Efficiency and Care in Community-led Initiatives

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This paper illustrates the multifaceted aspects of caring practices, and the ways they are entangled with the organizing of community-driven initiatives. Highlighting the situated inter-dependencies between concerns for care and efficiency, and considering caring practices as essential to the practical work that makes communities work, we reflect on how caring and efficiency rationalities frame the use, and scope the design of digital technologies. Drawing on two cases, the analysis shows the ways in which digital technologies oftentimes overshadow communities' key concerns for care, and how attempts to design for community settings can result in anti-designs, that is sociotechnical configurations that can disrupt caring practices. The contribution of the paper is twofold: first, an analysis of the different configurations of caring and efficiency and, second, a focus on care in the design and appropriation of technologies into this space.

1 INTRODUCTION

Community-driven and volunteer-run initiatives are often moved by concerns for better, alternative, and more sustainable futures. While the practical and pragmatic goals to contend with specific matters of concern [19, 41, 42] are key to the organizing of these initiatives, encountering others and nurturing supportive relationships are also paramount to participating in them [2, 45, 47]. Striving to realize key visions and to make a significant impact is central to community-driven initiatives, but so are the other opportunities that participation provides.

This paper contributes to the understanding of relationships between caring practices and the practical work of organizing community-driven initiatives, and how digital technologies can configure, inhibit, or exclude these practices. Considering acts of care as essential to the practical work that makes communities work, we focus on the inter-dependencies – rather than the excluding juxtapositions – between participants' concerns for both care (e.g., establishing and nurturing

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interpersonal and organizational relationships) and efficiency (e.g., being able to smoothly accomplish central activities). Moreover, we reflect on how both caring and other work rationalities can frame the use and scope the design of digital technologies in these settings. Drawing on Puig de la Bellacasa's work [51, 52], and taking distance from mere emotional orientations and normative definitions of what constitutes care, we illustrate the multifaceted aspects of care in two volunteer-run, community-led initiatives.

Previous CSCW and HCI work has investigated the role of care in developing alternatives to rational models of collaboration [11, 62, 63], and the neoliberal narratives that often frame both technological designs and the creative contexts where design takes place [65, 67]. Research has also foregrounded how care-centered analyses can help unravel the ways people actively attend to both human and non-human actors – including digital technologies – [32, 38], and researchers' positionality within projects [38, 44, 47, 64]. Our empirical cases show how care is enacted through the practical labor of pursuing activist goals, helping and supporting others, and creating favorable conditions for personal and collective fulfillment. The paper shows that the self-actualization that can stem from encountering others is as desirable as community members' achievement of practical goals. Yet, technological interventions tend to override both these key aspects of participation and the ways caring practices are entangled with practical concerns for efficiency. This results in tensions in communities' appropriation and design of new technologies. Our arguments resonate with a recent call to broaden investigations of sustainable technology appropriation beyond workplace narratives and organizational structures [61]. As the lack of dedicated budgets often results in community initiatives' adoption of pre-existing digital technologies [18, 57], this orientation is relevant in that it challenges the values, associated with professionalism, that are oftentimes embedded in the designs and visions of digital technologies (see [30]).

The paper connects to emerging critiques of efficiency, productivity and personal responsibility as the core values driving the design of digital technologies, and to related concerns of how this can disregard the social dimension of work [30]. As also noted elsewhere [60], alternative and wider framings of technology are needed to account for the social relations that are desirable, become visible, or are simply not assembled through sociotechnical practices that reinforce the vision of self-independent and self-motivated users of technology.

We ground our analysis in two cases, the Foodbank and Hoffice, that were investigated separately through ethnographic and qualitative approaches. The Foodbank is an NGO that aims to reduce food waste within the distribution chain, and redistribute it to socially disadvantaged people – i.e., shelters for homeless and victims of abuse, drop-in centers, and orphanages. The Foodbank is run by both volunteers and paid staff, and it has three distribution centers in Denmark. This paper reports on the one that has been active in Aarhus, Denmark, since 2008. Hoffice is a merger of the words home and office. It is a grassroots, volunteer-driven network promoting the collective use of private homes as co-working spaces to be shared with friends, acquaintances, or even strangers. The initiative was founded in Sweden, in 2014, with the goal to provide a framework and a context for the creation of co-working environments for flexible forms of work. The analysis illustrates the different configurations care can have, the ways caring practices are intertwined with other concerns for participation, and how they are entangled with the use of technologies that are tailored to the organizing of the two communities. Moreover, it examines how design efforts often become instances of *anti-design*, that is sociotechnical explorations that neglect key caring practices. While previous research has developed care-centered framings and sensitivities to design with care [3, 32, 37, 62], our empirical material shows the challenges, for community members, to envision the features that designing with care could entail, and the related trouble to make care visible for design.

In concluding this paper, we discuss the relevance of care for CSCW research, and its relationships to foundational concepts, such as articulation work [59] and technology appropriation through practices [20, 49]. Finally, we outline the challenges for thinking with care in technology design.

2 CONCEPTUAL BACKGROUND AND RELATED WORK

CSCW has broadly examined *care* within professional healthcare settings [e.g., 7, 16, 22], and highlighted the tensions between rationalistic conceptions of work and practice-centric perspectives [22]. While professional care practices differ from the type of care work addressed in this paper, they share with it an analytical concern for the aspects of work that are valued, but hardly captured by formal descriptions and rationalizations.

Drawing on previous CSCW scholarship that has considered care and carework beyond professional domains [63, 65, 67], we connect with Puig de la Bellacasa's theorizing of care [50, 52], and relate her work to the ways digital technologies are appropriated in practice. Underlining this interest in care, it is our ambition to explore alternative perspectives on the value of work in community settings, and to broaden discussions on how different work rationalities are intertwined in processes of technology appropriation. Recent debates have brought up questions of how CSCW research can engage in sociotechnical designs nurturing social relationships, lives that are worth living [33], and more just conditions for work and life in general [23, 35]. This body of work moves the analytical and design focus away from simply supporting professional practices towards different ways of being together and encountering others (e.g., [9, 47]), and towards the alternative values (e.g., fulfillment, compassion, intimacy) that can frame technology use and design [24, 44, 45]. Recent design explorations of IoT devices in home settings [37] have developed a care-centered framing that accounts for the labor of attending to smart devices, thus challenging the design assumptions that these artifacts always act and work independently from human actors. Beyond CSCW, Gregg [30] has recently examined the narratives of productivity that are often used to measure workplace performance, and the ways they become implicitly embedded in the design of digital technologies. Through a detailed analysis of various time management apps and productivity software, this work shows how the quest for quantifying and maximizing the work performed foregrounds contests among individuals, while overriding the collaborative dimension of work and the personal fulfillment that can derive from it. Gregg argues for the need to frame technology design beyond competitive enterprise models, and suggests the vision of productive atmospheres as context for workers to develop interpersonal connections, build communities, and connect to collective solidarity. Overall, her work argues for designing technologies that promote practices of selflessness and care and that challenge the enterprise and business-centered values of neoliberal corporate cultures.

2.1 Thinking with care

Below we introduce key tenets of Puig de la Bellacasa's theorizing of care [50, 52], and how thinking with care can inform CSCW understandings of technologies in practice. Drawing on Tronto and Fisher's definitions and discussion [21], the feminist scholar defines care as *"everything that is done (rather than everything that 'we' do) to maintain, continue, and re-pair 'the world' so that all (rather than 'we') can live in it as well as possible. That world includes [...] all that we seek to interweave in a complex, life-sustaining web"* [52, p.161]. To care about something comes with strong attachments and commitments. It implies motivations (i.e., why we care) and direct engagement with the world (i.e., how we care and what we care for). Characterized as always embedded in – and stemming from – webs of relations and inter-dependencies [50], care requires maintenance and practical labor, not mere emotional orientations. This conceptualization neither assumes a fixed, normative vision of what constitutes care, nor is it attached to specific situations, or contexts, that prescribe

the forms care can have. Care, as theorized by Puig de la Bellacasa, is not associated with moral obligations, affective dispositions or with something unconditionally pleasant. Understanding care as everything that can be done redefines it as a set of ethically and politically charged practices. Acts of care are *"material and affective tasks related to communication, the production of sociability, and capacity of affect 'without which our lives do not work out', the complexity of which makes them difficult to value, to reduce to a schedule, or to enclose in fixed tasks that 'start here and end there'* ([29] cited in [50, p.93]).

