

Food Sharing in Handbook of Sustainable and Regenerative Food Systems

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Abstract

Food sharing is a longstanding human practice for ensuring access to food and for building social relations to strengthen mutual support systems in small-scale and hunter-gatherer societies. Elsewhere food sharing beyond friends and family has persisted under the radar of the highly globalized and technically complex commercial food system with its sophisticated systems of monetary exchange, distribution and storage. In the early years of the twenty-first century information and communication technologies (ICT) from websites and apps to social media platforms have, however, increased options for people to share food rapidly and at unprecedented scales. The formation and sustenance of social relations through collective social activities remains a key motivation, but there are also environmental, economic and political drivers for food sharing. Mapping the digital traces of contemporary food sharing initiatives reveals the diversity of what is shared, the modes of sharing adopted and the goals of those initiatives, many of which align with key tenets of a more sustainable and regenerative food system. Further technical, empirical and conceptual work is required however to establish more concretely the impacts of contemporary food sharing.

1. Introduction

Food sharing has been practiced by humans for millennia. Extensive research by evolutionary biologists and anthropologists has identified the manifold ways in which the collective and collaborative acquisition, preparation and distribution of food have been used to ensure

sustenance and structure relations within and between social groups historically (Kaplan and Gurven, 2005; Jones, 2007). As the unsustainability of our global food system has become incontrovertibly demonstrated, a resurgent interest in the practices of food sharing and its impacts has emerged. This interest moves beyond the studies of past and small-scale societies that have dominated attention to food sharing to date and focuses on contemporary food sharing which is increasingly mediated by digital information and communication technologies (ICT) and which takes place in multiple arenas, including cities (Davies, 2019a). While international analyses of the goals of such ICT-mediated food sharing indicates that it is the intention of many initiatives to support the development of a sustainable, regenerative food system, the precise impacts of sharing are still to be evidenced empirically (Davies et al., 2018). As a result this chapter reflects on the practice and regenerative potential of contemporary food sharing, with a specific focus on those practices which are taking place beyond family and friendship networks and which are utilising ICT to support their activities.

Before exploring the practices of food sharing, it is important to first consider the evolution of scholarly attention to food sharing, delineating the foundational theories of food sharing that have been established. This is followed by the presentation of a working definition for examining contemporary food sharing and the contestations that remain in this definitional space. A typology of food sharing is then presented as a means to exemplify the diverse economies of food sharing that are admitted by the working definition. The main body of the chapter dissects illustrative examples of food sharing initiatives. It explores where the goals, practices and impacts of these initiatives intersect with key characteristics of a regenerative food system that emphasises closing loops to support human and environmental health, ensuring the protection of food cultures and sovereignty, and supporting a movement towards enhanced food democracy. The concluding section of this chapter adopts a reflective stance,

identifying the main ways that food sharing might become classified as a regenerative practice and the steps needed to justify that classification.

Evolution of food sharing

While other species also share food, the complexity of food sharing amongst humans is unparalleled. Scholars widely agree that food sharing has been an important means not only to secure sustenance, but also to cement social relations, build resilience into communities and allow for role specialisation within society (Jaeggi and Gurven, 2013). Within-family transfers of food shaped the division of labour and care, particularly with respect to age and gender, in ways which are still visible in many contemporary societies. However, food sharing that extends beyond nuclear familial groupings has also been identified, particularly amongst societies which are small-scale, hunter-gatherer or forager-horticulturalist in character. In part this beyond-family food sharing emerged for pragmatic reasons because of the difficulties in preserving any surplus food. However, the bulk of societies studied for their beyond-family food sharing also had particular social structures which did not demand the same sorts of reciprocity or property ownership systems that predominate in contemporary western democracies (Kaplan and Gurven, 2005). This has led to a suite of theories seeking to explain why sharing emerged in this way. As shown on Table 1, some theories highlight the toleration of begging and food theft within groups when food is abundant and the donation of food initially to close relatives in times of scarcity as exemplars of how food sharing is used to foster group resilience. 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 it is not clear what relevance they hold also for contemporary food sharing practices.

