnational food-sharing initiatives, such as VoulezVousDiner and Mealsharing, that list many cities as sites for meal sharing but do not detail the level of activity within them. Such translocal, even transnational, networks sit alongside similar but more place-based initiatives such as Wats Cooking in Chennai, India. Apps are also used to connect producers directly to consumers, facilitating shorter food value chains and promoting local produce, as exemplified by SEND in Tokyo.

The interactive and mobile technology of apps provides an unprecedented ability to connect strangers and bring them

together across large distances. As such, they are particularly useful for knowledge exchange, mapping and dissemination. However, engaging with strangers in this way is also the newest form of social interaction and many app-reliant initiatives deteriorate rapidly if they fail to develop a critical mass of users in the short term. Research indicates that a third of initial mobile app engagements last less than a minute, with people being intolerant of poor user experiences (Segrist, 2015). So, while apps are the most novel form of ICT mediation, they are also the most resource intensive to develop, maintain and successfully operationalise. The high start-up costs and concerns about risk may explain the predominance of monetary-exchange business models when apps are used for food sharing. Despite this, still more than a quarter of app-based sharing initiatives in the database operate a gifting mode of sharing, and a handful of initiatives use apps to facilitate collecting or bartering. For example, Wild Food in Houston shares information about edible plants and Byhøst (City Harvest) in Copenhagen uses its app to share knowledge about urban foraging and wild plants.

Examining the online profiles of sharing activities can provide a useful overview of the stated goals and activities of initiatives (see Davies et al, 2018b), but it is often impossible to discern how initiatives operate in practice from online profiles alone. Experiential detail is needed to flesh out practices and impacts, and the remainder of this chapter draws on ethnographic research that sought to do just this.

Mapping Melbourne: Ripe Near.Me

Founded by a couple from Adelaide, Australia in 2012, Ripe Near.Me is a global web platform for people who wish to share information about the location of excess urban food in order to reduce food loss and expand access to fresh local produce. The web application allows anyone to post food that either they grow themselves or is growing in a public space. The

posting element of the process is free and the person posting can decide whether to gift, swap or sell the goods they post. The locational posting is then pinned on the searchable map, providing for online foraging. As noted on the website, Ripe Near.Me aims to be 'all about community and ultra-local food, mapped across the globe. You can find what's growing in your neighbourhood to get in touch with folks nearby, or see what's growing half way around the world.' Produce listings are coded red or green to indicate if the food is growing or ripe, in order to let online foragers know when it is available. The online dimension means that sharers can subscribe to produce listings and receive notifications when the harvest is ripe for collection or when the grower posts a comment or update. Primarily funded through the crowdfunding website Start Some Good, the initiative has developed a partnership with Australian food manufacturer Continental, a subsidiary of Unilever.

Alongside the goals of utilising excess food for human consumption, the founders also hope that the site might act as a disruptive force leading to more edible urban landscapes:

> We imagine an edible urban landscape, overflowing with food for all. What keeps us up at night is a feeling that we have an opportunity to really shake up the food system, and put food back in the hands of people. If we encourage and incentivize people to grow food we can have an entirely different (edible) urban landscape. One where you get to pick fruit and veg off the plant – not a shelf! And where your fresh food comes from a micro-farm, window garden, or fruit tree in your neighbour's [sic] backyards. (Ripe Near.Me, 2018)

But does Ripe Near.Me encourage and incentivise people to grow food in ways that are transformative? No analysis of the impact of the global platform is in the public realm and the initiative itself provides no information about traffic on

its platform. As a result, in 2016 participatory research was conducted in Melbourne to uncover more details of the activities that the web platform generates (Edwards and Davies, 2018). This revealed that while posts of food can appear plentiful at an urban scale when one enters the mapping tool, postings are not equally dispersed across the city and not all posts have food ready to be exchanged (or ripe, as the system classifies them), meaning that there may be far fewer options within particular localities at any time. Analysis of posts in Melbourne also revealed that some were uploaded more than two years earlier, with no clear indications of whether or not the post was still available. An intense period of engagement with the website was required to dig beneath the maps and understand more clearly how the app functions in practice. During research, participants who posted within the Melbourne area were contacted, and exchanges were organised when responses were received. Sharers were engaged during the subsequent meetings, and reflections on the use of the map and the logistics of engaging with Ripe Near.Me were documented.

All the participants were supportive of the goals of the initiative that initially motivated them to participate. For some, the web-based interface was attractive because it offered a means to opt in to a more sustainable means of food acquisition without the need for intimate social engagement or expectations that come from more communal growing and food-sharing activities. The system facilitates matches and the follow-up interactions can be as abrupt or discursive as the participants wish. Navigating the map was perceived by sharers as an entry-level activity for those familiar with online technologies but less familiar with growing activities. One user who had received only a couple of contacts through Ripe Near.Me enjoyed the novelty of the experience and was not concerned that she had not met anyone directly through the initiative. She had no expectations around building friendships or even widening her food community through the

site. She simply thought the concept was interesting, but was not highly invested in the outcome of her social experiment.

While moments of deep connection are not required by Ripe Near.Me, they can emerge. In one case a connection generated an invitation to a local food swap, which in turn revealed a whole layer of community food swaps that were not ICT mediated and therefore not visible to researchers online. In this way such sharing sites may provide a useful way into further activities and connections with others, but their efficacy in this regard is hard to track, even through ethnographic research. Many of those who had posted food to share were contacted during the research, but most had received few contacts through the website and even fewer actual exchanges of food. One participant had been on the site for two years and had experienced only two exchanges through the website. Where interactions were forthcoming, the food providers were all enthusiasts about the qualities of home-grown food and about increasing the capacity of urban areas around food; essentially, they were all supporters of creating more edible cities.

One concern raised by participants was the uncertainty around the social rules of sharing through platforms like Ripe Near.Me. While there are cursory responses to frequently asked questions on the website to help guide new users – for example, regarding protocol for posting and contacting sharers – participants mentioned concerns around meeting with strangers at their own homes. This was particularly true for women living alone or single women picking up food. Even the labelling of the platform's 'friending' button, used to make contact with people posting food, while common for social media users of Facebook and other platforms, was mentioned by several users as being rather too intimate for connecting with strangers over food exchanges. Meanwhile, the vagueness of posts often made it difficult for some users to know what rules of reciprocity or value should apply in this novel context. Similarly, when interactions had taken place through the platform an automated system called

for feedback, but users were uncertain to whom this feedback would go and for how long it would be held. Overall, social rules for online-to-offline engagements were thinly developed.

While the global mapping of excess food in Ripe Near.Me is staggering in its reach, the usability of the system (which remains a beta version, according to the website) could be improved. While it is simple in concept, the practicalities of exchanging excess food are multi-layered, with details required for listing, contacting people, replying to responses, following up with non-respondents and subscribing to posts or friending people. All of these steps to share involve considerable time and labour and create additional e-mail or phone-based traffic. It seems that while it demonstrates the potential reach of a global ICT mapping tool, Ripe Near.Me has not yet managed to acquire sufficient local network effects, at least within Melbourne, to establish the kinds of impacts experienced by other sharing-economy platforms. These network effects would enable more people to see more food available in their locality, encouraging more posting and subscribing. This in itself would encourage participants to be more active posters of food and managers of their posts online than seems currently to be the case. Other forms of highly ICT-mediated sharing, such as meal-sharing platforms, have had more success generating participation, and some of the implications of this are considered below.

Come dine with me: Eat With and Viz Eat

Viz Eat is a European-based for-profit initiative founded in 2014 that uses a web platform to match cooks with diners who wish to eat together with others. According to its website, Viz Eat is 'the world's leading community for authentic food experiences', operating in over 130 countries by 2018. In 2017, Viz Eat acquired Eat With, a similar platform established in San Francisco in the US that aims to bring people around the world together 'to access the underground food scene and connect

with creative, open-minded and interesting people' (Eat With, 2018). Before its acquisition, Eat With identified 650 hosts (cooks) in 20 cities across 50 countries, creating 1,500 menus for 11,000 dinners and more than 80,000 diners. Whereas Eat With emphasised the creative connections to be made through a foodie sub-culture, Viz Eat has focused on connecting local hosts with travellers seeking off-the-beaten-track experiences. Both initiatives emphasise the social dimensions of eating together and the cultural benefits that accrue from it, with Viz Eat explicitly seeking an immersive food experience and 'authentic' dining experiences, cooking classes and food tours for participants.

The apparent scale of Viz Eat's activity is impressive, with its website claiming more than 20,000 hosts and 150,000 Viz Eaters by 2018, and with localised versions of its app available in English, French, German, Italian, Spanish and Chinese. Its acquisition of Eat With, which itself had already raised around $8 million from financial backers, was seen as a way to further expand its global offering by bringing global tourism partners into the mix for Eat With hosts. So, rather than relying on bespoke dinner parties made up of individual strangers, the Viz Eat model uses travel and tourism agents to provide block bookings for hosts, guaranteeing numbers of diners and taking some of the logistical uncertainty out of the process. Viz Eat's acquisition of Eat With by was also not its first. In 2015 it acquired Cookening, a French-based early pioneer in the space of shared dining experiences.

As with Ripe Near.Me, the practices of eating together through Eat With and Viz Eat were explored through ethnographic research in Barcelona and Athens, respectively, in order to understand the activities behind the platforms of both initiatives. In contrast to more locally situated meal-sharing sites set up to share food with locals (such as Comparto Plato in Barcelona, which offers food at very competitive prices), the immersive experiences on offer across Eat With and Viz Eat

were higher, sometimes higher than many mid-price restaurants in central areas of both cities.

Across both platforms initiatives give an impression of bountiful offerings, while lively eating events and spaces are portrayed. However, on drilling down into these online events, researchers found that in both cities there were limited experiences being offered by individual hosts, with a small core of events being offered repeatedly by the same individuals. In Athens, which was an emerging site for Viz Eat during the research conducted in 2017, events were sponsored by Viz Eat, and travel bloggers, Instagram social media influencers and journalists were recruited to participate and spread the word about the new possibilities for eating together. Commercial strategies for expanding participation were used, such that only around 20% of bookings are thought to go through the app, with the remainder being arranged through tourist agencies or other organisations.

The stranger-sharing dimension of Viz Eat and Eat With means that issues of trust and safety are often high in the minds of both hosts and participants. In a similar fashion to other sharing-economy platforms, both sites use a system of profiling, assessment, feedback and reviews. In Viz Eat, ambassadors seek out new hosts through social media and other networks. New hosts are checked out through 'demo events' where hosts get to trial menus and solicit feedback from ambassadors and other participants. While this worked well for most of the hosts and participants involved in the research, occasional incidences of intrusive behaviour or unfair reviews by diners were reported. Only one case was reported where a host was removed temporarily from the site after complaints from diners, and there were no reports of any food safety concerns.