With a strong focus on the labor required to maintain care, Puig de la Bellacasa connects to foundational CSCW work on situated practices [60], and related discussions on articulation work [56, 59] and boundary work [43, 58]. Briefly, articulation work refers to the actions and activities actors engage with to enact collaboration, cooperation, and division of labor. This includes aspects such as communication, bringing attention to, articulating status, planning and scheduling of work, and dealing with issues of accountability. Boundary work [43], and the original concept of boundary objects [58], refer to the articulation work and work-objects that play a crucial role in negotiating and coordinating work between different communities of practice. Similarly to the situated nature [60] of these actions, acts of care are emerging and situational. They are not necessarily directed at the primary (from an observer's point of view) goals or aspects of a given activity, but at the quality of the situation, particularly to maintain mutual intelligibility and well-being. Just like articulation [59] and boundary work [43], acts of care are often not readily recognized as part of the 'work', or immediately visible; they are often taken for granted, devalued, and rendered invisible in formalizations and descriptions of work, including the ways it is made relevant to technology design. Echoing Suchman's [60] analysis of smart assistant technologies[1], Puig de la Bellacasa draws attention to technology production and maintenance, and to practices of technology appropriation. As caring practices are directed to both humans and material objects, including digital technologies, for Puig de la Bellacasa, sociotechnical assemblies and objects are matters of care: what comes to matter is always configured through unfolding relationships. This foregrounds the ways technologies can foster, or neglect, sociotechnical assemblages, and human-machine configurations that value – or not – relations of care.

To sum up, thinking with care is a speculative commitment to reflect on how things could be different if they generated care, yet without letting a situation, or a moral orientation, define in advance what doings of care are, or should be [50–52]. Sociotechnical assemblages can reinforce or disrupt caring relations and even promote forms of neglect. Thinking with care is a relational way of knowing that always describes and builds connections and, thus, possibilities – i.e., the consequences of these relations. Thinking-with care acknowledges the embednessess of thoughts in the worlds one cares for, while compelling us to think of both the relationships that are created and the disconnections from worlds we would rather not endorse – this last point is what Puig de la Bellacasa defines as dissenting-within [52]. The relationships of inclusion/exclusion that thinking with care produces are not oppositions, but inter-dependencies that can also entail conflict and dissent. In the following section, we discuss how reflections on *technology-in-practice* [49] can help understand this tension, especially in cases where care is paramount, but technology designs are not centered on care-related values.

2.1.1 Technology-in-practice. The concept of technology-in-practice refers to the structures that are enacted as people recurrently use specific technologies in their everyday activities. As noted: *"A community of users engaged in similar work practices typically enacts similar technologies-in-practice, where through common training sessions, shared socialization, comparable on-the-job experiences, and*

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[1]Suchman, in turn, developed her arguments in close connection to Star's work, as well as to the Scandinavian Participatory Design community that she invited to the 1988 CSCW conference ([11])

mutual coordination and storytelling, users come to engage with a technology in similar ways." [49, p.411]. Technology-in-practice might evolve as people experience changing needs, circumstances and knowledge, or as technology itself changes. This makes any engagement with technology temporal and contextually provisional. Through processes of appropriation, technologies become part of the multiple structures that are continuously reenacted through diverse, situated practices. As people draw on both properties inscribed by designers and on those emerging from repeated interactions and previous experience (see also [34]), the use of a given technology is never limited to the structure stemming from specific practices alone: *"Because the enactment of a technology-in-practice is situated within a number of nested and overlapping social systems, people's interaction with technology will always enact other social structures along with the technology-in-practice"* [49, p.411].

The dynamics between situated practices and emerging structures are central to this paper. Understanding the relationships between caring and the organizing of community initiatives, and the ways digital technologies configure these relationships is paramount to research on volunteer-run initiatives. Unpacking the many narratives and rationalities at play in the use and design of sociotechnical practices in these settings is relevant, in that such communities oftentimes appropriate readily available tools [18, 57], rather than bespoke technologies.

This analytical orientation helps us examine the tensions that might emerge when specific structures are (re)enacted as people appropriate technologies across contexts and situations. Moreover, it helps unravel the relationships between caring and efficiency rationalities, and how they can frame both the use and the design of digital technologies.

2.2 Situating care in CSCW research

CSCW scholarship has long been concerned with care work in professional, care-providing organizations [e.g., 7, 16, 22], and with the collaborative aspects of care, between caregivers and family members, in home settings [e.g., 1, 6, 12, 63]. Although different from our cases, we recognize that this body of work accounts for care beyond practical aspects of healthcare [16]. For instance, while examining collaboration at a patient Care Hotel, and the related aspects of technology mediation, Bossen and Grönvall [7] have illustrated the blurred boundaries of both professional and non-professional caring activities, and characterized them as 'in-between' sites, practices, infrastructures, and concerns.

Dating back to the early years of CSCW, research has investigated care as an alternative to rational models of collaboration in diverse work settings. Bødker et al. [11] have discussed caring as an alternative to what, in the late eighties, was regarded as an ideal for collaborative work – that is the small, homogeneous research group characterized by symmetrical relationships among its members. As they noted, this vision did not capture the reality of everyday collaborative situations, which outlined a need for other forms of work rationalities. In their article, they suggested Noddings' view on care [48] to emphasize that cooperative work can be asymmetrical, and not always unfolding in equal terms. People might care because they have once been cared for and, while caring relationships presupposes different degrees of mutuality, the freedom to care for, and how to care for. Overall, this early work challenged a rational model of collaboration, and called for care and solidarity as alternative framings of collaborative work.

Spanning a variety of settings beyond traditional workplaces, recent work on collaborative practices has called for more nuanced approaches to how we might understand and design for caring practices [63]. Research has illustrated the many reasons people might have to come together, and the benefits of face-to-face interactions in developing supportive relationships beyond functional inter-dependencies of work. As previously shown [27], coming together, in the same location, can sometimes be determined by reasons that have little to do with the work at hand, and that are more connected to community-centered qualities – e.g., repeated encounters, collective identity, and

the development of genuine friendships. Relatedly, research on assistive technologies for disabled people [1] has illustrated that affective and emotional encounters, along with commitments to tend to one another, can override concerns for completing tasks. Previous work has also illustrated how people's concerns to be productive can intertwine with a genuine interest towards other people (within the limits of the situation) [54]; here failing to create favorable and inspiring work contexts might be associated with experiences of failure of community-led initiatives [40].

Work at the intersection of community-driven initiatives and the collaborative economy has argued for the relevance of values such as collective care and commons in structuring the flow of attendees at face-to-face, food sharing events [2]. This research has called for a need to design sociotechnical queuing mechanisms that uphold supportive relationships between participants in these events, rather than just optimizing individual waiting time [3]. Overall, this work critiques the individualization of relationships that can stem from the one-to-one exchange promoted by mainstream platforms [15] [46], and from merely focusing on the efficiency and convenience of sharing at the cost of other context-specific values [26] [25]. Previous work [39] has also tackled the role of CSCW research in reflecting on how to approach the work we support, and how to broaden views of the role of organizations for CSCW. This work has explored member-owned alternatives with emphasis on organizations that are not primarily for profit, and how they are managed with a view towards participation and inclusion.

Resonating with our primary interest in the tensions between care and efficiency, and challenging the business logics integral to corporate cultures, Toombs et al. [65] have highlighted the complex negotiation of a neoliberal libertarian ethos and a care ethos in the context of makerspaces. Vyal's study of a craft-based maker organization [67] serves as an example of this challenge, in that it illustrates, first, the significant care work that goes into supporting the making in such a setting and, second, how participation in making activities promotes both social and physical well-being.

Finally, CSCW scholarship has also foregrounded concerns for building enduring, personal relationships between researchers and other project participants [44, 47]. Toombs et al. [64] have emphasized the need to account for researchers' positionality in participatory projects as ways to unravel and participate in reciprocal, caring relationships between researchers and participants. This work draws attention to issues, such as acknowledging vulnerabilities and privileges, configuring and identifying identifies, and nurturing impartiality as key aspects of building care relationships. Research has also problematized this type of caring relationships by pointing to its asymmetries and the structural inequalities which they might stem from [38].

To summarize, previous work has investigated the role of care and caring practices to develop alternatives to rational models of collaboration, and to the neoliberal narratives that frame both technological designs and the creative contexts where design takes place. Research has foregrounded the ways care-centered analyses can help unravel howx people attend to both human and non-human actors (e.g., digital technologies) within specific situations. More research is, however, needed to further explore the multifaceted aspects that characterize collaboration beyond the functional inter-dependencies of work, the ways caring practices are entangled with practical concerns for efficiency, and the problems this tension might create in the appropriation and design of new technologies.