Extending the work of behavioural ecologists, psychologists and anthropologists have also sought to explain how sharing systems persist or transform over time as norms around

Table 1. Theories of food sharing (Adapted from: Gurven, 2004)

Theory	Characteristics	Key drivers	Key referencesⁱ
<i>Reciprocal altruism</i>	Food is given at one point in time in exchange for food at some later time.	<ul style="list-style-type: none"> - Hunter gatherers focus on large, high-quality, nutrient-dense food which are difficult to acquire leading to high variance in success - When successful more food is secured than can be consumed by hunters themselves leading to waste - Absence of safe storage for food 	Trivers 1971
<i>Co-operative acquisition and by-product mutualism</i>	Individuals work together as a team to secure high value or hard-to-acquire foods, such as wild game.	<ul style="list-style-type: none"> - Hard-to-acquire food often requires coordinated efforts of a number of individuals - While an individual might be seen as the owner of acquired food if they found or killed the food source, sharing with those who participated in the hunt can be a means of rewarding cooperation and ensuring it is forthcoming in future hunts - Trade-based reciprocal altruism where labour is rewarded with food - Group production provides participants with higher per capita returns than gained as individuals 	Clements and Stephens 1997; Dugatkin 1997; Alvard 2001
<i>Tolerated theft and scrounging</i>	Food is obtained by individuals through demands made to the generosity of those who acquire and control it (or by stealth).	<ul style="list-style-type: none"> - Unequal access to food within groups leads to differential marginal value of additional food - A hungry individual will be more cunning (or demanding) in order to obtain food - An individual who has access to food and is not hungry is more likely to relinquish some of it - It has been suggested that the sex-bias of hunting roles add additional weight to why food theft or scrounging might be tolerated - May include elements of showing off from the food donor 	Blurton Jones 1984; 1987
<i>Costly signalling</i>	Food is shared as a means to demonstrate attractive characteristics in order to secure a partner, mate or ally	<ul style="list-style-type: none"> - Hard to obtain food is secured to demonstrate certain skills or characteristics - Food shared may be ultimately sub-optimal from a calorific perspective - Need to secure strong allies within a group - Need to find a mate 	Gurven et al. 2000a
<i>Nepotism based on kin selection</i>	Food is shared with kin	<ul style="list-style-type: none"> - Natural selection leads to sharing with those who have similar genetic material 	Hamilton 1964 Feinman 1979 Gurven et al. 2000b
<i>Trait group selection</i>	Food sharing is done for the benefit of the group	<ul style="list-style-type: none"> - While food sharing may have costs to food donors, the benefits of their actions may lead to overall group benefits compared to groups without donors. 	Wilson 1990; 1998

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 phenomenon 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, food sharing studies are still primarily focused on small-scale and isolated communities functioning on the edge or outside global trade systems, leaving much of the contemporary landscape of food sharing unexamined.

Placing food sharing as a practice in contemporary settings is fraught with complexity, not least because there is no agreed definition and therefore a lack of clarity about what types of activities, exchanges and transactions count as legitimate acts of food sharing. With respect to sharing practice beyond food, it is the cultural specificity and evolutionary dynamism of sharing that is most clearly articulated (Belk 2010), with scholars also documenting a decline in sharing of many kinds as trends towards mass consumerism, privatization, and greater disposable income emerged across the globe in the 20th Century (Gabriel, 2013). The arrival of digital mobile platforms in the 21st Century, however, brought a new wealth of possibilities to connect with others in unprecedented ways, sparking calls for more nuanced attention to contemporary sharing and leading to the emergence of a new term ‘the sharing economy’ (Botsman and Rogers, 2010). While sharing is a social practice, the sharing economy has emerged as a term to describe a particular economic system in which assets or services are shared (for free or for a fee), typically by means of the internet. Despite the resurgence of

attention to sharing generally, there are still definitional uncertainties about what exactly counts as food sharing.