In both cities it was found that national menus tended to attract tourists (for example, Catalan cuisine in Barcelona and traditional Greek food such as meze in Athens), while international menus were more likely to bring in local residents

looking to try something new or ex-pat communities looking for a taste of home. Across the multiple dining experiences that researchers participated in, the overall the quality of food and hosting was high. While it was noted that the hosts were often in the kitchen preparing food rather than hosting the conversations over the table, interactions were generally felt to be easy and productive, if not intimate or leading to the development of strong social ties.

The main attractions of Viz Eat and Eat With for many diners were two-fold. First was the possibility to escape the commercial spaces of restaurants and have home-cooked food (even if the food served was restaurant quality and commercially priced). Second was to experience the thrill of eating with strangers who were similarly attracted to a menu or profile. Ultimately, where participants had sought out the platforms as individuals rather than being provided with the experience through a travel agent, they often felt part of a food scene that was alternative with a small 'a'. This means that while they sought out novel food experiences in the cities and even saw themselves as part of a food sub-culture, they were not aware of the more radical alternative food-sharing activities in either Athens (for example, Allos Anthropos, an informal initiative that shares kitchen spaces and meals) or Barcelona (for example, Can Masdeu, a growing cooperative). What both Eat With and Viz Eat employed, in contrast to not-for-profit mapping projects such as Ripe Near. Me, were capital-raising activities that generated investment to develop more attractive and user-friendly online interfaces and to fund marketing campaigns to drive online traffic to the websites. However, as detailed in Chapter Two, the organisational structure of many food-sharing initiatives falls somewhere in between the practices of for-profit meal-sharing apps and the unorganised autonomous mapping of urban harvests. One sector of food sharing that is dominated by a variety of not-for-profit exchange models – including charities and social enterprises – is

the expanding arena of redistributing surplus food, considered below.

Moving food along: ICT and the redistribution of surplus food

The sharing of food surplus involves collective action to identify, gather and relocate edible food from waste streams to those in need of it (Weymes and Davies, 2018a; Davies, 2019). This can take place in multiple ways, for example by gleaning crops left over after harvesting, a practice with a long history that is experiencing a renaissance (Edwards and Mercer, 2007). Redistribution of surplus between individuals through peer-to-peer platforms such as OLIO Ex is, however, a much more recent manifestation of sharing surplus food. As public awareness of the scale of food waste increases such initiatives, and particularly the technologies they adopt – apps, platforms, websites and social media – to facilitate redistribution, are being heralded as a solution to these negative features of contemporary food systems. The speed and simplicity of identifying surplus food and finding people who want it by using these digital mechanisms extends the reach of redistributive activities, bringing more food destined for the dump into productive use (Ciaghi and Villafiorta, 2016). However, there are many other challenges, which vary across time, space and phases of the food system. Commercial farms may yield unmanageably large volumes of food for many sharing initiatives to cope with, while small food producers may have insufficient amounts of surplus to make the labour of redistributing it worthwhile. The food service industry, including restaurants, hotels, schools or other institutions providing prepared food, creates particular challenges, due to the need to redistribute the food it produces within a short time frame to ensure that food safety is maintained. Meanwhile, redistributing surplus from citizens at the consumer level (including unused groceries as well as cooked meals) generates highly unpredictable quantities of food,

making its redistribution harder to match with those looking to consume it (Weymes and Davies, 2018a).

The goldilocks phase of the current food system for ICT-mediated surplus redistribution is the retail sector, particularly supermarkets with multiple stores; but while studies of individual ICT-mediated food-surplus redistribution initiatives are emerging (Rogers, 2014), little is known about the broader landscape of such activities. In response to this, more than 400 surplus redistribution initiatives detailed in the food-sharing database were isolated and examined according to their key characteristics. These initiatives included activities targeting food surplus across the food supply chain and involved a range of different drivers and goals as well as diverse forms of ICT. While some of these initiatives are long-standing ventures that have integrated ICT into their practices, three-quarters were established from 2008 onwards, the year that apps became accessible to consumers through online app stores (Flood et al, 2013). There is also a peak after 2012, when smart technologies became more readily affordable, accessible and widely adopted. Taken as a whole, the main drivers for the establishment of these initiatives are environmental – working to mitigate structural food waste across the food system and reduce the waste of food and the embodied resources that have been used in producing it – and social, as a response to food security or as a means to create greater social connectivity. Imperfect Produce in the US, for example, provides discounted sales of visually imperfect produce and Too Good to Go in the UK provides discounted meals, but all have food waste reduction as a core part of their mission. Initiatives like Open Table in Melbourne, Australia meanwhile put on community feasts with the goal of destigmatising the consumption of surplus food. They provide events where diverse communities can come together to eat surplus food. They work with other surplus redistribution initiatives to achieve this, such as Secondbite, which redistributes food donated by farmers, wholesalers, markets, supermarkets, caterers and events, and Fare

Share, which both rescues and cooks surplus food (Edwards and Davies, 2018). This ecosystem of sharing is explored in more detail in Chapter Five.

Across the sample collated through the database, and following trends reported internationally, two-thirds of the initiatives redistribute food stuff (either fresh or processed) and two-thirds intercept surplus food at the retail stage (with a third of these facilitating flows between retailers and charities). The vast majority of food-surplus redistribution initiatives operate outside the mainstream market system, with roughly half registered as non-profit organisations or charities and more than one third operating informally. Only a small fraction of initiatives are for-profit enterprises and these are predominantly initiatives that use more complex forms of ICT such as apps or online platforms to connect donors and recipients or provide the infrastructure to sell surplus food at discounted prices. Initiatives using more complex forms of ICT were also more likely to source surplus food in the retail sector and were associated with redistribution networks that went beyond individual localities to operate in multiple urban areas, such as FoodCloud in Ireland.

Mediating logistics: ICT and the redistribution of surplus

As a primary mover in the field of ICT-mediation for food-surplus redistribution and as one that has adopted the use of complex ICT, including a mobile app to connect retailers and charities, FoodCloud is a useful case study to explore in more detail how exactly ICT is shaping the traditionally hyper-social practice of sharing. The initiative was established in 2013 in Dublin, Ireland, where it connected one Tesco store and a small number of food businesses with six partner charities. It was developed in response to a lack of national infrastructure for surplus food redistribution in Ireland despite persistent and high levels of food waste (O'Brien, 2012; Stop Food Waste, 2017) and food insecurity (DSP, 2017). By 2018 FoodCloud

had redistributed 15 million kilogrammes of food from over 4,000 food and retail partners to more than 7,500 charity and community groups across Ireland and the UK using a range of technological innovations, including a dedicated mobile app and integrated point-of-sales system such as providing 'donate' options on the barcode scanners used in store management (Midgely, 2018). It is this technological smorgasbord that is identified by the initiative as being key to the evident scalability of its operations (Weymes and Davies, 2018b), and it has also garnered much media attention and a suite of philanthropic and business development supports. However, there were other differences in the initiative's approach relative to the food redistribution efforts that had operated in Dublin previously. Importantly, in terms of their communications with retailers, the founders framed participation in FoodCloud as primarily an opportunity for them to improve their logistics, with the added benefits of reducing waste, providing data on waste to improve ordering procedures and building better connections with local communities. Adopting a social enterprise model – where commercial strategies are employed to maximise improvements in human and environmental well-being (Defourney and Nyssens, 2008) – and emphasising its professionalism and hi-tech approach to the challenge of food waste, FoodCloud was able to unlock doors and gain audiences with decision makers within large corporate retailers in ways that local charities and community groups had been unable to do previously. Effectively, it became a trusted intermediary to both charities and large multinational retailers.

FoodCloud's position as a trusted intermediary not only made donating simpler for retailers, it also disrupted pre-existing power relations between the retail donor and the charitable or community recipient. FoodCloud was able to act as an independent quality-control arbiter, assuaging the concerns of recipients that rejecting any surplus food might result in a reduction or cessation of donations in the future. It was also able

to provide rapid feedback to retailers with regard to the types of surplus that were in demand from community and charity groups. The interactions between retailers, who can use an app or web-based platform to upload details of surplus produce, and charities, who receive a text message about available food, are not only automated and thus rapid, they also fully traceable. This seamlessly fulfils vital food safety requirements around redistributing food within certain time periods and under certain conditions (as discussed in Chapter Three), it also means that participants who repeatedly fail to make scheduled donations, offer poor-quality food or claim food but do not collect it are easily identifiable. The digitally managed system of moving food around then provides a suite of reliable data and feedback on the process for all participants.

On the surface it seems self-evident that using ICT has generated many advantages for FoodCloud and its partners, adding a level of professionalism to food-surplus redistribution, brokering relations between multinational corporations and grassroots community groups as well as providing surety around quality and liability. However, while ICT has no doubt permitted activities to scale, the retention of partners and the sustained growth in partnerships in Ireland and also across the UK depends on firm foundations built on face-to-face relationships between partners, as well as on the benefits of ICT. While ICT is a facilitator, offering significant opportunities and operational enhancements for food-surplus redistribution, it is not a technical quick fix. The relational elements are key for understanding and responding to the diverse needs of partners. For example, one familiar problem for surplus food distribution is the difficulty that charities face in terms of collecting and managing the unpredictable offers of surplus food that come through. After initial unsuccessful attempts to roll out a first-come, first-served online distribution model, FoodCloud developed a process-driven system, with informed scheduling and allocated days for community groups to collect food. This

scheduling has been a crucial factor for many, allowing them to plan and budget around regular and dependable donations.

Essentially, each donor and recipient has specific requirements and a 'one app fits all' approach proved to be unworkable. In response, FoodCloud developed a range of approaches and tools to maximise appeal and efficiency. Many large retailers have opted to use solutions other than the app, for example some use a 'donate' button on barcode scanners and simple Microsoft Excel spreadsheets detailing surplus that are sent to FoodCloud daily for management. At the other end of the technological spectrum, many community groups do not have access to sophisticated ICT, or to the means to collect and transport surplus food from stores, and in such cases FoodCloud manages a team of volunteers to help collect and deliver the food.

