ECSCW CONTRIBUTION

Learning from Other Communities: Organising Collective Action in a Grassroots Food-sharing Initiative

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Abstract. This paper illustrates the work of creating, infrastructuring, and organising a food-sharing community from the ground up. Drawing on Participatory Action Research (PAR) and a three-year engagement with FoodSharing Stockholm, the paper shows how the processes of starting up a grassroots initiative are shaped by participants' direct experience and knowledge of similar initiatives. The analysis draws attention to: (1) how central activities such as recruiting volunteers, choosing digital tools, and establishing partnerships with food donors are conceived and organised, (2) the concrete challenges of sharing surplus food, such as adopting a distribution model, and negotiating fairness, and (3) how governance and decision-making models are adopted and (re)negotiated over time. The paper introduces the term *Collective histories of organising* to capture the impact that learning from previous experiences can have on communities' efforts to set up and run; and re-orient design visions towards the consideration and adoption of existing sociotechnical practices, rather than always aiming at novel digital explorations. We outline three emerging dimensions that can characterise "Collective histories of organising" as a concept, (1) configuring capacities, (2) configuring sociotechnical practices, and (3) configuring participation. The paper contributes practical sensitivities to build, sustain, and infrastructure surplus food-sharing initiatives, where these three dimensions are discussed as central concerns designers and other food-sharing communities could learn from.

Key Words: Learning, Food-sharing, Collective action, Infrastructuring, PAR, Grassroots

1. Introduction

Over the last decade, CSCW scholarship has investigated the role digital technology plays in structuring social movements and their efforts to organise collective action, raise awareness, promote social change, or influence policy-making. Sometimes intersecting with HCI research, work in this area has outlined, for instance, how digital technology is adopted or can be tailored to structure participants' work practices and key values (Berns et al., 2021a; Ghoshal et al., 2019; Lu, 2021; Rossitto and Lampinen, 2018; Rossitto et al., 2021; Voida et al., 2015), develop

local cooperative relations (Light and Miskelly, 2019; Mosconi et al., 2017), infrastructure the formation of publics (Le Dantec and DiSalvo, 2013), or to support different phases of community organising (Biørn-Hansen and Håkansson, 2018; Bødker et al., 2016; Svenfelt and Zapico, 2016). Overall, these studies unravel the variety of processes and sociotechnical practices that make collective initiatives work, along with the attachments and commitments participants develop with each other, and with specific matters of concern. However, they say relatively little about the everyday practical work whereby such initiatives are formed, get started and become communities.

This paper expands our understanding of how community-led initiatives are organised and infrastructured in practice, oftentimes drawing on and learning from the examples that existing, related initiatives provide. We argue that considering the relations to other community initiatives, their stories of failure and success, their ways to organise key sociotechnical practices, or frame shared problems is central to how new communities define their goals and visions, as well as plan and carry out practical labour. As illustrated by diverse examples – e.g, see FridaysForFuture (Brünker et al., 2019), #MeToo (Hansson et al., 2021; Larsen-Ledet and Rossitto, 2023), or #BlackLivesMatter (Mundt et al., 2018) – social movements and civic initiatives seldom evolve as isolated happenings. On the contrary, they draw from each other in framing calls for action, enabling forms of participation, defining visions and the forms of impact to strive for (Lampinen et al., 2022; Rossitto, 2021). It is such emerging connections that this paper sets out to illustrate and conceptualise.

We introduce the concept of *"Collective histories of organising"* to account for the many and diverse past experiences that volunteers bring to the processes of setting up and maintaining a community-led initiative. The notion entails the previous knowledge, the direct or indirect experience people share with other members, but also the sense-making processes (e.g., recounting, discussing, negotiating, exemplifying) and situated circumstances whereby individual histories become relevant to the community and, thus, collective. We have chosen the term history to indicate that even fragmented examples of how to organise a community's work can gain new meanings, as volunteers discuss and experiment with them in new contexts. We regard the processes of considering, reflecting on, and (sometimes) borrowing such past experiences as a form of learning; this emphasises the transformative qualities of such sense-making processes, even when examples of organising are regarded as not suitable for the new context. Expanding previous work (Frauenberger et al., 2018; Hughes et al., 2017; Lampinen et al., 2022; Rossitto, 2021) that has shown how ideas, social practices, and specific forms of technological mediation travel between initiatives, "Collective histories of organising" emphasises the role of single individuals in putting stories into circulation, and the sometimes unplanned encounters (e.g., emerging discussions at meetings) whereby such stories become relevant.

We argue that outlining the explicit and more tacit interconnections that initiatives striving for social change develop with each other has a twofold relevance for CSCW. First, it shows the impact that (otherwise invisible) previous experiences can have on communities' efforts to articulate their work (Star and Strauss, 1999), as well as scope and shape specific cooperative practices. Second, it re-orients design visions towards the *adaptability* and *adoptability* of existing sociotechnical practices that community-led initiatives can learn from each other, instead of always prioritising digital innovation as the end goal of design interventions. Resonating with previous studies that have emphasised civic initiatives' concerns for social change, rather than digital advances (Le Dantec et al., 2011; Schrock, 2018), and their expert, yet non-professional, design ability to create social alternatives (Manzini and Coad, 2015), our contribution bears important consequences for researchers and activist alike. We outline both analytical and practical sensitivities to organise work and set up community activism from the ground up. As voluntary work often unfolds amid limited resources (e.g., human, physical, economic, and infrastructural assets), we point to the relevance of existing framings and sociotechnical practices in helping community-led initiatives get started and sustain their work and commitment to it.

We ground our arguments in the investigation of a grassroots food-sharing community starting up its operations in Stockholm, Sweden. Although heterogeneous in their ways of organising and contenting with food problems (Davies, 2019; Schanes and Stagl, 2019), food-sharing initiatives (Berns et al., 2021a; Chies, 2017; Ganglbauer et al., 2014) are part of a global anti-food waste movement (Feng et. al, 2022; Gollnhofer and Boller, 2020; Tartiu and Morone, 2017), a variegated activist reaction to the inefficiencies and inequalities of the mainstream, capitalist food systems, particularly in the distribution chain (Gustavsson et al., 2011; UN, 2015). Initiatives within this movement are focused on raising awareness on the issues of food waste through providing alternatives to surplus food re-distribution. The empirical material stems from a three-year Participatory Action Research (PAR) approach (Hayes, 2014) focused on Foodsharing Stockholm, a grassroots community, where the first author has been an active member since its inception. The data has been collected by the first author through participant observation, from September 2019 to September 2022 [1]. The data consists of field notes from volunteer meetings, food collections and distributions, as well as from informal conversations with various community members.

The findings centre around three key themes that illustrate how learning from other communities is instrumental to how a new food-sharing community is organised and infrastructured through the appropriation of various digital technologies and practices (e.g., knowledge-sharing forums, and pre-established distribution

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[1] There was a brief interruption in activity from the 25th of March to the 7th of July 2020 while the community adjusted/adapted operations to comply with safety recommendations and restriction put in place due to Covid19.

models). The first unpacks the role of previous experiences in articulating key visions as part of a strategy to initially set up the community, create a digital infrastructure, recruit volunteers, and establish partnerships with food donors. The second theme focuses on how organisers looked to similar communities for inspiration on existing food-sharing models, as well as the negotiation of values such as consideration of fairness, and the affective dimensions that frame the distribution of surplus food. Finally, the third theme looks at the challenges connected to governing and maintaining the community. Here we unpack the community's decision to deviate from the approach of similar organisations and adopt the non-hierarchical, consensus model of decision-making, leading to conflicts with practical concerns to get work done, as well as, challenges with regard to fluctuating participant numbers.

In concluding this paper, we discuss three dimensions that are encapsulated in "Collective histories of organising" as a concept, namely configuring capacities, configuring sociotechnical practices, and configuring participation. These dimensions foreground the explicit and tacit interconnections that community-led initiatives develop with each other, as well as serving as practical guidelines that other initiatives can benefit from when organising. This is relevant to CSCW research as it opens up opportunities for scholars to cooperate with initiatives concerned with social change, collaboratively inform the design of sociotechnical practices, and identify recurrent challenges, processes and problems of technology appropriation that are relevant for infrastructuring community-led initiatives.

2. Related work

In what follows, we first introduce previous CSCW and HCI scholarship on food-sharing initiatives. Situating our contribution within a broader research area, we then discuss related work that has investigated the processes whereby collective initiatives and social movements organise their actions both operationally and through governance and decision-making models. Furthermore, we position our work within a body of research that illustrates the various ways community initiatives share ideas, learn from each other, and scale the impact of their work in unexpected days.

2.1. Food-sharing as a collective action against food-waste

Over the last decade, HCI and CSCW scholarship has investigated the role technology can play in enabling just (Dombrowski et al., 2013; Prost et al., 2018) and sustainable (Bødker et al., 2016; Ganglbauer et al., 2013; Heitlinger et al., 2018) food systems, where sharing and redistributing surplus food are paramount. Much research has explored how digital technologies can play an important role in food waste reduction through a rising number of mobile apps specifically designed to reduce domestic waste, and make households' food management more efficient (Altarriba et al., 2017; Comber et al., 2013; Farr-Wharton et al., 2014).

CSCW and HCI scholars have also shown a burgeoning interest in more collective approaches for reducing waste, as indicated by the interest in the many and diversified urban food-sharing initiatives (Berns and Rossitto, 2019; Burton et al., 2017; Chies, 2017; Ciaghi and Villafiorita, 2016; Davies, 2019; Ganglbauer et al., 2012; Rossitto et al., 2021). The number of food-sharing initiatives has grown as an activist response to mitigate the consequences of capitalist and global food chains (Schanes and Stagl, 2019). Food-sharing initiatives can take a variety of forms with some examples being web-based food networks (Prost, 2019), underground restaurants (Rombach and Bitsch, 2015), public refrigerators (Kera and Sulaiman, 2014), or within households consisting of non-related people for example, students (Falcone and Imbert, 2017).

Digital technologies have transformed the way we conceive of and (re)-distribute surplus food across different contexts (Davies et al., 2017; Davies and Legg, 2018), and research has outlined sociotechnical configurations of food-sharing through three emerging models, namely, for-profit (e.g., the many platforms that allow buying food at a lower price), for charity (e.g., sharing with those in need), and for the community (e.g., sharing at face-to-face events as a means to sensitise people towards the problem) (Michelini et al., 2018). The work of FoodSharing Stockholm best fits the community model as it is a grassroots, volunteer-led initiative where surplus food is shared for free, without any distinction between those who collect food as support for financial disadvantage or those who are simply making an ethical choice to prevent waste. Information communication tools have been key drivers in making sharing for community initiatives possible. Whether it is a specific online platform matching people with each other (Ganglbauer et al., 2014) or making use of mainstream social media platforms such as Facebook (Berns and Rossitto, 2019), or messaging services such as Telegram (Engelbutzeder et al., 2020). Generally, such tools can support the proliferation of food-sharing initiatives. They, in fact, provide digital templates to infrastructure central aspects of community organising that can be easily adopted across contexts, thus reducing the efforts required to start up. For instance, the German foodsharing platform, foodsharing.de, was first adopted in Berlin, but it now facilitates multiple food-sharing initiatives across several German, Austrian and Swiss cities by providing digital infrastructure to facilitate surplus food collections and exchanges (Ganglbauer et al., 2014; Rombach and Bitsch, 2015).