Defining contemporary food sharing

While there is no agreed definition of food sharing in English the verb *to share* dates from the late 16th Century. Sharing is defined by the Oxford English Dictionary (2019) as having a portion of something with others or giving a portion to someone, and is illustrated with food-based examples, such as *'he shared the pie with her'* and *'they shared out the peanuts'*.

Beyond this, sharing is also defined as using, occupying or enjoying something jointly with others, possessing a view or quality in common with others or telling someone about something. To reflect the evolution of language and changing technologies of communication, the Oxford English Dictionary also includes the process of posting or reposting something on social media, a website or application as a form of sharing. Building on this foundational reading, a working definition of food sharing can be outlined as follows:

Having a portion of food with others or giving a portion of food to others; using, occupying or enjoying food (and food growing, cooking and eating spaces) jointly with others; possessing an interest in food in common with others or telling someone about food, which includes knowledge and skills about food growing, cooking, eating and food redistribution.

Under this definition, the term food sharing can be used to refer to the joint or alternating use of a material or informational resource. This includes sharing food itself, in all its forms from seeds to products, but also sharing knowledge about food which might relate to growing, cooking and storage practices and the sharing of spaces for growing and cooking together and

food-related tools and utensils. It can refer to acts of dividing, distribution and communication. The definition is loose in that it does not specify the mode or form that sharing should take, which has led to considerable contestation around whether sharing is an appropriate term to describe contemporary activities, particularly those which are for-profit enterprises which utilise highly sophisticated ICT to mediate their activities and which are typically collated under the term sharing economy. For example, advocates of the sharing economy, such as Botsman and Rogers (2010), have characterised sharing as a particularly beneficial way to make use of idling assets from cars to homes. For them sharing is primarily an efficiency mechanism which results in reduced waste and economic savings or income depending on the mode of sharing adopted. The social dimensions to sharing, so key to the theories outlined in Table 1, are largely absent from these readings of the sharing economy aside from general statements about how connecting people through exchanges (transactional or otherwise) helps to build community cohesion through interaction. Others argue for a more constrained definition of sharing which emphasizes the sociocultural dimensions and excludes the commercial transactions of large-scale sharing platforms or apps (Belk, 2014). Much of this critical work brings a normative dimension to bear on sharing, imbuing it with notions of appropriate social interaction, collaboration and generosity. In these narrower readings of sharing there are frequently assumptions made that it is pro-social and caring, but sharing in practice does not operate in a vacuum and it is as a result infused with politics and uneven power relations. Essentially, whatever definition is adopted, sharing is performed according to a set of rules, tools, skills and understandings that can change over time, across space and depending on who is involved. Given this complexity it is useful to illustrate the diversity of what is shared, how it is shared and the organisational forms that food sharing is taking, even if this can only ever provide a snapshot of dynamic food sharing practices.

2. Food sharing practices

The broad definition of food sharing set out in the previous section is useful in that it allows consideration of a diverse range of practices; termed diverse food sharing economies in homage to the rich body of literature emerging in relation to diverse food economies (Dixon 2011), but with an added focus on the role of socio-technologies, particularly ICT in shaping the ways sharing occurs (Davies et al., 2017a). Attention to ICT mediation is important for exploring contemporary sharing practices as it offers a technical fix to many challenges that typically constrain food sharing, such as the temporal limits of redistributing perishable goods and the spatial challenges of connecting people who are not necessarily co-located. Beyond the well-established benefits of being able to disseminate informational resources instantaneously and internationally, ICT can also be used to facilitate two-way connections, such as enabling donors and recipients to quickly match food offerings with needs.

Table 2 captures different aspects to food sharing, distinguishing between what is shared and how it is shared. The nature of what is being shared is carved into three core categories which comprise the bulk of food sharing initiatives identified through empirical research and which have distinct qualities (Davies, 2019). The food stuff category incorporates food in its many forms from seeds and plants to highly processed food products, as well as tools and utensils which are used to grow, prepare or redistribute food. Despite its diversity, what is shared under this category typically expresses a very material quality and is often a rival good, in that if someone is consuming or using it then it is not available to others. The food spaces category includes the physical sites where food sharing occurs, from land which is used to grow food together to the kitchens where collective cooking and eating take place. This category is restricted to place-bound and spatially delimited sites for sharing. The skills category captures the exchange of more intangible qualities; the skills, knowledge and

information related to food matters, from locating wild crops to setting up a surplus food redistribution network. What is shared in this category are typically non-rival goods, such that sharing them with one person does not preclude sharing the same qualities with others.

