



THE
ETHICS AND
POLITICS
OF
PLATFORM
COOPERATIVES

A Report by

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1.

INTRODUCTION

INTRODUCTION

Notions of ethical technology design are gaining increasing attention from companies, legislators, researchers, and activists. But what does it mean to integrate values into a technology's design? Where and how do we find them? And do technologies actually have politics?

In the platform and sharing economy, a lot is at stake: advocates of the platform and sharing economy emphasize its positive environmental and economic potentials. Whereas critics point out mainstream platforms' controversial practices in terms of working conditions, impact on local communities, and their neoliberal ideology. Responding to this, platform companies often claim they are merely intermediaries and therefore not responsible for the platforms' social and political consequences. A response with a striking similarity to the neutrality thesis argument that "guns don't kill people, people kill people". There are, however, alternatives to mainstream platforms, most notably platform cooperatives: platform co-ops are "businesses that use a website, mobile app, or protocol to sell goods or services. They rely on democratic decision-making and shared ownership of the platform by workers and users" (Platform Cooperativism Consortium, 2020). Platform co-ops and their mainstream counterparts may have similar applications (e.g., food delivery, short-term rentals), but they differ in a wide range of ways: business models, ownership, institutional structures, and arguably their ethical and political values (Scholz, 2017; Scholz & Schneider, 2017). These fundamental differences, in turn, have a variety of ethical and political implications for the platforms' design.

The following study takes a disclosive computer ethics approach (DCE) to reconstruct the ethics and politics of cooperatively owned digital platforms.¹ As I will elaborate in the methodology section, DCE focuses on identifying and evaluating embedded values, moral and political issues, and normativity in information technologies, applications, and practices; especially when these are morally opaque. To do so, I will investigate the platforms' technical components and operations in relation to the institutional conditions in which they operate (as part of their socio-technical complex). The study focuses on two case studies of cooperative platforms: the food delivery platform CoopCycle and the short-term rental platform Fairbnb. The rationale behind this choice is to incorporate this research's findings within a "2 by 2 matrix". That is, a cooperative and a mainstream platform² from two categories – sharing platforms (e.g., Fairbnb and Airbnb) and labor/gig platforms (e.g., CoopCycle and Deliveroo/Uber Eats/Wolt). Such a matrix offers various dimensions for comparison and generalization of the findings (e.g., between platform models, sectors, and technological frameworks). For each case study, I identified the moral

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and political values that are embedded in the platform's technical design and analyzed them in relation to the platform's institutional structures as a cooperative. My analysis also stresses the key differences of these platforms from their mainstream platform counterparts (Deliveroo, UberEats, Wolt, and Airbnb).

The study is structured as follows: the first section begins with the theoretical background that informs the research. This includes a brief overview of the philosophical discussion (and controversy) regarding the morality and politics of technologies. The discussion includes examples to illustrate its relevance for the platform and sharing economy. Subsequently, I will describe the chosen DCE methodology, its strength and weaknesses, and its practical application in the study.

The second section discusses the CoopCycle case study. This section's findings show that CoopCycle is built from the ground up in a way that distributes power "downwards"; that is, in the direction of the local co-ops and the individual couriers. Examples of such design features are the decentralized infrastructure, dispatch process, pricing system, *absence of* gamification/habit-forming design, or the careful implementation of courier geo-tracking. CoopCycle has a fundamentally different approach to algorithmic management than its mainstream counterparts. This approach is visible in the ability to deny gigs, the geo-tracking function as well as in the *absence of* a rating system, gamification, and habit-forming design. In this manner, the CoopCycle software strengthens their autonomy, dignity, and well-being. Furthermore, CoopCycle minimizes the information asymmetry between the platform (that is, the federation) and the local co-ops/individual couriers. This is done through open-source code, technical manuals, and the demo system as well as design features such as the available gig information. Interestingly, despite environmental sustainability's importance for CoopCycle, the co-op and its members weigh and balance it when it comes in conflict with other values (such as diversity and non-discrimination). Lastly, I will examine how CoopCycle's values influence in the platform's business and technical partnerships.

The third section discusses the Fairbnb case study. Fairbnb uses a variety of institutional structures that redistribute power toward the local communities at travel destinations. Most notably, the local nodes and the local community's sovereignty over the platform's local operations. Furthermore, Fairbnb's business model abstains from mass tourism and the commodification of living space. These aspects find technical expressions in the platform's design, for example through the "local information" data fields, technical limitations for enforcing the "1 host – 1

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house” policy, and the overall user journey of hosts and guests. Through donations to local projects and community co-determination, Fairbnb mitigates travel and home-sharing’s negative impact, especially on a local level. Having said that, it remains a challenge to sustain these goals as the platform scales. All in all, Fairbnb engages the user, makes the platform’s values and ethical operations explicit, and thus, re-politicizes travel and home-sharing (and their social, economic, and environmental impact).

The last section offers a comparison and a preliminary discussion on how the two case studies’ findings come together to form a generalizable notion of platform cooperatives’ ethical operations and politics. The section also includes some challenges that platform co-ops are facing due to their values.



2.

THEORETICAL
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Background: The Morality and Politics of Technology

Philosophers of technology give a great deal of attention to issues of values in technologies. On the one hand, the neutrality thesis claims that technological artifacts have no inherent values, politics, or consequences. It is rather the human agency of the person using the technology, which is responsible for the outcomes and consequently, for the technology's social and political implications (Pitt, 2014). Interestingly, actors in the platform and sharing economy often make a similar claim to fend criticism. Namely, that platforms are mere intermediaries/marketplaces and therefore not responsible for the social and political consequences of their use.³ To name a few examples: Uber stipulates being an intermediary between customers and self-employed drivers to fend criticism (and law-suits) regarding the drivers' employment status and working conditions (Domurath, 2018); Airbnb's and Uber's efforts to be acknowledged by European courts as Information Society Services (ISS) instead of Material Services with significant implications for the platforms' liability (Filatova-Bilous, 2021);⁴ or Deliveroo's feedback to the European Commission's Digital Services Act initiative: "The proposal must distinguish between platforms that pose a genuine risk to EU freedoms and those which are just marketplaces. As an online restaurant food delivery business, we don't disseminate information or facilitate the hosting of content other than the listing of goods for smaller businesses. These businesses often wouldn't have access to digital channels without a marketplace. Platforms which simply list products for sale should not be caught by the same onerous obligations as those that do host or disseminate such content" (Deliveroo, 2020).

On the other hand, technologies are shaped by society. They are therefore value-laden and have certain affordance for their use: "technological artefacts (and in particular computer systems and software) have built-in tendencies to promote or demote the realization of particular values" (Brey, 2010, p. 43). This, however, doesn't imply a deterministic view of technology. Technological artifacts don't possess absolute built-in consequences and individuals aren't completely determined in their use of technological artifacts. The uses of certain technologies may vary between contexts. Furthermore, embedded values aren't necessarily intentional. Designers aren't necessarily aware of the ethical aspects of the technology's design. Nor can they anticipate all future uses and use-contexts of the technology (and, in turn, the implication of these uses) (Brey, 2010). In addition,

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technological artifact's affordances don't only depend on the artifact's design, but also the social and institutional contexts that it finds itself in. Therefore, when studying algorithms—arguably digital platforms' technical core—, it is instructive to unpack the socio-technical context of their deployment (Kitchin, 2017).