Adding to the role of technology mediation, previous research has pointed out that a lack of social relationships and, consequently, of trust can have a negative impact on food-sharing practices (Farr-Wharton et al., 2014; Lazell, 2016). Researchers have explored the various ways sharing relationships between food-donors, volunteer organisations, and food recipients can be configured and how they may be affected by digital technology use (Berns et al., 2021a; Ciaghi and Villafiorita, 2016; Ganglbauer et al., 2014). Our previous work has identified the practice of food-sharing as a form of *community economy* (Berns et al., 2021a), that is, a generative economic system in which the process of negotiating interde-

pendence is central (Gibson-Graham et al., 2016). Here, the authors describe how, within a community economy, multiple layers of participation, commitment, and interdependence are embraced, yet recognise that degrees of involvement will vary among community members and change over time (Berns et al., 2021a).

To sum up, past research on food-sharing has investigated different forms of food-sharing models and initiatives. It has outlined how technology can enable key food-sharing practices (e.g., managing the flow on attendees (Berns et al., 2021b), matching donors and food-recipients), and concerns (communicating activism (Berns et al., 2021a). Overall, this body of work focuses on the practicalities of managing food sharing and the values underlying them but it tends to overlook the efforts, processes, and strategies whereby such initiatives are formed, get started and learn from each other. This paper further develops understandings of how surplus food-sharing communities get up and running by learning from and adopting the existing sociotechnical practices of other initiatives and adapting them to new settings. By highlighting these learning processes, the paper re-orients design visions away from digital innovation, to instead focus on how existing technologies can be used in new ways.

2.2. Organising collective actions

Past CSCW work has studied the collaborative efforts underpinning various aspects of activism, such as, how it is organised (Menendez-Blanco et al., 2017; Mosconi et al., 2017), the role of sociotechnical systems like social media (Ganglbauer et al., 2014; Erete, 2015), and the complex network of systems, information, people, values, narratives and ideologies that characterise activist initiatives (Bødker et al., 2016; Dickinson et al., 2019; Wilson et al., 2018).

A recent JCSCW special issue has zoomed in on how activism materialises online. Resonating with earlier work from social movement studies (Klandermans and Oegema, 1987; Martin et al., 2015; Hansson et al., 2021) unpack how activism is initiated online through a shared affection for a political issue, reinforcing the culture of initiatives through ICTs, linking local activism with global movements, and using technology as an infrastructure for setting protocols and building relationships (Hansson et al., 2021). This connects to earlier CSCW and HCI work on publics (Dewey, 2012; DiSalvo, 2009; Le Dantec, 2016) that investigates the way design can draw people together on shared issues and provides an overarching framework to talk about infrastructuring community initiatives through design. This research has outlined the role of technology in providing social and material resources, creating attachments to shared matters of concern, and sustaining people's engagement with and around them.

Past work HCI and CSCW has investigated the intricacies of self-governance in diverse community-led initiatives, such as maker-spaces Schmid (2021) community-based recycling A.R. Davies (2009), feminist activism Hansson et al.

(2021); Rossitto et al. (2020), open source software development communities (Schneider, 2021), and platform co-operatives (Cherry, 2016). These examples draw attention to the many challenges that can arise while striving for grassroots governance – e.g., enabling flexible participation, juggling volunteers' burnout, documenting work, negotiating rules and norms, and balancing community ethics along with ideological and pragmatic concerns.

Another relevant aspect in the organisation of civic, collective actions relates to the role of digital technology. Work on digital civics has argued that successful civic interventions should think of technology as social and community infrastructure, rather than a solution in itself – where the focus is on social change rather than innovative technologies (Schrock, 2018). Digital infrastructures are here described as "re-configurable" (Le Dantec, 2016) or "hackable" (Schrock, 2018), in that they can adapt to and manage future changes in issues and attachments that a community may face. Past work (Bettega et al., 2022) details how "off-the-shelf" digital tools can support communities in commoning practices, as well as enable them to focus on participation rather than software development. For instance, mainstream social media platforms can be used to help activist initiatives build momentum as the platforms are used by a large number of people (Hirsch, 2011; Kow et al., 2016). However, past work (Hirsch, 2011; Kow et al., 2016) also argues that such platforms are less helpful for more localised grassroots forms of activism, where the goal is to cultivate persistent efforts of small groups for creating and nurturing movements, rather than large-scale online mobilisations. The use of Facebook across many grassroots, activist communities, is a prime example of this (see for instance (Ganglbauer et al., 2014) and (Rossitto et al., 2021).

Finally, previous work has illustrated how grassroots and community-driven initiatives are organised through different stages of development. Research on artefact ecologies has focused on how communities manage and organise a variety of digital technologies, to infrastructure their work, Bødker and colleagues (Bødker et al., 2016) have identified different phases volunteer-run communities go through becoming a community, everyday community, and building anew. The first phase relates to the initial stages when a community is formed and constituted. The second one betokens the work of sustaining collectives, while the last indicates how communities might change as they expand, and become connected to other actors. Overall, this work shows that such communities operate with limited resources, that their ways of working might change, and that they are often dependent on how and when volunteers can participate. Moreover, specifically focusing on issues of scaling up (i.e., expanding what already exists), previous work (Biørn-Hansen and Håkansson, 2018) has identified sustaining, growing, and spreading as key stages of organising. Sustaining concerns activities aim at bringing together the resources that communities need to operate and exist. Growing connects to communities' possibilities to operate beyond the initial member groups. Finally, spreading relates to communities attempting to define their impact by, for instance, disseminating skills, and knowledge. Resonating with Bødker and colleagues (Bødker

et al., 2016), we note that throughout these different stages, concerns of organis-
ing might be addressed as a consequence of contingencies and emerging tactics,
rather than (pre)defined, goal-oriented strategies (Bødker et al., 2016). Here, hap-
penstance, that is the circumstantial presence of people, reflects on practical work,
decision-making, and on defining key aspects of technology use, and organising
more broadly.

Overall, this heterogeneous body of research outlines volunteers' work to organ-
ise activism both on- and offline, set up digital infrastructures, configure gover-
nance, and evolve over time. In what follows, we discuss how community-led
initiatives borrow from each other, sometimes through transformative processes
that can be associated with learning.

2.2.1. Learning from other communities

Drawing on connections and attachments to other community-led initiatives is a
central aspect of organising volunteer-based activism, yet a rather overlooked one.
As our analysis will show, encounters, happenstance, and valuing each individual
experience are central to how different aspects of organising activism (see section
above) are considered in the context of setting up a new grassroots community.
Emphasising that community-led initiatives are seldom born and evolve as isolated
happenings, we suggest "learning from other communities" as a theme to encom-
pass the many and various relations community-led initiatives develop with each
other. Bilandzic and Foth have introduced the concept of "connected learning" as
an approach to design that fosters digital learning and participation outside of tra-
ditional learning spaces, such as schools or universities. Through the co-located
encounters in physical places (i.e., co-working spaces, hackerspaces, and meet-up
groups), they suggest that learning takes place in everyday life contexts. Here,
collective idea-sharing, experimentation, and problem-solving can result in new
knowledge and social connections (Bilandzic and Foth, 2016). The authors frame
connected learning as a way to develop a community of practice. Work by Hughes
and colleagues (Hughes et al., 2017) has illustrated the potential of social living
labs to support the development of digital literacy as a way to foster community
participation, well-being, and social inclusion, whilst also extending its network
to other groups. Here learning explicitly connects to digital capacity building and
increased literacy. Although relevant to community organising, resonating with the
Community of Practice theory (Wenger, 2011), these studies frame learning as a
way to develop community, social cohesion, or well-being. For them, learning is
learning with or within a community, not from another.

More directly resonating with the view of learning we suggest, research (Frauen-
berger et al., 2018) has highlighted the tension between the extrinsically situated
quality of participatory design work and the need for insights and outcomes to
travel and scale. The authors envision how participatory design practice might sup-
port the creation of learning communities that develop and strengthen sociotech-
nical literacies and skills around participation. These skills and literacies can then

travel beyond the initial design settings to other contexts as a "legacy" that can be recontextualised into new settings. Here, partnerships, dedicated fora, and networks are central to enable i) outcomes of Participatory Design projects to travel and "proliferate" in other contexts, and ii) interconnected and intermediary knowledge to emerge. In exploring conceptual alternatives to the scale metaphor, and its underpinnings to merely replicate each component without variation, Lampinen and colleagues (Lampinen et al., 2022) have suggested the concept of "processes of proliferation" to account for the many ways key sociotechnical practices of community-led initiatives can travel across contexts and activate new initiatives.

The concept builds on work by Light and Miskelly (Light and Miskelly, 2019), which outlines the role of mutual commitments, learning from others, and circulation of ideas in how local initiatives become interconnected. Lampinen and colleagues draw on different types of grassroots initiatives, concerned with sharing as empirical examples of how initiatives can be created and evolve in unexpected ways as artefacts, sociotechnical practices, or social ties travel between different contexts (Lampinen et al., 2022). While the appropriation of some of these aspects can be facilitated by the adoption of specific digital technologies and the specific forms of participation they enable, others processes of borrowing and learning from other communities are tied to the role of existing documentation. The Hoffice network (Rossitto and Lampinen, 2018) and the Social Street initiative (Mosconi et al., 2017) are relevant examples of how step-by-step guides can help get an initiative going in different contexts, independently of key actors such as founders. Past work has Larsen-Ledet and Rossitto (2023); Rossitto (2021), also illustrated the role of encounters between people, sharing similar matters of concern, in moving projects' outcomes forward and activating related initiatives contending related matters of concerns.

Overall, resonating with Dourish's concept of technologies of scale-making (Dourish, 2010), this body of previous work unpacks how alternative models for design and technological intervention can connect people based on shared values, and what can be learnt from the actions and experiences of others. This emphasises that social movements and grassroots collectives are created, operate, and evolve as ecologies and through relations with each other. This is relevant as grassroots initiatives often organise amid limited resources, and design strategies for such settings might be better equipped by considering what sociotechnical practices already exist.

3. Setting and methods

3.1. FoodSharing stockholm

FoodSharing Stockholm is a volunteer-run, grassroots community that aims to (re)-distribute surplus food, donated by restaurants or big-chain supermarkets, that would otherwise go to waste. The community was established in September 2019,

and it is made up of five participant groups who are brought together by concerns for food waste reduction. *Food-sharers* are the volunteers who run the community; they set up co-operations with food-donors, collect, sort and share surplus food as well as rescue and eat it themselves.*Food-savers* are individuals who rescue food from going to waste by attending events or by stopping by the community's solidarity fridge to collect surplus food. *Food-donors* are the businesses such as grocery stores, restaurants and cafes that donate surplus food. *Hosts* are the establishments/locations in which food-sharing events are held. And finally, the *Collaborators* are any other charitable, activist, or volunteer-led organisations with whom the community collaborates by supplying surplus food. The use of these terms was negotiated early on by the core volunteer group to establish clear language for describing the various participants. Members of the community were searching for terms beyond the standard approach of "volunteer" and "participant" in an attempt to cultivate a culture of collaboration in the community, where all members save food together, in opposition to the more typical binary narrative of active and passive participant (Mccarthy and Wright, 2015). In the paper, we refer to them by adopting the same names that early members of the community have decided to use. We, however, recognise that the use of these terms can also be problematic; for example, donors are also sharers, and volunteers are savers, arguably even more than participants, since they put in a lot of work to make events run.