Table 2 also provides exemplar initiatives to illustrate the sharing of stuff, spaces and skills in relation to four main modes of food sharing:

- **Collecting:** which refers to activities such as foraging, gleaning and skip surfing or dumpster diving, where edible food is collected from waste bins
- **Gifting:** that includes bestowing something voluntarily and without compensation;
- **Bartering:** which involves the exchange of goods or services for other goods or services without using money; and
- **Monetary exchange:** where goods and services are exchanged for monetary payment, either for-profit or not-for-profit.

How initiatives choose to organise their activities is another important consideration as institutional arrangements can limit activities in particular ways. For example, charitable organisations are restricted from campaigning politically in many jurisdictions and this can sometimes affect capacities of initiatives to fully meet their stated goals to reorient the food system. In other cases, initiatives chose to have two different wings to their work, one may be for-profit, generating income to support other activities which may not be sustainable otherwise. Certainly, there are many ways to share, just as there are many motivations for, and outcomes from, doing so.

Table 2. Food sharing typology (adapted from Davies et al., 2017a)

Mode of sharing	Collecting	Gifting	Bartering	Selling Not-for-profit	Selling For-profit
What is shared					
Food stuff <i>Including: seeds, plants, animals, unprocessed and processed foodstuff, utensils, food waste, compost</i>	Sharing food that has been foraged or gleaned, e.g. 510 fruits, USA	Providing food for free e.g. FoodCloud, Ireland and UK	Swapping food and food devices, e.g. Adelaide Hills Produce Swap, Australia	Providing affordable food on a not-for-profit basis e.g. 4 th Street Food Co-op, USA	Selling home cooked food that generates income beyond the costs of production e.g. Homemade, Australia
Food spaces <i>Including: sites for shared growing, preparation and eating spaces as well as physical redistribution hubs</i>	Unofficial (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 bartering can take place 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
Food skills <i>Including: sharing knowledge and experiences in relation to food growing, eating, redistribution or disposal</i>	Sharing information about places where gleaning or foraging can occur e.g. Fallen Fruit, Los Angeles, USA	Providing skills around growing for free e.g. 3000 acres, Australia	Providing opportunities to exchange information about food swapping 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. Viz Eat, Global

3. Food sharing in practice

Despite their innovation, the wealth of food sharing initiatives has historically been hard to identify due to their hyper-localised spheres of engagement and dependence (Cox, 1998) and their small scale (Davies, 2012). However, efforts are being made to map these initiatives internationally thus creating greater visibility for their activities in order to communicate better not only with others who share but also with potential sharers and those charged with regulating sharing (Davies, 2017a). What this research reveals is that there is no single archetypal food sharing initiative as, despite the liberating capacities of ICT to overcome previous spatio-temporal constraints, the context in which food sharing initiatives emerge remains crucial to their practices. With this caveat in mind the following sub-sections focus on illustrative cases of food sharing with initiatives that explicitly seek sustainability from their actions in relation to growing, cooking and eating and surplus food redistribution.

Collective growing

3000 Acres is a network in Melbourne, Australia that shares land, knowledge and skills through gifting. They provide a service which they describe on their website as making it ‘easier for more people to grow more food in more places’ (3000 Acres website, 2019). Established in 2014, and drawing inspiration from a similar initiative 596 Acres based in New York, 3000 Acres have been working to break down the barriers to urban food growing by influencing the public and private sector to rethink vacant land use as underutilised spaces for food growing, and by empowering community groups with the knowledge and skills they need to make it happen. Their overarching goal is to normalise collective food growing as a mainstream feature of healthy urban landscapes. This is driven not only by a desire to increase the incidence and volume of food grown by people together in urban areas, but also

to reduce stress and increase feelings of calm which gardening has been shown to generate (Mitchell and Popham, 2008; South et al., 2018). Importantly, the positive health effects of collective urban gardening are also equigenic, meaning that people who start out with worse health conditions experience greater levels of improvement when spending time in such spaces. Allied to the mental health benefits are the physical impacts of gardening as a low impact exercise that supports joint mobility and general fitness levels for people of all abilities. Beyond this community gardens are flagged as important sites of nature-based productivity, not just of food but also for enhanced urban biodiversity and other ecosystem services (Clarke and Darrel, 2015).