3 TWO COMMUNITIES THAT CARE: THE FOODBANK AND HOFFICE

To develop our argument, we consider two empirical examples of communities that care. The first community is a foodbank concerned with the (re)circulation of surplus food from production, distribution and retail to organizations working with socially disadvantaged people. The second is the self-organizing network Hoffice, a grassroots initiative that aims to facilitate the collective use

of private homes as shared offices that are open to friends, acquaintances, or even strangers, who come together to organize co-working events.

3.1 The Foodbank

The Foodbank is a Danish NGO that works actively to address three UN sustainability goals – reducing hunger, fostering responsible consumption, and promoting environmental sustainability – by collaborating with partners within the food production and distribution sector, and larger supermarket chains. The Foodbank focuses on reducing food waste by recirculating surplus food produce to organizations working with socially disadvantaged people, including homeless shelters, drop-in centers, shelters for victims of abuse, orphanages, and other similar initiatives. It has three distribution centers where food produce is stored, managed, packed, and redistributed. The organization is primarily funded by donations from larger foundations and partnerships with various companies. Donations are accepted through the three distribution centers, where donors can deliver food and/or request a pickup.

In 2016, the Foodbank redistributed 812 tons of food, of which fresh dairy products constituted roughly 30 percent, and greens an additional 25 percent. This is food equivalent to 5300 meals per day. In 2018, the Foodbank recirculated 1080 tons of food – approximately 2.7 million meals – illustrating a growing interest on both the donor and recipient side. The food donors range from food producers, distributors, large supermarket chains, on-line stores, and wholesale, to more ad-hoc deliveries. Each distribution center runs with a small paid staff and a number of volunteers. The staff manages and coordinates logistics (e.g., weekly routes, pick-ups) and maintains the registration of food produce within the warehouse. Furthermore, the staff manages the connections to donors, enrolls new volunteers, donors, and recipients, and is responsible for compliance with legislation regarding the handling of food. The volunteers have specific shifts, largely in the same groups, re-packing the food within the warehouse before distribution, and driving the (same) weekly, delivery routes to the recipient organizations. The delivery vans are packed by volunteers and staff, with a concern for available foods, routes, and expiration dates to minimize food waste. The aim is to provide a balanced mix of produce for the recipients.

A wide range of products, that would otherwise go to waste, are donated to the Foodbank. The food items are then distributed to various member organizations that cook for people in need. These organizations use professional kitchens and have staff who undertake the planning and cooking, and who are also responsible for the budget and documentation of the cooking process. These recipient organizations pay a membership/handling fee to the Foodbank. They are concerned with value for money. The food is distributed on weekly delivery routes by volunteers who work for the Foodbank for half a day a week.

Both the Foodbank and the recipients carry out ongoing processes of compliance with legislation and documentation of the food items' origin, expiration dates, etc. The storage facilities are where donated food comes in and gets recirculated. The Foodbank has both dry-store and cold-store facilities, and the redistribution is done in a van that is similarly equipped. In compliance with legislation, it is important to document what food items come and go from the storage, and data about the temperature in different parts of the storage and the vans. Generally, this means that bar codes for food items are scanned whenever food is handed over to the recipients and that documentation for these items are sent to the recipients to be used, for example, in case of visits from the Food Control Agency. Authorities treat the Foodbank as any other food company, which puts demands on documentation.

The recipients need delivery notes with a list of quantities and qualities of the items received on a particular day for their documentation purposes. The vans, used by the volunteer crews to distribute food, are thus equipped with a scanning system and a hand scanner to document all food

items delivered to the kitchens. Although not easy to handle in the van, it is a priority for the staff to use a robust standard technology instead of a specialized system that would need maintenance.

3.2 Hoffice

The second case we consider is Hoffice, a self-organizing network that aims to facilitate the collective use of private homes as temporary workplaces that can be shared with friends, acquaintances, or even strangers. In line with this guiding vision, the name of the network is a merger of the words home and office. The network was founded in Stockholm, Sweden, in the beginning of 2014. As documented in prior research [54], the network provides a framework for the creation of facilitated co-working events in private homes, both for flexible workers and other cohorts of people who do not have access to formal office arrangements, or who wish to step away from them for a change. While the network has spread internationally since its inception, we focus here on the network that is based in Stockholm. At the time of this writing, there are slightly more than 2000 people in the Facebook group of this particular Hoffice network. The network relies primarily on Facebook for the coordination of co-working days. This is where most of the network's online activities take place, mostly in the form of advertising and organizing events. All members of the network, that is, everyone who has joined the local Facebook group, are free to set up invitations for Hoffice days and welcome as many participants as they deem desirable and feasible to host. The network also has a website (hoffice.nu/en) that documents key details regarding the Hoffice concept. This is where interested individuals can find guidelines for organizing Hoffice days. These include a specific co-working methodology – which members refer to as *the structure* – providing a rhythm of silent work sessions of about forty-five minutes and social breaks. The guidelines also provide some guidance regarding the practices, norms, and values that are intended to characterize the workplaces that Hoffice participants co-create. Roles necessary for running Hoffice events include hosts, guests, and facilitators, that is people who are generally responsible for introducing and keeping the structure of the work day.

In bringing together people who wish to co-create temporary workplaces, Hoffice is indicative of a set of community-led practices and an alternative social model for collectively organizing and supporting flexible forms of work. Participation in activities within the Hoffice network is meant to be free-of-charge, and the network has no economic model beyond reliance on generalized reciprocity among its members. Our previous research [54] has illustrated how Hoffice is already making change for its members, and how this is achieved through the collective and participatory efforts to create a workplace whose core values are support and care for others, rather than profit.

4 METHODS AND EMPIRICAL MATERIALS

Our analysis draws on two sets of qualitative research material. While the data were independently collected for each case, they were then brought together and analyzed side by side. Both transcripts and analytical notes were compared and revisited to unpack the tensions between care and work practices that might stem from the appropriation and introduction of technologies in the two community-led initiatives.

4.1 Data collection: The Foodbank

The Foodbank case evolved throughout 2018, involving multiple participants from both the Foodbank, the research team, donors, and recipients, including kitchen staff. Volunteers and staff participated in meetings, interviews, observations, workshops, design activities, and design evaluations.

The research team had frequent meetings with the staff at the Foodbank to coordinate interviews, observations and workshops, and to maintain a shared understanding of the proposed activities

and outcomes. Overall, the research materials, stemming from the collaboration, include interview data, design proposals in the form of mock-ups and prototypes, and field notes that document observations and conversations with the people at the Foodbank. The data collected, as part of the student and design activities (see below), was transcribed and documented; information shared during the many informal meetings and participant observations has been documented in notes and shared meeting digests. Throughout the research process, our observations and impressions have been shared with the different participants, in the form of presentations, documents, and design material. This empirical data has been complemented with the collection and analysis of publicly shared documents, like the Foodbank Christmas calendar published on the Instagram account of the NGO. While we are aware that such material might have been edited with specific audiences in mind, their contents align with the data collected through our direct involvement with the field.

The data collection involved two stages, with two students carrying out research activities as part of their final projects. A first study revolved around studying the Foodbank, its practices, and how to support the relationship between the Foodbank and the recipient organizations. The two students, together, conducted participant observation (in the warehouse and on the delivery routes), and interviews at the Foodbank, with both management and volunteers, and with kitchen staff at two recipient organizations. This was followed by an evaluation of their design mock-ups and ideas. The outcome of this work was a platform for the recipient organizations to collect various information about the weekly deliveries, and to visualize data on the quantity of yearly donations – e.g., food types, weight. This was done to provide them with a clear idea of the impact on their economy and organization. The second student project was a Master thesis written as a continuation by one of the two students. Here, the student investigated the donor side, and how data, collected by the Foodbank could be used to improve various forms of reporting within the companies, in particular about initiatives related to companies' social responsibility, (CSR) and to the UN's sustainability goals. The outcome was an analysis based on the previously collected material, and supplemented with a series of interviews with donors, and an expert on CSR.

Second, in parallel with the student efforts, the senior researchers initiated design activities in two consecutive steps, each with a slightly different focus. Based on initial talks with the Foodbank staff, we focused on different perspectives on how data about food quantity and quality could benefit the Foodbank (e.g., getting a better overview of their activities and communicating their societal impact), the donors (e.g., integrating the donations into their own public reporting), and the recipients (e.g., understanding how the impact the donations had on their budget and planning). As a part of these activities, we did participant observation of the scanning and registration process, of the volunteer training, the pick-ups, the packing, and of the preparations for delivery. This was supplemented by interviews and joint planning of the design workshops. As part of the data-centric line of inquiry, we conducted a *designing with data* workshop, wherein staff and volunteers developed design concepts. Subsequently, we focused on designing visualizations to support the warehouse activities, such as registering incoming food produce, packing pallets for the routes, or providing an overview of produce in stock to inform the weekly planning process. The research primarily investigated new design methods for various distributed displays, and for visualizations to support specific activities (see [8]). This was supplemented by the previous observations and interviews, by additional participant observation, and a design workshop in the warehouse together with staff and volunteers.