Looking at the morality of technology more broadly, decisions regarding technologies' design, their use, and the contexts in which they are embedded can have political consequences such as the (re-)production of social order (Akrich, 1992; Feenberg, 2002; Sclove, 1995; Winner, 1980). For Langdon Winner, technological artifacts can have politics by implication of a design process. This is because the design process itself is already biased in a particular direction: "instances in which the very process of technical development is so thoroughly biased in a particular direction that it regularly produces results heralded as wonderful breakthroughs by some social interests and crushing setbacks by others" (Winner, 1980, pp. 25–26). Moreover, Winner makes the more radical claim that technological artifacts can be inherently political. Either by requiring a particular sociological system to function or by being strongly compatible with a particular sociological system. In his *Critical Theory of Technology*, Andrew Feenberg makes similar claims and argues for a democratic transformation of technology: "At the highest level, public life involves choices about what it means to be human. Today these choices are increasingly mediated by technical decisions. *What human beings are and will become is decided in the shape of our tools no less than in the action of statesmen and political movements.* The design of technology is thus an ontological decision fraught with political consequences. The exclusion of the vast majority from participation in this decision is profoundly undemocratic. Fundamental change requires a democratic transformation of technology" (Feenberg, 2002, p. 3).

Along the development process, the platforms are shaped with affordances that promote and demote the realization of certain values. For example, as will be discussed below, many mainstream platforms (e.g., Uber and Deliveroo) don't have a function for platform workers to deny or skip a task (a "gig") (Lee et al., 2015; Woodcock, 2020; Woodcock & Waters, 2017); a design choice with implications for the worker's autonomy, freedom, safety, and personal well-being. The platforms' institutional context doesn't only influence the development process, its values, and biases. The institutional context defines much of the socio-technical environment in which the platform operates. For example, the platform's ownership-structures and the links between the institution and stakeholders (e.g., workers, shareholders, customers) influence aspects such as the individual stakeholder's rights and duties,

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moral aspects of interactions between stakeholders (e.g., promoting/demoting values such as solidarity and social well-being), or stakeholders' autonomy to use the platform differently than the designers' intention.

Looking at them more broadly, *mainstream platforms* are political in the sense that they require and/or are compatible with a particular socio-economic system. To name two examples of such systems: first, the system that Nick Srnicek termed as *Platform Capitalism* (Srnicek, 2016); a system of business models and digital infrastructures, which are based on aggregation and utilization of data and the production of network effects. Second, the system that Shoshana Zuboff termed *Surveillance Capitalism* (Zuboff, 2019); an economic system that is based on the (unsolicited) aggregation and commodification of personal data. In contrast, *platform cooperatives* seem to be political in their compatibility with Feenberg's account of a democratic transformation of technology. Therefore, at least in theory, they have the potential to be *differently* political and promote a different socio-economic system than their mainstream counterparts. But what are the concrete ways in which cooperative platforms incorporate moral and political values, ethical operations, and politics that are fundamentally different from mainstream platforms? The following section will present the study's methodology, which was chosen to shed light on this question.

Methodology: Disclosive Computer Ethics

In this study, I deploy the disclosive computer ethics approach (DCE). DCE belongs to a group of approaches in computer ethics that are concerned with uncovering moral issues and features of computer (digital) technologies: Batya Friedman & Helen Nissenbaum developed an approach for analyzing how technological artifacts acquire the biases embedded in their design (Friedman & Nissenbaum, 1996). By focusing on the origin of technical artifacts' biases and values, Friedman & Nissenbaum's embedded values approach is mainly concerned with the design process. Resulting from this focus, approaches to include value considerations in the technologies' design process such as value sensitive design (VSD) have emerged (Brey, 2010). Philip Brey (2000, 2010) proposed the DCE approach to integrate Friedman & Nissenbaum's embedded values approach as part of a comprehensive approach to computer ethics. Mainstream computer ethics approaches focus primarily on *morally transparent* practices (e.g., design, use, and management) surrounding computer technologies. The term morally transparent indicates that the respective practice is known and the involved moral values are generally understood (Brey, 2010). For example, internet censorship and ransomware attacks.

In contrast, DCE is concerned with identifying and evaluating embedded values, moral and political issues, and normativity in *morally opaque* information technologies, applications, and practices (Brey, 2010; Introna, 2005). To name a few examples, DCE was used to analyze facial recognition systems (Introna, 2005), plagiarism detection systems (Introna, 2007), search engines (Introna, 2007), and the social media platform Facebook (Light & McGrath, 2010). The aspect of opaqueness is crucial for this study's methodological choice. Digital platforms are morally opaque in the sense that their complexity exceeds the understanding and insight of most laypersons and users. They involve distant actions over networks and servers, their logics and parameters aren't transparent or comprehensible, and their operations are often value-laden without it being known or visible for direct (e.g., platform workers, users, and customers) and indirect (e.g., local communities and policymakers) stakeholders.

Due to its focus on technical investigations, DCE's strength is a systematic evaluation of values that are potential and *performed* (the degree of the value's enactment within the system) as well as *accidental* and *purposive* (the degree of the designer's intention to materialize a value in the system). However, the *post-hoc* investigation of existing technologies makes it difficult to influence these values.

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Furthermore, technical investigations such as DCE are limited in terms of analyzing the values' source (e.g., whether they are individual or collective values, do they originate in a homogenous or hybrid group of stakeholders) (Shilton et al., 2014).

The DCE approach can take a normative or a descriptive form. The normative DCE approach was proposed by Philip Brey (2000). This approach *ex-ante* identifies certain values (that should be promoted by technology) and uses them as a benchmark for the analyzed technology. The descriptive DCE approach was proposed by Lucas Introna (2005, 2007). This approach focuses on revealing the hidden values, interests, and politics in technologies and related practices; however, without a predefinition of desirable values or politics (Brey, 2010). My application of the DCE method aligns with the descriptive approach. Despite its descriptive character, this DCE approach has a substantial normative potential down the road by revealing (opaque) platforms' hidden ethics and politics. As I will elaborate in the discussion and conclusion chapters, the normative potential relates to the platforms' responsibility towards their societal impact, (re-)politicization of technological governance, assessing the ethical preferability of different platform models, and creating a political tailwind for policy action.

In practice, the research design includes five tasks:

1. Composing a *preliminary collection of values* that are attributed to the platforms based on key academic literature, journalistic literature, and platforms' self-presentation
2. Inferring *values from the platforms' technical design* through technical investigations (user journey, functional analysis, etc.) and technical documents (code documentation, user and admin manual, etc.)
3. Identifying *ethically relevant aspects and practices in the platforms' institutional structures* (e.g., ownership structures, business model and practices, decision-making processes, etc.) based on textual sources (bylaws, charters, reports, training materials, platforms' website, secondary literature, etc.)
4. Engaging *in exchange with platform representatives* to supplement tasks 2 and 3's findings

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5. Analyzing the findings

A few remarks regarding the DCE method application:

First, the preliminary collection of values (1st task) informed the subsequent tasks by indicating values that may play a role in the respective platforms as well as “places” and practices, in which these values could manifest. Put differently, this stage helped to focus and guide my gaze throughout the investigation. It also helped expand and deepen my view by giving clues for findings (subtle ethical and political aspects) that might not be visible on the surface or from my subjective perspective as a researcher.