High-level statistics on the weight of surplus food redistributed by FoodCloud, documented publicly on its website, provide an impressive insight into the rapid expansion in its activities. However, the bigger-picture impacts of the initiative in terms of reducing food waste and feeding those who are hungry are less easy to discern. There are data challenges here with respect to following the flows of surplus food from cradle to grave. In many jurisdictions, including Ireland, there are currently no requirements on retailers to report on their food waste, let alone on the fraction of it that might be edible surplus. Equally, at least for the moment, FoodCloud does not monitor the flows of surplus food once it is collected by community groups, nor establish the impacts that the food has for the recipients. So, while on one level FoodCloud is clearly taking food that would go to waste and providing it to people who consume it, there are unanswered questions about whether this is challenging or perpetuating the current business model of supermarket retailers. While FoodCloud has a database of information on what surplus is generated in which stores, it has no insight as to whether or not such information is fed back into retailers' ordering processes so as to reduce wastage in the future. The logistics and distribution

systems of multinational companies are often set from company headquarters rather than through individual stores and managers, so there are questions here as to where FoodCloud's information should be sent in order to have maximum exposure. Similarly, while FoodCloud receives anecdotal reports of how important the food donations are for community groups, perhaps in terms of being able to offer a food service where one was not provided before, or making savings on already existing food budgets that can be spent on other essential services, the precise outcomes of this are not recorded. Ultimately, while the technology, data and relationships formed by FoodCloud have initiated a dialogue around food surplus and increased the efficiency, affordability and scalability of keeping edible surplus out of the bin, it is too soon to identify any systemic disruptions to the production of food surplus. Similarly, and recognised by FoodCloud itself, it is by no means agreed that food-surplus redistribution is a solution for meeting the needs of food-insecure people (Caraher and Furey, 2017; Davies, 2019). While FoodCloud has been successful in diverting more food from landfill to food-insecure people than any other single organisation in Ireland to date, it is still diverting only an estimated 1% of the available surplus. There is, then, a long way to go before the twin goals of reducing waste and hunger are addressed at anything other than a hyper-local level. As such, FoodCloud is currently a provisional activity operating very much in the meantime (Cloke et al, 2016) and at the coalface of waste and hunger. ICT has been pivotal in enabling organisations with few resources to break through the geographical barriers of redistribution, allowing new practices and scales of redistribution, but this should not overshadow its essentially socio-technical nature. In essence, ICT-mediation is just one element of a wider system of sharing within initiatives. The greater logistical efficiency that ICT provides in matching donors and recipients certainly enhances the capacity of initiatives to operate at scale, but translating that capacity into enduring transfers between those with surplus and those in

need of it relies on a suite of other contextual, social, political and material factors.

Conclusion

Techno-optimism around the sustainability benefits of ICT and sharing are well documented through the works of advocates such as Rachel Botsman and Roo Rogers (2010). Many of the claims around the sustainability of such technologically augmented sharing are, however, still to be proved empirically (Davies et al, 2018a). Rather than focusing only on the ICT dimension of sharing initiatives, this chapter has indicated that a broader socio-technical, even socio-technical–ecological (Davies and Doyle, 2015), perspective is required in order to fully understand both the practices and impacts of food sharing. As Andrew Feenberg has asserted, '[t]echnology is not an independent variable but is co-constructed by the social forces it organizes and unleashes' (Feenberg, 2012: 3). Such a perspective considers not only the hardware and software components of ICT but also the material, personal, political and social aspects of ICT-mediated food sharing.

Certainly, within the case studies outlined in this chapter, ICT has enabled more spatial and temporal fluidity in the flow of information, services and goods and experiences, with some evidence to suggest that it is facilitating international cooperation, joint ventures, strategic alliances and mergers. Indeed, for many within high-income countries, software-enabled and networked devices and infrastructures are becoming an everyday feature of urban life, augmenting and mediating all sorts of areas of life, from production and consumption. As Amin and Thrift (2002: 125) declared at the turn of the 21st century, '[n]early every urban practice is becoming mediated by code'. Although by no means a central component of all urban food-sharing initiatives, software packages from spreadsheets and databases to mapping tools are becoming indispensable to

sharing praxis. The next chapter engages with the ways in which food–sharing initiatives have sought to build capacity from this socio–ecological–technical system for social change around food and sharing, particularly through collaborative engagements and social networking.

FIVE

Networks: connections and interactions

If there is one thing on which there is agreement, it is that you cannot share alone. Interactions between people, mediated by the socio-technologies, social norms and practices and regulatory regimes outlined in Chapters Three and Four, are the lifeblood of sharing. The motivations for these interactions and the resultant exchanges have been at the very centre of previous research examining beyond-kin sharing within small-scale, hunter-gatherer or foraging-horticultural societies (see Kaplan et al, 2012). Sharing initiatives in contemporary urban environments similarly involve a whole range of interactions, including those between people directly involved in sharing as donors, recipients or intermediaries, but also between those who share and actors with whom they intersect in the urban setting. The multifaceted and multifunctional nature of sharing, outlined in Chapter Two, means that sharing initiatives frequently interact with a range of other organisations from public, private and civil society sectors; some voluntarily and some by necessity. Indeed, research uncovered assemblages of urban food sharing, with initiatives interacting with each other as well as with other organisations (Edwards and Davies, 2018); assemblages that are dynamic, with connections being forged,

evolving and disappearing across time and space. These relational geographies of urban food sharing, and the dynamic networks of actors and actants that facilitate them, provide the main focus of this chapter, which will be illustrated by the experiences and activities of initiatives operating in contrasting contexts around the world, from Melbourne to London and from Berlin to Singapore. The first section examines the nature of interactions among sharers that are sought by individual initiatives. Here particular attention is paid to three key goals of urban sharing initiatives: the cultivation of connections, care and learning. The second section widens the net of analysis beyond those who share directly within a single initiative and focuses on how sharing initiatives as entities interact with other organisations both within and beyond their immediate environs. Finally, the chapter reflects on both of these sets of relational processes and the benefits and challenges that initiatives face when cultivating connections around food.

Cultivating connections

As outlined in Chapter One, sharing can be motivated by a whole range of drivers, from reciprocal altruism to cooperative acquisition and costly signalling (Kaplan and Gurven, 2005). Evidence of these drivers can still be identified in many sharing initiatives around food in contemporary urban environments, but these are frequently supplemented, even dominated, by a suite of other concerns. As detailed in Chapter Two, economic, social and environmental challenges are major push factors in stimulating sharing activities, while a desire to help transition towards more sustainable urban food systems is a key positive motivator. Whatever the drivers, all sharing initiatives fundamentally adhere to the idea that it is better to do things together, whether this is identifying and utilising land for shared growing or establishing collective cooking and eating events. Cultivation, in both its literal and figurative senses, lies at the

heart of these endeavours. This includes preparation for growing through the work of initiatives such as 596 Acres in New York and 3000 Acres in Melbourne, which identify vacant plots of land in the city and seek to liberate them for people to grow together. Both seek to tap into the unharnessed potential of vacant spaces within the city that are often hidden in plain sight.

596 Acres was established in 2011 following discontent over the mismanagement of public land in an area of Brooklyn (north Bedford Stuyvesant) in New York City. The initiative takes its name from this state of municipal neglect after it identified 596 acres of vacant city-owned land in that area alone. Similarly, 3000 Acres, established in 2014, was born following a call from the local authority for innovative responses to the question 'How can we improve access to healthy and fresh foods in urban environments?' Both initiatives provide a combination of on- and offline services that make it easier for more people to identify vacant spaces in their areas and to grow more food in more places. Once land suitable for growing food has been identified it is mapped onto an interactive web platform where community members can access details about it, as well as other people who might grow food with them on the site. 596 Acres employs a combination of tools, maps and advocacy networks to operationalise its goals and, while starting out in New York City, it has stimulated the development of maps in Los Angeles, New Orleans and Philadelphia, working in partnership with organisations such as LA Open Acres, Living Lots NOLA and Grounded in Philly. Beyond the US, 596 Acres has provided insights for the development of Parkdale People's Map in Toronto, Canada and worked with the Neighborhood Academy at Prinzessinnengarten in Berlin, Germany to make hidden commons visible to residents for potential reclamation. These spaces were mapped online, with physical signs posted on location. Living Lots, 596 Acres' code base for the online mapping of vacant spaces, is open source and free to use, allowing its concept and practice to be replicated in new territories.

Outside these direct collaborations, 596 Acres has also inspired other land- access and activation organisations internationally, including Love Old Trafford Lots in Manchester, UK.

The goal of land–access initiatives like 596 Acres and 3000 Acres is to support more people to grow more food together in more places. They seek to break down barriers to urban agriculture in a number of ways: empowering communities with the skills and knowledge to grow fresh, healthy food; enabling the transformation of under–utilised land into great community spaces; and influencing the regulatory environment to make it easier to grow food in more places. Ultimately, the key contribution of these initiatives is not to provide food to people directly, but to unlock pockets of under-utilised land in order to enable people to grow food in the company of others. While the legislative context shaping the form, function and governance of the initiatives is different in the two cities, both focus on preparing and supporting access – legally and emotionally – to urban land. However, they aim to open up more than just gates and help to foster collaboration, organisation and active stewardship.

A plethora of other shared growing initiatives were made visible through the food-sharing database, from Himmelbeet in Berlin to the Edible Garden City in Singapore. Some of these make a literal contribution to the cultivation of connections, offering opportunities to connect not only with others to grow food but also with the material biophysical properties of soil, seeds and plants (Rut and Davies, 2018). This combination of connections is visible in the Skip Garden and Kitchen, an initiative of the Global Generation (an educational charity, founded in 2004), based in London, UK, which works together with local children and young people, businesses, residents and families to create healthy, integrated and environmentally responsible communities. Its mission is to provide practical experiences and employment pathways to young people, often from disadvantaged backgrounds, and give them the social,

emotional and practical skills to make a difference in the world. It uses land-based activities and the metaphors of ecological processes to support building communities with others and with the natural world. Ecology, education and enterprise are at the heart of everything it does and it has developed a wide range of educational programmes, all of which reflect its core values, articulated as 'I, we and the planet'. The Skip Garden and Kitchen, its home base, is a moveable garden that it has co-created with local businesses, restaurants, schools and young people in and around the King's Cross development site in central London. Here it grows fruit and vegetables alongside a thriving cafe where nutritious, seasonal food is served. The cafe also offers work experience and employability programmes to those often marginalised by society, such as young people with special needs, the elderly and refugees. Its community outreach and development projects bring together local school children and business employees, vulnerable families living in the area and local volunteers, with the goal of nurturing a close-knit and collaborative community that cares about its local environment and the planet as a whole. The physical materiality experienced by getting hands in the soil when growing is seen by the initiative as offering possibilities for bringing people closer both to the seasons and to each other.