4.2 Data collection: Hoffice

When it comes to Hoffice, the research team generated the empirical material through three co-design workshops that took place in 2017 and 2018, alongside ethnographic engagement with the community between October 2016 and November 2017. This entailed, first, a formal interview and

several follow-up conversations with one of the co-founders. The interview tackled issues, such as motivations, visions and models underlying the Hoffice network, the role of the work structure, what it takes to become a Hoffice host and/or guest, and the role of Facebook in managing Hoffice events. Second, participant observation at Hoffice events was also carried out on eight occasions, adding up to a total of about fifty hours. This was particularly valuable for understanding social interactions between the attendees, the practices enacted to keep the structure, and the social norms emerging from being-together or from being a guest at a stranger's home. Third, participation in events led to informal interviews with five of the attendees during lunch breaks. These conversations lasted between forty-five and sixty minutes and focused on the overall experience of participating in the Hoffice community, including both practical enactments (e.g., arranging events) and the felt-like experience of participating (e.g., sense of togetherness).

Complementing the fieldwork, the first co-design workshop was focused on becoming familiar with the network, documenting how Hoffice events are organized and co-created, why network members choose to participate in them, and which values and norms are central to the community. The second workshop aimed at investigating practical opportunities, expectations, and concrete design ideas for a new digital platform intended to support the local Hoffice community. Additionally, it explored the challenges and possibilities to engage with different stakeholders by expanding the Hoffice structure and practices to new settings. Finally, the third workshop aimed at generating low-cost ideas that would help reinvigorating the local Hoffice community, at a time when its activities seemed to have stalled. The discussion delved into aspects of technology design, such as tailoring existing social media to the needs of Hoffice, along with rethinking some of the social practices around organizing Hoffice events (e.g., deciding on a predetermined schedule of events that attendees could plan for, or taking turns in being an active host). All the workshops were jointly organized and planned with the co-founder of the Hoffice network.

All the workshops brought together active members of the Hoffice network with two researchers, and other stakeholders – i.e., the founders of a startup company collaborating with Hoffice to tailor the prototype of their digital platform for the community. Nine people participated in the first and second workshops and six in the third. All three workshops lasted for about three hours. The first workshop was central to ground the discussion and provide in-depth understandings of the community and the challenges it faces. The second workshop was helpful in surfacing participants' concerns about Hoffice, such as how to sustain the community over time. The discussion on how to tailor the prototype of the digital platform to the Hoffice context stemmed from concerns regarding how to navigate pressures toward the fragmentation of the community, how to better enable and facilitate different Hoffice roles (i.e., guests, hosts, and facilitators), and how to provide continuity for active members while staying open to newcomers. The third workshop was framed by the notion of hacking the infrastructure [57], namely the idea that designing for community-led initiatives and civic technologies does not necessarily need to engage with technological innovation. Reflecting both the network's lack of dedicated budgets, and the co-founder's concern not to introduce any membership fee, the workshop sought to explore a number of creative combinations of readily available tools and practices that would help address specific, local needs and concerns in a nimble way. The local startup was a central stakeholder in the initial planning of the second workshop, as the design work was meant to tailor their prototype to the specific needs of the Hoffice community. Nevertheless, their economic problems, that eventually lead to shutting down the company, forced us to rethink the design focus of the third workshop which was, instead, structured around four scenarios. The first one discussed the option of keeping Facebook as the community's main platform. The other ones explored instead options to transition to other alternatives, more specifically by i) combining Facebook with another platform (e.g., Meetup), ii) migrating to a new platform

altogether, iii) shifting to the open web and seeking to integrate a number of tools that provide different functionalities.

With the participants' written consent, all the conversations were audio-recorded and then transcribed for analysis. Most of the discussions took place in Swedish. When it comes to translating excerpts from the original Swedish for presentation in this paper, we have striven at accuracy in both meaning and style.

4.3 Reflections on positionality

The research with the Foodbank started as a result of a long-term interest in communities that work with food, sustainability, and data. We learned about the Foodbank from friends who volunteered with them, and we established contact through the local branch manager of the Aarhus office. The initial research focus and engagement with the Foodbank were discussed at several meetings with the branch manager. He shared with us an interest in working with their data and visualizations of them. He showed us the storage facilities, and he was responsible for setting up contacts with volunteers. He also facilitated our participation in the volunteers' work shifts and tours in the van. When on site, we also interviewed the other paid staff who organize volunteers and carries out back-office work (e.g., data and documentation). As part of this participation in the setting, we were also invited to join the breaks and some of the daily meetings with the volunteers. The interviews with donor organizations and recipient kitchens were done by the students independently of the Foodbank, although as a result of the contacts that the Foodbank gave us. Complementing our interactions with the volunteers, the study of the Foodbank has been mostly shaped by the perspective of the local management, which makes this investigation different from other grassroots communities we have previously worked with [see 13, 14].

The involvement with the Hoffice community started in 2016 with an interview with one of the co-founders. He was initially a key informant introducing us to the core sociotechnical practices and values of Hoffice. He also facilitated our participation in the setting, first, by welcoming us to Hoffice events and, later on, by inviting Hoffice members to the three planned workshops. We believe that the trust participants placed in him extended to us, which is one of the reasons for the participants' deep engagement in the workshop discussions. Throughout the data collection and analysis, and up to now, our research interests in collaborative, community-led initiatives – including the role of care work in this setting – have been profoundly shaped by our relationship with him. The focus of the co-design workshops, for instance, was determined based on concrete problems and practical concerns the community was facing at the time, rather than being defined by purely academic concerns. At the same time, the workshops have served as a site for community members to reflect on and discuss possible sociotechnical (re)configurations that could help Hoffice spread and evolve over time. Moreover, our analyses have provided – and continue to provide – the community with external insights on its strengths, problems, and how to better manage them.

4.4 Analyzing the two cases

The analysis of the two cases highlights the relationships between community initiatives' practical concerns of organizing (e.g., more sustainable lives), and the multifaceted acts of care that might stem from participating in them. In preparation for this article, the authors carried out a thematic analysis [17] of the two data sets collaboratively and iteratively. During a first round of analysis, we unpacked core practices in the two settings, how they are mediated by current digital technologies, and the attempts to reconfigure them through sociotechnical design interventions. This work was instrumental to unpacking how participants tend to technologies, and how they orient themselves towards other people, key visions of the two communities, and other aspects of their organization. During a second phase of analysis, drawing on feminist understandings of care [51, 52], we focused

on the tensions and contradictions that might emerge when considering the inter-dependencies between care and more efficiency-centered rationalities in the two settings. The chosen themes show how care and other values are reciprocally configured in everyday practices, and how they reflect on technology appropriation and design. Moreover, our themes draw attention to the challenges of designing with these different configurations in mind. We interconnect concerns for both care and design by suggesting the concept of *anti-design*, that is, technological explorations that can hinder care and caring as they meddle with, or disrupt, important relationships of volunteering and organizing.

5 ANALYSIS

In the sections below, we first draw attention to the multifaceted nature of caring practices in the two settings (Section 5.1). While discussing the different ways caring is configured within the two communities – i.e., caring for oneself and other participants, caring for the communities' goals and visions – we show the ways relations of care are interwoven with concerns for efficiency, that is, for managing work-related activities and carrying out key tasks. Thereafter, the analysis shows how existing technologies often overshadow core aspects of caring (Section 5.2). We illustrate that community-led initiatives, like the ones discussed, are oftentimes aware of such sociotechnical challenges, and seek alternative designs that better enable what they regard as caring practices (Section 5.3). We outline that sociotechnical explorations often become instances of anti-designs, that is, designs that might stem from needs and desires identified through initial design processes (e.g., during workshops), but that might become less desirable through further explorations. As we discuss, this is particularly evident when technological concerns for efficiency take away cherished social encounters, seek to quantify core qualities of participation or, as in the case of the Foodbank, re-frame food-gifting practices as convenient deliveries.

5.1 Multifaceted aspects of caring in community settings

Our cases illustrate the multifaceted nature of care within the two communities, encompassing both affective motivations and the variety of practices that can stem from shifting meanings and interpretations of care. Caring unfolds on multiple levels within the two communities, as a primary goal of core activities, as a consequence of such activities, or as an ongoing matter of care requiring active involvement. Moreover, it is framed differently through individual and collective perspectives.