Second, the 3rd task set out to empirically identify ethically relevant aspects and practices in the platforms’ institutional structures. As outlined in the theoretical background section, the aspects of the platforms’ institutional context and technical design are co-dependent. In other words, my analysis brings the intersection of technical and institutional aspects of platform cooperatives into consideration; the intersection of *the platform* and *the cooperative*. For example, how CoopCycle’s democratic institutional structures and empowerment of platform workers correlate with the platform’s decentralized technical infrastructure or its unique implementation of a geo-tracking function. Having said that, this study (and the DCE methodology) focuses mainly on the platforms’ technological design. Therefore, the institutional structures’ analysis aimed at identifying *technology-related* aspects and practices that show correlations with the 2nd task’s findings. Lastly, please note that analyzing the full range of cooperative institutional structures’ ethical and political implications (e.g., cooperative principles, working conditions, etc.) exceeds the scope of this paper, requires appropriate methodology, and has been discussed in dedicated literature.

Third, the 4th task objective was to supplement the 2nd and 3rd tasks’ findings with the information provided by the platforms in the form of conversations, semi-structured interviews, and email correspondences.⁵ Please note that this is an additional task to support the DCE work. The center of the empirical work lies in the DCE, while the interviews’/correspondences’ objective was to complement and better understand the findings. For the sake of clarity and transparency, I will reference information from these sources as “field notes”.

Lastly, when discussing *moral and political values*,⁶ I use a pre-theoretical

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approach to address values such as fairness, autonomy, freedom, democracy, etc. That is, I will address the values in their loose, common-sense understanding *in the context* of their usage (e.g., in the platform's institutional structures). Accordingly, I will explicitly mention when discussing a value using a theoretical approach (e.g., the value freedom in terms of positive and negative liberties). Furthermore, when discussing *ethical operations* (rather than particular values), I refer to actual operations such as functions, policies, actions, and behaviors that promote certain interests, intentions, and outcomes while demoting others.⁷ Likewise, when discussing politics, I refer to actual mechanisms of (re-)distribution of power and (re-)production of social order.⁸ Thus, going from the mere disclosing of "static" values to the analysis of the mechanisms that bring them into action and their influence on society and people's lives. Please note that *ethical operations* and *politics* aren't mutually exclusive, but often interconnected and overlapping.

3.

CASE STUDY 1:
COOPCYCLE

3. CASE STUDY 1: COOPCYCLE

CoopCycle⁹ is a bike delivery platform co-op. It was founded in 2017 and its main headquarters are located in Paris, France. CoopCycle serves as a federation of local bike delivery co-ops and is responsible for the CoopCycle software development. CoopCycle itself as well as many of the local bike delivery co-ops emerged as a response to mainstream platforms going out of business or abruptly exiting the local market, leaving bike couriers without a source of income (e.g., the Take Eat Easy 2016 bankruptcy or the Deliveroo 2019 withdrawal from the German market). These events served as an impulse for local bike couriers to organize and form a co-op. However, in the highly competitive platform-based bike delivery market, CoopCycle and its member co-ops continue to operate as an alternative to new and existing mainstream platforms. These conditions, together with the couriers' experience working for mainstream platforms inform many institutional and technical decisions regarding the co-ops and their software.

While the bike delivery co-ops operate on a local level, the CoopCycle federation is “[g]overned democratically by [its member] coops, it enables them to stand united and to reduce their costs thanks to resources pooling. It creates a strong bargaining power to protect the bikers rights” (CoopCycle, 2021b). At the time of writing, the CoopCycle federation has approx. 70 local co-ops as members.¹⁰ To become members, local bike delivery co-ops must respect the values of a social and fair economy and operate democratically, based on cooperative principles (even they don't yet possess the legal status of a cooperative). The federation offers its member co-ops the ability to pool resources and services on both technical and organizational levels, such as the platform software, smartphone app, educational resources, legal support, etc.

CoopCycle offers a freely accessible demo system,¹¹ source code and code documentation,¹² and software manuals.¹³ These have proven to be fruitful sources for the technical analysis, but also shed light on a variety of ethically relevant institutional aspects, as I will discuss below. On the institutional aspect, CoopCycle has provided me with the federation's bylaws, the partnership agreement (that member co-ops sign to join the federation), and CoopCycle's charter of values (that member co-ops are obliged to when signing the partnership agreement).

Less Is More: The CoopCycle Software

The CoopCycle GitHub repository states: “CoopCycle is a self-hosted platform to order meals in your neighborhood and get them delivered by bike couriers. The only difference with proprietary platforms as Deliveroo or UberEats is that this software is reserved for co-ops. The main idea is to decentralize this kind of service and to allow couriers to own the platform they are working for. In each city, couriers are encouraged to organize into co-ops, and to run their very own version of the software” (CoopCycle, 2021a). However, as the following analysis will show, this is arguably not the only difference; the CoopCycle software shows further fundamental differences to platforms such as Deliveroo, UberEats, and Wolt. The CoopCycle software decentralized logic means that is self-hosted and self-administered by the local bike delivery co-ops. The software usage is granted under a Coopyleft license.¹⁴ The license is designed to ensure that institutions that use the CoopCycle software are using a cooperative model and that they fall under the European Union’s definition of social economy actors (CoopCycle, 2021c).

At the center of the CoopCycle software, as in any other delivery platform, are the logistics/dispatch functionalities. A customer can browse the restaurants and shops on the platform, place an order, and pay (using the third-party service Stripe). The order is represented by a task on the admin dashboard, from which the administrator/dispatcher assigns it to a courier. Tasks can be assigned in real-time or up to one day in advance. Using their mobiles phones, couriers receive the task on the courier dashboard. They can mark it as completed or failed, and add a comment. The couriers can also deny a task. Additionally, the admin can geo-track the courier’s position in real-time (from the admin/dispatch dashboard). The E-Commerce functionalities enable restaurants and shops to receive an order in real-time, accept or reject it, mark the order as ready (in this case the courier is notified). They can also manage their menus and prices online.

On the surface, the CoopCycle software makes a rudimentary and straightforward impression. However, as the following detailed analysis will show, this simplicity doesn’t imply a lack of ethical and political dimensions. Some of the ethical and political implications are built-in the software; others emerge through *the absence* of certain functionalities or *their difference to* mainstream platforms such as Deliveroo, UberEats, and Wolt; and yet others emerge due to the institutional context in which the software is built and used (a crucial part of the platform’s socio-technical context). In the following section, I outline key findings on the technical

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design (e.g., a specific function or design decision) and institutional aspects (e.g., ownership structures, decision-making in the software development process) that are formative to CoopCycle's ethical operations and politics. I will discuss how these aspects (have the potential to) promote or demote values as well as their (potential) ethical and political implications.

