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Making visible: Interrogating the performance of food sharing across 100 urban areas

Anna R. Davies*, Ferne Edwards, Brigida Marovelli, Oona Morrow, Monika Rut, Marion Weymes

Department of Geography, School of Natural Sciences, Trinity College Dublin, Ireland

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ABSTRACT

Interpersonal sharing of food has been an omnipresent feature of human civilisation from hunter-gatherer societies to the present, both as a mechanism through which sustenance is secured and as a means to cement social relations. While the evolutionary dynamism of this food sharing is relatively well documented, critical scholarship has tended to examine contemporary food sharing practices beyond family and friends through case studies of individual initiatives. A broader view of food sharing practices is absent. In addition, there has been little examination of the role that emerging information and communication technologies (ICT) are having on food sharing, despite claims that such technologies offer transformative potential to achieve more secure, sustainable and just food systems. In response, this paper presents a novel landscape level analysis of more than 4000 ICT-mediated urban food sharing activities operating across 100 cities in six continents. Adopting conceptual insights from the intersection of social and economic practice-oriented approaches, the resulting food-sharing database progresses understanding of, and makes visible, the ways in which food (and food-related skills, stuff and spaces) is being shared across diverse urban settings. To conclude, it is argued that the database plays an important productive and performative role in mapping and comparing diverse food sharing economies. Importantly, it provides a springboard for further explanatory research to fine-tune our understanding of the evolution, governance and sustainability potential of urban food sharing.

1. Introduction

At the second meeting of the Milan Urban Food Pact 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. Aligning with the aspirations of the Sustainable Development Goals to end hunger and create sustainable cities and communities, the Pact brings together mayors from across 130 cities to identify solutions to current and future food challenges in an increasingly urbanized world. In this quest, illustrative examples of innovative responses to local food challenges abound, including food-sharing initiatives beyond familial and household settings such as surplus food redistribution and community gardens, with urban areas emerging as living laboratories for sustainable food transition experiments. However, little is known about the cumulative nature of these urban food initiatives at a city, nation or aggregate level as large-n comparative analyses are rarely developed. This means that the full range and consequence of diverse food initiatives remain largely invisible to city governors, urban citizens and to the growing communities of practice in the urban food arena. As a result, the overall potential of such initiatives in terms of transforming urban food systems onto more sustainable and resilient trajectories is hard to discern, the international learning from experiences is limited, and novel interventions in the foodscapes of one locale are easily dismissed as interesting but rather inconsequential niche experiments in the face of systems dominated by multinational agri-food organisations.

This problem of invisibility has already been noted by those researching grassroots sustainability innovations (Davies and Mullin, 2011; Seyfang and Smith, 2007) and diverse economies more broadly (Gibson-Graham, 2008), including diverse food economies (Cameron and Wright, 2014). However, significant challenges around ascertaining and aggregating the performance of diverse food sharing initiatives beyond one locale remain, particularly in emergent and dynamic arenas such as urban food sharing. Confronting these challenges head on, this paper reports and reflects on the findings of an experimental process of 'making visible' the practices and economies of urban food sharing initiatives that are utilising specific forms of ICT (information and communication technologies)

* Corresponding author.
E-mail addresses: daviesa@tcd.ie (A.R. Davies), edwardsf@tcd.ie (F. Edwards), marovelb@tcd.ie (B. Marovelli), morrowo@tcd.ie (O. Morrow), rutm@tcd.ie (M. Rut), weymesma@tcd.ie (M. Weymes).

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across 100 cities, drawn from 43 countries and six continents. The focus on ICT-mediated urban food sharing emerging out of claims that we are living through a fourth industrial revolution characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres (Schwab, 2016).

Beginning with a brief summary of the meaning, history and evolution of the social practice of food sharing, this paper presents a typology of food sharing which helped define search terms for identifying and interrogating urban food sharing initiatives and subsequently the construction of a database. A reading of the database is then provided that explores the performance characteristics of food sharing practices. This includes their spatial orientation (*where* food sharing initiatives are located) and *why* they were established, *what* is being shared within them and *how* that sharing takes place. Explicitly embracing the weak theoretical stance promoted through diverse economies research (Gibson-Graham, 2008), it is argued that this descriptive process is a necessary and productive initial step in understanding the contribution food sharing makes (and might make) to broader urban foodscapes (Mikkelson, 2011). Ultimately, this paper has two functions: (1) It presents the findings of a novel international study of ICT-mediated urban food sharing and (2) it reflects critically on the limitations of the study, outlining key research questions still to be answered and illustrating how co-ordination between multi-scalar and multi-disciplinary studies will be needed to understand how food systems in urban areas might become more resilient and ultimately more sustainable.

2. Food sharing

The sharing of food is a longstanding feature of human civilisation, both as a mechanism through which sustenance is secured and as a means to cement social relations (Kaplan and Gurven, 2005). Its evolutionary dynamism is relatively well documented at the kinship level, particularly in relation to the apparent decline of eating together at home in some western societies (Julier, 2013; Weinstein, 2005). Meanwhile, attempts to understand how, why and to what end people share food more broadly have a long lineage across archaeology, geography, psychology, anthropology and beyond. As Jaeggi and Gurven (2013: 186) note, '[f]ood 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'. Behavioural anthropologists in particular have concluded that while many other animals actively partake in food sharing, 'the patterning and complexity of food sharing among humans is truly unique' (Kaplan and Gurven, 2005: 1). However, the patterning and complexity of contemporary food sharing especially that occurring beyond the home and in urban, industrialised settings has received the limited attention to date. Given that such sharing has been further differentiated in recent decades through the mediating capabilities of smart and mobile information and communication technologies (ICT) that are reshaping how people connect, interact, exchange and acquire knowledge, skills, experiences, goods and services, this is an area ripe for further investigation (Hearn et al., 2014).

First, it is helpful to delineate more precisely what is considered as food sharing for the purposes of this paper. Given the manifold ways in which sharing is understood, combined with a desire to begin with a broad examination of food sharing across the urban food system, the Oxford English Dictionary definition of sharing is adapted to focus explicitly on food:

> *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' (Oxford University Press, 2014[1] emphasis added).

[1] On-line dictionary available at: http://www.oed.com/.