The Foodbank encompasses multiple caring agendas through its organizing. On the one hand, reducing food waste, at the level of distribution chains, can be associated with an overarching concern for more sustainable food practices. On the other hand, redistributing surplus food to marginalized and vulnerable people is a practical way to help those in need. Food waste reduction is the primary goal of the Foodbank, and many aspects of organizing are instrumental to this objective, from the redistribution of food produce to the dependency on the volunteers who do the redistribution. It can, thus, be said that the care and concern for marginalized and vulnerable people are profoundly intertwined with other fundamental goals of the Foodbank, in that helping others is highly dependent on the existence of surplus food and its (re)distribution. Caring for sustainable food systems and people in need are both central to the community, and the ways it presents itself to volunteers, donors, funding opportunities, and society at large. Nevertheless, volunteers are often more motivated by the possibility to help others than the mitigation of food waste as such. This makes working at the Foodbank more gratifying than other forms of volunteering.

Volunteers at the Foodbank are retirees, for the most part, and job trainees. Considering their motivations for participating draws attention to an additional dimension of caring, where socializing with other volunteers and developing relationships with staff and food recipients are central to volunteering, as much as the level of professionalism required to do the job. When volunteers join

the Foodbank, they are introduced to the work at the warehouse, and they are trained in produce handling and warehouse registration. They also learn the weekly rhythm of picking up donations and packing these for distribution. Volunteers are assigned shifts with experienced volunteers. At the start of every new shift, the staff has a brief meeting with the volunteers in addition to a shared lunch. Volunteers typically work for the Foodbank for half a day a week, on the same day, with the same group of volunteers, doing the same weekly delivery route to reach the same recipients. While delivering food, the volunteers meet the kitchen staff at 'their' different recipient organizations, and learn which food items they prefer or need. This information is, then, used by volunteers to negotiate at the Foodbank and make deliveries better match recipients' needs and wishes. As the quotes below illustrate, these moments are central opportunities to establish relationships with others involved with the Foodbank. Here, caring for a cause intertwines with a meaningful orientation towards other people. For the Foodbank's X-tmas calendar 2020, Kasper, a young job trainee says[2]:

> "I've been volunteering for a year. I work four days a week and needed something to do on Mondays. My caseworker told me about the Foodbank. Now I ride with Erik, my buddy every Monday and that makes me super happy." (December 22).

Relatedly, Nick, a retiree, says: [3]:

> "I've been involved since the spring of 2018, and I work at the Foodbank on Tuesdays. It means a lot that we help other people and reduce food waste. You realize how lucky you are when you meet people who struggle. […] We chat at every stop and, by now, I know people en route quite well […]. At KFUM [Local organization similar to YMCA (Young Men's Christian Association)], Dorte manages the cafe and she manages so many things. It is fantastic to meet a person like her. […] The women's shelter is on our route and that is a bit special: Normally we like to hand over as much food as possible but there less food means that they have fewer residents, which is good." (December 23).

As seen from these quotes, food is distributed on weekly delivery routes by volunteers who play a very active role in making the best out of these runs. The social dimension of participating in the Foodbank, enjoying a chat with friends, and getting to know different people on route is self-actualizing for volunteers, particularly retirees. For the volunteers, care is materialized through membership and participation in the concrete activity and aspects of distribution, rather than being formalized in the purposes and abstract activities of the community. Through our engagement with the community, we have learned that they primarily want to work with the activities where the care is more visible and directly experienced as part of volunteering, that is, in collecting food produce from donors and, especially, delivering it to the recipients. This means to interact with recipients directly, and to gain a first-hand experience of the impact the Foodbank makes in helping others. As a consequence, tasks such as accounting, data entry, and warehouse management – all needed in order to document the food transactions and handling – are experienced as more tedious and less desirable. As the manager of the Foodbank explained, besides ensuring a good and pleasant working environment for the volunteers, he also has to consider what tasks are more attractive and worthwhile to them. As he explained, people who volunteered do not do so to sit in front of a computer doing data entry, but rather to take part in activities more directly linked to people and produce redistribution.

At the same time, informal relationships with others are also paramount to the functional labor of delivering food. The delivery vans are packed by volunteers and staff who seek to balance

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available food items with the number of routes and to provide a balanced mix of produce for the recipients. This is done while taking expiration dates into account to minimize food waste. This balancing work is a central concern, and both volunteers and staff draw on their knowledge about the different recipients to deliver food that they think will suite them. As one of the interviewees explained, he sees himself as a market seller who tries to 'sell' as many food items as possible to the recipients, when he is visiting them with the van. Typically there is a bit of bargaining and attempts to convince the recipient kitchen staff, based on previous knowledge:

> "I prefer being the one standing and selling from the car. You kind of become like a market seller – don't you also want this? and look here what I got for you" (interview quote from [5]).

When it comes to *Hoffice*, participating in shared working days creates opportunities for hosts and guests alike to take care of themselves and others. This is particularly significant with respect to Hoffice's overarching vision to mitigate the challenges associated with self-employment and the management of flexible forms of work – e.g., the lack of a social dimension of work, difficulties in managing work/life boundaries, and limited networking possibilities. The Hoffice work structure is practically used by participants to give rhythm to working days and alternate working sessions and social breaks, thus supporting participants in finding focus and interacting with other attendees, at least to the extent that they find it enjoyable. The synchronized alternation of working sessions and breaks supports participants in maximizing their efforts towards what can be accomplished within a forty-five minute time frame, but also in fostering a sense of mutuality and care among the participants. In following the structure and adhering to its key norms, participants find focus and, at the same time, help others to find focus. The structure defines a number of tasks for the production of sociality at Hoffice events, which shapes how to care for other attendees.

Developing supportive relationships is key to Hoffice events, and following the structure helps participants find focus. These aspects are core to both the values and situated practices of this co-working setting. Supporting other people find focus along with concerns for personal productivity (e.g., meeting deadlines, delivering outcomes) go hand in hand in Hoffice practices, and they are key to caring for oneself and other participants. Thus, the articulation work that goes into organizing Hoffice events scopes mutually supportive relationships, rather than framing cooperation or other interdependent activities on shared work-related tasks. The interplay between caring by being together and working effectively was a recurrent theme in the data.

Hoffice participants often lamented that the flexibility associated with homeworking and being self-employed requires discipline and individual efforts to maintain working schedules. Hoffice's structure, including work sessions, breaks, and clear working hours, alleviates some of these problems. Attending Hoffice results in effective and collaborative ways to put boundaries around work, while following the structure helps participants feel accomplished. As discussed during the interviews and the first workshop, the check-out rounds, taking place in the end of each session, orient participants' experience towards appreciating together the tasks that have been carried out, rather than worrying alone over everything that did not get done. Eventually, this contributes to participants' experience of well-being and efficiency, ideally alleviating stress and guilt. The structure helps make Hoffice days more effective, without draining the participants. As one of the workshop participant put it: *"I'm not exhausted when I get out of here"*, (Workshop 1).

To sum up, this section has considered the multifaceted qualities of care practices in the two settings. The analysis has focused on the relational qualities of care and how they emerge from the two communities' core practices and values. In the Foodbank, concerns for food waste reduction and for vulnerable people are interwoven in the goals the community strives for, and in the work of the volunteers, especially with respect to the activities they regard as more valuable and rewarding.

For the volunteers, food deliveries are important moments to establish meaningful relationships with food recipients, and not mere transactions to deliver food items (despite the practical concern to allocate them). Relatedly, this section has illustrated the inter-dependencies between acts of care and more practical concerns, and the ways they define each other. Participation in Hoffice events is instrumental to both accomplishing planned work tasks and developing supportive relationships with other attendees. Here, the structure plays a central role in defining the articulation of practices needed to put boundaries around work, and, thus, in configuring the collective qualities of self-care in this setting.

5.2 The problems with re-purposing existing technologies within communities that care

The analysis below unpacks the tension between the caring and working rationalities that might arise when digital technologies, originally meant to be used in other contexts, are re-purposed and appropriated by non-profit, volunteer-run initiatives. As dedicated platforms often require considerable investments in money, along with time and energy to learn their use, it is common for grassroots and community-driven initiatives to seek creative combinations of readily available tools that help advance their goals, and address their needs in nimble ways [18, 57]. This calls for a critical consideration of the values and narratives that stem from using workplace technology and commercial platforms that cannot be hacked or redesigned, the ways they hinder supportive and caring relationships among community members, and the extend to which they can be reconfigured or negotiated through practices of organizing. The Hoffice case illustrates these issues thorough the practical work of organizing co-working events by mainly relying on a general-purpose, social networking site like Facebook. The Foodbank case reveals similar challenges by considering, instead, the use of workplace technologies (i.e., database software, a scanning system) which have been donated to the community, and which members resist, at least to some extent.