In collaboration with town planners, lawyers, residential developers and web-developers, 3000 Acres sought to identify and unlock pockets of vacant land to enable people to grow more food for themselves. Referring to the typology of food sharing developed earlier, they share the skills and knowledge (both online and face-to-face) needed to support collective growing activities. ICT for 3000 Acres provides an effective and efficient means to collate, store and communicate information about collective gardening activities. The website provides an open portal to explore (for those with access to the internet that is) information about how to identify a site for a community garden, how to organise with others to create a vision for a community garden and sustain that garden financially and safely. The website also provides a means to connect and engage potential volunteers or donors to the initiative.

Through their experience of facilitating urban food gardens in Melbourne, 3000 Acres identified a need to quantify the benefits of urban agriculture to deepen our understanding of urban agriculture's contribution to the environment and communities, to identify key areas for improvement and help to communicate the need for urban agriculture. They are developing a metric for measuring the health and social benefits of community gardens and

are working with local authorities to encourage gardeners to measure their benefits through a citizen science initiative called ‘backyard and all’ which includes measuring kits with scales, recording sheets and prizes. They are also supporting Melbournians to use an online toolkit developed by New York gardeners and sponsored by the New York City Community Garden Coalition in 2009. This forms part of the Farming Concrete project which seeks to measure how much food is grown in community gardens and urban farms. Between 2009 and 2012, Farming Concrete provided approximately 200 free scales, record keeping materials, training, and customized reports to New York City gardeners, who recorded harvests through their online platform. Farming Concrete’s 2012 Harvest Report revealed the yield of more than 195 crop varieties from the data of 106 gardeners across the city. As seen with 3000 Acres, Framing Concrete has used ICT to expand its territorial reach to engage urban food growers internationally developing a translocal ecosystem of food sharing (Edwards and Davies, 2018). Farming Concrete contains twenty different methods for measuring, tracking, and analyzing the impacts of community gardens. This ranges from systems for weighing the pounds of vegetables harvested on a farm in a season to monitoring the number of times a visitor is made to feel happier as a result of walking through the garden gate.

Cooking and eating together

Eating alone has been demonstrated to have long-term negative health implications (Dunbar, 2017), with loneliness identified as a key predictor of physical and mental health problems (Holt-Lunstad et al., 2010). As a result, activities that foster interactions between people are increasingly valued for the social nourishment they can provide. Shared cooking and eating initiatives, as with the collective growing initiatives described above, provide opportunities for diverse interactions, from fleeting moments of encounter chopping vegetables alongside others, to deeper connections involving the sharing of intimate thoughts and feelings over regular meals eaten together.

In many cases, food sharing initiatives which focus on creating opportunities for people to cook and eat together are specifically focused on the social needs which predominate in the context in which they are located. In London, for example, Be Enriched run regular collective cooking and eating events in a number of locations to meet their goals of reducing inequalities, building community cohesion and developing life skills amongst community members. Food is the centre of these events, but their overarching goal is broader, and listed on their website as ‘enriching local life through connecting people through community activities and cultivating respect over a bite’ (Be Enriched website, 2019). Meals are provided for free to anyone who attends and surplus food is used where possible to reduce food waste. In addition to providing sustenance at the dining events, Be Enriched also offers skill share events to encourage participants to make their own healthy, low cost food at home. While reporting on their sustainability impacts is currently limited, Be Enriched is helping to co-create an online tool to identify their sustainability worth in ways which are feasible, meaningful and appropriate (MacKenzie and Davies, 2019). However, there are particular challenges with pinning down the social sustainability impacts of food sharing where the affects and effects can be experienced differently amongst participants, can be fleeting and hard to capture quantitatively. While cooking and eating together per se does not necessarily guarantee social sustainability or health benefits (Schor et al., 2016), researchers have demonstrated its potential to reduce social barriers relating to race, gender and socioeconomic backgrounds, creating greater community cohesion as a result (Julier, 2013).