Disclosing CoopCycle's ethics and politics

Basic infrastructure

One distinct feature of the CoopCycle software is its decentralized infrastructure. Each instance of the platform is self-hosted and administered by the local bike delivery co-ops. Put differently, in contrast to Deliveroo, UberEat, and Wolt, there is no central instance of the platform. Therefore, there is no (algorithmic) monitoring and control of how local co-ops organize their work or monitoring and control of the couriers themselves. A further implication is that the data that is generated by the platform's operation is hosted on the local co-op's platform instance (rather than on central servers). Thus, the local co-ops and their members (couriers) co-own the platform that they use to organize their work and the data that is generated in the process. The decentralized infrastructure is visible to the customers; it isn't opaque. When starting the app for the first time, the user is asked to connect to a server by choosing a city from a list of locations (Figure 1). The wording "connect to a server" discloses the decentralized technicality behind the location (city) choice.

Thus, CoopCycle software's decentralized infrastructure changes the distribution of power between the involved stakeholders. A centralized platform infrastructure also centralizes power in the hands of the platform owners; a decentralized infrastructure gives local structures and individual workers more power through positive liberties such as autonomy over their work organization, working conditions, business partnerships, and data ownership and governance. Furthermore, it gives them negative liberties, most notably the freedom from surveillance, data collection, and quantification.¹⁵ These aren't only ethical, but thoroughly political implications.

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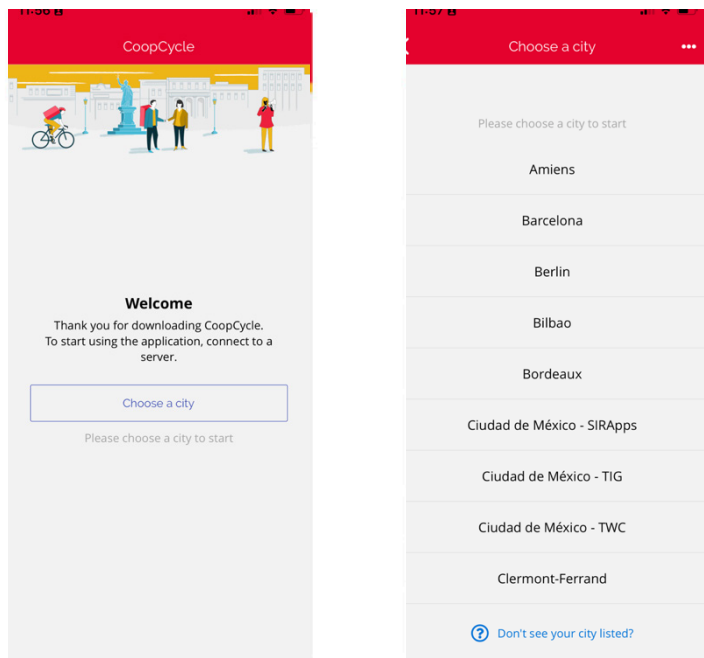


Figure SEQ Figure * ARABIC 1: City selection dialogue in the CoopCycle app

Open source

The CoopCycle software has open-source code which accessible on GitHub (Figure 2). The software's code is licensed under the Coopyleft license.¹⁶ As stated in the CoopCycle GitHub repository, this means that organizations are allowed to use the software provided that:

- "You are matching with the social and common company's criteria as define by their national law, or by the European Commission in its October 25th, 2011 communication, or by default by the Article 1 of the French law n°2014-856 of July 31st, 2014,⁵⁷ relative à l'économie sociale et solidaire' [social and solidary economy]"
- "You are using a cooperative model in which workers are employees" (CoopCycle, 2021a)

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In other words, the license is designed to ensure that the software will be used by organizations with similar ethics to CoopCycle. Thus, software licensing can be a political act: by providing them with software that builds their operations' backbone, it strengthens organizations that follow social standards and promote solidarity and worker co-determination.

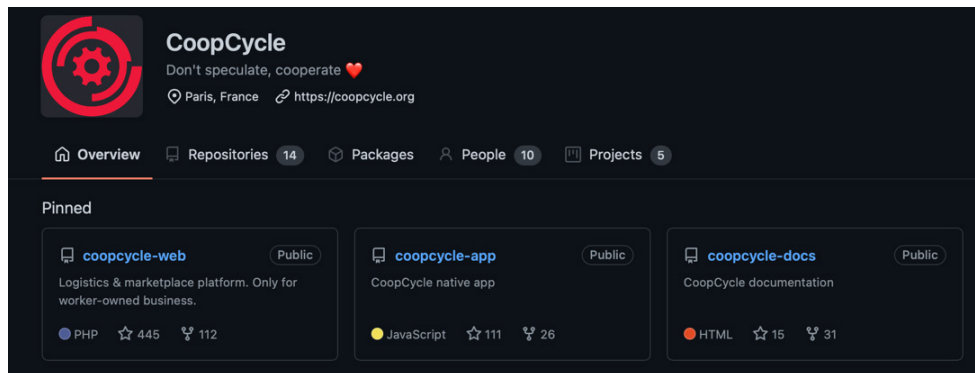


Figure 2: CoopCycle GitHub repository

It is important to note that, in practice, an open-source code has a limited effect on key issues such as transparency, customers' understanding of the platform usage of their data, or workers' understanding of the parameters, patterns, and operations that govern their work. This is because many platform workers and users lack the coding knowledge and skills as well as the time resources to analyze the code. However, CoopCycle's software manuals¹⁸ narrow this gap by providing detailed information on the platform's operations. Furthermore, CoopCycle has a freely accessible demo system¹⁹ that allows users (e.g., couriers, customers, local delivery co-ops that are interested in joining CoopCycle) to explore the platform using all system roles (Admin, Dispatcher, Courier, Restaurant Owner, Store Owner, and normal User) (Figure 3). This further reduces knowledge-related hierarchies and power imbalances by making the software, its logic, and operations accessible to local co-ops and individual couriers.

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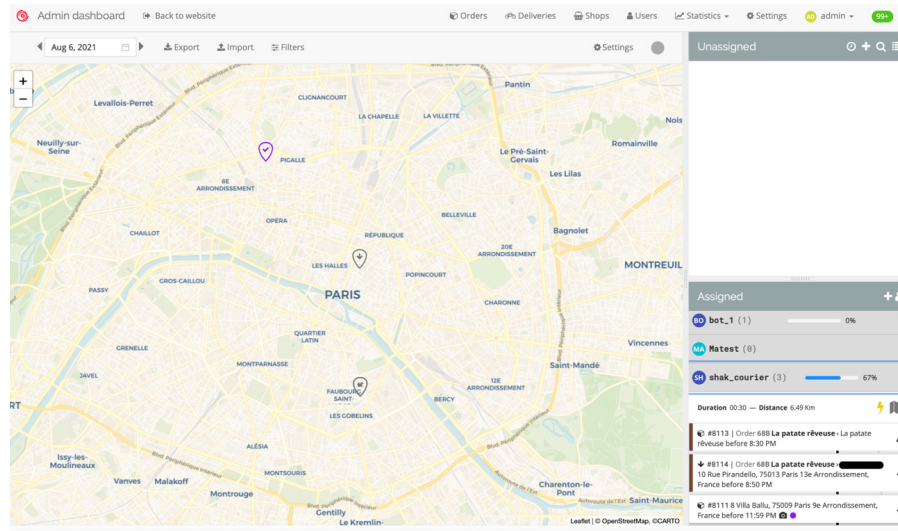