At the time of writing the community has been active for over three years, and participation has fluctuated. The food-sharer (volunteer) and food-saver (recipient) groups have been those that have been subject to this fluctuation. For example, the first meeting in September 2019 had twenty-four people in attendance, in September 2020 there were approximately eighteen active food-sharers (volunteers), and in September 2021 eight active food-sharers (volunteers). Likewise, the community has experienced periods of high and low turn out to food-sharing events with some events attracting over thirty participants and others a little as four participants. Hosts have increased gradually over time as food-sharing events scaled from one to three. Community partnerships with food-donors have remained quite consistent with one supermarket and one anti-waste-focused restaurant (that sells meals cooked from surplus food) supplying the majority of the food shared at events since the beginning. Collaborations with other organisations have also happened, although on a more sporadic basis; for instance, the community has supplied food to the local chapter of the global environmental movement Extinction Rebellion [2] for demonstration events, as well as, supplying specific food items to a nearby community cafe that offer a free breakfast to guests in need each today. At present, FoodSharing Stockholm is sustained with twelve active food-sharers (volunteers) who organise three weekly surplus-food distribution events, hosted at three differ-

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[2] https://rebellion.global/

ent locations and attract between 15 and 25 participants. Together the community have rescued over nineteen-thousand kilograms of food.

3.2. Research approach

The engagement with the community has been framed by a Participatory Action Research (PAR) approach (Hayes, 2011; 2014; Kindon et al., 2007), with the first author being involved as both a researcher and active food-sharer (volunteer) since it was founded in 2019. Having seen the call to participate in the group on a local Facebook page, the first author commenced a long-term study of the newly formed food-sharing community. At the time of writing, engagement with the community has lasted for three years. Methodologically, the research project combines contextual inquiries and a first-hand understanding of the setting with a practical orientation towards the community's work. This means that besides understanding the processes around the community organisation, the study's aspiration has been for the first author to combine her skills with the collective knowledge of the FS-STHLM community. This happened in two ways; firstly, the first author supported the community practically as one of the core food-sharers. Secondly, she encouraged and assisted her fellow community members to join the project as co-researchers. Practically, this entailed discussing the PAR research process and planning, executing, and reflecting on a number of design interventions concerned with the adoption or rejection of different digital technologies and sociotechnical practices.

Both the first author and the other core food-sharers adopted the action research 'plan, act, reflect, repeat' spiral (Hayes, 2011). For instance, when the community was required to make adjustments to their sharing model during the Covid19 pandemic to comply with social distancing requirements, the community made a plan to switch from an event-based model of sharing to a community-fridge-based model where food-savers collect food individually at different times. The fridge was implemented and used for approximately one year, and upon reflecting on the experiences of both food-sharers (volunteers) and food-savers (recipients), the community ultimately decided to primarily return to the event-based model as members missed the social interaction. However, the community also continued to use the fridge to support asynchronous sharing also. The plan, act, reflect process was also used on a number of other occasions within the community, such as experimenting with different systems for recruiting food-sharers e.g, via social media, through face-to-face interactions, or a combination of both (this is detailed further in Section 4.1.3), or for experimenting with different governance models e.g., researching consensus through voting, or adopting a so-called "lazy consensus" model (Dana et al., 2021) (this is detailed further in Section 4.3).

The 'action' element of this study also manifests as part of a larger (PAR) investigation carried out by the first author on the practice of food-sharing across three European countries. This means that throughout her research and participation in

FS-STHLM, the first author has influenced the organisation of the community by implementing tools and practices that she had learned from her previous studies and experiences with food-sharing. For example, during her research and analysis of the FS-CPH community (Berns and Rossitto, 2019; Berns et al.,2021a, 2021b, p. 8), the first author spent much time learning and reflecting on the importance of bringing people together at food-sharing events, rather than having them collect food individually Berns et al. (2021a). This emerged as important for building community, negotiating fairness, and communicating activism by showing the scale of the surplus food that would otherwise have gone to waste. the first author strongly encouraged the community to adopt an event-based model of sharing, which they eventually did (the different food-sharing models are detailed further in Section 4.2.1. As we will unpack later in Section 3.6 this is an example of how the dual role of the first author as both participant and researcher of FS-STHLM enabled her to make and implement decisions as a participant and later reflect on them as a researcher.

3.3. Researcher positionality

The presented research started as a result of the first author's wider interest in food-sharing initiatives. Her previous research involvement with another food-sharing community, FoodSharing Copenhagen (Berns and Rossitto, 2019; Berns et al., 2021a, 2021b), provided initial insights on the practical issues (e.g., enrolling volunteers, organising food pick-ups), and the interesting analytical aspects to be considered when organising and studying food-sharing communities (e.g., practices around food-sharing events). Building on this past experience, the adoption of a Participatory Action Research approach (P.A.R), was central to not just studying, but also gaining first-hand experience of the work of establishing, sustaining and growing a food-sharing community from the ground up.

In her work with FS-STHLM, the first author used a commoning approach, taking on the role of an intermediary through participating as both a researcher and active community member. This draws on recent work by Teli and colleagues (Teli et al., 2020) who frame the engagement between design researchers and grassroots, activist communities as a form of commoning – that is grassroots practices that "nurture social collaboration and the emergence of collaborative subjects" (p. 5). In her role as an action researcher, she was involved in the organisation and running of meetings and food-sharing events, in making decisions about the involvement of volunteers, donors, and strategies to approach both groups. She also had an active role in designing key sociotechnical practices about the community's use of digital technology (e.g., social media, the Karrot platform), or the community could think of its governance models. This form of participation, which was also possible because of the trust other community members invested in her, enabled the first author to actively shape the organisation of the community and not only investigate it (ibid).

While related to classical concerns on reflexivity in participatory design and co-design, intermediation takes on the role of actively representing the specific interests of a community dynamic (Teli et al., 2020). Resonating with Teli and colleagues (Teli et al., 2022), the first author tried to employ designerly ways of knowing without imposing specific design methods such as empathy mapping or scenario development on participants which can temporarily replace the rules, norms, and strategies embedded in the community culture with those of the designer. Instead, as detailed above, she "played the long game" by conducting a complete participant observation (DeWalt and DeWalt, 2002) by being present and active during both the pivotal and mundane day-to-day moments of organising activism over the three-year period.

Maintaining and juggling both a researcher and a participant role has often been a conscious balancing act and at times tensions have arisen. Throughout the research process, the first author made explicit choices as a researcher and others more as a member. For instance, through previous involvement with research and other communities, they were aware of some challenges that would likely arise while setting up such an initiative (e.g., defining a vision), and such knowledge was shared with the rest of the community members, thus shaping the way problems were framed and addressed. On several occasions, the first author decided to prioritise their role as a participant to engage in "participation with the other rather than for professional privilege over them" (McCarthy and Wright, 2015, p. 15). In practical terms, this sometimes entailed forgoing more data collection, such as explicitly discussing or reflecting on technologies or practices, to support the running of food collections or sharing events because there was a last-minute shortage of food-sharers (volunteers). Moreover, during periods of low participation and dwindling interest from members in maintaining food-sharing activities, the first author often felt a sense of obligation to take on extra responsibilities to keep the community alive.

Balancing additional community activities, alongside her work at the university became overwhelming at times, leading to intermittent periods of burnout through-out the three years. On a more positive note, this approach of complete participant participation allowed for the relevance and trustworthiness of the data analysis to be explored continuously by means of member checking (Baumer et al., 2017). As an active member of the community, the first author could check their interpretations of the data against the perspectives and understandings of fellow members openly and on an ongoing basis. Ultimately, the conceptual contribution of this paper, as well as the suggested sensitivities reflect the first author's concerns for research and her commitment to helping establish the community and see it flourish.

McCarthy and Wright (McCarthy and Wright, 2015, p. 15) have discussed the tendency to keep "a professional distance" from the object of inquiry and to play down the messiness of everyday experience as a strategy to document and learn about it. During data collection and analysis, the first author often experienced a sense of messiness, which was also described by other volunteers. For exam-

ple, they felt the anxiety of coordinating events and endured the emotional labour of feeling unequipped to adequately respond to the needs of people experiencing food insecurity. This messiness is reflected in the points raised in the discussion, for instance, how organising activism around surplus food is circumstantial and highly variable, or how decision-making models require constant renegotiation. To counterbalance this feeling of "messiness" and to maintain a level of reflexivity throughout the study, the first author has kept a diary where they documented personal feelings, biases and insights experienced during sharing events and community meetings.

3.4. Data collection

The data presented in this paper have been collected between September 2019 and September 2022, mostly by means of complete participant observation (see (DeWalt and DeWalt, 2002)) carried out at meetings, sharing events, and during the processes of enrolling new food-donors. Complete participant observations entail the researcher's active role as both an observer and a core member of a social group. As the community is in the phase of maintaining main practices and collaborations with third parties, the research engagement with it has been valuable to understand aspects such as sociotechnical practices of infrastructuring the community's efforts, making them sustainable over time along with the food-sharers' (volunteers) attitudes towards growth.

These data consist of: (1) 66 single-spaced typed A4 pages of notes and minutes from thirty-nine volunteer meetings; (2) 43 single-spaced A4 pages of weekly reflections and field notes documenting activities that took place during food collections and food-sharing events, and conversations between community members that took place in face-to-face and online settings. The quotations found in the analysis were derived from volunteer meetings and conversations. These data provide rich accounts of both the minutiae of the day-to-day work of setting up and maintaining a surplus food project while also documenting higher-level discussions around the complexities of community organisation.

3.5. Data analysis

In this study, the first author took a bilateral approach to data analysis. Firstly, initial rounds of data analysis were carried out on a continuous basis throughout the study by reflecting on meetings and participatory experiences, creating working themes and using an iterative visual mapping technique (Burgess-Allen and Owen-Smith, 2010) to capture the central focus points of the community. Secondly, at the end of the data collection process in September 2022, the first author conducted a thematic analysis (Braun and Clarke, 2012) of the data collected over the three-year period

namely the notes and reflections from volunteer meetings and the weekly field notes and reflections collected during food collections and sharing events.

Working themes and visual maps. In late February 2021, as FS-STHLM became operational i.e., started collecting and sharing food, the first author began mapping out the meta-level aspects of the community that became visible to her through repeated participation. In the first round of mapping, three central aspects of the community were identified: people, tools, and surplus food.

Starting with "people" a visual map was created illustrating who the actors of the community are, such as the food-sharers (volunteers), food-savers (recipients), food-donors, hosts and other collaborators that make the rescue and redistribution of food possible. Once this map was created, an accompanying text was composed to describe the role of each participant group and to situate them within the context of the community. For example, closely examining the "food-sharer" group included observations on how the volunteers do the groundwork for the community, their past experiences, and the diverse cultural perspectives they may bring to the community. The same process was followed for the subsequent "tool" and "surplus food" categories- first creating visual maps, and then building on them with a descriptive text. The "tool map" included central digital tools such as the community's website and Facebook page; each tool was then connected with the actors that interact with it, and a short text describing what they used it for – e.g., the Facebook page is used for communication between food-sharers (volunteers) and food-savers (recipients). The "surplus food" map visualised the flow of the food stating, from collection from the food-donors, showing what food items are typically collected and where and how they are eventually shared with food-savers (recipients) in different ways.

Resonating with past work that illustrates the benefits of graphic and participant-centric artefacts such as mind-maps for data analysis and discussing findings with stakeholders (Wheeldon and Ahlberg, 2017), these maps were used in two ways. First, as boundary objects that enabled an exchange of expertise between the first author and her fellow community members (Vines et al., 2013); and second, as an analytical framework to connect codes and themes to a broader picture of the key elements of the community. This approach helped to make the research process transparent and participatory by allowing community members to have group ownership of the data analysis process (Burgess-Allen and Owen-Smith, 2010).