Initiatives such as Open Table in Melbourne, Australia, like Be Enriched also use ICT to provide open access and online information about community meals that take place in neighbourhoods across the city, but with a specific goal of destigmatising the consumption of surplus food. Initiated in 2013 by a group of graduate students interested in sustainability who were inspired by a food sharing project in Sweden, Open Table began with a six-week

pilot program in one location. By 2017 they were hosting seven community feasts every month using food collected from food rescue initiatives, such as Secondbite, as well as with food donations from local businesses (Edwards and Davies, 2018). The monthly feasts focus on creating convivial moments for participants with a key focus on reducing social isolation, rather than providing alternative infrastructures of food security for vulnerable populations.

The goal of destigmatising the consumption of surplus food is also the goal of O Allos Anthropos (translated as, the other human) which is based in Athens, Greece. Adopting an informal organisational structure, O Allos Anthropos shares prepared meals in shared kitchens using surplus food they collect or receive as food donations. They frame their endeavour as a society kitchen and the activities undertaken as acts of solidarity and consciousness raising. Similar goals are also visible in the multifunctional food sharing initiative the Skip Garden and Kitchen in London. The Skip Garden and Kitchen is the homebase of Global Generation, an educational charity established in 2004 which works to create healthy, integrated and environmentally responsible communities. Fruits and vegetables are grown in mobile containers alongside a café which serves produce from the garden alongside nutritious seasonal food. In addition, the initiative provides work experience and employability programmes to young people with special needs and refugees. Across their activities themes of ecology, education and enterprise dominate, reflecting their core value articulated as “I, we and the planet” and their mission to create the conditions for change (Davies, 2019a). In terms of evidencing progress towards their goals, the Skip Garden and Kitchen currently report on outcomes, such as numbers of people who have achieved certificates for completion of training programmes or the number of opportunities provided to local children to come together around food.

In Berlin, Über Den Tellerrand is a social enterprise which shares food, kitchen spaces, knowledge and meals. Its stated goal is to encourage face-to-face encounters between the

local community and refugees in order to provide opportunities for people to learn from each other and discover diverse cultures, breaking down barriers and enhancing possibilities for understanding and harmony. However, standard sustainability assessment tools rarely provide indicators that might identify, capture and monitor qualities of tolerance, inclusivity and connectedness in communities. Instead, Über Den Tellerrand, provide testimonials from participants in their annual reports which are then posted on their website and which highlight where activities helped generate responses which align with their stated goals. As with the other initiatives mentioned in this section, they predominantly use ICT as a means to organise and present information about food sharing alongside disseminating information about their activities, and recruiting new food sharers by illustrating and mapping their activities and opportunities to engage. The online component has become an essential feature of these initiatives in terms of their recruitment and dissemination activities, although it is the face-to-face elements which remain core to their goals and purpose. In other collective eating initiatives, particularly the for-profit initiatives such as Viz Eat and Eat With, which offer collective eating experiences for travellers and economic opportunities for homecooks, sophisticated ICT, particularly interactive digital platforms are at the very core of connecting those who wish to connect over food.

Redistribution

The redistribution of surplus food is an area which has seen a dramatic increase in activities as the scale of global food loss and waste has become clear and it is the sector of food sharing that has adopted the most complex forms of ICT to mediate activities. This is unsurprising given the delimited time window in which food is simultaneously both surplus and edible. The connective capacity of digital platforms and apps provides the possibility of rapidly identifying and matching those with excess food to those in need of access. It can also provide a manageable mechanism for recording details of the transfer of surplus food from

donor to recipient, providing digital traces that meet food safety requirements of identifying the origins and destinations of food for human consumption. Redistribution activities are, however, diverse and include the gleaning operations of Espigoladors in Barcelona, the community fridges of Foodshare.de in Germany, the mobile Food Justice Truck in Melbourne, and the fixed footprint of the Community Shop in London.