Figure SEQ Figure * ARABIC 3: CoopCycle admin dashboard (demo system)

Decision making with and about tools

As discussed in the theoretical background section, the design process—the software development—is crucial in terms of the platform’s values and politics. CoopCycle structures the software development process and related decision making in roughly three building blocks: major design decisions and the software development roadmap are discussed and resolved annually at the federation’s general assembly; a workgroup dedicated for the software (with members representing the couriers, federation, and the software developers) works on the resolved roadmap and makes decisions to achieve it; and continuous deliberation using Slack.²⁰ The deliberation using Slack enables co-op members (especially couriers) to be informed on the software development process and give feedback that feeds into the process (e.g., to change and even undo certain developments) (Field Notes, May 2021, September 2021).

Interestingly, the geo-tracking of the courier by the dispatcher was initially out-of-scope. The couriers themselves raised this requirement to support the dispatch process and approved it by a majority vote. This is a surprising finding considering the critique of platform worker surveillance (Scholz, 2017; Woodcock, 2020) and CoopCycle’s emphasis on the couriers’ respect and autonomy. To make sense of this finding, an in-depth analysis of CoopCycle’s geo-tracking functionalities and their difference from those of mainstream platforms (e.g., Deliveroo) will be conducted below. A further design choice made by couriers is the manual task assignment (in

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contrast to the developer's initial plan to have a "smart" task assignment algorithm). One reason is that, according to CoopCycle, humans can make better context-related decisions because they know their local partners (e.g., if a specific restaurant is fast/slow in preparing orders) (Field Notes, September 2021). This design choice is closely related to the local co-ops' institutional autonomy in choosing business partners and their emphasis on close relation and communication with these partners, as will be discussed below.

As the deployment of Slack for the software development process implies, digital democracy tools play a role in CoopCycle's institutional structures and processes. As appropriate in a cooperative, the federation's annual general assembly provides the structure for discussing major decisions and the roadmap both in terms of the software development and the institution (e.g., legal structures, finances, etc.). This is supplemented by the deployment of Loomio,²¹ which is used for facilitating the ongoing discussion and decision-making (Field Notes, September 2021).

These examples show that the democratization of the design process through workers' co-determination affects the technological design in ethically and politically relevant ways. Furthermore, the democratization of software design is by itself a political act. It redistributes power by giving stakeholders (in this case, couriers) the power to make design choices with structural and financial implications. This is fundamentally different from eliciting feedback and suggestions from stakeholders without giving them decision-making power.

The dispatch process

The dispatch function is the core of the CoopCycle software. Therefore, it's particularly interesting to examine how it differs from mainstream platforms.

The first striking difference is that the dispatcher assigns tasks manually to the couriers. As mentioned above, the couriers made this design decision which was approved by a majority vote (Field Notes, May 2021, September 2021). This, however, has several implications. First, the platform can only operate (that is, deliver) when a dispatcher is on duty; which, in turn, demands a certain level of work organization by the local co-op. Second, the manual process is arguably slower than the automated system of mainstream platforms. Third, the manual task assignment requires from the dispatcher contextual knowledge regarding the delivering restaurants (e.g., how quick they can prepare dishes), the delivery area (e.g., traffic, weather), and the available couriers (e.g., speed, capacity, personal preferences). In other words, local delivery co-ops need to maintain a high level of communication, community engagement, and local integration. Having said that, the manual process has the potential to create interpersonal friction or conflicts between dispatchers and couriers/restaurants. However, according to CoopCycle and the Berliner local delivery co-op Khora,²² this is generally avoided due to an institutional culture that facilitates communication within the local co-ops as well as between the co-op and their partner restaurants (Field Notes, September 2021, October 2021). This institutional culture is reinforced by the local co-ops' autonomy to self-organize their work and to choose partner restaurants that share similar values (see below).

The second difference regards the geo-tracking of couriers' location. As mentioned above, the CoopCycle couriers raised this requirement and its implementation deserves some attention. First, the courier location is available only for the local co-op's admin/dispatcher while they're signed-in the system using the dispatcher or administrator user roles (and not, for example, if the same person is signed-in as a courier). Second, due to the decentralized infrastructure, the courier location isn't available for the CoopCycle federation or other member co-ops; neither in real-time nor as data to analyze. Third, the courier location is used only in real-time to support the dispatch process and dispatcher's decisions. The data isn't collected, stored, or otherwise analyzed. Fourth, the courier location isn't available for restaurants and customers (Field Notes, September 2021). In contrast, mainstream platforms such as Wolt display the courier's real-time location to the customer (Figure 4). In sum, these

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differences constitute technical design choices that are fundamentally different from the geo-tracking of couriers in mainstream platforms. They limit the geo-tracking function to its declared purpose—supporting the dispatch process—and keep the power over it in the local co-ops' hands. In other words, the geo-tracking function isn't (ab-)used for worker surveillance and algorithmic management, it doesn't shift the power balance between the local level (local co-ops and couriers) and the CoopCycle federation, nor does it produce power hierarchies between customers/restaurants and couriers. These differences and hence, their ethical and political implications, are arguably a result of CoopCycle's participatory development process and the values that play a role in this process.

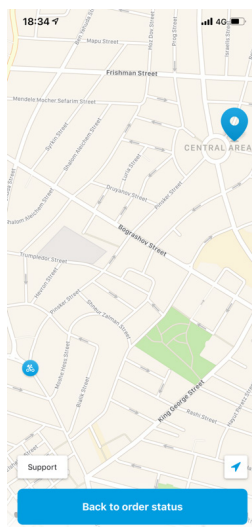


Figure SEQ Figure * ARABIC 4: Courier's location in the Wolt app customer interface

The third difference is that both couriers and restaurants can actively deny tasks (gigs) without implications to their contractual status, income, etc. In contrast, mainstream platforms rarely implement a function for platform workers to deny gigs.²³ In some cases, platform workers can *passively* deny a gig by not accepting it until the countdown (to accept the gig) is over. However, the lack of transparency on the implications of ignoring tasks puts platform workers under pressure to accept all tasks, even if the gig is unprofitable or puts the platform worker at risk (e.g., female and queer workers who prefer to avoid certain neighborhoods). In some cases, such as Deliveroo, workers can contact a central support phone to get unassigned. However, platform workers report long waiting times that de facto force them to carry out the gig anyway (Lee et al., 2015; Woodcock, 2020; Woodcock & Waters, 2017); yet another example of how technical design and institutional structures can intersect with ethically relevant outcomes. The ability to deny gigs

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strengthens the autonomy, freedom, and individual well-being of couriers; and it gives them power against being forced into unfavorable working conditions (e.g., underpaid and risk involving gigs). Having said that, this comes at the cost of more complex work organization and coordination between dispatchers and couriers. Thus, it implies that in contrast to mainstream platforms, CoopCycle prioritizes the above-mentioned values over efficiency.