However, the practical and very material process of growing is seen as a mechanism to catalyse collaborative activities, to 'work together'. Food growing is seen as a form of quiet or everyday activism (Chatterton and Pickerill, 2010), of finding space for people to reclaim some sense of power and control over their lives, to 'take back their land'. Growing together is also seen as having valuable benefits for individuals, particularly around mental health and cultivating an ethic of care (Milligan and Wiles, 2010) – care for oneself, care for one another and care for the wider environment. Such benefits incorporate more figurative dimensions of cultivation that derive from the word's Latin root, cultus, which means care. As such, cultivation in

the Skip Garden and Kitchen context can also be read as the desire for improvement or fostering of something or someone by encouragement and labour. Just as plants in shared growing initiatives are cultivated through the care and attention of gardeners, so too can knowledge and skills about growing, and food more generally be cultivated through the care and attention of sharers (Marovelli, 2018). This care may be organised formally through explicit education and training, but it can also occur informally through the spontaneous interactions that shared spaces facilitate. The spaces for interaction – virtual and material – that initiatives create ultimately provide for the development of new acquaintances and the opportunity to expand social connections.

However, there is work involved in that caring: the labour of care. The vast majority of the urban food-growing initiatives involve some form of volunteer labour both to look after and provide for the needs of the material space of growing and to for the others who wish to grow together. In the Himmelbeet community garden in Berlin, Germany, care is articulated through the social practice of 'paying attention' and a code of 'respect' that was detailed in Chapter Three. The benefits of sharing the burden of labour involved in growing are emphasised by Himmelbeet, whereas for the Edible Garden City in Singapore it is the experience of working together in a more-than-human environment and discovering yourself through connecting with food that is emphasised. Working with plants is described as therapy with an abundance of reward.

In 2008, the *Lancet* reported that mental health conditions were one of the main causes of the overall disease burden worldwide, at an estimated global cost of £1.6 trillion per year, and that green spaces provide one means of reducing that stress (Mitchell and Popham, 2008). Such spaces have been found to exert positive health effects that are equigenic, meaning that they are equalisers of socioeconomic disparities; people who started out with worse health conditions were found to experience

greater levels of improvement when exposed to green spaces. More recently, random control trials have been conducted in Philadelphia, where the creation of green spaces was treated as medication – garden as dose – that could be administered to urban environments (South et al, 2018). The conclusion of this research was that enhancing biophilic design in the city could provide a cost-effective public health intervention. Biophilic design that also incorporates people coming together with others to grow also provides potential benefits for psychological health and well-being, given the increasingly well-documented dangers of social atomisation and alienation. In the UK, healthcare professionals have suggested that loneliness is one of the biggest predictors of physical and mental health problems, associated with an increased mortality risk of around 26% (Holt-Lunstad and Layton, 2010). As a result, interactions between people are seen as providing social nourishment (Hakulinen et al, 2018). Shared growing spaces provide opportunities for such interactions, which can include anything from fleeting moments of encounter to deeper connections involving the sharing of intimate thoughts and feelings.

Within food-sharing initiatives such health and well-being benefits were certainly articulated, albeit without the collection of physiological data that took place in the clinical trials referenced above. In addition to such growing initiatives providing psychological care for individuals, it was found that they also provide opportunities for other kinds of improvement, fostering and labouring, which is figuratively articulated within the concept of cultivation. However, rarely was the term 'care' explicitly used, due to concerns around setting up hierarchical relations among sharers or patronising participants. As Maria Puig de la Bellacasa (2015) has noted, drawing on Donna Haraway (2011), care is not an innocent category, it is political, messy and dirty, even an act of resistance. There are affective involvements at stake in maintaining and fostering caring relations, and while care can be enjoyable and rewarding, it is

often also time consuming and full of effort. The sharing of this labour of care is highlighted particularly by initiatives through the cultivation of connections with others.

Across food-sharing initiatives there are many opportunities to acquire or develop new skills around growing, cooking, eating and redistributing food. Indeed, for many growing initiatives learning about food more broadly was a core part of their mission. Organisation Earth in Athens, Greece, for example, was established in 2010 and developed its Center of the Earth park on a site a few kilometres from central Athens to offer sustainable development training. It was envisaged as a physical hub, to expand the capacity of participants to identify and adopt attitudes and practices that will ameliorate the planet's future, while contributing to collective prosperity and a better quality of life. Elevating the experiential dimension of learning was particularly common among initiatives, as noted by the Skip Garden and Kitchen, which works with the idea of the garden as an outdoor classroom. That such learning opportunities were also inclusive and accessible was a key driver behind the TUML book project in the Himmelbeet garden. The aim was to co-create a gardening book that could be used by everyone. Not only does the project facilitate a group process that gives space to possibilities of friendship and exchange, but it also allows for discussion, disagreement and debate about the best way to meet the spectrum of needs among its shared urban gardens. Such participatory and collaborative learning not only informs sharing initiatives, it can also have spill-over effects, connecting participants in the garden to wider infrastructures of social welfare and other support agencies. Sharing initiatives do not, however, operate in a vacuum; they intersect with a range of different actors, sometimes by choice and sometimes by necessity. These wider connections, understood as dynamic assemblages, are examined below.

Sharing assemblages

Food-sharing initiatives, at least those with physical spaces for congregating, frequently exhibit what Timothy Ingold (2011) has called a meshwork of relations between people, the non-human, materials and motions. These meshworks are in a state of flux, being formed and reformed as activities and interactions evolve and the effects and affects of sharing emerge. Connections between food-sharing initiatives and other support-service organisations (state supported and otherwise) within social spaces are also common. Himmelbeet, for example, cooperated with Weddingwandler, a nearby community group that was inspired by the Transition Towns movement, as well as with the Food Assembly, a transnational initiative focused on bringing producers closer to consumers without the need for long supply chains. The Skip Garden and Kitchen in London, meanwhile, has had to forge connections with the developers of the Kings Cross site on which its mobile community gardens reside, as well as with the local authorities in which it operates and the local community groups that exist in the surrounding areas. These connections allow the food-sharing initiatives to signpost a host of additional support services for sharers over and above what the initiatives themselves might be able to provide. They also help the sharing initiative to understand the perspective of other important urban stakeholders and ensure that the actions and impacts of the initiatives are better understood by those stakeholders.

In other contexts, stakeholders are gatekeepers for sharing initiatives. For example, as Edwards and Davies (2018) outline, 3000 Acres in Melbourne works to identify vacant land for communities to come together and garden. As such, its operations depend very much on where land is located and the conditions prescribed by those who manage it, whether that is the municipal government, utilities such as Melbourne Water and transportation body VicTrack or private residences. The

stability of relations can also depend on the security of tenure of the spaces in which sharing initiatives operate. For example, 3000 Acres in Melbourne and 596 Acres in New York both seek to support the establishment of gardens on temporarily vacant land, while Himmelbeet and Skip Garden and Kitchen have time-delimited licences to operate in the spaces they occupy. In each situation challenges arise when competing land uses emerge.

While there is pressure for alternative food initiatives, including food-sharing initiatives, to be scalable in order to confront the system-level flaws of the current urban food system (Edwards and Davies, 2018), many food-sharing initiatives are anxious that their activities do not lose the very benefits of being connected to localities in different but intimate ways. As a result, sharing initiatives that are tied to locations through kitchens or gardens often seek to support replication rather than expansion of their activities, and building connections is central to achieving this goal. While this network-building approach has already been illustrated through individual initiatives working with public, private and civil-society actors, there are also a burgeoning number of sharing and food-based umbrella organisations that are providing additional guidance and support.

Many umbrella networks that intersect with food sharing are comprised of grassroots initiatives seeking to connect with others to share their experiences and glean inspiration (Davies, 2012). This is exemplified by Shareable, a non-profit news, action and connection hub that sees sharing as a potentially transformative movement of movements to solve societal challenges. It has developed a Sharing Cities Network of more than 50 cities, predominantly North American but also across Europe and with a small number in Africa, Asia and South America, with the express goal of connecting sharing innovators and fostering collaborative action around sharing. Like another sharing network, OuiShare, Shareable sees itself as an incubating space where ideas and concerns can be exchanged and debated.

Whereas Shareable has focused on the development of asset maps where opportunities to share are documented across urban territories and sharing experiences are disseminated through open-access publications and online blogs, OuiShare is renowned for its participatory events that bring together actors involved in sharing to explore emerging themes, tensions and topics. There are also a number of umbrella initiatives that are focused on connecting actors around food rather than sharing, such as Sustain, an alliance of more than 100 public-interest organisations that seeks to improve the sustainability of food and farming practices in both urban and rural settings, with municipal engagement being rallied through initiatives such as the Milan Urban Food Policy Pact. Less prevalent are international networks for sub-categories of food sharing such as community growing, cooking or eating, where national and urban networks predominate. Around community gardening, for example, there are many national networks, exemplified by Community Gardens Ireland and the Australian City Farms & Community Gardens Network, as well as urban networks such as the Dublin Community Growers and the New York City Community Garden Coalition. While national and supra-national networks of food banks do exist, such as FEBA, the European federation of food banks, it is less common to see similar networks of community kitchens or surplus food redistribution initiatives.

Ultimately, the connections that sharing initiatives facilitate are both central to their operations and inherently provisional as sharers and the organisations they engage with ebb and flow over time. Sharing initiatives can, as a result, be thought of as assemblages that experience ongoing processes of 'gathering, coherence and dispersion' (Anderson and McFarlane, 2011: 124). Thinking of sharing initiatives themselves as assemblages within urban assemblages permits the range and nature of connections to be made more visible, and allows for more strategic governing of the sector to take place, but it does little to identify the patterns

of power and influence that affect the nature and endurance of connections within them. Some of the benefits and challenges around the connected nature of food sharing are drawn out in the next section.

Benefits and challenges of networked food sharing

For all the benefits that have been identified by initiatives through the cultivation of connections to places, to environments, to individuals and organisations, many shared growing initiatives face challenges in relation to achieving their goals and securing their continued existence. While many of the challenges that food-sharing initiatives face are hyper-local and refer to unique characteristics of localities in relation to their social, economic, physical and political configuration, there are also common challenges that relate to precarity, protection and power. For example, Himmelbeet, which has been operating in the Wedding district of Berlin since 2012, was given notice of plans to reuse the site it was cultivating for a new social venture developed by AMANDLA EduFootball eV and the Oliver Khan Foundation. The new plan was to provide a safe space on the site focused on football and education for young, disadvantaged communities. Despite trying to find ways to work together in support of their common concerns around education and empowerment, Himmelbeet was notified in 2018 that its licence to operate would not be renewed and they would have to vacate the site and find a new home for the garden. Many community gardens, like Himmelbeet, do not have any protected status or champions within urban governing arrangements. Himmlebeet is not classified as a park, nor is it a school or a sports facility (all areas that have dedicated teams within the local government) so it falls between governing stools – an experience common to many grassroots sustainability initiatives (Davies, 2012).