(Re)creating the social dimension of work and workplaces is central to *Hoffice*. Nevertheless, as it emerges from the analysis, while Facebook makes it easy to create new events, and make them visible to broad audiences, the design of the platform does not support the work of facilitating and managing them. This regards both practical concerns to get everyday work done, and the more felt-like experience of being together with other attendees. As summarized by one of the Hoffice co-founders:

> "Facebook is not really interested in facilitating Hoffice events. [. . .] They are not creating a platform that makes this easier [to manage events], that's not their interest." (Workshop 3).

A recurrent theme during the workshops was that Facebook as a platform and the corporation behind it are not concerned with the organizing of volunteer-driven initiatives, and any redesign to the platform disrupts the doings of such collectives. There was a shared understanding among Hoffice members that Facebook takes control away, in that its features cannot be hacked, tailored, or just maintained to support specific organizing needs. This was discussed, for instance, with respect to the norms underlying the ways events are managed on the platform. Previous work has detailed how the platform is used by Hoffice attendees to organize and coordinate co-working events [54]. Here, we emphasize that, while Hoffice members consider the template to create new events to be straightforward, they see the lack of commitment to notifying interests to participate–or not–as problematic for the community. While this way of responding to event invitations might work in other contexts, participants pointed out that stating an interest to participate, but not showing up, might have big perceived costs for hosts who plan working sessions which, eventually, are not attended by those who showed interest. Connecting to the points raised in the previous section,

this can undermine efforts to plan being together and to work with the support of other people. Furthermore, during data collection, participants lamented that the "create event" option does not allow them to define the desirable number of attendees that can be hosted. This becomes challenging within a Facebook group of more than 2000 members, where an unlimited number of people can notify an interest to participate, but where the platform does not enable awareness of the order in which interest in participation is indicated.

Finally, during the third workshop, participants spoke about the possibility to reconfigure the key roles of hosts, guests, and facilitators. As they explained, the platform does not allow, for instance, to host an event and, at the same time, let someone else facilitate it. As noted, facilitating events might be demanding for hosts who may have to repeatedly introduce Hoffice and its structure to newcomers and manage time, while also attending to their own work. As it was explained, introducing newcomers to the practicalities and norms of Hoffice events can result in lost opportunities to both find focus for oneself and help others accomplish the work planned for the day. As one of the co-founders put it, with the growth of the network, running shared sessions is *"too work intense"*. The work needed to make events work hinders opportunities to create supportive relationships – both for oneself and other participants – and effective working days. Here, concerns for individual productivity intertwine with care seen as the creation of participatory, enjoyable moments for all attendees. A fixed separation of Hoffice key roles does not interfere with concerns for individual productivity and collective care within small groups. Participants felt, however, that upholding them while being inclusive towards newcomers had to be counterbalanced by reorganizing sociotechnical practices for these roles.

The *Foodbank* is quite dependent on donations both with respect to food and digital technologies, which must communicate and work together with the recipients and donors' digital systems, in ways that are prescribed by laws and regulations for food security. This concerns both shared file formats and shared applications and, more generally, the choice of technologies to be used by the Foodbank. The Foodbank operates within rules and regulations that it needs to comply with in handling fresh foods, while, its recipients, as professional kitchens, have requirements to document food transactions, finances, etc. As reported elsewhere [5], in addition to keeping documentation for food authorities, other key activities are to calculate the cost price of the received goods, to justify the membership fee, and to document the amounts of organic food items for the certification of the kitchen. This is a major reason for much of the documentation work of the Foodbank, both for the scanning in the van, as we will return to, and for creating excel sheets and delivery notes that the recipient kitchens receive. The documentation is a concern that needs to be considered, despite what the volunteers appreciate most (e.g., the personal meeting with the staff and members of the recipient organizations). Thus, managers at the Foodbank try to reduce the volunteers' involvement in such activities as much as possible. This means that the staff carries out the significant activities to verify food deliveries, and to generate overviews – through excel sheets and weekly delivery notes – that the recipients need for the health authorities. The staff carries out this administrative work, despite the fact that many volunteers have the professional expertise to do it. At the same time, this means that the technologies supporting these tasks (e.g., database software and Excel sheets) are used by a small group of people (compared to the many people working at the NGO), and appropriated for this specific form of food documentation.

The documentation work is also closely connected to the scanning system that is used by the volunteers in the van. This specific technology has been chosen because it is robust, it conforms to common, established standards for warehouse registration and inventory, and it is easy to use and maintain. It is, however, not necessarily the more suitable, or the most efficient, for this job, and neither it is the most reliable in terms of the data produced. There are no easy ways that

technologies brought into use can balance these needs and requirements. At the same time, these concerns are important for introducing technologies into this setting.

To sum up, this section has shown how appropriating existing technologies can overshadow caring aspects among volunteers, and other key actors in the two settings. The Hoffice case illustrates key volunteers' awareness of the pitfalls of using a social networking site to create participatory events that both newcomers and more returning attendees can benefit from. In many ways, in the Foodbank, it is the staff who makes the decision of how to use/repurpose technologies, which they do with an eye on both what the volunteers can do and what does not interfere with their commitment and desire to volunteer. Having to spend time on documentation and administration is generally not attractive to them because –or despite– they may have spent their work life on such activities. This illustrates the tension between the efficient work concerns that are needed for the purpose of documentation vis-à-vis the legislation, on the one hand, and the volunteers' care to help the disadvantaged together with other volunteers, on the other.

5.3 Encountering anti-designs

This section outlines how sociotechnical explorations, aimed at supporting the organizing of the two communities, can result in technical features that are not desirable, and that we characterize as *anti-designs*. We stress that while being envisioned through participatory workshops, these design ideas can interfere with, or even disrupt, care and caring aspects that are central to the communities. This is particularly true when concerns for efficiency, effective transactions, and material rewards for participation (unintentionally) override cherished social encounters.

In the case of *the Foodbank*, the design work focused on exploring existing technologies to collect and use food-related data. This focus was defined through from conversations with the local manager, and with other people directly involved in the Foodbank. Below, we report on three use scenarios whose key technological features had been previously discussed by both staff and volunteers during interviews and site visits.

The first scenario is called *Designing for the Van*. It explores what happens when the van is on tour, particularly during the preparation that the volunteers and staff do before handing over food items to the recipients. Volunteers had complained that they did not always feel prepared for meeting the recipients, and this design suggestion is a context-aware application, to be used in the van, that provides volunteers with information about recipient organizations. Although practically making available information that can help food delivery (i.e., the type of food recipients need), the use of such an app would replace the on-site bartering with the kitchen staff – an important and highly valued space for socializing and getting to know the sites, and hence, for caring. As the data analysis show, the existing, physical information binder in the van is rarely consulted, as the volunteers are often engaged in conversations, and share experiences while driving the delivery route. Thus, this envisioned design could easily get in-between the caring aspects of the work that makes volunteering attractive.

The second scenario, *The Webshop*, focuses on supporting efficient food transactions, rather than nurturing relationships among the many actors involved. During the interviews, the recipients had talked about their wish to be better informed about what food items were available from the Foodbank, which led to the proposal of a webshop where food items could be ordered. In discussing the idea of a webshop with the Foodbank staff, we quickly realized that this design would impact both volunteering, because volunteers would no longer need to care about what they could give to 'their' recipients, and the Foodbank's relationship with the food donors; in fact, they did not want recipients to be able to order things, but rather to get things as gifts. Just as the context-aware application for the van would meddle with the caring interactions between the volunteers and the recipients, a webshop would remove the on-site selection and bartering process, and potentially

hinder the contact between the volunteers, the recipients, and the people in need. This would reduce volunteering to packaging and delivery, along with introducing a further administrative task in managing the webshop. These solutions challenge the basic donor and volunteering structures of the Foodbank in many ways. First, resonating with other research [3], the webshop would hinder caring relationships by reframing food as an *order* to be placed, rather than a gift to be shared, and by creating competition between the Foodbank and the food donors. Second, for the volunteer crew, this would mean to become a mere delivery service, rather than a crew who knows their recipients, their needs, and how to care and make the most for them. Showing up with the van and doing the bartering is also a way to make the Foodbank visible to kitchen staff and users of the kitchen. Finally, the donors, in particular the big supermarket chains, do not want to compete with themselves, and hence they do not want a service where recipients can simply go and get the items, for a lower price, or for free. Ultimately, introducing information technology that would make previewing and pre-ordering food possible, would shift the balance between caring and efficiency for all involved parties, in ways that may not be attractive to any of them. This is why we consider this technological exploration as an anti-design.