This definition illustrates the social practices of *doing things together* around food, including but moving beyond simple commensality; the practice of eating or drinking together. Sharing then is not just what people do, it is a co-ordinated entity 'a temporally unfolding and spatially dispersed nexus of doings and sayings' (Schatzki, 1996) and a performance - a process of doing - through which sharing as an entity is perpetuated and potentially reshaped. Such a definition also allows attention to a wide range of things that can be shared, from the material stuff of food (e.g. unprocessed crops and seeds), to products (e.g. processed food or tools for growing and cooking) and services (e.g. systems for the provision of redistributed food), as well as capabilities (e.g. growing or cooking skills) and spaces (e.g. fields, allotments, gardens, and kitchens). It also admits, although does not prescribe, a wide variety of scales over which sharing might take place; what Agyeman et al. (2013: 2) refer to as 'territories of sharing'.

Focusing on what is shared and how it is shared provides a useful skeleton structure for demarcating realms of food sharing and this was used to develop an initial typology illustrated by Table 1., which illustrates the type of urban food sharing initiatives included in such a definition. For the formation of the database this typology was used alongside attention to organisational structures (for-profit, not-for-profit, social enterprise, cooperative, association, informal), modes of sharing (gifting, bartering, collecting and selling) and form of ICT (website, facebook, twitter, app) being used. The methods adopted for identifying such characteristics are outlined more fully in the mapping section of this paper.

2.1. Food sharing as social practice

While the benefits of adopting a practice orientation in relation to eating, cooking or growing food is relatively well-established (Davies, 2014; Warde, 2013; Delormier et al., 2009; Campbell et al., 2012; 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 (Hall and Ince, 2018; Agyeman et al., 2013). It is, as a result, replete with habits, routines, tools and technologies; essentially an archetypal practice that is both entity and performance. Food sharing embodies routinized ways "in which bodies are moved, objects are handled, subjects are treated, things are described and the world in understood" (Reckwitz, 2002: 250). 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" (ibid), 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. Individuals are the carriers of a food sharing practice which may itself evolve, with new forms of sharing appearing and others disappearing over time and across space as elements and performances are reconfigured. 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) and understanding it as such provides a frame for integrative analysis that can accommodate attention to the gamut of rules, tools, skills and understandings embodied within it.

Adopting a practice approach enables examination of broad social and economic processes through the consideration of the actions and meanings associated with everyday activities such as food sharing. Indeed, the approach has been mooted as a useful bridging concept between researchers primarily associated with either social or economic concerns, particularly within human geography. As documented by Jones and Murphy (2010), there are many examples of studies where practices are used to help explain phenomena within socio-spatial economies. Certainly, there is much to be drawn from the rich epistemic history of practice-oriented studies that will be relevant for analysis of

Table 1
An urban food sharing typology
adapted from Davies and Legg, 2018

Mode of sharing What is shared	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, e.g. 510 fruits, USA	Providing food for free e.g. FoodCloud.ie, Ireland	Swapping food and food devices, e.g. Adelaide Hills Produce Swap, Australia	Providing affordable food on a not-for-profit basis e.g. 4th Street Food co-op, USA	Selling home cooked food that generates income beyond the costs of production e.g. Eat With, International
Spaces *Shared growing spaces, shared food preparation or shared eating spaces*	Guerrilla gardening of public open spaces e.g. Elephant and Castle roundabout, London, UK	Providing spaces for growing for free e.g. The Monroe Sharing Gardens, USA	Providing spaces where food can be exchanged for labour e.g. Community Shop, London	Providing spaces for people to grow food on a not-for-profit basis e.g. Milwaukee Urban Gardens, USA	Providing spaces for supper clubs e.g. The Underground Supper Club, Ireland
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 e.g. Fallen Fruit, Los Angeles, USA	Providing skills around growing e.g. 3000 acres, Australia	Providing opportunities to learn about growing food, swap seeds and produce e.g. Grow stuff, Australia	Providing workshops around nutrition or growing, e.g. Hunger mountain co-op, Montpellier, USA	Providing opportunities for travellers to experience home cooked meals with locals, e.g. Eat With, Global

urban food sharing, not least the attention to cultural rituals and individual habits enshrined within Bourdieu's ideas around habitus, taste and distinction (1977) that determine (in part) what is deemed appropriate to share in different contexts, but also through attention to the rules and forms of control - or governmentality - which shapes the ways in which food sharing takes place (Foucault, 1991). This is exemplified by the mundane practices of government, for example through land use planning which dictates what types of food sharing activity can take place and where. It is also visible in the ways in which environmental health and food safety regulations shape how food can be processed, prepared and delivered for consumption (Orsi, 2012).

2.2. Food sharing practices and diverse economies

Perhaps of most relevance to the emergent phenomena of urban food sharing initiatives is the practice-oriented work emerging from diverse economies scholars (such as Gibson-Graham, 2008; Cameron and Wright, 2014) who emphasise both the intertwined messiness of livelihoods and economies, and their social, political and geographical constitution (Lee, 2006). According to Jones and Murphy (2010: 374), these studies indicate that practiced economies are far more than just sets of social relations driven by forms of structural power, "they are instead amalgams of materials, performances, structural factors, and cognitions whose particular time-space constitution is contingent on the agency of actors and is thus open to improvisation and accident". Usefully, for research examining urban food sharing, the weak theory dimension of diverse economies research in particular promotes attention to such affective assemblages. Weak theory strives towards "mere description" and documents diverse economic practices (some desirable, others less so), without presuming the dominance of a particular economic form or system (Sedgwick, 1997). This work attends to the way stuff, spaces, and skills as well as actors (and their embodied emotions), and actants with different trajectories, may come together in tentative, inconclusive or evolving ways (Wright, 2014). Where the practice-focused dimension of diverse economies research particularly resonates with the mapping of food sharing landscapes is by recognising different forms of economic organisation and exchange - such as volunteering within food surplus redistribution or gifting food or skills to reduce waste or foster greater food security - which are commonly obscured in mainstream economic studies.