Getting community gardens reclassified as parks rather than vacant land in order to ensure greater visibility and protection

from parks and gardens departments has been a key advocacy platform for 596 Acres in New York. However, and despite considerable successes, including the development of more than 40 new community-controlled spaces where vacant lots used to be and the conversion of such spaces into designated parks, 596 Acres also announced in 2018 that it was ceasing its advocacy work, stating that it felt it had failed to achieve its goals. Key among its perceived shortcomings was the failure to secure diverse participation of community members in its management board, particularly from the most deprived neighbourhoods, where most of the vacant lots are located. Despite invitations, citizens in these locations prioritised action in their locality rather than the more diffuse labour related to the 596 Acres operation itself. The tangible material and physical rewards of converting vacant lots to productive landscapes provided a clearer motivating force for local residents than the lengthy and ultimately uncertain advocacy work with governing actors. In addition, the initiative's anti-oppression goals for non-hierarchical leadership structures were hampered by the requirements of employment law, which are premised on there being a power differential between labour and management in the workplace. While the advocacy work of 596 Acres will cease, the founders have committed to fund its website's hosting costs into the future to ensure that the tools and digital resources developed will remain freely available for others to use. This is one clear benefit of having a digital repository, and 596 Acres may yet return to advocacy work in the future; but in the interim the cessation of the important work that it conducted in creating more security for community gardens on vacant lots leaves a large hole to be filled by others in the city.

In essence, the future is precarious for many sharing initiatives. Some, such as the Skip Garden and Kitchen, embrace their provisional status by using mobile gardens and remain on a 'meanwhile' or temporary lease without long-term security of tenure. Their perspective on this is pragmatic, that is, making use of land while they have access to it. For others, precarity is

a fundamental challenge that is exacerbated by unclear relations with local governing departments, as with Himmelbeet in Berlin, which leaves them susceptible to development pressures when conflicting land uses emerge.

Another realm of tension and discord expressed by food-sharing initiatives, which might well be linked at least partially to precarity, relates to concerns about the unintended or imperfect impacts of their own activities. Certainly, concerns were raised about initiatives being inadvertent vehicles for social exclusion through green gentrification (Anguelovski et al, 2018), or even perversely perpetuating flawed food systems by not addressing the root causes that underpin persistent hunger and food waste through the redistribution of surplus food to those who are hungry (Davies, 2019). Recognising the unintended consequences of actions and reflecting on where best to channel finite resources and efforts are not the unique concerns of food-sharing initiatives and have been considered by grassroots initiatives for many years (Davies, 2012). Similarly, whether it is best to effect change by working incrementally and locally within systems or to seek more radical transformative change at the system level has long preoccupied environmental and social justice scholars and activists alike (Rudel, 2013). Certainly, further attention to the patterns of power and influence that circulate around, permeate and suffuse sharing initiatives is a key area for future research endeavours as is outlined in the concluding chapter of this book.

Conclusion

This chapter has identified the highly networked nature of urban food-sharing initiatives that forge connections between those who participate in sharing within an initiative, between food-sharing initiatives and between food-sharing initiatives and wider civil society organisations, public authorities and sometimes private sector actors. While research suggests that highly

connected initiatives are more likely to become active nodes for practising new social relations and new political, environmental and economic subjectivities around food through sharing (Edwards and Davies, 2018), this chapter has also highlighted the challenges involved in fostering and maintaining such a positive dynamic. The precise dynamics and configurations of ICT-mediated urban food sharing as an emergent sector will need to be continually monitored and mapped so as to explore any commonalities and divergences from other grassroots initiatives focused on fostering positive relations around urban food. It is perhaps more accurate at this stage to think about the food-sharing initiatives as creating the conditions for change; creating the conditions for people to come together in a fuller and more connected sense of who they are and the wider world that they are a part of.

SIX

Conclusion: food-sharing futures

It is clear from the preceding chapters that contemporary urban food sharing includes a vibrant body of initiatives operating across the globe and providing many opportunities to bring people together around food, whether that is collectively mapping spaces to grow food or working collaboratively to redistribute food and its derivatives. These initiatives are diverse in form, function and governance. They include for-profit initiatives that embrace commercial, market transactions to provide novel and shared experiences in relation to growing, cooking or eating together. Many of these initiatives focus on improving inefficiencies relating to the under-utilisation of resources, including skills (for example, providing opportunities for home cooks to make use of their culinary knowledge), or to improve access to facilities that would otherwise be beyond the reach of individuals or small start-up enterprises (for example, shared commercial kitchens). Food-sharing initiatives also include more informal, even sometimes deliberately unorganised, initiatives that create opportunities to develop new urban food commons. Such diversity made the foundational exercise of mapping and building a database of ICT-mediated food-sharing initiatives highly productive in creating a clearer picture of why, where,

what and how food sharing occurs (Davies et al, 2017a; 2017b). Certainly the diverse collection of food-sharing initiatives that appears across many urban areas around the world provides an important counterbalance to the media preoccupation with a few high-profile, for-profit sharing companies that are using ICT to link up those with idle capacity and those who wish to avail themselves of it (Davies et al, 2017c). Rather than simply reacting to the media noise around platform-based sharing economies, the database underpinning the material presented in this book provides a springboard from which the broad base of sharing can be examined.

This concluding chapter reflects on the key findings detailed in this book. It considers first the overarching issues within food sharing of practice, planning and policy. This is followed by an outline research agenda for examining food sharing in contemporary contexts that identifies mapping and tracking, assessing, comparing and planning as key to progressing our understanding of food sharing in contemporary contexts, while the need for greater attention to theoretical approaches is also noted.

Practice, planning and policy

Some findings of the research are crystal clear. ICT-mediated food sharing occurs across diverse urban areas, small and large, dense or dispersed, rich and poor, global North and South. It is, then, an international phenomenon, and not confined only to wealthy, self-appointed 'smart cities'. It is also apparent that ICT, in all its manifold forms, allows for new forms of agency around food and offers the means to mediate a range of practices and experiences from across the spectrum of urban food-sharing initiatives (Davies and Legg, 2018). The previous chapters in this book have drawn on case studies of individual initiatives to illustrate how some food-sharing practices are challenging and others are being challenged by existing social and regulatory

rules that define appropriate food-related behaviours. Indeed, some initiatives are actively attempting to reframe constraining regulatory regimes while also working within them. For example, ICT opens up the possibility of greater sharing among strangers through surplus food redistribution, but stranger sharing brings into focus attendant social, political and legal rules relating to trust and risk, most specifically those relating to personal health and safety. Formal rules are struggling to shoe-horn interactions and exchanges from food sharing into the binary private-commercial regulatory framework. While retaining such neat regulatory divides is understandable from a pragmatic procedural perspective, the nature of food sharing and the interactions and exchanges that it generates makes the relevance of continuing on this path problematic (Davies et al, 2017c).

Despite the complex multilevel governance infrastructure around food, many urban governing systems are not well equipped to cope with the forms of collective action, collaborative engagements and community spaces that much food sharing fosters. This raises concerns that inappropriate legislation is, in effect, closing down possibilities for alternative food consumption practices by design. However, regulatory regimes are dynamic; they can and do change over time, albeit not always in predictable ways (Rut and Davies, 2018). As a result, vocal advocates for urban food sharing are calling for a review of current systems and evaluations of alternative governing approaches. One proposal has been to trial so-called 'innovation lanes', which give experimental practices temporary rights to operate outside existing legislation so that their impacts can be traced and compared to business-as-usual approaches. Another is the imposition of sunset provisions, which would require legislative bodies to actively review and renew (or revise) existing laws at predefined intervals to ensure that they take into account current practices and socio-technical capabilities. Certainly, it would be a mistake to permit ICT innovations to be

rolled out uncontrollably in advance of governance frameworks that would help societies to anticipate and shape the impact they create. It remains to be seen how tussles over governance evolve; but, whatever the outcome, sharing initiatives will have to develop better systems of communicating their goals and impacts if they are to have a more visible role in urban food systems (Davies et al, 2018b).

While contemporary food sharing has – without doubt – been given significant impetus by the high-profile capabilities of ICT and its increasing accessibility and usability, it would be a mistake to reduce ICT-mediated food sharing to its technical components. As this book has documented, contemporary ICT-mediated food sharing is better articulated as a socio-technical system, or even a socio-technical-ecological system. Certainly, ICT-mediated food-sharing initiatives are diverse and dynamic circuits under construction , rather than fixed entities. As such, continued attention to their activities and the impacts they generate is needed. It is far from clear, for example, how many people currently participate in food sharing in different urban areas; likewise the social, economic and environmental impacts that sharing creates. Responding to these questions requires not only that initiatives are willing and able to collect and analyse relevant data, but also that they are willing to share it with others.

So, what are the implications of these findings for the future practice of food sharing? How might policies and planning for food sharing change over time? Such prospective thinking is fraught with difficulties, as with any futures work; but, as the urban areas examined in this book in relation to their food-sharing landscapes incorporate different places and trajectories, it is possible to detect emergent trends and issues. The first is growth. Since 2008 there has been an exponential rise in the establishment of ICT-mediated urban food-sharing initiatives in the 100 areas examined to date, and there is nothing to suggest that we have reached peak food sharing (Davies et al, 2018b). The second is flux. The landscape of urban food sharing

examined to date indicates a much lower level of failure than is typically reported in start-up businesses. This suggests that such initiatives are developing strategies that are aiding resilience. In some cases this resilience is fostered through multifunctionality, which incorporates the sharing of multiple things (for example, food itself, skills and knowledge) through different modes of sharing, sometimes even using multiple institutional models. However, there is also evidence of food-sharing initiatives combining, rebranding or failing, and a watching brief is required to explore what fails in which locations over time. On the commercial side we have mergers and acquisitions in the for-profit meal-sharing sector, with European social eating platform Viz Eat acquiring American-based Eat With, mimicking similar patterns in accommodation and car sharing. In these cases the practice of acquisition seems to be driven by companies seeking to exploit economies of scale, to gain market dominance and to expand sharing from peer-to-peer to include incumbent aspects of tourism and travel industries so as to boost numbers and guarantee participants in shared eating events. In other sectors of commercial food sharing high-profile companies have evolved dramatically. For example, Cookisto, an early platform for home cooks to share their wares for money, finally closed its app in 2016, despite expanding from Athens to include London, seed funding from angel investors and extensive media coverage. The founders of Cookisto said that it was their dual goals of getting to know neighbours through purchasing home-cooked food from your neighbourhood while also getting high-quality prepared food that ultimately affected their bottom line. Apparently, when paying for food the opportunity to also get to know your neighbours at the same time proved less of a pull to potential participants. While Cookisto had high numbers using the app, the repeat custom was not strong enough to keep the initiative afloat. The founders reflected, and rebranded their initiative. The goal of the new initiative, renamed Forky, was to deliver

healthy food fast, cutting out the social benefits of food sharing that set Cookisto apart from any other food-delivery mechanism.