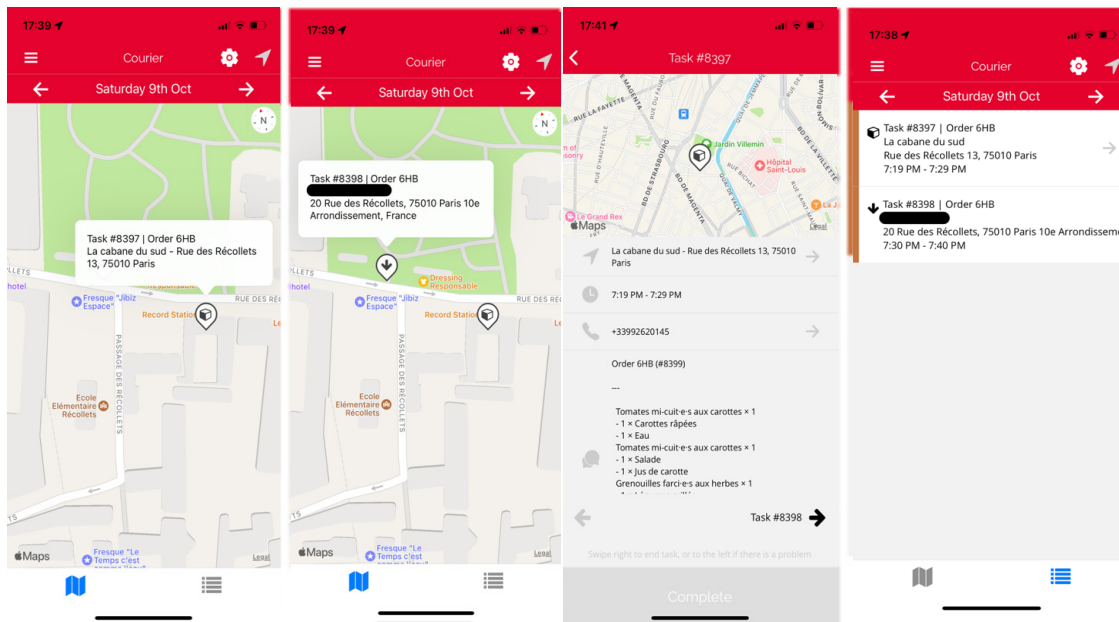


Figure SEQ Figure * ARABIC 5: Gig-information broken into tasks in CoopCycle app courier interface (demo system)

The fourth difference regards the gig information available to the platform worker (or, the information asymmetry between the platform and the worker). In Deliveroo, for example, the courier receives each step of the gig at a time. This causes uncertainty and is often accompanied by unpleasant surprises like bulk orders/ deliveries (picking up several orders from one restaurant and delivering them to different customers) (Woodcock, 2020; Woodcock & Waters, 2017). In contrast, the CoopCycle software provides the courier with the full gig-information broken down to detailed individual tasks (Figure 5). By being informed about the expected gig, this simple design choice reduces information asymmetries between the platform and couriers and hence, strengthens the couriers' well-being. It also enables couriers to make well-founded decisions when accepting/rejecting gigs.

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The fifth difference is that CoopCycle abstains from implementing a rating system. The rating function is widespread—nearly ubiquitous—in online platforms. In the context of the platform and sharing economy, mainstream platforms encourage users to rate the platform worker at a gig’s end. This relates to platform owners’ and founders’ libertarian views of the internet and internet platforms as self-regulating markets (Stone, 2017). Many problems have been associated with rating systems, for example, their informative value due to inaccuracy, inflated ratings, and unclear criteria (Frenken & Schor, 2017; Slee, 2017).²⁴ Moreover, rating systems enable gig platforms to decentralize and outsource the management function of worker evaluation. In effect, they create a situation in which no clear evaluation criteria are set, platform workers are pressured to self-optimize and comply with customers’ demands (regardless of their reasonableness) (Lee et al., 2015; van Doorn, 2017). Lastly, although user-generated, rating data is appropriated by the platforms and constitutes a significant part of their value (Frenken & Schor, 2017). Therefore, the *absence* of a rating system is an ethical choice against such tendencies. By implication, abstaining from a rating system promotes—or, to the very least, doesn’t demote—the dignity and individual well-being of the couriers in the work setting as well as the social well-being within the co-op.

Pricing system

The CoopCycle pricing system gives the local co-ops and restaurants autonomy over the pricing system; the CoopCycle software doesn’t have an algorithm for dynamic pricing. In general, the delivery fees are calculated based on the distance to ensure fair payment and a sustainable business model (Field Notes, September 2021). The local delivery co-ops can create and adjust the delivery fees’ pricing rules to fit the local circumstances (e.g., wage levels, delivery area’s topography, and traffic). Thus, giving local co-ops and couriers the power over the working conditions. Furthermore, due to the close cooperation and value-based partnerships with restaurants (see below) this function also contributes to better conditions for restaurants.

Habit-forming design and gamification

The “straightforwardness” of the CoopCycle software that was described above also bears ethical and political implications. This straightforwardness is, in a sense, a subjective experience; it stems from the experiences and habits that a user is accustomed to from other platforms (prior to the engagement with the CoopCycle

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platform). Put differently, the system’s straightforwardness implies the absence of design features that make other platforms non-straightforward. Such a design feature is (the absence of) habit-forming design and gamification.²⁵ Mainstream platforms use habit-forming design and gamification to incentivize platform workers and to keep users/customers engaged. In the gamification of work, platforms use distance, delivery, or working hour goals that are tied to financial incentives such as temporary income guarantees or bonus payments. Often, this is packaged in a game-like interaction between the worker and the app (e.g., collecting such goals or “prizes” in a video-game similar manner). However, the incentives aren’t available to all platform workers at all times. Thus, such incentives have implications for the fairness toward platform workers and transparency of their wage structures (Mason, 2018; van Doorn, 2019; Woodcock, 2021). On the customer side, platforms use habit-forming design and gamification to make the platform usage not only functional (ordering food) but also entertaining, thus, fostering additional incentives to the customers to use the app again (that is, ordering food more often than they would otherwise). For example, the geo-tracking of food couriers in the Wolt app (could) fosters a habit-forming temptation of watching your ordered meal—your favorite pizza or sushi, perhaps—approaching. Furthermore, Wolt gamifies waiting by displaying animations of dishes “jump out” the mobile phone’s screen when tipping on it (Figure 6).