In contrast, critical attention to an emergent ICT-mediated 'sharing economy' has focused primarily on providing a much-needed interrogation of the impacts of venture-capital-funded, for-profit sharing platforms, particularly in the mobility and accommodation sectors (Davies et al., 2017a, 2017b; Belk, 2017; Martin, 2016; Cheng, 2016). This work has rightly highlighted the ways in which popular assumptions around the social (e.g. the view that sharing bolsters social capital) and environmental (e.g. the position that sharing reduces resource consumption) benefits of sharing are being claimed by companies who provide little in the way of concrete evidence as to whether, and to whom, such benefits accrue. Indeed, research highlights how these sharing economy platforms are in many cases simply using new technologies to extend longstanding systems of profit-maximisation (Belk, 2014), raising concerns about the ways in which the technologies of sharing may facilitate increased labour exploitation, contributing to, rather than resolving, social vulnerability through insecure working conditions under the guise of autonomy and flexibility (Bourdieu, 1998; Standing, 2011). Nonetheless, focusing only on a small number of particularly high profile cases of for-profit sharing in mobility and accommodation is problematic. It ignores the wealth of ways and sectors in which sharing is taking place, both in terms of the nature of sharing involved and the organisational models adopted to facilitate that sharing. Indeed, McLaren and Agyeman (2015) argue that the most transformative potential within urban sharing economies is unlikely to be led by commercial enterprises alone, rather by a coalescence of formal and informal behaviours particularly around shared

infrastructures and public spaces. While McLaren and Agyeman focus on the capacity of collective power rather than capital to reshape processes of urbanisation, Gibson-Graham outlines how reading economic spaces for difference rather than dominance helps to make visible the diversity of relations that co-exist alongside for-profit, monetary exchange. Elucidating the many ways in which enterprises, transactions, labour, property and finance are organised, the goal of diverse economies approaches is to unsettle the dominant economic narrative which privileges capital, markets, wages, private property and mainstream financing, by revealing a multiplicity of already existing practices that operate differently and offer the possibility for 'new economic becomings' (Gibson-Graham, 2006: 76).

This diverse economies approach is already familiar to food studies scholars, with existing research including attention to foraging (McLain et al., 2014), fisheries (St. Martin, 2007; Bresnihan, 2016), community supported agriculture (White, 2013; Wilson, 2013) and community food projects (Dixon, 2011; Trauger and Passidomo, 2012), amongst many others. The majority of these studies are however highly localised empirical analyses with the notable exception of Cameron's (2012) study of commercial international and national food retailers in Newcastle, Australia. While the rich examination of food economies through localised case studies provides interesting insights, questions have been raised about the ability of such research to inform strategic planning and policy formation and address higher order challenges (Jones and Murphy, 2010; Browne et al., 2014). In response, a few diverse economies scholars have begun to include meso-level and quantitative studies to complement the rich insights provided by studies of individual initiatives (Drake and Lawson, 2015; Wright, 2014), with similar endeavours also emerging amongst some social practice scholars (Browne et al., 2014). Following in the footsteps of these scholars and in direct response to critiques that isolated small scales studies alone will not create the necessary leverage in strategic attempts to reorient urban food systems onto more sustainable pathways, a database of ICT-mediated urban food sharing was constructed.

3. Mapping urban food sharing landscapes

As an extended reflection on the complexities and significance of constructing the database of ICT-mediated urban food sharing is published elsewhere (Davies et al., 2017a, 2017b), this section simply outlines the strategies that were developed to identify, record and classify relevant initiatives. Identification began with a scoping study that used a key word search of major internet search engines to identify ICT-mediated food sharing initiatives (Davies and Legg, 2018). The forms of ICT required for the initiative to be included in the database were: a website, a facebook page, a meet-up or twitter profile, App or platform. Including this ICT component was important for two key reasons. Conceptually, because it is the ICT component of these initiatives which has been mooted as revolutionising the practice of sharing (Botsman and Rogers, 2012) and pragmatically, because having one of these forms of ICT-mediation meant that online searches were in theory able to identify the entire population of activities even in locations dispersed around the globe. As a proof of concept phase, a scoping study was conducted in 2014–5 using only a limited number of keywords in English. Nonetheless ICT-mediated food sharing initiatives were found across 468 urban areas and in 91 countries. These numbers gave credence to undertaking a full analysis and given the calls for practice-oriented research to have greater methodological rigour and comparability (Jones and Murphy, 2010; James, 2006; Yeung, 2003), it was then decided in 2016 to conduct a thorough, multilingual search of 100 urban areas internationally. In order to maximise the potential for identifying cities with active urban food sharing five urban networks and indices were used to assist in this selection: The Sharing Cities Network; 100 Resilient Cities Network; The Milan Urban Food Policy Pact; A.T. Kearney Global Cities Index; and, the Economist Competitive Cities 2015 list. A total of 404 cities were identified through this process. The final selection of 100 cities includes all 54 cities involved in the Sharing Cities Network in 2016 and the top ranked cities across the remaining indices (Table 2).[2]

Following the city selection, 28 key search terms were identified by a core team of international researchers and food sharing networks, communities and activists. Additional native speakers were recruited to conduct and cross-check searches where needed and an excel spreadsheet was created to record key characteristics (see Table 3).

In total, over a period of five months from April 2016 to August 2016, 4003 initiatives were identified and coded. Cross-checking with multiple coders and communities provided assurances of coverage and common quantitative coding methods focused on location, form, mode of sharing, organisation and impact ensured possibilities for comparative analysis. Though this approach provided an on-going dialogue between the conceptual framing of ICT-mediated food sharing and empirical observations (Downwards and Mearman, 2007; Jones and Murphy, 2010), there were limitations. One was the static nature of the data. The database presents only a snapshot of activities which are constantly evolving, with new initiatives emerging and existing ones disappearing over time. Another was the multifaceted and sometimes contested nature of urban boundaries, with diverse spatial definitions and systems of data collection being used by different organisations and cities internationally.

While the potential permutations and combinations for analysing the database are extensive,[3] the following section of this paper considers four broad areas related to the performance of sharing practices that they facilitate: (i) Drivers: why food is being shared; (ii) Geographies: where sharing is occurring; (iii) Ingredients: what is being shared; and (iv) Organisation: how it is being shared.

4. The performance of urban food sharing

Initially, each initiative across the 100 urban areas was coded to record its date of establishment and its motivations and goals where these were noted on the website. Fig. 1 details the establishment date of the initiatives and indicates the rapid rise in initiatives being established after 2008 when smart, mobile digital technologies became more widely accessible, affordable and easier to use. This date also coincides with the global recession that impacted economies and societies around the globe from 2007 onwards, which has been mooted as a key stimulus to the development of sharing economies alongside technological shifts, rising environmental awareness and social anomie (Botsman and Rogers, 2012). There are initiatives with establishment dates far earlier than the availability of social media, websites and Apps. These are sharing initiatives which have incorporated ICT into their operations subsequently rather than being shaped by those technologies.