A third trend is around hot policy arenas. Where there is a coming together of international agendas, as there has been around food waste, the possibilities for gaining support from external stakeholders to experiment with novel responses are much greater. Linked to the heightened attention to food waste is the most diverse and dynamic sector within the spectrum of ICT-mediated food sharing: surplus food redistribution. This growth has occurred through diverse operational models, from the online mapping of Ripe Near.Me, through the commoning approach adopted by Foodsharing.de to the more corporate-style social-enterprise logistics model of FoodCloud. Some of these initiatives are hands-off in style, not demanding or requiring users have close encounters with others; rather, focusing on setting up an ICT-based infrastructure as a means to open up information on urban harvests to everyone able to get online (Ripe Near.Me). Others have a much more explicit social purpose and have developed extensive rules around how to share, such as FoodSharing.de, or extensive logistics operations to connect donors and recipients, as with FoodCloud. Despite their diversity, all have benefited from a suite of national and international campaigns raising awareness of the extent of food waste and, importantly, the edible fraction within that waste. This has helped to create communities of interest that are motivated by the potential such activities have to foster social, environmental and economic benefits. However, the extent to which these activities do reduce overall levels of food waste is yet to be demonstrated, and this issue is confronted in the next section, which fleshes out a research agenda for contemporary food sharing.

A fourth trend relates to the lack of coherent food focus within urban governments in many areas. The impact of this for food-sharing initiatives is double edged. An absence of policies and officers can provides opportunities for grassroots food-sharing

initiatives to be innovative, but it also means that there is a lack of dedicated attention from urban government officers to monitor, support and evaluate activities. In some cases such a vacuum, when combined with a hot policy topic such as food waste outlined above, has led to a burgeoning of experimental practices. From urban harvesting maps and informal public gifting activities to pay-as-you-feel cafes and business-to-charity donations, there are more ways than ever to share surplus food of all kinds. In other cases the vacuum leaves initiatives in a precarious position due to their invisibility to policy actors within governing departments. This is best illustrated through shared growing activities, which often find themselves as temporary residents of vacant or derelict spaces within a city, as illustrated in Chapter Four. If there is no dedicated officer who is aware of and sympathetic to such endeavours, an initiative's investment in the land and its impacts on both local communities and the environment are unlikely to be fully recognised. Time and time again, established community gardens, from Himmelbeet in Berlin to Muck and Magic in Dublin, are gazumped by other land uses. It is not that these initiatives are unaware of their temporary leases, and in some cases, such as Global Generation's Skip Garden and Kitchen, this temporariness has been written into the physical fabric of gardens to ensure their mobility. However, such nimble approaches are not always feasible or desirable. While shared growing has been shown to create a plethora of benefits, these are rarely collected in any systematic or comprehensive way, and even when they are it can be hard for them to find an audience within the sectoral silos of local governments. This is compounded when, as with both Himmelbeet and Muck and Magic, the competing use for the land they inhabited is also of social importance. In Himmelbeet the plan is to develop an intercultural football hub on the site of the garden, and badly needed social housing will be built on the land that Muck and Magic currently occupies. Yet, in both cases opportunities to retain elements of the community

gardening activities have not been taken forward by the incoming organisations and the potential to add value through combining forces and collaborating seems to have been lost. Such losses will not automatically register with local authorities where officers have delineated targets for narrowly defined activities such as number of houses completed or leisure facilities managed. In these cases it is often up to small, voluntary grassroots activities to try to make the benefits of their activities heard. Where advocacy groups, such as 596 Acres in New York, exist to champion the benefits of community growing activities there has been more success in integrating them into the remit of local authority departments by classifying them as designated parks, although progress remains slow even in these cases. Further research is certainly required in order to fully understand the nuances of what it means to share food in the 21st century and the impacts of that sharing on urban food systems. In the section below a selection of such areas are outlined.

Research opportunities

Mapping, tracking and monitoring

Considerable labour was involved in mapping food-sharing initiatives in the 100 urban areas reported on in this book. The initial survey took a team of six people five months (Davies et al, 2017a). Whenever the database research was presented in public there would be someone in the audience from an area not on the database asking when we would be starting work there. Similarly, while the justification for the urban focus is generally appreciated, sharing food is not restricted to such spaces. Research focused on rural food sharing and rural–urban or peri-urban food sharing would provide an important counterpoint to explore the role that ICT has across these differently configured human settlements. Without doubt, there is scope to conduct further mapping exercises in other areas, rural and urban, but the labour costs are high and the focus dynamic,

so the possibility for developing more automated systems for searching and collating initiatives should be explored. It would also be useful to develop a more dynamic means for updating such databases, so as to keep better track of new initiatives as they evolve, merge or disappear. Even so, relying solely on information provided through online profile mechanisms has limited explanatory potential, particularly in relation to the scale of activities undertaken and impacts created.

Research questions here include the following.

- Within countries, how and why do landscapes of urban food sharing differ?
- What are the landscapes of ICT-mediated rural food sharing?
- How do rural and urban food-sharing landscapes intersect?

Assessing sustainability

Since the ICT-fuelled renaissance of sharing began to gain media attention, claims have been made about its capability to increase resource efficiency, cultivate new social capital and diversify economic activity – essentially, to create sustainability benefits. Given this, there has been surprisingly little detailed analysis of the actual impacts of sharing. In addition, negative impacts of for-profit sharing in the mobility and accommodation sectors have raised concerns that there may be a shadowy side to food sharing, particularly in relation to safety, labour rights and the precarity of work and labour. Even in the non-profit sector questions have been raised about the capacity of sharing to overcome social barriers and provide an inclusive alternative to mainstream exchange practices. Establishing the sustainability of sharing has been a challenge for a number of reasons, including a lack of available data and incomplete or contentious systems of measurement and reporting. Where data is collected it is rarely shared openly; and even when it is the data tends to relate to outputs (for example, volume or weight of food redistributed)

rather than outcomes or impacts. Further research is needed in a number of areas: to understand more precisely why the impacts of sharing are currently so elusive; to define more carefully social, economic and environmental indices relevant to sharing; and to establish whether there are any specific indices that are able to represent the particular characteristics of sharing. Certainly there is a need to become better attuned to registering and evaluating the collective worth of food sharing.

Research questions here include the following.

- How do food-sharing initiatives determine their progress towards goals?
- What elements of existing sustainability assessment approaches are relevant to urban food sharing?
- Are novel means to identify and monitor the impacts of urban food sharing required?

Comparative governance analysis

Chapter Three provided a glimpse of the social and regulatory rules that shape food sharing and the encounters and exchanges that it creates. However, there is much more to be said here about the ways in which sharing begins to pick at the assumptions of regulation from different angles. From the commercial side there are issues to do with the veracity of claims by platform economies that they are only matchmakers and therefore are not responsible for the effects of things or people that they match. From the opposite side, there are the challenges in locating sharing initiatives that are ideologically committed to reclaiming food as commons. While such big-picture challenges were repeated across different urban environments and governing regimes, there are important and intricate genealogies of culture and policy beneath these issues that help to explain and understand how and why the landscape of urban food sharing has been shaped in particular ways. Comparative analysis of

policy and policy transitions relevant to sharing would provide important additional understanding of why landscapes have taken their current form, and also of how attempts to transform that regulatory regime might be received.

Research questions here include the following.

- Which urban policies support or constrain different forms of urban food sharing?
- What role do urban food plans and strategies play in supporting urban food sharing?
- What innovations in urban governance are required to support sustainable food sharing?

Strategic planning

With growing interest in supporting the development of more edible cities, from the Milan Urban Food Policy Pact to the driving force of the Sustainable Development Goals (including the EU's FOOD2030 initiative), it is important to establish a more prospective perspective for urban food sharing (Simone and Pieterse, 2017). Building on research that establishes the worth of urban food sharing and a greater understanding of practice and regulation, it will be necessary to consider how optimal systems to support sustainable sharing might be configured in the future. While this will rely on establishing hot spots of good practice within cities, the specificity of locations means that simply transplanting sustainable initiatives from one location to another is unlikely to be successful. In the absence of cut-and-paste approaches for diffusing sustainable sharing, new means to identify contextually appropriate responses will be needed. Experimental systems for strategic planning of not just edible but also shared urban food systems need to be identified, trialled and evaluated.

Research questions here include the following.

- What are the key challenges for urban areas in terms of planning for sustainable food sharing?
- Where are the key implementation gaps when strategic urban food planning already exists?
- What mechanisms offer potential for extending and improving strategic urban food planning?

New theories of contemporary sharing

This book began with an overview of the well-established tradition of food-sharing research conducted by evolutionary biologists and anthropologists. The resulting theoretical models have tended to focus on why people share food stuff (for example, tolerated scrounging, kin selection, reciprocity and costly signalling) and the systems that are required to support those models (Jaeggi and Gurven, 2018). Motivations are also important for contemporary sharing, but there has not been a systematic interrogation of existing theories developed in the context of small-scale hunter-gatherer societies and their relevance to contemporary ICT-mediated urban food sharing. Further work is required to establish the evolution of social norms around sharing and the extent to which local conditions shape that evolution. It is also important to account for the increasingly technological mediation of food sharing and the sharing of other qualities around food beyond the material food stuff, to include the sharing of spaces and information. Research questions here include the following.

- To what extent are established food-sharing models relevant to contemporary urban ICT-mediated food sharing?
- What novel theories of contemporary food sharing might be developed to incorporate the multiplicity of exchange and cooperation?

Conclusion

There are many reasons to take seriously the practice and potential of ICT-mediated urban food sharing. On the positive side, food is a fundamental dimension of life, identity and social relations and coming together around food with others is increasingly being evidenced as providing individual and collective benefits for health and well-being. In contrast, it is also increasingly clear that the global food system is failing to meet the needs of current generations, with increasing concern that its limitations will be further exposed under conditions of climate change, affecting access to resources, damaging the environment and accelerating a nutrition transition that is changing our diets for the worse. Given the impacts of technology on food systems historically, it is worth being healthily sceptical about what ICT might do for urban food systems, including but also beyond its capacity to connect people over food. Certainly, attention to the ongoing dematerialisation, digitalisation and financialisation of food will need to go hand in hand with future studies of ICT-mediated food sharing. While the initiatives explored in this book suggest that in certain circumstances ICT can help people to generate food together in new places, move food along from places of excess food to places where people need access to it and help to bring people together in new moments of social interaction, it is not the technology itself but how it is used and who uses it that is important. While digital divides persist, the potential of ICT-mediated food sharing will be limited. New ways to democratise access to technologies are needed.