Ripe Near Me was established in Adelaide, Australia by co-founders who noticed the glut of seasonal fruits from public fruit trees in their city was not being consumed. Their goals are manifold, from encouraging food growing in urban areas, reducing food waste and improving people's health and quality of life to encouraging more sustainable living and even microenterprises around growing food. More than simply seeing food as fuel, they see food as the catalyst 'to make the world a better place'. Utilising the interactive capacity of open access online mapping, Ripe Near Me has expanded from one site in Adelaide and now has posts across Australasia, Europe and North America with some urban harvests noted as far afield as Hawaii and Harare in Zimbabwe. Ripe Near Me facilitates harvesting of food on public lands (where this is permitted) alongside peer-to-peer harvesting where gardeners with crops to spare can offer their surplus for free or for a fee. There is no interpersonal intermediation offered by Ripe Near Me to facilitate donor-recipient relationships that other redistributive food sharing initiatives offer. It is very much an experiment with the generative capabilities of the technical mapping and exchange tool. As a result there is no publicly reported analysis of the impacts created.

Falling Fruit was established in Dublin in 2015 as an off-shoot from a freecycling initiative We Share, which is a gift economy community group that uses a website to share skills, knowledge, stuff and time, in a money-free environment. Rather than facilitating individual or peer-to-peer exchanges that emerge from the activities of Ripe Near Me, Falling Fruit

focuses on redistributing surplus fruit and vegetables to give to charities and other social causes. They use a website to document their activities and to call out for growers with gluts of seasonal fruit and vegetables to donate and volunteers who have the capacity to transport the surplus food to those in need. To distribute their surplus effectively they liaise with other redistribution initiatives which have greater logistical infrastructures, such as FoodCloud. In contrast to the broader societal goals of Ripe Near Me, however, Falling Fruit is very much focused on preventing food waste. With the aim of attaining zero waste, Falling Fruit ensures that food is eaten, stored, preserved, pressed, or fed to animals.

FoodCloud, which works with Falling Fruit, is a social enterprise from Ireland set up in 2012 to redistribute surplus food which is now operational nationwide in both the UK and Ireland. They have gained a public profile as being tech-innovators, winning accolades for their application of ICT for social good through their mediated digital platform which links donors of surplus food to recipients. It is this technical capacity and the buy-in of a major multinational retailer, which has enabled the initiative to scale dramatically to reach more than 9000 community groups. However, while FoodCloud would not be able to work at this scale without its use of ICT, it is the management of interpersonal relations between donors and recipients that is done by staff which sustains the system of surplus food redistribution. Their vision is a world where no good food goes to waste and their mission is to use food as a tool to empower people, bring communities together and create a more sustainable food system. FoodCloud exists first and foremost to reduce the environmental impact of waste in the food supply chain. In the short-term it concentrates on redirecting food from landfill towards people who are in need of food, but long-term they hope that the data they collect and pass on to retailers will be used to streamline acquisition systems to reduce the amount of surplus generated. While they are not in a position to require multinational companies to reduce their food waste in the light of their data, they are actively participating in policy

shaping as members of a food loss and waste platform co-ordinated by the European Union to inform decisions on food waste policy.

As with other food sharing initiatives, FoodCloud tend to use simple output measures to demonstrate the impact of their activities. For example, they focus on numbers of groups engaged (indicating the scale and reach of their activities) and the weight of surplus food diverted from landfill. In 2019, their website reported that they help 9,100 groups, saving 22,000 tonnes of food. Using simple conversion formulae they indicate that this provides 50 million meals, 72,727 tonnes of carbon savings and €68.1 million in food budget savings to community groups. Although internal surveys of community partners are conducted annually, the difference these meals make to those who consume them is not currently reported externally.