4.1. Drivers: the 'why' of sharing

The online mission statements and initiative descriptions of the enterprises were examined as a means of identifying the key drivers for the establishment of the initiatives. These were entered into the qualitative data analysis package NVivo in order to identify frequencies and clusters of keywords within initiatives descriptions of themselves and their goals. A word cloud and key word count produced from this process is detailed in Fig. 2. Excluding the word 'food' from the analysis, it is the social dimensions of food sharing that are emphasised by initiatives in their ICT profiles, with 'community', 'local', and 'people' all appearing in the top ten of most frequently used terms. Terms

[2] The shading on Table 2 indicates those cities who ranked in the top ten (dark grey) and bottom ten (light grey) in terms of the number of sharing initiatives.

[3] Data related to location, mode and organisational form of sharing initiatives have been made open access through an interactive tool on the project website to encourage greater engagement with the material gathered. Access to the data is available from [www.sharecity.ie].

Table 2
List of 100 cities source: Davies et al. (2016). Key: Light grey = top 10 cities; ark grey = bottom 10 cities.

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
Central & 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

(continued on next page)

Table 2 *(continued)*

		Madrid	63	12
	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
		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	

related to sociality appear at rank 16. Despite the claims of sharing economy advocates, no explicitly economic or environmental phrases feature highly, although terms related to waste and wasting appear at number 20 in the table. Despite this online analysis of the initiatives shows that that 78%[4] indicate economic impacts, 77% social impacts and 61% environmental impacts, while just over a third (34%) of initiatives explicitly seek all three. Few of the initiatives provided any evidence to substantiate achievement of these impacts in their online profiles however.

4.2. Geographies: the 'where' of food sharing

The number of initiatives identified in each of the 100 urban areas examined indicates a spectrum of activity, from London in the UK, which has more than 200 initiatives, to Porto Alegre in Brazil where just four initiatives were identified (see Table 2). 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 (29%) across the 100 areas, while the ten food sharing areas with the fewest number of initiatives account for just 2%,

[4] All % are rounded to the nearly whole number.

Table 3
Spreadsheet coding subcategories.

Code category	Sub-category
Location	Region; city
Name	Name of initiative
ICT	URL: Meetup; Facebook; Twitter; App;
Goals	Mission statement
What	Plans and seeds; fruits and vegetables; meat and fish; food products; compost; tools; land; kitchen spaces; kitchen devices; knowledge/skills; meals; eating together
Mode	Collecting; gifting; bartering; selling
Organisation	Non-profit; social enterprise; for-profit; cooperative; association; informal
Flow	Business to charity; business to individual; individual to charity; charity to charity; business to business; charity to individual; individual to individual
Benefits	Social; economic; environmental

suggesting a cluster of areas currently dominate the ICT mediated-urban food sharing arena. What though are the reasons for this uneven geography of ICT-mediated food sharing and what might explain the clustering of activities around a smaller number of highly active cities?

Given the lack of comprehensive and consistent data at the urban level for all the areas in the database, it is not straightforward to identify whether areas exhibit particular contextual characteristics which might explain the relative incidence of ICT-mediated food sharing. For example, while the areas with the highest number of initiatives are predominantly large populous metropolitan areas with high levels of GDP (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 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 just under 43,000 people.[5]

On a per-capita basis the top ten are all smaller urban areas in North America: Elora, Media, Ithaca, Santa Cruz, Asheville, Berkeley, Ann Arbor, Bloomington, Boulder and Hertford. Indeed, Elora, a community in the township of Centre Wellington in Canada ranks first in this configuration with the impressive statistic of having a food sharing initiative for every 511 people. So what makes this area a hot spot of urban food sharing? There is no obvious answer, but it is an affluent community with a longstanding commitment to food and agriculture, where the population has strong links with nearby university towns such as Waterloo or Guelph for employment and farming research. Sharing in Elora also has a charismatic champion who led the formation of Elora Community Share which provides an umbrella for food sharing initiatives and sharing beyond food and which connects with international sharing networks such as Shareable through the Sharing Cities Network.

The urban areas with the highest absolute number of initiatives tend to be highly active across the networks and indices used to select the sample (detailed in the previous section). Indeed, Melbourne, New York and Chicago appear in all the networks and indices and London appears in all except the Sharing Cities Network. Meanwhile, eight of the top ten urban areas participate in the Milan Urban Food Pact and are listed in the Sustainable City Index. While it is impossible to identify a causal relationship between participation in these international networks and a high level of ICT-mediated food sharing, what this at least suggests is that a high level of ICT-food sharing occurs most often in cities with a broadly supportive governing structure for activities which relate to food and sustainability. The connection between areas with lots of food sharing initiatives and presence in the competitive cities and global city indices is less obvious, although six of the top ten cities do appear in both.

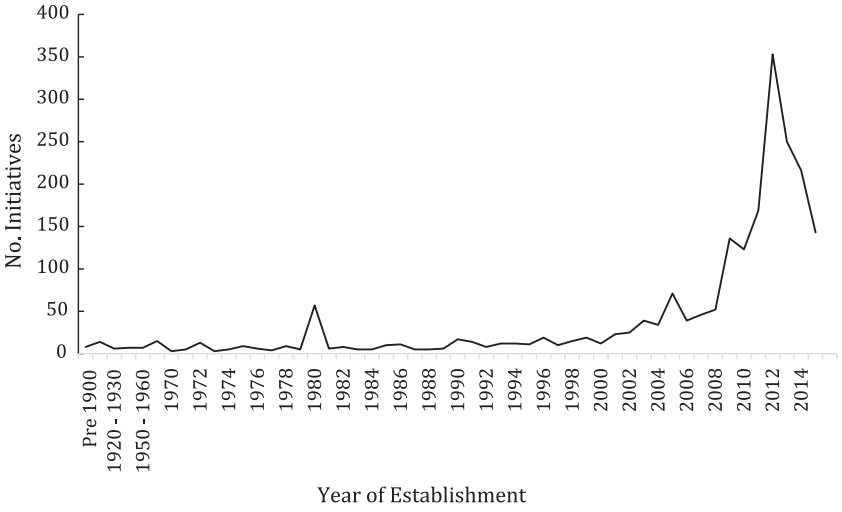
The ten urban areas with least food sharing activity are more diverse geographically than the leader cluster of urban areas, being located across Africa (Nairobi, Dakar), Asia (Toyama), South America (Rio de Janeiro, Porto Alegre) and the Middle East (Dubai, Doha), as well as North America (Elora, Jackson, Media). These areas, particularly the ones in North America, have far lower engagement with the international networks and indices than those at the top of table. It should be noted that all non-North American urban areas are included in either the 100 Resilient Cities Index or the Sustainable Cities Index, but only Rio de Janeiro and Nairobi are listed in the Global Cities Index and only Dubai and Doha appear in the Competitive City Index. Similarly, 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 the top ten cities particularly in relation to internet connectivity.[6]