Thematic analysis. At the end of the data collection process in September 2022, the first author conducted a thematic analysis (Braun and Clarke, 2012) of the notes and reflections from volunteer meetings and the weekly field notes and reflections. Building on the earlier rounds of analysis, this process began by highlighting words, phrases and sentences in the text, and identifying shorthand labels or "codes" to describe their content. These codes captured a more detailed account of the day-to-day operations of the community as well as her own personal reflections as both a participating volunteer and researcher. The data became richer and more nuanced over time, for instance, the initial category of "people" expanded

to include codes such as "community, not service" and "conflicts/disagreements between food-sharers (volunteers)", the initial category of "tools" expanded to include codes such as "building routines" and "online/offline balance" and the category of "surplus food" include codes such as "fairness" and "managing expectations". The findings were then triangulated with the maps that were created in the earlier stages of data analysis. For example, the "surplus food" map that visualised the flow of food within the community was helpful for unpacking gradual changes in conceptualisations of fairness over the three-year period. In the final rounds of analysis, the authors worked together to iteratively unpack the various connections and relationships that exist between these categories, and codes were sorted into the following themes: setting up the community, setting-up sharing, and governing the community.

3.6. Ethical considerations

The choice to not anonymise the name of the food-sharing community was negotiated with the community members. This decision resonates with HCI and CSCW research that has called for a reconsideration of ethics in anonymization practices (Brown et al., 2016), and for a concern to give credit to community-led initiatives striving for social change (Rossitto and Lampinen, 2018). This approach also reinvigorates the argument that HCI research should find sites of resistance, narrate them, and help them proliferate through design research and practice (Heitlinger et al., 2019). The geographical location of the community has been disclosed, as it is important to recognise the very specific socio-cultural context that shapes the ways the community operates and conceives of surplus food. However, the names of the individuals who participate in the community and this study have been anonymized.

In a longitudinal study such as this, with community members coming and going – ethical concerns such as obtaining informed consent from all collaborators and more casual participants can be problematic. To overcome related challenges, we took a two-pronged approach. Firstly, verbal consent to collaborate or participate in the study was collected on an ongoing basis with community members as the first author spoke openly about the research project and what it means to be involved. Secondly, during the three-month time period between data collection and submitting the paper for publication, the first author circulated a digital consent form outlining the study results and that all personal data would be anonymous, but the name of the organisation would be revealed. This consent form was used by the authors to obtain explicit consent from all community members whose direct quotes have been used.

4. Analysis

The analysis is structured around three themes that capture how learning from other food-sharing communities contributed to the work of setting up FoodShar-

ing Stockholm. As we will unpack, learning took place through the volunteers' direct and indirect experience of other food-sharing communities – particularly with respect to key sociotechnical practices, and models and strategies to organise food-sharing. The relevance of learning through previous experience is illustrated across three themes (illustrated in *Figure* 1). The first one examines the efforts of setting up the community, namely, developing ways of working, recruiting food-sharers (volunteers), and establishing partnerships with food-donors. The second focuses on the negotiation of values and practices framing the re-distribution of surplus food, showing the mutual influence of both the activist concerns and logistical practicalities con of sharing, as well as negotiations of fairness within the community. The last theme deals with how governance and decision-making models are (recurrently) negotiated, and how the work of activism is maintained over time.

4.1. The role of previous experience in setting-up the community

Dealing with the practical concerns to get the community started and make it work was the primary focus of early volunteers' meetings. In what follows, we detail how volunteers considered both practical arrangements, concerned with putting together the resources needed to operate, and efforts to define driving visions and values through the direct or indirect experience of other food-sharing initiatives. Resonating with past work (Bødker et al., 2016), some of these learnings were then strategically re-contextualised to align with the goals and capacities of the community, while others were adopted by happenstance.

4.1.1. Developing ways of working

Showing how initiatives striving for social change often develop within broader contexts where specific matters of concern have gained attention, FoodSharing Stockholm stems from the early actions of four people who shared concerns for environmental sustainability. Through an unplanned encounter, these persons discovered a shared interest in food-waste reduction when meeting at an environmental protest, which thus provided a relevant backdrop to start discussing their experience and views on the topic. This was the starting point for a number of discussions on how the practice of food-sharing, which was already successful in other counties e.g., Germany and Denmark, could be established in Stockholm. These discussions led to a kick-off meeting to which potentially interested people were openly invited. The invitation to join the initiative was shared openly by word of mouth within the personal networks of the initiators, and through a flyer that was distributed physically, by email, and on various social media platforms. With twenty-four participants in attendance, the interest in what can be regarded as the community's first meeting was high.

Early participants were mostly ex-pats who had relocated to Stockholm from other cities many of them had direct experiences with other similar communities.
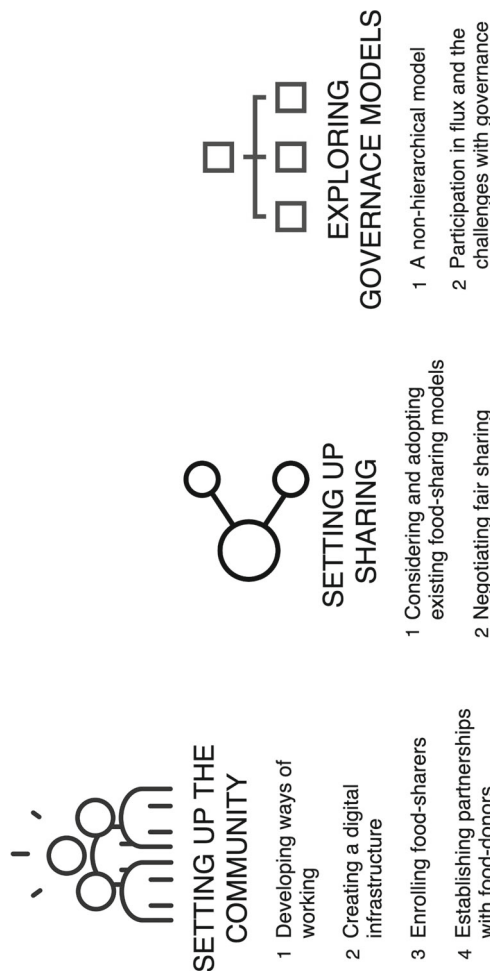
SETTING UP THE COMMUNITY

1 Developing ways of working

2 Creating a digital infrastructure

3 Enrolling food-sharers

4 Establishing partnerships with food-donors

SETTING UP SHARING

1 Considering and adopting existing food-sharing models

2 Negotiating fair sharing

EXPLORING GOVERNACE MODELS

1 A non-hierarchical model

2 Participation in flux and the challenges with governance

Figure 1. These three themes illustrate the role of previous experience in setting-up FS-STHLM: (**1**)Setting-up the community, (**2**)Setting-up sharing, and (**3**)Exploring governance models.

Because of this discussions at the first meeting took place through an informal brainstorming session where participants shared both new ideas (e.g., what kind of food could be shared) and established practices that they had learned through previous experiences (e.g., sharing food at public events). This helped to outline ideas of how this food-sharing community could operate, and what visions about food sustainability could frame its operation. In later meetings, previous first-hand understandings of the challenges of organising food sharing became more prominent and were key to having focused discussions on framing underlying motivations for distributing surplus food. Participants were not always in agreement about certain issues. For instance, in considering the recipients of food redistribution, some thought that the focus should be on helping people who are in need, while others thought the focus should be on waste reduction. In situations like these, considerations of other initiatives for making the same decisions were helpful for understanding the nuances of these decisions, as more established communities had a wealth of knowledge on the practicalities of such choices.

Sharing success stories from other food-sharing communities was, therefore, instrumental to initial planning – for example, FoodSharing Copenhagen in Denmark, Solikyl (translation: Solidarity Fridge) in Göteborg Sweden, Fairteiler (translation: Fair Dividers) in Vienna Austria, and foodsharing.de operating in various locations across Germany. As a result of this, the initial stages of setting up Food-Sharing Stockholm were characterised by learning from the ecology of framings (e.g., for charity, environmentally concerned), practices (e.g., how to structure distributions), and values associated with different experiences of food-sharing, both as a concept and practical ways of organising community work. Food-sharers identified how some groups viewed food-sharing as a form of solidarity (Chies, 2017) while others appeared to be more driven by environmental concerns (Berns et al., 2021a) associated with wasting food.

Knowledge of other initiatives was also useful to reflect on how available human resources (i.e., number of volunteers, food donors) would relate to the scale of operation to aim for. Here, discussions centred around how some communities had grown to be quite large organisations and food-sharers, who had previously participated, shared their opinions about them. For example, it was explained that FoodSharing Copenhagen was a highly structured organisation with an active board and a formalised structure for recruiting as well as training food-sharers (See (foodsharingcph.org, 2020) for details). Similarly, foodsharing.de was also described as being a structured organisation, and food-sharers who had previously participated in it credited their bespoke platform (foodsharing.de, 2020) for its success to scale out its activities across different locations. Although inspirational, the large-scale operations of these were experienced as intimidating. Participants agreed that this level of organising would be difficult to replicate in this context due to an unknown number of food-sharers and food-donors. Therefore, food-sharers rejected this idea and found themselves drawing more on the experiences of smaller and more localised

communities such as Solikyl (solikyl.se, 2019) and Fairteiler (fairteiler, 2022). Staying small, to operate with limited capacity in terms of human assets, was an explicit strategy agreed on already in the phase of setting up the community.

A third issue extensively explored was the work that is practically needed to make the community work, and how related tasks and responsibilities could be distributed and organised. These tasks were largely identified through the initial brainstorming session. Here as well, the participants' direct experience and knowledge of other food communities played a central role for food-shares in learning about the main concerns to be dealt with. For example, reaching out to food donors and finding tools to structure their work and advertise events. Following this three working groups were established: 1) a communication group, that would work on strategies for finding food-donors, finding locations for sharing events, advertising to potential food-savers (final recipients), and developing a mission statement for the community's main motivations and the goals it strives for; 2) the fair-share group, who planned to investigate synchronous and asynchronous modalities for sharing food fairly (e.g., hosting events, setting up a community fridge or pantry); and finally, 3) the technology group was responsible for researching digital tools that could be useful for organising and structuring different aspects of the community's work.

The explicit distribution of responsibilities to each of these groups was a strategy to divide the processes and work of setting up the community into specific issues. This strategy was, however, difficult to uphold. While the early participants' previous experience with other food-sharing initiatives had helped identify key operational needs, it did not extend to the practical orchestration of them, especially when operating with limited capacities. Shortly after the working groups were formed, the total number of participants reduced from twenty-four to twelve, after a number of initially interested people dropped out early on. The reduction in numbers resulted in the decision to hold all subsequent meetings as one group. This was the first of many instances where food-sharers needed to adjust and re-organise the community's work based on changing circumstances (e.g., a food donor changing the food collection day) or changes in participation numbers (this is detailed further in 4.2).

4.1.2. Creating a digital infrastructure

As previously mentioned, researching digital tools to use for organising and structuring the different aspects of the community's work was a key focus for setting up the community. Significant efforts were put into strategically planning the different digital tools that could form the community's digital infrastructure. Resonating with previous work on artefact ecologies (Bødker et al., 2016), the first two years of operation of this community shows that the digital infrastructure needed to be flexible, and that the adoption of specific technologies, or functionalities within them, also evolves from situated circumstances. The digital infrastructure of the community

continued to expand as different needs arose. Connecting to work that highlights how activist communities tend to favour non-commercial platforms (Hirsch, 2011), for many food-sharers it was important to use open source, non-mainstream tools where possible as they felt such tools would better align with the values of the community (these are illustrated in Figure 2).