We need to ensure that intellectual spaces are provided for ongoing conversations about desired forms of collective life and the means to achieve them. ICT-mediated urban food-sharing initiatives are, even if only hyper-locally and provisionally, reworking established norms and subverting regulations to connect people in new ways. Frequently celebrated for facilitating cooperation, efficiency and empowering ordinary

citizens, they are also proving deeply unsettling to many existing social and economic orders. A critical stance on sharing is certainly required, as not all forms of ICT-mediated food sharing create the same kinds of impacts. Beyond technical matters of efficiency and convenience, the implications of diverse food sharing for (re)distribution, justice and the empowerment of vulnerable and marginalised populations in relation to food must be retained as a central concern of analyses.

Ultimately, constructing sustainable and resilient urban food systems in the face of climate change and growing urbanisation is a meta-societal challenge. This challenge will require an understanding of the dominant ways in which food is grown, prepared and ultimately consumed, but also of those ways that are emergent or marginal. ICT-mediated food-sharing initiatives offer one such arena of emergent activity ripe for exploration. A fuller understanding of urban responses to unsustainable food systems requires new forms of comparative and case-study research that cover a territorially diverse range of urban environments and interventions. This book makes the preliminary steps in that direction, but there is much more to be done.

References

Agyeman, J., McLaren, D. and Schaefer-Borrego, A. (2013) *Briefing: Sharing cities*. London: Friends of the Earth (September), 1–32.

Albrecht, C. (2018) Josephine, the Uber for home cooking, shuts down. *The Spoon*. https://thespoon.tech/josephine-a-sharing-economy-marketplace-for-home-cooking-shuts-down/. Accessed 20 September 2018.

Amin, A. and Thrift, N. (2002) *Cities: Rethinking the urban*. Cambridge: Polity Press.

Anderson, B. and McFarlane, C. (2011) 'Assemblage and geography', *Area*, 43(2): 124–127.

Anguelovski, I., Connolly, J., Masip, L. and Pearsall, H. (2018) 'Assessing green gentrification in historically disenfranchised neighborhoods: a longitudinal and spatial analysis of Barcelona', *Urban Geography*, 39(3): 458–491.

Ban, K-M. (2012) 'Our struggle for global sustainability will be won or lost in cities,' says Secretary-General, at New York EVENT. 23 April. Press release. https://www.un.org/press/en/2012/sgsm14249.doc.htm. Accessed 20 September 2018.

Belk, R. (2010) 'Sharing', *Journal of Consumer Research,* 36(5): 715–734.

Belk, R. (2014) 'You are what you can access: Sharing and collaborative consumption online', *Journal of Business Research*, 67(8): 1595–1600.

Bhabha, H. (1994) *The location of culture*. London: Routledge.

Botsman, R. and Rogers, R. (2010) *What's mine is yours*. New York: Harper Collins.

Broto, V. and Bulkeley, H. (2013) 'A survey of urban climate change experiments in 100 cities', *Global Environmental Change*, 23(1): 92–102.

Cambridge University Press (2017) *Cambridge English Dictionary*. Cambridge: Cambridge University Press.

Cantamessa, M., Gatteschi, V., Perboli, G. and Rosano, M. (2018) 'Startups' roads to failure', *Sustainability*, 10: 2346.

Caraher, M. and Furey, S. (2017) Is it appropriate to use surplus food to feed people in hunger? Short term band aid to more deep rooted problems of poverty. 26 January. *Food Research Collaboration Policy Brief*. London: City University.

CASA (2012) The importance of family diners. *CASA ColumbiaTM White Paper*. New York: The National Centre for Addiction and Substance Abuse, Columbia University.

Chatterton, P. and Pickerill, J. (2010) 'Everyday activism and transitions towards post-capitalist worlds', *Transactions of the Institute of British Geographers NS*, 35: 475–490.

Chies, B.M. (2017) 'Turning food "waste" into a commons: The case of Foodsharing (Germany) and Solidarity Fridge (Sweden)', in *Proceedings of the 16th International Association for the Study of the Commons Conference*, 10–14 July 2017. Netherlands: Utrecht University.

Ciaghi, A. and Villafiorta, A. (2016) Beyond food sharing: Supporting food waste reduction with ICTs. *IEEE International Smart Cities Conference*, Trento, Italy.

Cloke, P., May, J. and Williams, A. (2016) 'The geographies of food banks in the meantime', *Progress in Human Geography*. http://dx.doi.org/10.1177/0309132516655881.

Davies, A.R. (2001) 'Hidden or hiding? Public perceptions of participation in the planning system', *Town Planning Review*, 56(1): 45–71.

Davies, A.R. (2012) *Enterprising communities: Grassroots sustainability innovations*, Bingley: Emerald Press.

Davies, A.R. (2019) 'Redistributing surplus food: Interrogating the collision of waste and justice', in N. Cook and D. Butz (eds) *Mobilities, mobility justice and social justice*. London: Routledge, pp 250–262.

Davies, A.R. and Doyle, R. (2015) 'Transforming household consumption: From backcasting to HomeLabs experiments', *Annals of the Association of American Geographers*, 105(2): 425–436.

Davies, A.R. and Evans, D. (2018) 'Urban food sharing: Emerging geographies of production, consumption and exchange', *Geoforum*, https://doi.org/10.1016/j.geoforum.2018.11.015

Davies, A.R. and Legg, R. (2018) 'Fare sharing: Interrogating the nexus of ICT, urban food sharing, and sustainability', *Food, Culture & Society*, 21(2): 233–254.

Davies, A.R., Fahy, F. and Rau, H. (2014) *Challenging Consumption: Pathways to a more sustainable future*, Routledge, London.

Davies, A.R., Edwards, F., Marovelli, B., Morrow, O., Rut, M. and Weymes, M. (2017a) 'Creative construction: crafting, negotiating and performing urban food sharing landscapes', *Area*, 86: 136–149. http://dx.doi.org/10.1111/area.12340.

Davies, A.R., Edwards, F., Marovelli, B., Morrow, O., Rut, M. and Weymes, M. (2017b) 'Making visible: Interrogating the performance of food sharing across 100 urban areas', *Geoforum*, 86: 136–149.

Davies, A.R., Donald, B., Gray, M. and Knox-Hayes, J. (2017c) 'Sharing economies: Moving beyond binaries in a digital age', *Cambridge Journal of Regions, Economy and Society*, 10(2): 209–230.

Davies, A., Kuster, M., Weymes, M. and MacKenzie, S. (2018a) *SHARECITY Briefing Note 3*: Goals & Impacts. Trinity College Dublin, Ireland. ERC Grant No: 646883.

Davies, A.R., Weymes, M. and MacKenzie, S. (2018b) 'Communicating goals and impacts of urban food sharing', *Urban Agriculture Magazine*, 34: 38–40.

Dawsey, J. (2015) Uber targets Mayor Bill de Blasio on proposed curbs on growth. *Wall Street Journal*, 16 July. https://www.wsj.com/articles/uber-targets-mayo-bill-de-blasio-on-proposed-curbs-on-growth-1437096154. Accessed 20 September 2018.

Defourney, J. and Nyssens, M. (2008) 'Social enterprise in Europe: recent trends and developments', *Social Enterprise Journal*, 4(3): 202–228.

Doménech-Pascual, G. (2016) 'Sharing economy and regulatory strategies towards legal change', *European Journal of Risk Regulation*, 7(4): 717–727.

Dowdall, A. (2017) 'Food safety governance and food redistribution'. MSc dissertation, Trinity College Dublin, Ireland. http://sharecity.ie/wp-content/uploads/2017/11/Alan-Dowdall-Dissertation.pdf. Accessed 20 September 2018.

DSP (2017) *Social inclusion monitor 2015*. Dublin: Department of Social Protection.

Dunbar, R.I.M. (2017) 'Breaking bread: The functions of social eating', *Adaptive Human Behavior and Physiology*, 3: 198. https://doi.org/10.1007/s40750-017-0061-4.

Eat With (2018) (website) https://www.eatwith.com/?c=USD.

EC (2017) *General Food Law* (Regulation (EC) No 178/2002). Brussels: European Commission.

Edwards, F. and Davies, A.R. (2018) 'Connective consumptions: Mapping Melbourne's food sharing ecosystem', *Urban Policy and Research*. doi: 10.1080/08111146.2018.1476231.

Edwards, F. and Mercer, D. (2007) 'Gleaning from gluttony: an Australian youth subculture confronts the ethics of waste', *Australian Geographer*, 38(3): 279–296.

England, K. (1994) 'Getting personal: Reflexivity, positionality, and feminist research', *The Professional Geographer*, 46(1): 80–89.

FAO (2010) *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*. Rome: FAO.

Feenberg, A. (2012) *Questioning technology*. Abingdon: Routledge.

Fisher, M.K. (1954) *The art of eating*. New York: Macmillan.

Fitzmaurice, C. and Schor, J. (2018) 'Homemade matters: Logics of opposition in a failed food swap', *Social Problems*, spx046. https://doi.org/10.1093/socpro/spx046.

Flood, D., Harrison, R., Duce, D. and Iacob, C. (2013) 'Evaluating mobile applications: A spreadsheet case study', *International Journal of Mobile Human Computer Interaction*, 4(4): 37–65.

Fraser, A. (2010) 'The craft of scalar practices', *Environment and Planning A: Economy and Space*, 42(2): 332–346.

Ganglbauer, E., Fitzpatrick, G., Subasi, Z. and Gidenpfennig, F. (2014) 'Think globally, act locally: A case study of a free food sharing community and social networking', in *Proceedings of the 17th ACM conference on Computer Supported Cooperative Work and Social Computing*. New York: ACM, pp 911–921.

Gibson-Graham, J.K. (2008) 'Diverse economies: Performative practices for "other worlds"', *Progress in Human Geography*, 32(5): 613–632.

Graham, M. (2011) 'Time machines and virtual portals: The spatialities of the digital divide', *Progress in Development Studies*, 11: 211–227.

Habermas, J. (1987) *Theory of communicative action. Volume Two: Lifeworld and system: A critique of functionalist reason*. Translated by Thomas A. McCarthy. Boston, MA: Beacon Press.