Although insufficient comparable urban-level data exists to identify a statistically significant relationship between particular cities and the nature of their food sharing, examining the extreme ends of the sample suggests that several factors may play a role in providing a supporting infrastructure which allows urban food sharing to form more readily. This includes, most obviously, the availability and accessibility of internet connections, but also active participation or recognition in international city networks, particularly where learning can be exchanged. This may suggest that international networking supports higher levels of city-based innovation and experimentation in areas such as ICT-mediated food sharing; a feature which has been found in relation to innovation around cities and climate change (Wang, 2012; Kern and Bulkeley, 2009; Castán Broto and Bulkeley, 2013; Davies, 2005).

A final comment on the geographies of sharing relates to the capacity of ICT-mediation to scale sharing beyond the face-to-face exchanges in particular locales which have typified familial and friendship sharing and also for sharing initiatives to have a presence in more than one location. While online data provided by sharing initiatives does not indicate the scale of participation in sharing or indeed the location of those participants – and more on this later – what it does reveal is the emergence of translocal (active in more than one urban area) and even transnational (active in more than one country) sharing initiatives. At present evidence of such translocal sharing is limited, with just 5% of initiatives operating in more than one urban area listed in the database (although they may operate in other urban areas not incorporated in the sample), and around 1% of all initiatives active in more than one country. Of these transnational sharing initiatives there appear to be three main types of sharing that are being performed: sharing meals, eating together and mapping of food harvests. This split is reflected also in the structure and mode of sharing employed. A third of the transnational initiatives are for-profit and predominantly sell meals or host dinner parties often marketed at those seeking more authentic home cooking experiences when travelling or living abroad, such as Eat With Me, or Travelling Spoon. A third have no discernible organisational structure or governance code and tend to be open data mapping initiatives, such as falling fruit, that rely on voluntary, self-organised data collation and management which is provided for free through on-line repositories.

[5] Focusing on the frequency of urban food sharing initiative per capita has less impact on the least active urban areas however, with the bottom ten urban areas under this configuration all also appearing in the bottom half of the original ranking. Population figures are taken from US Government Census Data for US urban areas and Eurostat for European areas. All other statistics are taken from official population data where available and verifiable sources elsewhere.

[6] Statistics do not exist at the city level for internet penetration for the cities in the database. Country level statistics are used which is likely to be an underestimation of penetration given the density of connections in urban areas in these countries is presumed to be higher: http://www.internetworldstats.com/south.htm.



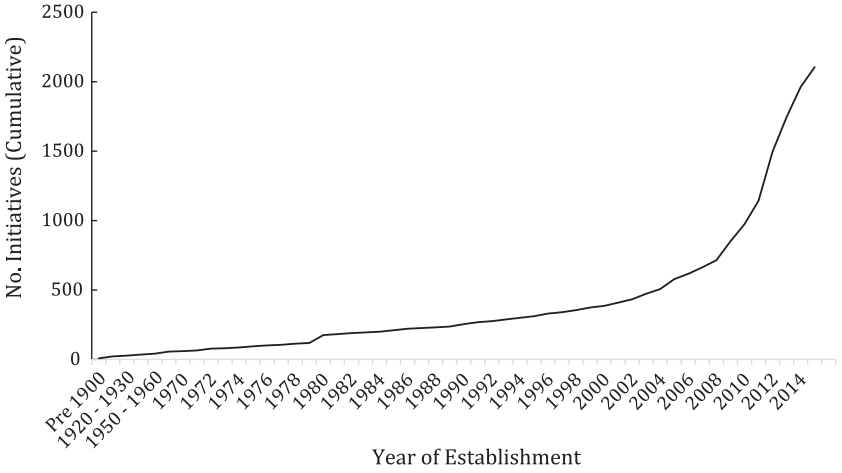


Fig. 1. (a) Year of food sharing initiative establishment. (b) Cumulative number of food sharing initiatives by year.

Fig. 1. (*continued*)

4.3. Ingredients: the 'what' of food sharing

Given the remit of the study to examine sharing practices around growing, preparing and consuming food, sub-divisions were required to order and code the various initiatives. The following categories – plants and seeds, fruits and vegetables, meat and fish, food products, compost, tools, land, kitchen space, kitchen devices, knowledge and skills, meals, and eating together – were established through a process of trial and revision (see Davies et al., 2017a, 2017b). In many cases, multiple skills, spaces and material 'stuff' are shared within a single food sharing initiative. More than two-thirds (70%) of food sharing initiatives in the database share multiple things and more than a third (35%) of initiatives share three or more things. For example, the Skip Garden and Kitchen in London provides knowledge and skills around community growing and cooking to local planners and businesses as well as involving the local resident community in food growing in its sites. Its sharing therefore involves food, land, tools, kitchen spaces and meals in addition to skills and knowledge. We term this phenomenon the multifunctionality of food sharing (Davies et al., 2017a, 2017b). Why this occurs is not directly discernible from the online material alone, but it may enable initiatives to reach wider audiences and contribute to the resilience of the initiative over time facilitating the redirection of efforts to different areas as they become more or less active or in-demand (Wilson and Dünckmann, 2010). It might also be a function of the multiple drivers behind the food sharing initiatives, for example seeking to both reduce food waste and improve food security. Alternatively, it could be that such multifunctionality responds to the heterogeneity and interlinked nature of urban food systems within which the sharing is embedded, but such hypotheses need further ground-truthing through in-depth qualitative research with initiatives.