Most tools required, such as email and web hosting, were easy to find open-source. Yet, to gain local visibility and attract people to attend food distributions, food-sharers felt that it was also necessary to have a presence on mainstream social media platforms, such as Facebook and Instagram. A practice they had learned was successful for other food-sharing communities, such as FoodSharing Copenhagen and Solikyl. As a result of using Facebook and Instagram for advertising food-sharing events, food-savers began to reach out using the same platforms, resulting in Facebook and Instagram direct messenger becoming the primary means of communication between food-sharers and food-savers as well as the most common first point of contact for potential new food-sharers. The decision to use the mainstream social media platforms connects to other work (for example, (Rossitto et al., 2021)) that highlights how the convenience connected to adopting available technology might override concerns for digital platforms' economic interests or (miss)alignment with a community's values.

However, it was still considered important for internal communication to be organised around non-commercial tools. A platform called *Karrot* (karrot.world, 2022) was introduced by community initiators during the first meeting. They had learned of the platform during a discussion with a member of the neighbouring Solikyl community who found it very useful. Karrot was presented to other food-sharers as a free and open-source tool for food-sharing groups that allow initiatives to create independent "groups" with their own name, logo, processes, rules and agreements. While some attendees agreed that it sounded intriguing, others (including the first author) voiced concerns about having the majority of interactions take place online rather than face-to-face. Therefore, the platform was not adopted straight away, instead, it was agreed that it would be investigated as a potential tool by the technology working group. Although the platform was ultimately adopted, this is an example of how learning can take place over time, and decisions are not always made right away. In this case, food-sharers needed some time to figure out concretely how things might play out for the new community.

Over the course of a month, a FoodSharing Stockholm group was created on Karrot to enable food-sharers to explore and experimented with the features offered by Karrot, such as creating events and making the location of potential donors on a map. Following this experimentation period, more and more interactions took place on Karrot and the platform remains the central infrastructure used by food-sharers today. Karrot is used to organise face-to-face activities food collections, distributions and meetings as well as to collect statistical data on the quantities of food distributed. However, in other situations, the adoption of certain sociotechnical prac-
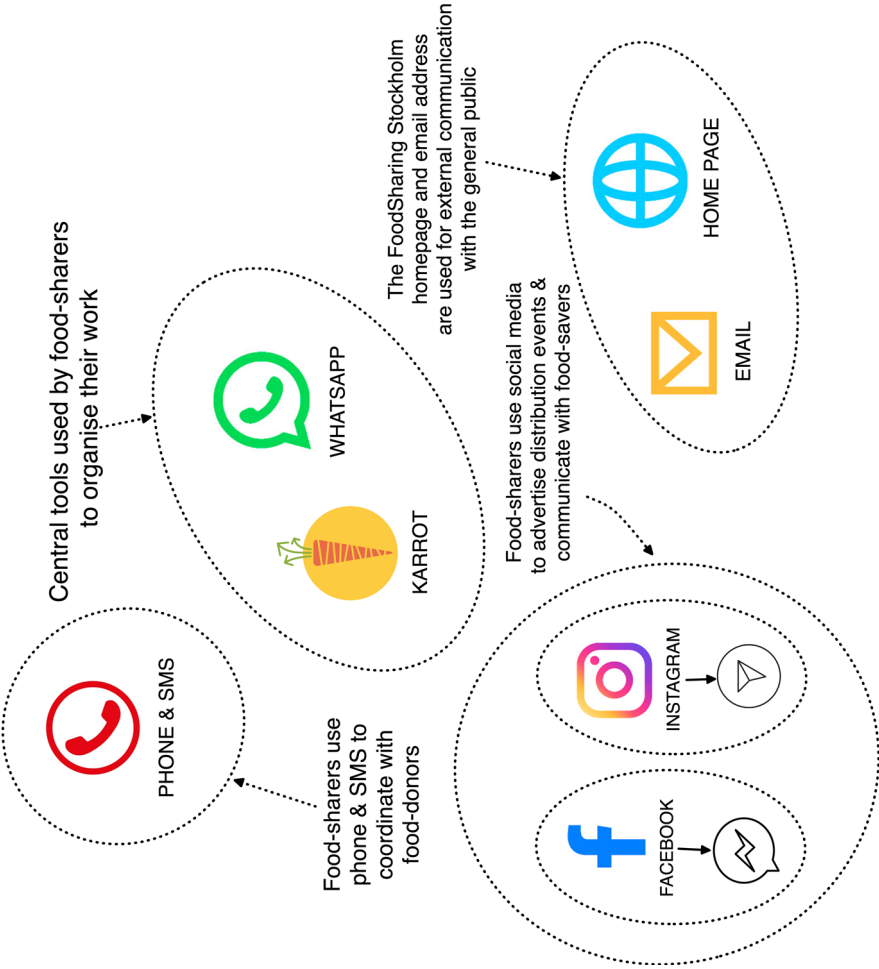
Central tools used by food-sharers
to organise their work

The FoodSharing Stockholm
homepage and email address
are used for external communication
with the general public

WHATSAPP

KARROT

HOME PAGE

EMAIL

Food-sharers use social media
to advertise distribution events &
communicate with food-savers

PHONE & SMS

Food-sharers use
phone & SMS to
coordinate with
food-donors

INSTAGRAM

FACEBOOK

Figure 2. This overview of the digital infrastructure of FoodSharing Stockholm illustrates the technologies that the community use and their primary functions.

tices happened by happenstance rather than strategic planning. For instance, telephone contact and SMS messaging were also initially used between food-sharers if quick contact was required as not everybody had the possibility to check Karrot regularly as a mobile version of the platform is available only on Android and not available for IOS users. However, in early 2022 SMS messaging was eventually swapped out for a WhatsApp group to facilitate group discussions transparent to all food-sharers, rather than one-to-one conversations.

4.1.3. Enrolling food-sharers

As also noted in other studies (Biørn-Hansen and Håkansson, 2018), enrolling food-sharers (volunteers) and creating the social assets needed for everyday work was central to setting up the community. Here, learning from other communities was instrumental in unpacking different enrolment practices. Some of the identified practices were rejected early, for example, previous volunteers of FoodSharing Copenhagen (foodsharingcph.org, 2020) recalled their experience with formal online onboarding systems. Here, potential new volunteers would need to watch informational videos about the organisation and what being a volunteer entails. Followed by a short quiz intended to determine if potential volunteers understood what Foodsharing Copenhagen is all about. While other practices were given more careful consideration, such as that of the Fairteiler community where both instances of happenstance and more structured enrolment practices were considered. Some food-sharers recalled their experiences of becoming involved by chance, after stumbling upon a sharing event or seeing an event advertisement on social media.

Following a number of discussions, food-sharers decided that they liked the casual approach to enrolling new sharers. This led to the adoption of a mixed strategy to facilitate the enrolment of new food-sharers, where some were enrolled at face-to-face events, while others were enrolled via private messages, sent on Facebook or Instagram, by people who showed an interest in the initiative. However, individually responding to a large number of messages was experienced as too laborious, to the point that food-sharers felt it was taking time away from the needed, practical work of collecting and distributing food. As it was not uncommon for "interested" persons to quickly lose interest or never actually participate, the responsible food-sharers grew frustrated that time invested in these tasks seldom resulted in increased participation. So instead, to stay flexible, food-sharers decided to set up multiple digital and physical contact points that could automate part of the process and filter general enquiries from more constant involvement. With this sociotechnical setup, the first contact was an automatic reply on Facebook Messenger that thanked senders for reaching out and linked them to a website with a description of the community, information on how to get involved, as well as an FAQ.

Moreover, on the website, anyone interested in becoming a food-sharer was invited to stop by at one of the distribution events, join one of the biweekly meet-

ings, and then join the core working group on Karrot. At this point, one experienced food-sharer would take on the responsibility to welcome newcomers personally, guide them, and assist them during their first shift. Apart from being more flexible, this system also limited access to the Karrot platform and, therefore, access to sensitive contact information about partnering food-donors. Again, based on the direct experience with other food-sharing communities, some of the volunteers were aware that such information had been abused, with people trying to receive donations outside of the prearranged times, resulting in a breakdown of the collaboration.

4.1.4. Establishing partnerships with food-donors

Developing strategies for approaching potential food-donors, and avoiding potential pitfalls was unsurprisingly one of the most prominent practical concerns in setting up the community. Food-sharers learned from the challenges faced during past experiences with similar communities, as well as, learning from strategies for recruiting food-donors that were published in an online anti-food waste forum, foodsaving.world (foodsaving.world, 2022)

Expanding on previous studies (Biørn-Hansen and Håkansson, 2018), in this section, we disentangle how this process intertwines with the food-sharers' effort to develop a clear vision for the community as well as with the development of a strategy to talk about food waste with potential donors. Much was learned from food-sharers' experiences with other food-sharing communities. For instance, past participants in foodsharing.de had experienced that a challenge with enrolling donors is that one only has one chance to convince them to collaborate with your organisation, in that store managers are busy and meetings are difficult to schedule. With this in mind, food-sharers agreed on the importance of being well-prepared with clear information on what was expected from donors, and how food would be handled and shared. While planning how to approach potential donors, it became obvious that contacting donors required the communication of an explicit vision of the community and its goals (e.g., helping others in need, addressing sustainability issues), and a clarification of the potential benefits for the donor.

Implementing its own effective communication form, volunteers who regularly attended the community meetings, wrote a script to be used as a base to talk to donors. It was articulated in three steps to a) enquire about potential food-donors' current practices for managing surplus/reducing food waste; b) explain what the FoodSharing Stockholm community seeks to achieve and how; and c) highlight the benefits a collaboration could provide. Two information artefacts were developed to support the food-sharers with this activity, namely a Q&A list, and a pamphlet with information about the community. The script was to be used as a guide to introduce the organisation in a clear and consistent manner. It consisted of a list of questions that donors could potentially ask, and responses to them. In the transcript

below "Q" are the potential questions asked by donors, and "A" are the suggested answers for volunteers:

Q. *"Who is food shared with and why?"*
A. *"Food is shared with everyone and anyone, the goal is to show people that surplus food is not 'waste' and can be accessible to everyone"*

Drawing on the past work of a similar community, other questions were adapted from a detailed guide for "How to build and maintain co-operations with stores" shared by another organisation on a community forum [3] on the Karrot platform. This included topics such as: (1) which store to approach, (2) how to initiate contact with store managers, (3) ideas on how to navigate common roadblocks, such as managers who like the idea of food-sharing but make claims such as, they don't throw anything away, and (4) what to do once a co-operation is attained, how to maintain it through reliability and professionalism. For example:

Q. *"We are already collaborating with another organisation, so why should I collaborate with you too?"*
A. *"If you are able to donate all of your surplus food to this organisation, great! Our aim is to avoid and minimise food waste so good job, we congratulate your efforts. If however, you do have some food left still, we can help to reduce your surplus even further."*

To complement the script, pamphlets were prepared with more detailed information that would allow potential donors could review it later on.