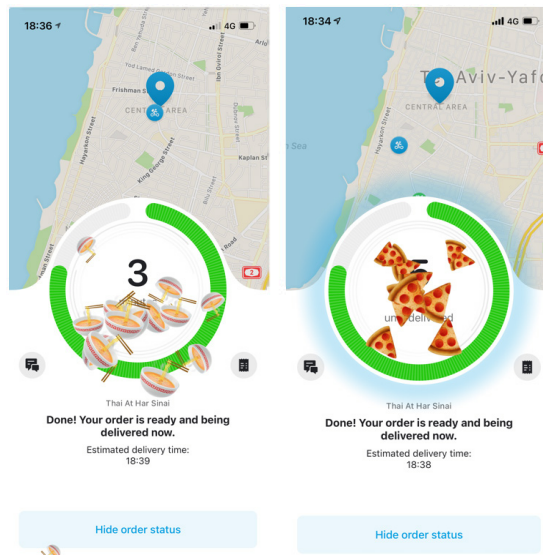


Figure SEQ Figure * ARABIC 6: Food animations in the Wolt app customer interface

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Habit-forming technological design and gamification are controversially debated. Critics point out their manipulative character, exploitive potential (e.g., of workers), and harmful effects on users' autonomy, dignity, and in some cases even well-being and mental health (Alter, 2018; Goodwin, 2012; Kim & Werbach, 2016; Marczewski, 2017; Schubert, 2015).⁹⁶ Therefore, the *absence* of habit-forming and/or gamifying design features in the CoopCycle software is a choice against such impacts on workers' and customers' autonomy, dignity, and well-being.

Tell me who your partners are, and I will tell you who you are

CoopCycle emphasizes business partners with shared values, such as fairness and sustainability (Field Notes, May 2021, September 2021, October 2021). At the same time, the local delivery co-ops have the autonomy to choose their business partners (that is, the restaurants and shops that they deliver for). Therefore, partners who are interested in cooperating with CoopCycle need to contact the local delivery co-ops; alternatively, the local co-ops proactively approach such businesses. Put in terms of technical design, there is no open registration function for restaurants and shops to use the platform. CoopCycle also mentioned potentially profitable business partnerships, for example with a French supermarket chain, that were neglected due to the lack of shared values (Field Notes, September 2021). This implies the importance of ethical aspects over revenue generation. Furthermore, CoopCycle offers an API²⁷ interface for restaurants with their own website and e-commerce. This lowers the barriers for them to use the platform and at the same time increases their freedom to operate their shop and/or cooperate with further delivery platforms.

Partnership choices are made also on technical levels. CoopCycle draws its map services (for a map-based display of restaurant location, delivery addresses, address search for in the order process, etc.) from Leaflet²⁸ and OpenStreetMaps (OSM).³⁹ According to CoopCycle, the platform originally used Google Maps but they couldn't afford Google's pricing when they reached a size that exceeds the free version. While the change to OSM was triggered by financial motivation, it continued ideologically. CoopCycle emphasizes that they make an effort to contribute to OSM (e.g., by correcting addresses) (Field Notes, September 2021). Thus, a seemingly trivial choice (maps service) with financial background (Google's pricing) becomes a political choice – a contribution to free and open digital infrastructures.³⁰

When environmental sustainability, diversity, and democracy intersect

Food delivery has two major implications for environmental sustainability – packaging waste and CO2 emission. To reduce packaging waste, some local delivery co-ops, such as Khora in Berlin, have partnerships with zero-waste restaurants. They offer either biodegradable or reusable packaging with a deposit system. The option to filter restaurants that use such a system is highlighted on the platform (Figure 7). Having said that, the overall impact of such standalone solutions should not be overemphasized.

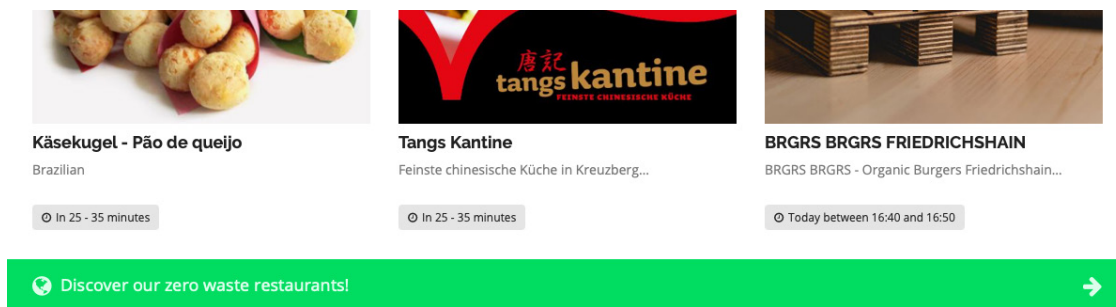


Figure 7: Zero waste restaurant search filter in the CoopCycle platform

Reducing CO2 emission plays a central role in CoopCycle's self-understanding and the platform's operations. CoopCycle (and the federation's member co-ops) defines itself as a bicycle delivery cooperative, amongst other things since bicycle delivery is emission-free. This, however, led to a conflict with local delivery co-ops from several South-American countries, most notably Brazil, that wanted to use the platform for motorcycle delivery. For couriers in these countries, using motorcycles for delivery work is a cultural practice and, in some cases, crucial due to the combination of long distances and bicycle-unsuitable infrastructures. When asked about this conflict, the CoopCycle federation portrayed how they try to facilitate a collective discussion between the bicycle-oriented European co-ops and motorcycle-oriented South American co-ops. The aim is to reach a consensus that will be approved in the next annual assembly, which will soften CoopCycle's principles and accept some exceptions (Field Notes, May 2021, September 2021). While the issue isn't resolved yet, it raises some interesting ethical and political issues. First, being a bicycle courier plays a role in the identity and self-perception of the (European) delivery co-ops and their members; an identity and self-perception that they project

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on CoopCycle in its entirety (as a platform, ideal, project, etc.). Second, CoopCycle resorted to its core value of democracy to tackle this value conflict between sustainability and diversity/non-discriminatory membership. When in conflict, CoopCycle members need to weigh and balance how the values of sustainability, diversity, and non-discrimination are put into practice. In such cases, democracy sets the framework and mechanisms for balancing values and making contextual moral decisions.

Conclusions

CoopCycle is built from the ground up in a way that distributes power “downwards”; that is, in the direction of the local co-ops and the individual couriers. In this manner, the CoopCycle software strengthens their autonomy, dignity, and well-being. Examples of such design features are the decentralized infrastructure, dispatch process, pricing system, *absence of* gamification/habit-forming design, or the careful implementation of courier geo-tracking. CoopCycle has a fundamentally different approach to algorithmic management than its mainstream counterparts. This approach is visible in the ability to deny gigs, the geo-tracking function as well as in the absence of a rating system, gamification, and habit-forming design. Furthermore, CoopCycle minimizes the information asymmetry between the platform (that is, the federation) and the local co-ops/individual couriers. This is done through open-source code, technical manuals, and the demo system as well as design features such as the available gig information. While environmental sustainability is a central value for CoopCycle, the co-op and its members weigh and balance it when it comes in conflict with other values (such as diversity and non-discrimination). Lastly, CoopCycle’s values play a central role in its business and technical partnerships. In this manner, CoopCycle engages in practices that promote its values of fair and social economy as well as open and democratic digital infrastructures. Having said that, staying true to their values has, of course, some implications. Most notably efficiency losses and limitations on business partnerships and revenue streams (which, in turn, impact CoopCycle’s ability to compete with mainstream platforms). This poses the challenge of continuing to scale the platform *while staying true to its core values*.

4.