Examining the entire database, the most common entity shared (including all categories of foodstuff, spaces and skills) is that of knowledge and skills, with more than half of initiatives (54%) engaging in some form of sharing information-based qualities (see Table 4). This category includes knowledge about growing, as for example in the Open Farm Community in Singapore or the Motoazabu Farm in Tokyo. It also involves skills sharing in relation to food preparation, as illustrated in the activities of the Kinder Kueche in Frankfurt that 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, can include, for example the provision of information about how to practice urban foraging, as articulated in Lots of Food in Louisville, USA and Espigar En Madrid in Madrid, Spain. That knowledge and skills ranks highly is unsurprising as information-provision (as one form of knowledge and skills sharing) is easily disseminated via ICT mechanisms and can provide a one-way dissemination function, without necessarily requiring interaction between donor and recipient (Hendricks, 1999; David, 2017). Information, unlike fruit and vegetables, or meals, is not degradable, although the relevance and accuracy of such data may still have a limited lifespan. The perishability

Rank	Word	Frequency	Combined Words
1	food	5689	food, food', 'food, foods
2	community	3067	communal, communally, commune, communes, communicate, communicates, communicating, communication, communications, communicative, communities, communities', community, community'
3	garden	2098	garden, gardener, gardeners, gardening, gardening, gardens, gardens'
4	sharing	1823	share, share', share', shared, shares, sharing
5	locals	1481	local, locale, locales, localism, locality, localization, localize, localized, locally, locals
6	people	1438	people, peoples, peoples', peoples'
7	farm	1104	farm, farm', farmed, farming, farms, farms'
8	meal	1037	meal, meals
9	urban	941	urban
10	cooks	863	cook, cooked, cooking, cooks
11	city	801	cities, cities', city
12	grow	757	grow, growing, grows, grows'
13	home	755	home, home, homely, homes
14	group	727	group, grouped, groups
15	provide	719	provide, provided, provider, providers, provides, providing
16	socially	716	social, 'social, socials, socialization, socialize, socializing, socially, socials
17	project	651	project, projected, projects, projects'
18	kitchen	647	kitchen, 'kitchen, kitchen, kitchen', kitchens
19	producing	631	produce, produced, producer, producers, produces, producing
20	wasting	611	waste, waste#, waste', wasted, wasteful, wastefulness, wastes, wasting

Fig. 2. Keyword analysis of food sharing mission statement: Worldcloud and top 20 keywords.

Table 4
What is shared by initiatives (NB: a single initiatives can share more than one thing).

What is shared	No. initiatives	% of total initiatives
Knowledge & skills	2142	53%
Meals	1420	35%
Fruits & vegetables	1318	33%
Eating together	1050	26%
Land	928	23%
Food products	898	22%
Tools	525	13%
Plants & seeds	466	12%
Kitchen devices	303	8%
Kitchen space	291	7%
Compost	228	6%
Meat & fish	145	4%

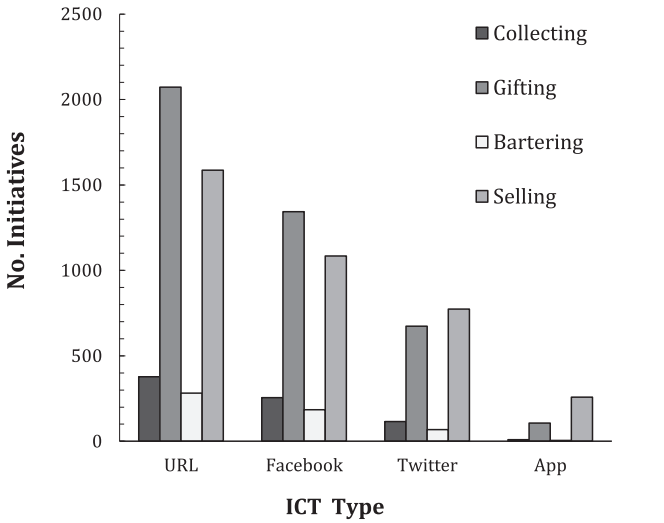
of foodstuff has been mooted as a reason why food sharing has been slower to scale than other sharing initiatives in mobility and accommodation, where the entities being shared are much slower to degrade (Orsi, 2012). However, the apparent dominance of knowledge and skills sharing requires further unpicking for there was no publicly available data on the balance of activities within an initiative; that is the proportion of sharing within an initiative's activities that focuses on such information exchange rather than other things. If the nine food 'stuff' categories and the two 'space' categories are combined, knowledge and skills comprises only a quarter of activities across the 100 areas, while with the combined sharing of foodstuff makes up 63% of everything that is shared.

Meals are the second most common quality shared entity (35%) in the database. This is a broad category that spans for-profit pop-up supper clubs where roving chefs produce meals in temporary settings for paying customers wishing to eat with others (as in the Disappearing Dining Club in London), to people providing meals for travellers in their own homes (as in the initiative Bon Appetour which connects travellers and homecooks in more than 100 cities around the world). It also includes initiatives providing the infrastructures of emergency food relief such as soup kitchens (as in Hunger Free Colorado in the USA). The emphasis on commensality across diverse initiatives here is significant. It elevates the convivial benefits of eating meals together and re-emphasises the important sociality and relationality of food sharing (Chou, 2015). Certainly, food sharing in this way is the embodiment of a 'more-than-food' activity (Goodman, 2016).

Looking at the data regionally, there is considerable commonality around what is shared particularly when examined through the broader lens of skills, spaces and stuff. For example, while skill sharing is the lowest in the Asian based urban areas, at 20% it is only 1% lower than levels in Europe and 2% lower than North America. Meanwhile the Middle East has the largest proportion of skills sharing at 29% followed by Africa at 26%. The range in the sharing of spaces category is even narrower (from 12% to 15%), with North American urban areas experiencing the lowest incidence, followed by African, Asian, European areas (13%) with the Middle Eastern with Australian and New Zealand based urban areas having the highest percentage of space sharing at 15%. Within the food stuff category, which contains the most elements, regions range from 58% (Middle East) to 67% (Europe and North America).

While sharing in individual urban areas can vary widely, particularly when the incidence of initiatives is low, the proportional patterning amongst the categories of what is shared is remarkably consistent across the database. Examining the top 10 areas in the database, knowledge and skills are the most commonly shared entity, followed by fruit and vegetables and meals. Within the bottom 10 areas, knowledge and skills is also the leading entity shared, followed by meals, then fruit and vegetables. Within all the diversity then there does appear to be some commonality around the nature of food sharing, at least with respect to the most commonly shared skills, spaces and stuff.

Table 5a
Number of initiatives using particular forms of ICT-mediation (disaggregated by mode of sharing).