Overall, it is clear that many food sharing initiatives, from collective growing activities to surplus food redistribution groups, articulate goals which indicate their desire to work within planetary boundaries, closing gaps within food systems which create food loss and waste to create more closed loop food systems that are frequently articulated as being the core of sustainable and regenerative food systems. However, while the goals are admirable, progress towards those goals tends to be only lightly monitored and reported. The final section of this chapter reflects on why this is the case.

4. Is food sharing sustainable and regenerative?

As Janelle Orsi and Emily Duskow summarise in their book *The Sharing Solution* (2009), sharing is seen as offering a means to save money, simplify your life and build community. More than this, it is also seen as a way to live more sustainably and intimately with the

environment, other species and humanity. Here intimacy is seen as an important element of being human; allowing for essential relationships to be constructed. However, establishing the impacts that food sharing has on social, economic and environmental sustainability is a challenge for a number of reasons, and not least because there is a lack of baseline data available. Incomplete, onerous or contentious systems of measurement and reporting also play an important prohibitive role for food sharing initiatives.

Where data is collected by food sharing initiatives it is rarely shared openly and even when it is, as illustrated in the previous section, the data used tends to focus on outputs rather than outcomes or impacts. There have also been concerns raised that sharing may not always generate positive benefits. The bulk of these concerns about a shadowy side to sharing have been articulated in sectors other than food, with a focus on the precarity of income that sharers may be able to derive from sharing transactions and the negative knock-on effects on housing prices and availability through online accommodation sharing sites (Davies et al., 2017b). The monopolistic tendencies of venture-capital funded sharing economy platforms, and the exploitation of grey areas within regulation and taxation are also being raised as important issues for the future governance of sharing, raising questions about the extent to which these activities are contributing sufficiently to the maintenance of broader public goods. Social concerns have also been flagged, with the inclusivity of sharing practices questioned (Fitzmaurice and Schor, 2018). Certainly, it is the case that sharing is replete with rules, even if these are often internally generated rather than externally driven. Nonetheless, in the food sharing sector specifically, major lines of tension between sharing initiatives and regulators revolve around health and hygiene, food safety and risk (Morrow, 2019).

Establishing sustainability impacts from food sharing can draw on a burgeoning suite of sustainability assessment frameworks designed specifically for food systems. However these tools often fail to capture all the impacts from sharing and as such they provide only a limited picture of the impacts created. Instead, inspiration for the assessment of sharing's contribution to sustainability will need to look more broadly, to social, health and education assessment tools and to toolkits designed to be appropriate to the types of initiatives that dominate (at least numerically) food sharing landscapes; grassroots, community driven, not for profit initiatives (MacKenzie and Davies, 2019). Whatever systems are developed there needs to be a careful and reflective approach adopted as measurement does not occur in a power vacuum. Impact reporting is, like sharing, itself a particular type of social practice whose performance is affected by the combination of rules, tools, skills and understandings employed. Sustainability assessment tools for sharing will ultimately influence and define the very thing they are purporting to measure.

Food sharing initiatives do not, per se, provide a silver bullet in terms of developing a more sustainable and regenerative global food system, they are too diverse in constitution and dynamic in nature to make such a generic statement. Food sharing initiatives operate with, alongside, underneath and beyond the dominant global commercial food system, in different ways depending on their goals and the context in which they are operating. As a result, the question should not be whether food sharing is sustainable, but rather how can we best capture and interrogate the impacts of food sharing to reveal any sustainability benefits and design a food system which supports those benefits. This means not only attending to how sharing meets the goals of regenerative food systems in relation to closed loop energy and nutrient systems for environmental sustainability, but also how they reconnect people to themselves, to others and to the planet.

5. Critical questions

- Should food sharing initiatives be governed by policy any differently from commercial food enterprises?
- Why is demonstrating the social impacts of food sharing so challenging?
- To what extent is the use of ICT by contemporary food sharing initiatives transformative?
- How have the goals of food sharing changed over time?
- Are existing theories of food sharing established for small scale, hunter-gatherer communities still relevant for contemporary food sharing?

6. Suggested readings:

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