When approached, many businesses responded positively showing that they shared the concerns of the community, yet declined the invitation to join for a number of different reasons – e.g., ongoing collaborations with charitable organisations, previous problems with similar initiatives to donate food, concerns for the work needed to collect and work out surplus food, regulations about food safety, claims about not having any food waste. Although food-sharers tried to be strategic, putting considerable effort into preparing for meetings with potential food-donors, much of the work of enrolling food-donors played out as in-the-moment responses to the concrete, unexpected challenges of talking to them. Ultimately, food-sharers realised their most successful way to form co-operations was through utilising personal connections, with the hope of building enough trust with donors to expand to a more regular agreement. For instance, the first food donation, received by the community, came about through a friend of the first author who was employed in a supermarket, and who arranged a meeting with the manager to discuss a donation for one specific event at a local community centre. This cooperation later developed into regular, twice-per-week donations which are still maintained at the time

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[3] http://foodsaving.net/

of writing. Telephone calls and SMS messaging have become the typical means of communication with food-donors as communication is fast and does not require specific applications. As discussed during one food-sharer (volunteer) meeting, the combination of the non-committal "one-off" nature of the donation, coupled with trust deriving from the direct connection with the employee, has been regarded as a reason for this successful partnership.

4.2. The Role of previous experience in setting-up sharing

This section further illustrates the challenges of setting up the community (Section 4.1.1) by focusing on the negotiation of values and practices framing the distribution of surplus food. Alongside lengthy discussions about how to develop co-operations with food-donors, early on food-sharers also engaged in many conversations about the logistics of actually sharing surplus food. Once again, learning from the choices of similar communities, food-sharers investigated how the community might be shaped around sharing food with specific cohorts of people. Below, we illustrate how sharing surplus food is defined by visions and values, but also shaped by the practical, logistical challenges of collecting, sorting, and (re)distributing such food.

4.2.1. Considering and adopting existing food-sharing models

As noted in 4.1.1, based on previous experiences volunteers decided, early on, that the primary goal of the community was to prevent food waste by sharing it with anyone. This approach foregrounds principles of solidarity and environmental sustainability, rather than the economic needs of more vulnerable groups. This is not to say that early food-sharers disregarded the role of charity. But rather, many had learned through their previous experience with other food-sharing communities, that charitable initiatives require a more stable organisation and infrastructure to offer reliable support to those experiencing food insecurity. Thus, not being able to predict the flow and intake of donated food – especially with the small network of food-donors Food Sharing Stockholm partners with – also contributed to the vision of a food-sharing community that would be primarily concerned with more sustainable food consumption.

Moreover, food-sharers (volunteers) drew considerable inspiration from other food-sharing communities to work out the logistics of sharing surplus food and adapt them to the context of a different city and community. Both synchronous and asynchronous models for food sharing were carefully examined. As noted earlier (Section 4.2), during one food-sharer meeting, four known models of food sharing used by similar communities were identified. One model, directly inspired by food-sharing.de (see (Ganglbauer et al., 2014)), involved a one-to-one exchange between community volunteers and food recipients of pre-made surplus food boxes, following an online signup process; another approach, inspired by the Solikyl community, was to have a community/solidarity fridge that volunteers would fill when donations were received, thus allowing food recipients to stop by at a time that was convenient

for them (see (Chies, 2017)); another option, employed by the Fairteiler group, was a more direct form of sharing, where members simply took turns collecting from donors in larger groups with no distribution point (see (fairteiler, 2022)); finally, another option was an event-based model where larger quantities of food were collected, sorted by volunteers, and distributed to recipients/attendees at set dates. Two of these models, the community/solidarity fridge model, and the food-sharing event model were discussed in depth as potential options for FoodSharing Stockholm. Both models were compared with regard to access to physical infrastructure (i.e., sourcing and placement of a fridge or finding a location for hosting events), time flexibility around food access and distribution, and potential impact (e.g., which model would enable the greatest amount of food to be shared, or raise people's awareness about food waste). Eventually, it was decided to begin by adopting the community fridge model, in that it would provide much-needed flexibility, and require little organisation work as the fridge can be filled anytime food is available.

Moving forward with the agreed strategy to share food asynchronously through a fridge, a partnership was established with a local, volunteer-run community centre where space was available. This connection was established through personal connections where a FoodSharing Stockholm food-sharer was acquainted with a member of the centre. However, quite early on this cooperation became problematic as the location did not have regular opening hours, thus making it difficult to accurately advertise opportunities to collect food. This led food-sharers to adjust to a hybrid approach, where most of the donated food was shared at planned, face-to-face events, with any remaining food being placed in the fridge for collection when the community centre was open. Combining these two ways of sharing gave the community a combination of visibility and flexibility. Bringing food-sharers and food-savers together for events was advantageous for rendering visible and developing activism around food waste as a societal issue. At the same time, having the fridge made food collection more flexible by expanding collection possibilities and taking pressure off food-sharers to distribute all food items by the end of each event. Communication with food-savers was predominantly carried out through social media, namely Facebook and Instagram, and mostly to advertise events. The two digital platforms were used to share information about distribution times and locations. Images of food that has been saved, and meals that could be cooked with it were also often shared.

4.2.2. Negotiating fair sharing

Complementing the practicalities of how food is distributed are questions of what values should shape food sharing. Although from the perspective of food-sharers, the central goal of FoodSharing Stockholm is to reduce food waste, they also feel responsible to try to share available food as fairly as possible among those who attend events. However, multiple discussions between food-sharers and between food-sharers and food-savers revealed that there was no shared agreement on what constituted "fair" sharing within the community. The first author had a first-hand

experience of this issue in her previous work with the FoodSharing Copenhagen community (Berns et al., 2021a, 2021b), and initiated conversations on how Foodsharing Stockholm might learn from them.

However, this was another example of how learning took place over time through a series of debates and experiments. For instance, some community members felt that the most "fair" but also efficient way would be to count all of the food items and divide them equally among the number of food-savers present that day. While others felt that this approach was not really conducive to reducing food waste as it might mean that people collect food that they may not actually use. This raises the point that "equal" may not always equate to "fair" for example, perhaps it does not make sense for a person who is just feeding themselves to collect the same amount of food as say someone with a family of four. Similarly, some community members felt that personal situations should influence who gets to take what, for instance, two older food-savers suggested that those who are old should get to collect food first.

Following trial periods with these different approaches, food-sharers recognised that there was no clear solution to this. Therefore they decided to take another look at how similar established communities approached fairness for practical inspiration. This led to the implementation of an approach previously used by FoodSharing Copenhagen that worked as follows: As food-savers arrive they each blindly pick a numbered ticket out of a box, and this ticket decides the order in which they will collect food, like a lottery. The numbers are then called in sequence and food-savers are asked to decide how much food to take based on what they will be able to consume while also trying to consider others who are also hoping to collect food. Food-sharers use their experience to help to guide food-savers on what a "fair" amount to take might be and food-savers who wish to can partake in a second collection round, once everyone has gone once. This allows for flexibility on what to collect but also ensures that even the person with the last number in the queue has a chance to collect something and that all of the food will be distributed. As one food-sharer stated in a discussion thread on Karrot:

> "I think that it's okay to come out of the distribution and one saver got 5 bananas and no one else got bananas but someone else got 5 apples and someone else got 5 oranges." (Food-sharer 4)

This approach to sharing surplus food resonates with the point made above that issues relating to environmental concerns, social responsibility and logistical challenges are interconnected in food-sharing communities. Members of FoodSharing Stockholm try to adapt to the complexities of food waste reduction and reinvest surplus food with new value. Events focus on reducing waste at the retail level but also work to encourage all members of the community to be more aware/conscious of reducing waste at home. For instance, once again learning from the practices of FoodSharing Copenhagen, when welcoming food-sharers to the events food-savers make a speech describing how the event will work and offer the guideline that "*just*

because it's free doesn't mean you should take as much as possible, think about what you can really use" (Food-sharer 5).

4.3. Exploring governance models

Processes and strategies to govern and organise the food-sharing community were negotiated and structured over time. Once again inspiration was drawn from food-sharers' direct experiences with other activist groups, within and beyond the context of food-sharing, as well as, direct conversations with members from the neighbouring community, Solikyl. The data highlights how efforts to define governance unfold resonating with scholarship that describes grassroots democracy as *"practised through a system of norms, values, societal processes and institutional arrangements fueled by the commitment and capacities of ordinary people"* (Tandon, 1997, p. 4). In what follows, we detail the ongoing processes of negotiating different organisational and decision-making structures and the day-to-day processes that reinforce them; this includes, for instance, discussions between food-sharers (volunteers) on the topics of reaching consensus, scaling the initiative, and reflections on when it would be a suitable time to become a more formally structured organisation (e.g., an NGO).

4.3.1. A non-hierarchical model
In early discussions on how to run the community, one of the core food-sharers proposed adopting a non-hierarchical, democratic decision-making model. This became the topic of several subsequent meetings with much time spent discussing how a non-hierarchical model would work in practice and the pros and cons of the model – for example, most food-sharers agreed that power would be equally distributed, while also sharing concerns about possible lengthy deliberation processes. The organisational approaches of other similar groups were considered relevant examples. For instance, some food-sharers discussed their experience with the highly structured approach of FoodSharing Copenhagen which included a biannually elected board and six working groups who managed various aspects of the community (Berns and Rossitto, 2019). Additionally, a video call was arranged with volunteers from the neighbouring community Solikyl as a way to learn from the experiences of another Swedish initiative. During this call, one volunteer advised the community during a video meeting that having a hierarchy should not be overlooked. Echoing past work which argues that structure will exist whether formalised or not (Freeman, 1972; Schneider, 2021), the Solikyl volunteer advised that hierarchies can be useful to solve problems as there will be someone who can make difficult decisions and that a more horizontal model requires an explicit agreement on what can be decided by a small group of people, and what instead requires broader consensus:

  "Hierarchy can actually be good once people don't abuse power, [a hierarchical model] does support mechanisms to move out of difficult situations [...] but it's

important to consider, what are the freedoms within the group, and what sorts
of things should be agreed as a group? Sometimes people need to be pushed to
take action." (Solikyl volunteer)

Ultimately, the community decided to forgo adopting a hierarchical model due
to a number of factors. As previously detailed in 4.1.1 initial attempts to organise
into working groups proved unsuccessful which contributed to many food-sharers
shying away from adopting a structured approach. Moreover, many food-sharers
felt this would be unnecessary, at least during this early stage of the organisation.
Although, food-sharers did explore the possibility of individual freedoms within
the group. For example, in an attempt to find a balance between responsibility
and control, they agreed on having a rotating facilitator for the weekly volunteer
meetings, someone who would run the meeting by taking attendance, formulate an
agenda based on attendees' suggestions, and make sure that everyone would have
an opportunity to speak. And a "temperature check" system was implemented as a
way to quickly reach a consensus on decisions where food-sharers would use hand
gestures that were pre-agreed upon to communicate their feelings with regards to a
particular decision – e.g., holding one's hand upwards and wiggling one's fingers to
show agreement with a suggestion. Moreover, the Karrot platform included features
that helped to facilitate this kind of decentralised decision-making. For instance, the
community made use of a built-in trust system that allows food-sharers to give and
receive "trust-karrots" to others, with more karrots equating to increased editing
capabilities. It was also discussed that Karrot also has a built-in voting system that
would enable food-sharers to resolve any conflicts in a communal way, however,
this feature has not presently been used.

Outside of meetings, one food-sharer suggested that perhaps each individual
could use their best judgement on making decisions that are time-sensitive or seem
like they would be agreeable. This would practically entail that food-sharers could
just act when needed, and then discuss with the whole group when the first oppor-
tunity arises. This process would still allow discussions about wrong or right deci-
sions, and still, help the community to learn by trial and error and over time develop
a set of shared norms and values on which future decisions can be made (Tandon,
1997). Posting about the community in a local dumpster diving group on Facebook
was regarded as an example of an "easy" decision to which a food-sharer could
"just say yes" while establishing a partnership with a new food donor was proba-
bly something that should be discussed as a group. The idea was that this working
strategy could result in more efficiency, in terms of making things happen, and
reducing decision fatigue among members.