4.4. Organisation: mediation and modes of food sharing

All initiatives in the database are ICT-mediated in some form as this was a necessary feature for their inclusion. However, the database is productive in revealing the diversity of ICT-mediation both across space and in relation to different types and modes of sharing (see Table 5.). Three different classifications of ICT were used in this research: Website, Social Media (including Facebook, Twitter and Meet Up[7]) and App. These all provide online spaces where potential sharers can connect, but they also represent a spectrum of ICT in terms of resource and skill requirements (Van Deursen et al., 2014). Whilst website technologies have become much more accessible in recent years, they remain more complex systems to set up and manage than either Facebook or Twitter, with greater potential for interactive or transactional elements (such as databases or payment services) and greater requirements for maintenance of the sites, particularly around security and management. The inclusion of sharing through an App illustrates the emergence of this new – and more technologically complex - format to deliver mobile, digital services and experiences or make connections that would have been conducted previously through web pages, texting, calling or face-to-face exchanges.

It is clear that websites dominate the ICT characteristics of urban food sharing initiatives, with 89% of all initiatives using a dedicated website. Indeed, across the database, websites are used to mediate the sharing of every category of what is shared and every mode of sharing from gifting and bartering to collecting and selling. Far fewer, but still more than half, initiatives have a Facebook page (58%) and fewer still, just over a third (34%), have a Twitter account. Unsurprisingly, given the level of technical knowledge and skills required to construct them and also the investment required to build up users to drive the necessary network effects, only 9% of the initiatives had an App. While Apps form a small cohort (just 9% of all initiatives) of the overall food sharing database, they tend to garner disproportional attention in the media because of the impacts of high-profile, App-based sharing companies such as Uber and Airbnb (Davies et al., 2017a, 2017b). Yet food sharing Apps have struggled to replicate the successes of these ventures despite receiving venture capital investment, with a number of high profile initiatives such as Cookisto and Grub with Us being wound down

[7] These particular forms of social media were used as they offer an online space for connections to be made between potential sharers.

Table 5b
ICT-mediation by region (% of initiatives in each region using particular forms of ICT-mediation).

	URL (%)	Meetup (%)	Facebook (%)	Twitter (%)	App (%)
Africa	91	15	67	42	12
Asia	84	6	73	28	15
Australia & New Zealand	86	1	68	34	4
Central & South America	81	9	73	42	12
Europe	91	4	54	35	10
North America	91	6	55	35	8
The Middle East	92	0	42	18	11

within a few years of establishment. It will be important to drill down into this category further in order to explore in more detail what kinds of initiatives are adopting this cutting edge technology in their practices, what particular challenges they face with regards to generating participation and the impact that such technologies have on the practices and performance of food sharing.

Unsurprisingly, given the higher levels of internet penetration, the bulk of the App-based sharing takes place in North America and Europe, with these regions accounting for two-thirds of all food sharing Apps. New York City is the most App-mediated food sharing area in the database with 14 initiatives, followed by Seattle on 11, with Barcelona, Berlin, Houston, and Philadelphia on 10 and Beijing, London, San Francisco and Singapore all having 8 Apps active in their environs. Only 14 areas in the database have no App-mediated food sharing initiatives. More than two-thirds (71%) of the App adopters are for-profit organisations which offer opportunities to share meals for money. Some of these, such as VizEat, VoulezVousDiner and Mealsharing, claim to be active across multiple areas internationally and seek foster convivial communal dining experiences. It is challenging to establish how active the Apps are in particular places, at least from publicly available online data, however media coverage suggests that generating the required levels of participation can be a challenge for such meal sharing initiatives (Danovich, 2016). These translocal networks sit alongside similar, but more place-based initiatives such as Wats Cooking in Chennai, which is an App seeking to connect locals via homemade cuisine. Apps are also used to connect producers to consumers, facilitating shorter food value chains and promoting local produce, as exemplified by SEND in Tokyo.

The mobile interactive technology of Apps provides an unprecedented ability to connect strangers quickly and bring together communities across large distances and as such it is particularly useful for knowledge exchange, mapping and dissemination. However, engaging with strangers in this way is the most alien form of social interaction for many people and many App-reliant enterprises can deteriorate very quickly if they fail to develop a critical mass of users. Indeed, it is suggested that a third of initial mobile App engagements last less than a minute with people being intolerant of poor user experiences (Segrist, 2015). While Apps are the most novel ICT-mediation included in the database, they are then also the riskiest and the most resource intensive. These start-up costs and risk concerns may explain the predominance of monetary exchange when Apps are used for food sharing, however more than 100 Apps do gift food (28% of all App initiatives) and a handful of initiatives use Apps to facilitate collecting or bartering. For example, Byhøst (City Harvest) in Copenhagen, uses its App to share knowledge about urban foraging and wild plants, while Wild Food in Houston shares information about edible plants through its App.

Examining the type of sharing employed across the 100 areas reveals that gifting is the dominant mode of sharing across the database with nearly half (49%) of initiatives using this approach. This is followed by selling (35%), which takes place in both mainstream and alternative markets such as Community Supported Agriculture and Cooperatives. In contrast to the multifunctionality around what is shared, the majority of initiatives adopt a singular form to organise their sharing activities, with only 21% of initiatives incorporating more than one organisational structure. Where it does occur, including multiple structures within a single initiative is most commonly employed by organisations operating outside the mainstream market economy (e.g. non-profits and cooperatives), perhaps as a means to provide multiple ways to access funding and resources and to overcome legal restrictions on certain types of activities. For-profit initiatives were meanwhile least likely to adopt multiple organisational structures.

Even within this brief account of high level results from the database, it is clear that capitalist and market transactions do not dominate the food sharing landscape. While venture capital, supported selling, and for-profit food sharing platforms and Apps are present, the vast majority of transactions and enterprises found in food sharing are, to use the phraseology of diverse economies, alternative market, alternative capitalist, non-market or non-capitalist (Gibson-Graham, 2008).

5. Conclusion: insights, limitations and a research agenda for urban food sharing

This paper began with the meta-societal challenge of constructing sustainable and resilient urban food systems in the face of climate change and population growth; a challenge that requires an understanding not only of the dominant ways in which food is grown, prepared and ultimately consumed within cities, but also of the ways which are emergent or marginal but which may provide different means to achieve these goals if appropriately supported. As indicated by a growing body of small scale studies, ICT-mediated food sharing initiatives offer one such area of emergent activity ripe for exploration, but interrogation is currently hampered by a lack of international and comparable data. A fuller understanding of urban responses to unsustainable food systems requires new forms of comparative and case-study research that covers a territorially diverse range of urban environments and interventions and this paper presents the findings of an initial attempt to do just this. The database provides, for the first time, consistent analysis and identification of patterns and trends in ICT-mediated urban food sharing across diverse cities, countries and continents. In doing so it engages in a process of making food sharing visible within and beyond individual urban foodscapes; enacting what Fraser (2010) might call a process of scalecraft. It is a strategy responding directly to the international scaling of governance around the 2030 development agenda and beyond, and the need to ensure that alternative pathways to development are critically considered from the local to the global. As noted by Boyle (2002), setting problems and solutions at certain scales can make a material difference to outcomes, including the power to generate different ecological outcomes, and such scalecraft must be approached as an “active progenitor of social processes” (Smith, 1993, 101).