To further address the challenges at the level of donor organizations, a third scenario, *Visualizing Donor Data*, was explored in collaboration with the Foodbank and their donors [4]. Here, the idea was to gather and visualize donor data. In particular, the focus was on donors' social responsibility reports, as some donors wanted to be able to do a benchmark with other donor organizations. In this scenario, it became clear that there is a certain competitive edge in donating, and that it can be problematic to do this too openly. Both among donors and recipients, there is also competition that makes sharing data among recipients and, in particular, among donors, a challenge. While donors do not want to reveal to their competitors how much food waste they generate, recipients want exclusive relationships with their donors, and do not want to share information about them with other recipients. While the Foodbank works to keep their donors happy regarding corporate social responsibility, there are several concerns in this respect, including the competition with other donors, and the public sharing and benchmarking of their amount of surplus food [4]. Hence, comparative benchmarking becomes yet another anti-design. While discussing this scenario, both the Foodbank and the donors became even more cautious about publicly sharing donation data, even across donors. Openness and transparency are not always desirable values to strive for in a context like this. This third scenario further illustrates how embedded the tensions between care and competition are in every part of the Foodbank, and how this needs to be balanced at many levels of design in this type of organization.

As for *Hoffice*, the examples below show that design explorations can easily fail to focus on the possible entanglements of caring and work rationalities. We suggest that this aspect can be explained by the lack of examples of digital technologies that could inspire sociotechnical narratives of care; this is particularly relevant for cases, such as community-driven initiatives, when design efforts are led and enacted by volunteers, rather than expert designers, and when operating under budget and time constraints. In the Hoffice case, instances of anti-design are crystallized in discussions about revitalizing active participation in the community, particularly in terms of organizing and hosting more regular co-working events. The two themes discussed, namely monetizing transactions and rating participation, surface the challenges of sustaining the life of the community by merely relying on the actions of a few active volunteers.

As extensively discussed during the three workshops, key Hoffice volunteers thought that the rapid growth of the network meant that there were not enough co-working events, given the high number of possible participants. The possibility to monetize participation in the community was considered as a strategy to mitigate problems associated with the lack of available events. Discussions included possibilities to crowdfund the network or to collect membership fees from

participants. One suggestion was to use a well-known platform that allows third-party donations – to people or projects – in exchange for diverse benefits, such as prioritized participation or access to resources. It was suggested that the raised money could be used to rent rooms in third places, like community centers, thus removing expectations about the hosts' responsibilities towards hospitality norms. As noted, this would ease the tasks of facilitating events. The possibility to use money to secure oneself a spot at co-working events, or as an economic compensation for the work of more active participants, was also explored. While the workshop participants were not explicit about the size of the compensation and what aspects of organizing it was meant to cover, this suggestion overrides Hoffice's concern for reciprocity and self-organizing. Even though guests sometimes leave small tips, for instance for making tea or coffee, this is not an obligation and it is to be regarded as a sign of gratefulness, rather than an economic compensation. Eventually, introducing payments or fees would result in an undesired design, in that it would raise expectations about value for money and lessen the sense of responsibility for community building and maintenance.

Another sociotechnical configuration, that can be seen as an instance of anti-design, was the idea of introducing a point system to rate active participation. The suggestion reflects a concern to recognize the efforts of more active members, and provide incentives for others to be more active, especially by organizing more events.

> "You could also have a status function, if you want; so if it has to be a community. For instance, if you could have that Erika, who organizes a lot of events, that she gets status points every time she does somethings. Every time you host [an event] you receive 100 points, every time you attend an event you receive 10 points. If you have high status, maybe your place is also guaranteed. [...] you could also have that four places are for Hoffice regulars, if one wants to have this type of thing". (Workshop).

As this discussion continued, the point-based ranking system was used to label different types of participants, from Hoffice professional to Hoffice apprentices and hang-arounds. Acknowledging the efforts of more active members through a rating system pointed to the use of rating mechanisms to characterize the status of more or less active participants. This can be seen as an attempt to quantify members' involvement and active participation in Hoffice, and to make visible those members who contribute more to the life of the community.

In this section, we have discussed a number of sociotechnical explorations intended to support the organizing of the two communities. Despite what was in many way our best attempts, these anti-designs interfered with care and caring aspects of the two communities. This is particularly true when concerns for efficiency and effective transactions override the relevance of cherished social encounters, resulting, for instance, in framing food gifts as orders. The anti-designs, nonetheless, were useful in articulating the role of the caring aspects in the organizations, both for the designers/researchers but also among the community members who participated in the design processes.

5.4 Summarizing the analysis

Care is everything that is done to maintain and repair 'the world' so that we can all live in it as well as possible [52]. Both our cases involve caring practices, but in different ways. Reducing food waste can be regarded as caring for more just food systems, which is a main concern for the Foodbank as well as its donors. More importantly, however, the analysis shows that volunteers are attracted to the Foodbank for other reasons, too. Interests to help vulnerable cohorts of people, participate in joint activities of the Foodbank, and to develop enjoyable relationships with people at the recipient kitchens are all central caring practices at the Foodbank. The daily routines, the routes, the crews and the packing of the van, moments of handing over food and accounting for it, are among the

material practices and practical labor where caring unfolds, at many levels. Hoffice organizes events for participants to work individually, while helping other attendees do the same. Caring, here, is defined through planning togetherness, structuring and putting boundaries around work with the help of other people. These collective aspects make caring in Hoffice inherently participatory: everyone's contribution counts beyond the functional inter-dependencies of collaborative work.

Our analysis has pointed out that the appropriation of existing technologies in both communities may overshadow core caring aspects. In the Hoffice case, key volunteers are aware of these pitfalls, especially when using social networking sites to create events, and to coordinate participation in events. In the Foodbank, the staff makes the decision to re-purpose technologies always considering what the volunteers consider as meaningful engagement, and how this might effect their commitment to the initiative. Practical concerns for food deliveries, engaging the volunteers, and for helping those in need are entangled in the ways digital technologies are appropriated and used.

Design explorations in these settings have pointed to anti-designs, that is features of digital technology that can exclude acts of care within the two communities. The anti-designs were useful in articulating the role of care, both for the designers/researchers and the community members who participated in the design processes. Considerations of the design work with the two communities indicate the lack of examples and sensitivities to think with care in a designerly way. For instance, active Hoffice members felt strongly about establishing mutually supportive relationships during co-working events. Nevertheless, design explorations delved into well-known gamification features as ways to functionally rate members' participation and status. In the two cases, we have seen acts of care that happen behind the scene, for instance, when the Foodbank staff makes decisions of repurposing technologies, or when the volunteers and staff decide on the food items to bring in the van.

6 DISCUSSION

The analysis has illustrated how care in the two settings is multifaceted, unfolding at many levels. Concerns for care and efficiency are inter-related, and neglecting one of them can upset core practices or undermine participants' motivations for being involved. As seen, interventions to redesign sociotechnical practices can result in anti-designs, particularly when concerns for optimizing and automating transactions overlook the relevance of cherished social encounters (i.e., the web shop scenario), or privilege measurements rather than other qualities of participation (e.g., the Hoffice point-based rating systems).

6.1 The work of care in community settings

We have introduced two cases including volunteer work, and people whose paid-job entails collaborating with volunteers. Both cases indicate that, just like in attempts to separate work and leisure [10, 31], boundaries between work and care are blurry and difficult to uphold. Clear-cut distinctions between voluntary and paid work do not hold up to scrutiny. As the analysis has shown, 'traditional' work and 'caring' practices are interwoven in the everyday organizing of the two communities, and instrumental to each other. The two cases are centered on certain forms of professionalism, yet without encompassing entrepreneurship and interests in profit. For the different participants in the Foodbank, visions of more sustainable futures – especially the goal to minimize food waste by redistributing it to people in need – are "matters of care". However, in its day-to-day operation, the NGO is very much like any other warehouse, with work shifts and requirements to both document re-distributed food items, and to comply with food regulations. Hoffice can be regarded as a set of strategies, norms, and best practices to help manage flexible forms of work, rather than "standard", office-centered, labor arrangements. Carrying out work is what people need to do. Being together, at someone's home, is where caring practices surface and

unfold, in that co-working events are opportunities for participants to recreate the social dimension of work, give a rhythm to working sessions, and put boundaries around work.