However, as the community developed, it became more difficult to recognise
what decisions that could be taken independently, and which ones require discus-
sion. One food-sharer, for instance, shared an episode when she posted something
on the community Facebook page that another contested as irrelevant. Relatedly,
others have shown frustration with the flat hierarchy, and how to navigate it. Sit-

uations such as this highlight the messiness of grassroots democracy and how previously established norms can be subject to change. Being committed to a non-hierarchical decision-making structure has often been in tension with the desire to take practical action (Dana et al., 2021) – i.e., picking up food and redistributing it. Several food-sharers lamented that they experienced the initiative as "all talk and no action", and some even felt that the community had lost potential members who were enthusiastic to get involved, but ultimately left as they were not interested in the more organisational, time-consuming aspects of the community. Periods of less structured decision-making were prompted by a feeling that the process was getting in the way of progress. As one food-sharer (volunteer) stated during an informal conversation, *"the speed of action should be linked to the level of importance"* (Food-sharer 3).

4.3.2. Participation in flux and the challenges with governance

The decision to deviate from the suggestions of Solikyl and observed practices of FoodSharing Copenhagen and foodsharing.de, and adopt a non-hierarchical governance model became problematic with regard to fluctuating numbers of food-sharers, and their level of engagement with the community. During periods when food-sharers' participation is high (in this case, between twenty and thirty approximately), a more formal approach, that is reaching a consensus on every decision at face-to-face meetings, was considered necessary. During periods of low participation (approximately five to ten), the community found that disagreements rarely arose, so as a response a more pragmatic approach to governance was adopted. Decision-making was moved online to Karrot, where issues could be shared as posts if and when they arose. This way food-sharers could simply make their feelings and opinions known in the comments. In practice, however, posts on Karrot tend to receive minimal interaction, due to varying levels of participation, but also to many food-sharers' lack of interest in organisational matters. Unlike the real-time deliberation that occurs during face-to-face meetings, discussions online were more fragmented and waiting for everybody to respond to a post proved to be impractical. Therefore, the community explicitly decided to use a combination of the lazy consensus model (Dana et al., 2021; Schneider, 2020) (where proposals within a group may be presumed to pass unless any explicit objections arise) and a do-ocracy methodology [ibid]. This means that those who take the initiative to do work in a group are empowered to make decisions about what they do. This pragmatic solution allows food-sharers to take more of a backseat role with regard to the organisational work of the community if they so wish, but discussions and decisions are still visible to all who are signed up to the FoodSharing Stockholm group on the Karrot Platform. In a sense, the non-hierarchical model is framed and (re)interpreted within the practices of the community, where active participation and responsibilities define core food-sharers and their ability to make decisions. Ideals of democracy are practically redefined by volunteers' degree of participation and involvement in the community.

5. Discussion

CSCW and HCI scholarship on grassroots initiatives has illustrated how communities self-organise, and how digital technologies are appropriated to both structure key practices and contend with specific matters of concern (Berns and Rossitto, 2019; Berns et al., 2021a; Engelbutzeder et al., 2020; Ganglbauer et al., 2014; Le Dantec, 2016; Lu, 2021; Mosconi et al., 2017). Zooming in on the specific case of FoodSharing Stockholm, our analysis has unpacked the processes and everyday actions whereby a small grassroots initiative develops key visions and ways of organising collaborative work, from the ground up. Resonating with other CSCW studies (Frauenberger et al., 2018; Hughes et al., 2017; Lampinen et al., 2022; Rossitto, 2021), our analysis has illustrated how processes of setting up, infrastructuring and governing, the community developed through a set of inter-connections with related initiatives. Narratives about the impact of such initiatives, key values and sociotechnical practices, ways of organising food distribution, and strategies to deal with various challenges were oftentimes discussed and carefully considered through key volunteers' direct or indirect experience of similar initiatives. We have characterised this sense-making process, whereby volunteers share their knowledge of other initiatives and consider their adaptability to the new context, as a form of learning. As such, these processes are transformative (they can change the way people act) but not always linear and straightforward. First, we have seen that the outcome does not necessarily coincide with the decision to adopt specific configurations from other communities (e.g., a formally structured way of organising, or the use of a digital platform to facilitate sharing events). Second, the analysis has shown that a careful reflection of existing food-sharing models was instrumental to shape the community's own food distribution already early on. On the contrary, practices and models of governance were first adopted, following the example of another community (Section 4.3.1), but then revised once core volunteers realised that processes of decision-making are highly influenced by the fluctuating number of central and more peripheral food-sharers (Section 4.3.1). This form of learning unfolds and evolves over time, can call for experimentation, and sometimes result in ideas eventually being disregarded.

In the context of Participatory Design projects, past work (Bilandzic and Venable, 2011; Hughes et al., 2017; Lankester et al., 2018) has illustrated the central role of learning in developing social connections, digital literacies, and knowledge. These studies emphasise learning between people who can become part of a community (e.g., hacker spaces), and their approach directly draws on the conceptualisation of learning in Communities of Practice (Wenger, 2011). Here, learning takes place within specific social contexts, and it is conceived as a move from peripheral to central membership, as a form of expertise development, and transformation that includes people's self-reflection. Our conceptualisation of learning complements this view, as it draws attention instead to the relations that grassroots initiatives develop with each other, as narratives about key visions and impacts, sociotech-

nical practices, sharing models, or about strategies for organising activism are considered, borrowed, and adapted by members of a new community. As such, it further specifies the notion of proliferation (Lampinen et al., 2022), by focusing on the encounters and the human agency that makes key practice, outcomes or artefacts travel. Although becoming a central member of a community might rightly be the consequence of extended participation, our emphasis is not on the mere appropriation of existing practices, but the configuration of new ones in new contexts.

We refer to the emerging body of previous experiences as *Collective histories of organising*. The term signifies the many subjective understandings, knowledge and awareness (e.g., what needs to be done and what strategies can help, challenges, problems to be avoided) that each volunteer brings to specific community-led initiatives and the processes whereby these stories become contextually relevant to set up, sustain, and govern a community. We use the adjective collective to emphasise that, although previous experiences can be highly individual, they gain (new) meanings in the situated interactions between community members, and between community members, specific technologies, sociocultural contexts and material environments. As communities' sociotechnical practices are envisioned and set up, or concrete problems addressed, experiences are put into circulation (in meetings, for instance) and discussed, oftentimes shaping each other. Their collective relevance can become manifest through planned meetings or happenstance, while sense-making processes (see (Mccarthy and Wright, 2004)), such as recounting, discussing or negotiating are central to how their relevance is framed. We call for analytical attention towards the power relations (e.g., returning volunteers, claims donors might have, or even power structures embedded in the digital infrastructure) that might surface as different experiences are discussed and that could shape what histories become more relevant within a certain community.

Connecting to the notions of intermediate knowledge (Frauenberger et al., 2018) and technologies of scale-making (Dourish, 2010), "Collective histories of organising" emphasises the explicit and more tacit interconnections that community-led initiatives, striving for social change, develop with each other. This is relevant to CSCW research focused on understanding and designing for the volunteer-based work required to organise and maintain collective actions. We suggest that the notion can provide an alternative to concepts such as organisational memory, often used in relation to workplaces with a more formal organisational structure to emphasise processes of acquisition and management of existing relevant knowledge. Finally, "Collective histories of organising" emphasises the impact that previous experiences can have on communities' efforts to articulate their work. By re-orienting analytical and design efforts towards the *adaptability* and *adoptability* of existing sociotechnical practices that community-led initiatives can learn from each other, the notion helps understand the practical aspects that shape community organising.

Having detailed how the FoodSharing Stockholm community developed by drawing on the experiences of other food initiatives, we now continue the cycle of learning by highlighting what other initiatives can learn from FoodSharing Stockholm. In line with the PAR approach of the presented study (Hayes, 2011; 2014; Kindon et al., 2007), and with a concern for how community-led initiatives can benefit from research, we now discuss three dimensions that can help other communities to practically design sociotechnical practices for building, sustaining, and infrastructuring foodsharing initiatives.

We introduce configuring capacities, sociotechnical practices, and participation as the key dimensions that we see emerging from the work volunteers in Foodsharing Stockholm's volunteers put in organising activism contenting with food waste. We draw attention to analytical and practical sensitivities that activists and designers alike could consider to mobilise resources, organise work, and set up community activism from the ground up.

5.1. Configuring capacities

As in the case of many social movements, resource mobilisation (Martin et al., 2015) has been a core aspect in building FoodSharing Stockholm. Resonating with other studies, this has included enrolling volunteers and gathering material resources (see also (Biørn-Hansen and Håkansson, 2018)), putting together a technological infrastructure (see also (Bødker et al., 2016), and more broadly identifying and developing the different capacities that are needed to operate. For instance, formal and informal relationships between core community members, between community members and other stakeholders (e.g., food donors, managers of community centres), knowledge and context-specific practices (e.g., the different food-sharing models discussed in 4.3), physical infrastructures (e.g., locales to host sharing events), and the negotiation of norms and values (how to govern the community) can be seen as different instances to identify, negotiate, and create the resources that are needed to operate.

Unsurprisingly, enrolling food-sharers is a salient concern as they do the groundwork of coordinating with food-donors, organising events, and transporting and sorting out food. Equally important are processes to attract food-donors, hosting locations for food distribution, and envisioning possible food-savers (recipients). While the creation of this network of actors could be imagined as a sequence of well-defined steps, the reality of organising is not so tidy. As outlined in the analysis, it is an alternation of pre-defined strategies, adjustments to emerging problems, and reconsideration of original plans. We have seen, for instance, that despite being strategically planned to develop diverse professional relationships, issues with enrolling food-donors and finding a locale for food distribution were eventually solved through some of the volunteers' personal connections. In our case, efforts to enrol donors included strategies to develop stable relationships with local

businesses; this can be challenging as potential donors might already be involved in other collaborations, be unaware of food-sharing initiatives and how they work, or simply not interested in becoming involved. Initial strategies to enrol donors involved developing a script and a list of Q&As that key volunteers could use to clearly communicate the goals and benefits of the organisation to potential donors. However, in the end, harnessing pre-existing social ties proved more fruitful.

We suggest that processes aimed at forming such partnerships could first develop around already established local ties and personal relationships. As seen in the analysis, in the early moments of organising, providing potential partners with consistent information on food-waste reduction, the benefits of participation, and the motivations and modalities to participate, is central to coordinating the work of the different volunteers and to more effectively enrol new donors. Once grassroots initiatives become more visible or grow, more formal roles or bespoke platforms for creating collaborations could be developed. Learning from other initiatives (Rossitto et al., 2022), this could entail the work of ambassadors to promote the adoption of environmentally concerned actions, the design of bespoke platforms to connect small initiatives promoting sustainable food consumption (Lampinen et al., 2022), or a list of best practices to more easily activate collective efforts. For instance, the website foodsaving.world, created by members of the German food-sharing community, helped to get FoodSharing Stockholm up and running by offering advice on how to enrol donors. This practice could be expanded to a more participatory forum, where multiple communities could share diverse insights and advice with those starting anew. As shown elsewhere (Lampinen et al., 2022), this can facilitate the circulation of key practices and values, and yet allow for the flexibility needed to tailor existing sociotechnical practices to new contexts.