There are then conceptual reasons for considering the performance of social practices such as urban food sharing at scales beyond the local. There are also pragmatic reasons when seeking to inform systems of governance which routinely privilege quantitative and large-scale studies over individual qualitative cases. The intention was to use the database as a tool to first reveal, quantify and then understand the range of ICT-mediated food sharing practice across 100 diverse cities. However, there are also challenges, particularly when exploring

emergent, complex and dynamic social practices such as sharing. There are concerns, for example, that using a quantitative approach might not be ontologically or epistemologically aligned with the theories of practice (Shove, 2011) that shaped the initial conception of food sharing. Yet as Browne et al. (2014) note, it is possible to using a quantitative methodology and maintain a post-positivist perspective that uses findings in a way to enable description rather than causation (Uprichard et al., 2008). In solidarity with Browne et al. (2014), we argue that the urban food sharing database can be seen as a form of methodological pragmatism offering a different way of exploring practices that can complement rich case studies and which can build an initial extensive (if not in-depth) body of foundational data from which is will be easier to explore how and why certain practices persist and others retreat. But what exactly did the process reveal and importantly, what questions are left unanswered?

The database is highly productive; creating a picture of the why, where, what and how of contemporary food sharing. Certainly, the diverse collection of food sharing initiatives documented provide an important counter-balance to the preoccupation with a small number of high profile, for-profit enterprises which are using ICT to link up those with idling capacity and those who wish to avail of it (Davies et al., 2017a, 2017b). A deliberately weak theoretical process, constructing and populating the database has been a means of 'attending and attuning' to things (Stewart, 2008: 72), rather than closing down debates. In particular, it responds to the call by Jones and Murphy (2010) to supplement qualitative case studies, in all their richness, with a more quantitative landscape level picture that can facilitate comparative research and engage meta-theoretical concerns. Substantively, the database clearly does considerable work in making visible the number, location, actors, mode and multifunctionality, of food sharing activities in 100 cities around the world. Some findings are clear. ICT-mediated food sharing occurs across diverse urban areas, small and large, dense or dispersed, rich and poor, Global North and South. Urban food sharing is an international phenomenon and not confined to wealthy, self-appointed 'smart cities'. However, while activity cannot simply be predicted by general characteristics, it does appear that participation in transnational urban networks may be an indicator of higher levels of and diversity within urban food sharing activities and will need further exploration.

The database not only provides a foundational function on which to build more in-depth and explanatory comparative scholarly analysis, it also provides the bedrock to build capabilities and networks amongst and between sharing initiatives, nascent and active food sharers and those who seek to regulate the sharing of food. As a further means to create visibility and open up the area of food sharing for conversations between stakeholders, key data from the 100 cities in the database related to the where, what and how of ICT-mediated food sharing have been converted into an open-access, interactive online database.[8] Publicised through a project website as well as sharing and urban networks, this online database was viewed more than 2670 times by 1647 unique users from 71 countries around the world – from South Korea and Mexico to Brazil and Senegal – in the first ten months following its launch. It has also generated interaction between researchers and stakeholders about the classification of sharing initiatives and the coverage of urban areas (with requests for the research to be extended and expanded beyond the 100 urban areas). This interaction has also highlighted the dynamism of the sector with the establishment and disappearance of initiatives ongoing. One year on from the initial collection the initiatives in the database were individually rechecked and it was found that around 5% of initiatives were no longer active online. In addition, 70 enterprises have been added following recommendations. The initiatives in the database will be checked annually until 2020 with a view to conducting longitudinal analysis exploring how initiatives which facilitate food sharing practices have changed over time. Certainly, ICT-mediated food sharing initiatives are diverse and dynamic circuits under construction (Dubois et al., 2014) rather than fixed entities. Ultimately, the database allows for more consistent and comparable analysis of how particular stuff, spaces, labour and skills around food are mobilised, appropriated, accessed, financed and distributed across space; drawing attention to the more-than-human assemblages that such initiatives embody. The ICT component in particular illustrates the extent to which actors harness technology to share food, potentially reconfiguring not only the prevailing socio-economic order, but also the technical infrastructures that support it. As Feenberg (2012: viii) has suggested, "new forms of agency have opened the way for new, mediated modes of sociality, reciprocity, participation, mobilization and resistance". These are appearing in advance of governance frameworks that would help societies anticipate and shape the impact of those emerging technologies (Baller et al., 2016: xii).

However, the analysis of the database also revealed its limitations. Answers to key questions around what kind of people and how many of them are participating in food sharing initiatives, for example, were impossible to delineate from the publicly available data. Responding to such questions requires not only that initiatives collect and hold relevant data on those who engage with their activities, but also that they are willing to share it with a third party. Such challenging issues around limited data availability are not restricted to food sharing and preoccupy many researchers in other fields of sharing including accommodation and mobility (Davies et al., 2017a, 2017b). Recent releases of data by organisations such as Uber through their Movement website may mark an opening up of information by the big players of the for-profit sharing economy, at least rhetorically for the benefit of public planning (Etherington, 2017), but the data provided to date is limited and highly parsed. Meanwhile other large sharing economy platforms are more resistant to such transparency, even seeking to constrain access to their publicly available data by preventing web mining activities (Slee, 2016). Nonetheless, while inevitably a snapshot of food sharing in the urban areas involved, the database does provide 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, albeit in often tentative, inconclusive or evolving ways" (Wright, 2014: 2). In this context, we concur with Cameron and Gordon (2010: 9, emphasis added) who argue that rather than focusing on what types of economies are currently dominant, attention should instead by placed onto those areas 'which are *worth* growing and strengthening'. As highlighted in this paper, further research is required in order to establish the worth of these initiatives, for whom that worth is generated and the means by which worth can be rolled out. This is particularly so in terms of understanding the wider genealogies of foodscapes within which the initiatives are embedded, but also in relation to the governing context, and the scale and impacts of existing food sharing practices.

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[8] The database can be accessed here: [www.sharecity.ie].

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