Previous work on care [e.g., 7, 16] has focused on professional health settings, where tending to other people is the primary purpose. Our analysis has introduced two settings where orientations towards other people and more sustainable lives are not required, but make the everyday labor of organizing more attractive to participants. Research has also emphasized the role of caring in promoting social and physical well-being [68], and in community maintenance in hackerspaces [65]. Our analysis resonates with the tensions between the different ethos identified by this work. However, we argue that understanding the emerging configurations of care and other rationalities is, indeed, relevant in other contexts to draw attention to 'the human face' of organizations, an aspect that is often overlooked in traditional work settings [54]. We write this at a time where corporations, such as Amazon and Uber, show the ugly face of commercial organizations while borrowing narratives, such as freedom of choice, from the sharing economy. As we write this article, Microsoft has filed a patent for a sensor-based system that can automatically score the quality of meetings, based on attendees' speech patterns, or the time they spend directly contributing to the ongoing work [66]. There are serious concerns with management surveillance at play here, and we see this episode as yet another example where the quality of work intrinsically becomes a function of factors that measure efficiency. More examples of the human face of work would be useful in rethinking alternatives, and how work and other technology-mediated practices can generate care, rather than reinforcing neoliberal corporate cultures (e.g., [30]).

6.2 The work of care in CSCW research

Unpacking the relational qualities of care outlines the many rationalities at play in the doings of community initiatives, and in the everyday labor required to make them work (see also [2]). Like the foundational CSCW concepts of articulation [59] and boundary work [58], care [51, 52] is a useful perspective to study how everyday activities are organized, inter-related, and carried out. Similarly to articulation work, caring practices are constitutive of the collaboration required in organizing the work of communities and volunteers. As shown, managers at the Foodbank facilitate volunteers' engagement with more social activities (i.e., deliveries to the recipients' kitchens), rather than assigning documenting responsibilities to them. In Hoffice, trust and respect for others are essential to the collective dimension of the co-working events, yet without the functional inter-dependencies that collaboration in traditional workplaces entails. While articulation work is a concept that still talks more to efficient and productive practices, it shares similarities with care: both aspects of work are often invisible, neglected, and challenging to formalize [52, 59]. Echoing Star and Strauss's argument about articulation work, then, applying a care lens does not necessarily mean that all caring practices should be made visible in designing new sociotechnical systems. Careful considerations should be made, instead, on who and what comes to matter, who and what benefit from a focus on care, and whether acts of care should be made visible by design, or internalized through the direct experience of key practices, norms, and visions of specific communities.

Encompassing multiple meanings and contextual qualities, care and care practices connect to notions of boundary objects and work [58], thus enabling interactions between different communities of practices and perspectives. The complex layering of work and care rationalities at play in our cases suggests that foregrounding just one, either to understand technology appropriation or to inform technology design, becomes reductive and difficult to follow. Acts of care are not to be seen in juxtaposition to other situational aspects of work [51, 52]. Understandings of technology use should unpack the relationships between them [60], and the many social structures that are enacted as people use technology in-practice [49]. This is particularly true in settings that, like the ones we have discussed, borrow digital technologies from both work and leisure contexts. We see a need

to understand technology appropriation through the relationships between caring and efficiency rationalities. Here, focusing on the value propositions and narratives about existing technologies, along with people's ability to negotiate their relevance, is paramount. Kaptelinin and Bannon [36] have differentiated intrinsic and extrinsic practice transformations, that is, changes that are determined from within a setting, or externally by designers. Interestingly, in our cases, there is no clear distinction between the two, when it comes to acts of care. In the cases we have seen, the interplay between caring and efficiency rationalities is a concern, both when appropriating technologies and when designing new ones. In the Foodbank, managers make decisions about technological support, and whose job technologies are meant to mediate. In Hoffice, it is a group of more active members who play this role, but in both instances their concerns embrace both efficiency and care. It is important to emphasize in this respect that the anti-designs did not come from the outside. They came from withing the communities, and only after reflections did the participants realize that they were not "solutions", but counterproductive examples of the role of technologies in these settings.

If we focus on narratives of technologies and practices beyond efficiency, it is interesting to consider the ways alternative framings of work are re-articulated through participation in community-led initiatives. Taking part becomes entangled with qualities related to being together, the multi-faceted meanings of care, and the forms of cooperative work that are at play outside, and even in resistance, to capitalist production [62]. In what follows, we further address these points by focusing on the use of digital technologies and the processes whereby they are shaped and introduced.

6.3 The work of care in technology design

Both Hoffice and the Foodbank illustrate that while key participants might be aware of the different dimensions at which acts of care unfold, designing for them is challenging. As the Hoffice instances of anti-design suggest, relationships between people might change when money is involved. Introducing membership fees, participation status, or explicitly quantifying the work done for the community, would make it harder to sustain the ethos of a self-organizing community where everyone's contribution is equally relevant. As soon as people contribute with money, they might feel more like customers joining an event, and less like community members who are contributing to the production of co-working days. As was brought up during the workshop, people might, then, feel entitled to a certain service, with membership fees being a means for a guaranteed spot at events. Previous work [55] has suggested interface designs to measure members' interactions with digital platforms, and to provide administrators with the means to quantify individual contributions to community-driven initiatives. We are cautious in this respect. We see this feature as possibly resulting in formal characterizations of central and peripheral participants, and in undermining the horizontal and equal relationships among members that Hoffice strives for. The notion of overt-explicit care has been used [65] to indicate technological interventions that make acts of care visible and recognizable. Connecting to this work, we consider designs that quantify care, and classify membership status, as ways that can introduce external motivations, and promote competition and individualism instead of mutual care and well-being.

Although critical reflections on the problems of anti-designs quickly surfaced during the design work in the two communities, it was clear that participants lacked examples of technologies were qualities and features of care are prominent. It was challenging for participants to think with care, even if care is what they value. Bødker et al. [15] have analyzed the many technological platforms utilized by caring and sharing communities, and concluded that most known platforms lack mechanisms for sociality, which, as we have seen, can be regarded as an aspect of care that shapes communities. Just like with sociality, we believe there is space for new caring mechanisms. The Commonfare project is one research example where caring has been explicitly on the agenda

[62]. It seems that some of the mechanisms they suggest could be understood as filling this gap, even if some of them are still quite transaction-oriented (i.e., the currency). Any form of 'money between people' can hinder care, even though it is part of caring to make an investment in the future, both for individuals and various types of communities. Berns and colleagues [2, 3] have presented a number of design sensitivities that can help activists and designers alike to configure the flow of attendees at food sharing events by drawing on relations of care – e.g., acknowledging and reciprocating volunteers' efforts, understanding that food sharing events are not the equivalent of free supermarkets, sensitizing people towards the problems and scale of food waste. The sensitivities are not meant to generate concrete design suggestions, rather to trigger reflections on the situated configurations of care that become relevant to the circumstances of specific food-sharing initiatives. For instance, in cases where food charity becomes a stigma [28, 53], encountering others might not be a desirable design goal.

Just like articulation work [59], care is contextual, situational and often invisible [51, 52], which makes designing for it challenging. Nevertheless, we conclude this paper with a call for sociotechnical explorations that generate acts of care, and for design methods that can help people see and explore caring alternatives. Design sensitivities might be useful to avoid commodification of care, and empower community activists to engage with design and designing. While recent work has sought to introduce aspects of care early on [32, 37], we argue for a decentralization of design processes from professional design, and for providing community activists with tools and expertise, rather than solutions. We have seen that design explorations often turn into what we call anti-designs, and that these often are the most immediate ideas that come to mind. It is, thus, important to explore the ways anti-designs can be used, especially regarding tensions between care and other values, and the flexibility needed to enable their emerging sociotechnical configurations.

7 CONCLUSION AND FUTURE WORK

We have presented two communities for which care and caring are central, although in different ways. The cases are both examples of volunteer organizations that, nonetheless, strongly relate to paid work. As seen, care and efficiency are intertwined in the situated practices of the two communities, and they unfold at many levels, through volunteering and paid work. This makes caring practices essential to the practical work that makes the organizing of communities work.

The adoption and appropriation of existing technologies may overshadow key concerns for caring. Doing design work with the two communities has generated sociotechnoical configurations that we have regarded as anti-designs. These are design explorations that, although originally suggested as design possibilities by key members of the two communities, were eventually perceived as disrupting core acts of care. Just like disaffordances can block, or constrain, key practices instead of enabling them [18], anti-designs can disrupt care and caring. Nevertheless, they can be useful in design contexts, to articulate the role and relevance of acts of care in community-led initiatives, both for researchers, community members, and other relevant stakeholders.

The analysis leaves questions for future work regarding investigations of care in other community-driven initiatives, and various processes of technology appropriation. We find it particularly relevant to continue focusing on this tension in future work, and also to further examine processes of appropriation and anti-designs.

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