Hakulinen, C., Pulkki-Råback, L., Virtanen, M. et al (2018) 'Social isolation and loneliness as risk factors for myocardial infarction, stroke and mortality: UK Biobank cohort study of 479 054 men and women', *Heart*. Published online first: 27 March. doi: 10.1136/heartjnl-2017-312663.

Haraway, D. (2011) 'Speculative fabulations for technoculture's generations: Taking care of unexpected country', *Australian Humanities Review*, 50. http://press.anu.edu.au/wp-content/uploads/2011/07/ch068.pdf. Accessed 5 August 2015.

Heinrichs, H. (2013) 'Sharing economy: A potential new pathway to sustainability', *Gaia*, 22(4): 228–231.

Henry, K. (2018) The 30th Anniversary of the first arrest of Food Not Bombs, 29 July. *Food Not Bombs Blog*. http://blog.foodnotbombs. net/the–30th–anniversary–of–the–first–arrest–of–food–not–bombs/. Accessed 20 September 2018.

Heynen, N. (2010) 'Cooking up Non–violent civil–disobedient direct action for the hungry: 'Food Not Bombs' and the resurgence of radical democracy in the US', *Urban Studies*, 47(6): 1225–1240.

Hine, C. (2005) 'Internet research and the sociology of cyber–social–scientific knowledge', *The Information Society: An International Journal*, 21(4): 239–248.

Holt–Lunstad, J. and Layton, J.B. (2010) 'Social relationships and mortality risk: A meta–analytic review', *PLoS Medicine* 7(7). http://www. plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal. pmed.1000316.

Ingold, T. (2011) *Being alive: Essays on movement, knowledge and description*. Abingdon: Routledge.

ITU (2017) *Measuring the Information Society Report*. Geneva: International Telecommunication Union.

Jaeggi, A. and Gurven, M. (2013) 'Natural cooperators: Food sharing in humans and other primates', *Evolutionary Anthropology*, 22(4): 186–195.

Jones, A. and Murphy, J. (2010) 'Practice and economic geography', *Geography Compass*, 4(4): 303–319.

Jones, M. (2007) *Feast: Why humans share food*. New York: Oxford University Press.

Julier, A. (2013) *Eating together: Food, friendship and inequality.* Urbana, IL: University of Illinois Press.

Kaplan, H. and Gurven, M. (2005) 'The natural history of human food sharing and cooperation: A review and a new multi–individual approach to the negotiation of norms', in H. Gintis, S. Bowles, R. Boyd and Fehr, E. (eds) *Moral sentiments and material interests: The foundations of cooperation in economic life*. Cambridge, MA: MIT Press, pp 75–113.

Kaplan, H., Schniter, E., Smith, V. and Wilson, B. (2012) 'Risk and the evolution of human exchange', *Proceedings Biological Science*, 279(1740): 2930–2935.

Kessler, S. (2016) 'Is an "innovation lane" the answer to tech's clash with regulation?' *The Fast Company*, 22 June. https://www.fastcompany.com/4011435/is-an-innovation-lane-the-answer-to-techs-clash-with-regulation. Accessed 20 September 2018.

Kitchin, R. and Dodge, M. (2011) *Code/Space*. Cambridge, MA: MIT Press.

Law, J. (2004) *After method: Mess in social science research*. New York: Routledge.

Marovelli, B. (2018) 'Cooking and eating together in London: Food sharing initiatives as affective convivial atmospheres', *Geoforum*. https://doi.org/10.1016/j.geoforum.2018.09.006.

Marshall, A. (2016) Berlin's public refrigerators were just declared a health hazard. *City Lab*. 12 February. https://www.citylab.com/equity/2016/02/berlin-public-refridgerator-food-sharing-germany/462633/. Accessed 20 September 2018.

Martin, C. (2016) 'The sharing economy', *Ecological Economics*, 121: 149–159.

McLaren, D. and Agyeman, J. (2015) *Sharing cities: A case for truly smart and sustainable cities*. Cambridge, MA: The MIT Press.

Meah, A. (2016) 'Still blaming the consumer? Geographies of responsibility in domestic food safety practices', *Critical Public Health*, 24: 88–103.

Midgely, J. (2018) 'Anticipatory practice and the making of surplus food', *Geoforum*. https://doi.org/10.1016/j.geoforum.2018.09.013.

Milligan, C. and Wiles, J. (2010) 'Landscapes of care', *Progress in Human Geography*, 34(6): 736–754.

Mitchell, R. and Popham, F. (2008) 'Effect of exposure to natural environment on health inequalities: An observational population study', *The Lancet*, (372) 9650: 1655–1660.

Morrow, O. (2018) 'Sharing food and risk in Berlin's urban food commons', *Geoforum*, https://doi.org/10.1016/j.geoforum.2018.09.003.

NPD (2014) *National eating trends, 2014*. Port Washington, New York: NPD Group.

Oatfield, C. (2016) Update on the new homemade food bill! 2 May. *SELC Blog*. http://www.theselc.org/food_news_update_on_the_new_homemade_food_bill. Accessed 20 September 2018.

O'Brien, M. (2012) *A crisis of waste. Understanding the rubbish society*. New York: Routledge.

OECD (2016) *Stimulating digital innovation for growth and inclusiveness: The role of policies for the successful diffusion of ICT*. Draft background report for Ministerial panel 1.2. DSTI/ICCP(2015)18/FINAL. Paris: OECD.

Orsi, J. (2010) *How to barter, give and get stuff*. California: Sustainable Economies Law Centre.

Orsi, J. (2012) *Practising law in the sharing economy: Helping people build cooperatives, social enterprise, and local sustainable economies*. Chicago, IL: ABA Publishing.

Parson, S. (2015) 'Parks, permits, and riot police: San Francisco Food Not Bombs and autonomous occupations of space', *New Political Science*, 37(3): 346–362.

Pasquale, F. and Vaidhyanathan, S. (2015) Uber and the lawlessness of 'sharing economy' corporates. *Guardian*. 28 July. https://www.theguardian.com/technology/2015/jul/28/uber-lawlessness-sharing-economy-corporates-airbnb-google. Accessed 20 September 2018.

Puig de la Bellacasa, M. (2015) 'Making time for soil: Technoscientific futurity and the pace of care', *Social Studies of Science*, 45(5): 691–716.

Ramsey, U. (2018) 'Seed libraries and food justice: Cultivating an effective legal and policy environment', *Georgetown Journal on Poverty Law and Policy*, V25(2): 193–220.

Reckwitz, A. (2002) *Towards a theory of social practice*. London: Sage.

Ripe Near.Me (2018) (website) www.ripenear.me/

Rogers, C. (2014) FareShare – a successful food redistribution model. *European Journal of Public Health*, 24: 329–350.

Rombach, M. and Bitsch, V. (2015) 'Food movements in Germany: Slow Food, food sharing, and dumpster diving', *International Food and Agribusiness Management Review*, 18(3): 1–15.

Rudel, T. (2013) *Defensive environmentalists and the dynamics of global reform*. New York: Cambridge University Press.

Russell, M. (2014) *Mining the social web*. Sebastopol, CA: O'Reilly.

Rut, M. and Davies, A.R. (2018) 'Transitioning without confrontation? Shared food growing niches and sustainable food transitions in Singapore', *Geoforum*. https://doi.org/10.1016/j.geoforum.2018.07.016.

Schatzki, T. (1996) *Social practices: A Wittgensteinian approach to human activity and the social*. Cambridge: Cambridge University Press.

Segrist, P. (2015) 'How the rise of big data and predictive analytics are changing the attorney's duty of competence', *North Carolina Journal of Law and Technology*, 16(3): 527–622.

SELC (2016) *Save seed sharing*. Oakland, CA: SELC. http://www.theselc.org/save_seed_sharing. Accessed 20 September 2018.

Simone, A. and Pieterse, A. (2017) *New urban worlds: Inhabiting dissonant times*. Oxford: Polity Press.

Slee, T. (2016) *What's yours is mine: Against the sharing economy*. New York: OR Books.

Somerville, H. (2015) Airbnb wages $8 million campaign to defeat San Francisco measure. *Reuters*, 1 November 1. https://www.reuters.com/article/us-airbnb-election-sanfrancisco-iduskcn0sq2cj20151101. Accessed 20 September 2018.

South, E.C., Hohl, B.C., Kondo, M.C., MacDonald, J.M. and Branas, C.C. (2018) 'Effect of greening vacant land on mental health: a citywide randomized controlled trial', *JAMA Network Open*, 1: 1–14.

Spataro, D. (2016) 'Against a de-politicized DIY urbanism: Food Not Bombs and the struggle over public space', *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 9(2): 185–201.

Stop Food Waste (2017) *Stop Food Waste: Our story*. Dublin: Environmental Protection Agency. http://stopfoodwaste.ie/our-story/.

UNESCO (1999) *General comment 12: The right to food*. New York and Geneva: United Nations Economic and Social Council. E/C.12/1999/5.

UNESCO (2002) *Information and communication technology in education*. Paris: UNESCO.

van Deursen, A., Courtois, C. and van Dijk, J. (2014) 'Internet skills, support sources and beneficial internet use', *International Journal of Human−Computer Interactions*, 30(4): 278–290.

Warde, A. (2013) 'What sort of a practice is eating?', in E. Shove and N. Spurling (eds) *Sustainable practices: Social theory and climate change*. London: Routledge, pp 17–30.

Weymes, M. and Davies, A.R. (2018a) '[Re]valuing surplus: Transitions, technologies and tensions in redistributing prepared food in San Francisco', *Geoforum*. https://doi.org/10.1016/j.geoforum.2018.11.005.

Weymes, M. and Davies, A.R. (2018b) Disruptive technologies? Scaling relational geographies of ICT-mediated surplus food redistribution. *SHARECITY working paper 3*, Dublin: Trinity College Dublin.

Zurek, K. (2016) 'Food sharing in Europe: Between regulating risks and the risks of regulating', *European Journal of Risk Regulation*, 7(4): 675–687.

Index

Note: Page numbers for tables appear in italics.

"A promising and original contribution to studies on the socio-technical processes that underpin urban food system transitions to sustainability.... innovative and timely."

Rositsa T. Ilieva, Urban Food Policy Institute, City University of New York

"This smart book helps us to recognize how destructive the commodification of food has been and the social isolation it has fostered given that all human life requires food to survive."

Nik Heynen, University of Georgia

This book explores the history and current practice of food sharing. Illustrated by rich case studies from around the world, the book uses new empirical data to set an agenda for research and action. The book will be an important resource for researchers, policy makers and sharing innovators to explore the impacts and sustainability potential of such sharing for cities.

Anna R. Davies is Professor and Chair of Geography, Environment and Society, Trinity College Dublin.