Relatedly, our analysis has illustrated that developing the collaborations needed to operate is interwoven with the articulation of core food-sharing visions (e.g., charity, sustainability), and models (e.g., face-to-face sharing events, solidarity fridge, technology-mediated one-to-one exchange). Here, the volunteers' previous experiences with other food-sharing initiatives were central to considerations about food sharing as a potential practice of sustainability. As it was discussed, a charity initiative in this context would rely on a more stable and regular flow of food, which made other possible reasons for distributing surplus food (i.e., helping those in need) unfeasible. *Configuring capacities and defining visions are interwoven processes, and we invite members of grassroots initiatives to reflect on how – or the extent to which – they mutually shape each other.* For instance, in contexts where community-led food-sharing initiatives are not common, there might be biases about the idea that second-hand food is distributed to vulnerable people, and careful considerations should be made on how this narrative could be avoided or re-framed.

Related to processes of building capacities were also discussions on what size the community should aspire for. Knowledge about initiatives, such as FoodSharing

Copenhagen, contributed to the awareness that a large size presupposes a structured organisation, for instance, to enrol volunteers, introduce them to the doings of the community, and plan working shifts. In our case, the initial plans to have different working groups were difficult to uphold as the number of interested people dropped already after the first weeks, and concerns emerged about operating with limited resources. This developed into an explicit strategy to keep the community small –and thus manageable– to the extent that core food-sharers declined an interview at a national radio to avoid attracting more attention than they could handle (e.g., too many food-savers they could handle at the distribution events) (Rossitto et al., 2020). As noted elsewhere (Berns et al., 2021a), there are tensions here about concerns for visibility, impact, and being able to carry out practical work. Previous work (Lampinen et al., 2019; Rossitto and Lampinen, 2018) has shown that too much visibility and rapid growth can be overwhelming for volunteer-led initiatives for which social ties and supportive relationships are central to their organisation. Consequently, as a practical guideline, *we see a need to carefully consider processes of growth, either by devising strategies to implement them (e.g., when? how? with which capacity?) or even questioning the approach as an obvious objective to aim for.* Considerations on how to increase impact by activating related initiatives might be more useful than utilising digital technologies to promote growth in numbers.

5.2. Configuring sociotechnical practices

One specific aspect of developing capacities relates to the community's efforts to use digital technologies to document meetings, create shared information spaces, and gain visibility. Similarly to other studies on food-sharing initiatives (Berns et al., 2021a; Ganglbauer et al., 2014), an ecology of digital artefacts form the digital infrastructure that FoodSharing Stockholm relies on for its day-to-day operations. Social media platforms are used by volunteers to advertise food distribution to broad audiences. Over time, the private message functions of these platforms have also become a way, for interested people, to inquire about the community. While the immediate reaction to this was to respond to this interest through personal messages, food-sharers, who are responsible for managing the community's social media, became frustrated at spending time with potential participants when their curiosity did not result in concrete actions to take part. Our analysis has provided a concrete example to address this problem with an auto-reply, containing information about the community and an invitation to learn more by participating in a physical event, being sent out to anyone inquiring about the community. *Outlining constraints caused by limited time and other resources – and not merely concerns for visibility – we emphasise the need to develop sources of information that potential new food-sharers, food-savers and food-donors can access, both online (e.g., dedicated websites, forums, and social media groups) and offline (e.g., pamphlets, posters).*

Because of a limited budget, and economic constraints, community-led initiatives often adopt existing technologies and social media to organise their work (Armouch

et al., 2019; Costanza-Chock, 2018; Hirsch, 2011; Rossitto et al., 2021). However, resonating with recent work that unpacks how collectives often favour open-soruce computational alternatives (Roscam Abbing, 2022) – FoodSharing Stockholm sets a different example by adopting Karrot, a dedicated platform purposefully designed to support collaboration between members of food-sharing communities. As seen in the analysis, Karrot provides support for decision-making, planning events, and storing information about volunteers and food donors. The design of the platform reflects a decentralised governance model, as users of the platform can collectively entrust others to edit online settings. Nevertheless, despite nurturing values such as trust and horizontal participation, we have seen that moving decision-making to the platform did not resolve issues with more active involvement, as not all volunteers might share the same interest to participate.

Moreover, while FoodSharing Stockholm's ethos is characterised by a sense of openness towards newcomers, core volunteers have been uncomfortable with the idea of sharing information on Karrot with participants who eventually do not commit to longer-term participation, as this might create unforeseen problems. For instance, through participation in another food community, the first author was aware of cases where people have shown up to collect food from donors while pretending to be volunteers. Although this might be a rare incident, the episode reflects concerns to devise practices of access to main digital platforms and to define which information should be available to broader audiences or limited to returning and trusted food-sharers. *We invite members of community-led initiatives to consider how the design of sociotechnical practices can enable pathways to information and different levels of participation.* The "Reader-to-Leader Framework" (Preece and Shneiderman, 2009) that captures the journey of how people can become progressively more involved in online communities (i.e., reader, contributor, collaborator, leader) could be of inspiration here. However, we see the challenges of formally structuring different degrees of participation (see (Rossitto et al., 2021) on this point) for communities aspiring to symmetrical models of governance. Examples of how other volunteer-led communities utilise their website to describe key roles, working structures and groups (see (Berns and Rossitto, 2019) or (Hoffice, 2022)) can be useful to make explicit what is expected from participants without imposing (any transitions between) formal roles on them. This point is further addressed in the following section.

Resonating with other work (Bødker et al., 2016; Rossitto et al., 2014), the analysis has shown that some digital tools are collectively negotiated and some others introduced by persons who have previous experience with them. In our case, creating a digital infrastructure has resulted in a mix of open-source and commercial platforms being used. Although more in line with the overall non-profit framing of the community, open-source technologies such as the Karrot Platform, are not always optimal for reaching large audiences. Digital technologies such as social media provide templates for participation that are broadly and readily available and easily adopted. This should, however, raise concerns about the structures and rela-

tions they reproduce, enforce, or maybe exclude. As seen in other food-sharing contexts, the adoption of specific platforms can contribute to a service-based approach to food sharing (Ganglbauer et al., 2014; Garthwaite, 2016; Vyas et al., 2015), and even hinder caring relationships (e.g., connecting to other people) that volunteers might value (Berns et al., 2021b; Rossitto et al., 2021). As a practical recommendation, *we suggest that communities should strategically map the variety of digital technologies used, what key functions and roles they provide, and who benefits from them. Equally important is the need to understand the value tension stemming from their use, and how they relate to core goals, visions, and work organisation.*

5.3. Configuring participation

Within FoodSharing Stockholm, relationships between food-sharers and food-donors are the only form of collaboration that is clearly defined. For other participant groups, there are no clear-cut definitions of what being a member entails, apart from committing to contributing to the community. Food-savers participate on a flexible basis as there is no sign-up or RSVP required for collecting food, as is the case in other communities (for example (Ganglbauer et al., 2014)). And for food-sharers participation is also flexible, making it possible for volunteers to engage as much as they wish, and when they have time. In reality, however, the openness of this approach makes it difficult for interested people to join, in that there are no stable guidelines or clear routines to guide them through the community and start contributing to it. This relates to Freeman's argument that *"For everyone to have the opportunity to be involved in a given group and to participate in its activities the structure must be explicit, not implicit. The rules of decision-making must be open and available to everyone, and this can happen only if they are formalised"* (Freeman, 1972, p. 3). As the community is not registered as an official (non-profit) organisation, there has not been a push to regulate the community with clear guidelines and decision-making models. Anytime the topic of "becoming official" has been raised, it has been dismissed based on concerns for the flexibility of the community, and too much bureaucracy. *Based on our analysis, we can however argue that making key rules, norms, and tasks more explicit could shape different actors' motivations and expectations about participation, and we invite grassroots initiatives to do so.*

In the analysis, we have discussed how balancing structure with pragmatism, and deciding what decision-making models to adopt were central governance issues. As we have seen, core food-sharers strive to maintain a non-hierarchical model for decision-making, and they encourage new members to take independent initiatives. However, this does not work well in practice, with newcomers being hesitant about making decisions, and turning to other food-sharers for advice. Moreover, in reality, structures always exist or emerge, whether formalised or not. A primary example within the community is what has become to be known as the "core group" of food-sharers, who are considered instrumental in keeping the community alive

even during periods of low participation. As an undesired consequence, this group has, over time, become an informal hierarchical leadership structure. This has led to stress and feelings of obligation within the group, as none of these food-sharers has actively chosen to take on this role. It appears that the lack of organisational structure within the community prevents newcomers to take ownership of the project as there were no clear structures for how this should be done.

Our last recommendation concerns sensitivities for organising participation and governance of volunteer-led communities. As members juggle with the conditions of flexible forms of participation and the practical concerns to distribute workload and responsibilities, there is a need for a governance model that can work with many, but also few people. Resonating with Freeman (Freeman, 1972), this entails an effort to *make basic decision-making mechanisms visible, along with pre-defined and emerging structures*. For instance, similar to the "trust-karrots" mechanism on the Karrot platform, decision-making could be rendered visible and made explicit through technology with the design of a community voting mechanism. Likewise, as a practical guideline, we suggest that, *rather than shying away from any formal structure, communities might try to recognise and acknowledge any informal structures that emerge naturally, and work to develop them into governance mechanisms that serve the community with regards to disturbing control and being adaptable to fluctuations in participation levels*. For instance, in our case, the "core group" of food-sharers could evolve into a "self-appointed board" (Dana et al., 2021) and, from there, strive for distribution of power on a rotating basis where existing board members collectively decide when to appoint new board members and who those members will be.

6. Conclusion

Past CSCW scholarship has investigated the role digital technology plays in structuring social movements and their efforts to organise collective action. However, relatively little is known about everyday practical work whereby such initiatives are formed, get started, and become communities. This paper has addressed this gap by investigating the organisational and collaborative work that goes into setting up such initiatives. The findings have unpacked how the FoodSharing Stockholm community developed through a network of explicit and tacit interconnections that it developed with related, existing grassroots initiatives.

We have introduced the concept of *"Collective histories of organising"* to account for the many and diverse previous experiences that volunteers bring to the processes of setting up and maintaining a community-led initiative. We have characterised as learning the sense-making processes whereby volunteers share, collectively consider, adjust, adopt and sometimes disregard the relevance of this knowledge in a new context of organising.

As a commitment to contribute to the knowledge and experience that both designers and community organisers can draw on, we have presented three dimensions

that can help to practically build, sustain, and infrastructure collective action by specifically addressing issues connected to configuring capacities, sociotechnical practices, and sharing mechanisms.

We encourage researchers and activists to consider how grassroots, community-led initiatives develop through the set of interconnections, outcomes, and narratives about impact circulate locally, and how key practices, ways of organising, and modes of participation are adopted across contexts. Recognising how grassroots communities vary in terms of capacities, sociotechnical practices and forms of participation we are not suggesting universal, abstract solutions for organising collective action around food waste. Rather, we hope that researchers, designers, and activists will reflect on these overarching themes within specific food-sharing settings, and will continue evolving this research and activist space with specific instances of both success stories and challenges of organising that other communities can learn from.

Availability of data and materials

The data sets used can be accessed by contacting the corresponding author at katie@dsv.su.se.

Declarations

Ethical Approval

Not applicable, ethical approval was not required for this study.

Competing interests

The first author was a member of the FoodSharing Stockholm community during the data collection and analysis. The nature of this relationship is described in detail in Section 3.6 (Reflections on ethics and positionality).

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