CASE STUDY 2:

FAIRBNB

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Fairbnb³¹ is a platform cooperative for home-sharing and short-term rentals with headquarters in Bologna, Italy. Fairbnb was officially founded in 2018 and has its roots in a movement that wanted to create a just alternative to existing home-sharing platforms, most notably Airbnb. During the same period, home-sharing platforms were facing criticism of their impact on the (already limited) living space and rising rents in cities as well as on so-called “Airbnb flats” impact on neighbors’ safety and well-being. This led cities such as Barcelona and Berlin to introduce legislation to regulate short-term rentals and to pressure platforms to share data with authorities. The influence of these social and political conditions is evident in many aspects of Fairbnb’s technical and institutional operations, as the following discussion will illustrate.

Fairbnb’s website is explicit about the platform’s values and the main mechanisms to realize them:

fair

We are inspired by Fair Trade, Circular Economy and Sustainable Development Goals. Like all the other platforms we ask for a fee for your bookings but unlike other platforms we transfer 50% of our fees to community projects in the host area with the goal to redistribute wealth and create jobs.

bnb

We screen hosts according to destination specific rules. In specific areas, we promote the one host – one house rule: lawful hosts, preferably residents, with only one second home on the touristic market in their city. It’s our way to promote a more sustainable, genuine and authentic tourism.

.coop

Cooperation and consensus are at the heart of our model. We are on a journey to become a home for all those who want to participate and grow this model of solidarity and participatory economy: hosts, guests, local business owners, neighbours are all welcome.

A non extractive alternative to the current vacation rental platforms. WE PRIORITIZE PEOPLE OVER PROFIT.

We offer the potential for authentic, sustainable and intimate travel experiences while facilitating the development of socially relevant projects within worldwide's communities. (Fairbnb, 2021)

In contrast to CoopCycle, Fairbnb is less transparent—it is opaquer—on the platform's technical design. The platform's code isn't open source and there is no freely accessible software documentation or demo system. This, of course, puts limitations on the disclosive work's extent. Having said that, Fairbnb is very transparent on institutional aspects of the platform and its operations. These, in turn, have a major contribution to the platform's ethical operations and politics, as the following analysis will show.

Travel with your values: the Fairbnb platform

On the surface, the Fairbnb platform and its user journey³² (listing, searching, and booking accommodation) don't differ much from mainstream booking and short-term rental platforms. The user (guest) inserts the travel information (destination, check-in/check-out dates, number of guests) and starts the search. On the following page, search results are displayed in a list and map view. Users can then refine their search by filtering the results according to various criteria. When opening a listing, detailed accommodation information, pictures, policies, prices, etc. are displayed and the user can request the booking. The host receives the request and can confirm/deny it. For hosts, adding listings requires filling out detailed information about the accommodation, pricing, adding pictures, etc.

However, from the get-go and throughout the listing and booking processes, Fairbnb makes transparent that the platform aims to make an ethical and political impact. Consider, for example, the emphasis on "travel with your values" (which is linked to further information) and information about the re-investment of booking fees on the platform's start page (Figure 8). Having said that, the platform's main

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ethical and political implications stem from institutional structures such as the platform's financial model and co-determination of local communities. These structures, in turn, build the foundation for the information and options that the platform offers users (hosts and guests) throughout the listing and booking process. In the following section, I discuss in further detail these institutional aspects, how they materialize in the platform's technical design, how they influence Fairbnb's ethical operations and politics, and therefore, separate it from mainstream platforms.

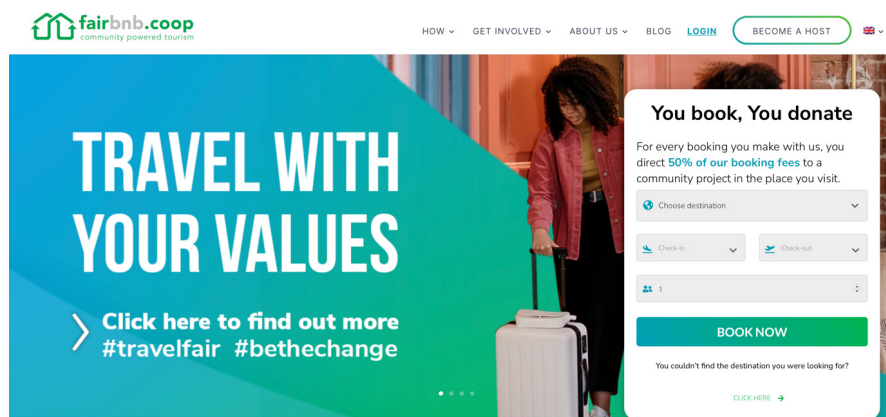


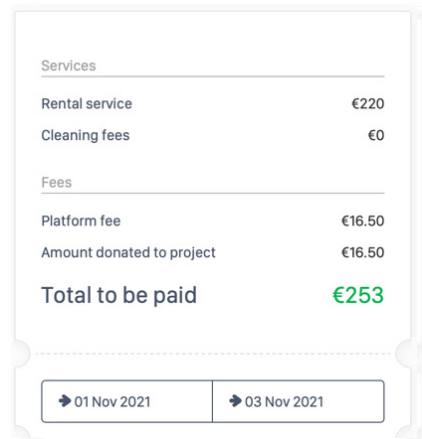
Figure 8: Fairbnb's start page for accommodation search

Disclosing Fairbnb's ethics and politics

The booking process (guest)

Throughout the booking process, Fairbnb informs the user on a variety of ethically relevant aspects of her platform usage and bookings. As Figure 8 shows, before the search, the user is informed that 50% of the booking fees are reinvested in community projects at the travel destination. When examining a specific accommodation, the user is informed about the exact fee and donation amounts (Figure 9). Furthermore, she is invited to explore the local projects that would receive donations (Figure 10). As part of the check-out process, she can choose which project will receive the donation (Figure 10).

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Services	
Rental service	€220
Cleaning fees	€0
Fees	
Platform fee	€16.50
Amount donated to project	€16.50
Total to be paid	€253

01 Nov 2021 03 Nov 2021

Figure SEQ Figure * ARABIC 9: Fee calculation in a Fairbnb accommodation listing

Through this design, Fairbnb makes visible that the platform usage (both as a host and a guest) has an ethical impact at the travel destination. The platform encourages users to make ethically relevant choices, most obviously through donations to local projects. However, as will be discussed below, Fairbnb informs the user about further, less obvious ethical and political implications of the platform use. For example, through policies such as “1 host – 1 house”. By implication, Fairbnb thematizes the fact that travel and home-sharing have ethical, political, and environmental implications. Thus, Fairbnb’s platform design and user journey (re-) politicize the field of travel and home-sharing. Importantly, Fairbnb promotes user choices and behaviors (e.g., choosing a project for donation) by informing the user about the related financial model, policies, projects, local/community sovereignty, etc.; it doesn’t deploy methods such as gamification and habit-forming design.³³ In contrast to gamification and (some cases of) habit-forming design, this is an emancipatory approach that respects the user’s autonomy.

The listing process (host)

For hosts, the choice of listing on Fairbnb and hence, supporting its goals, is arguably an ethical/political choice by itself. However, also hosts encounter several ethically and politically relevant design choices and functions when listing their accommodation.

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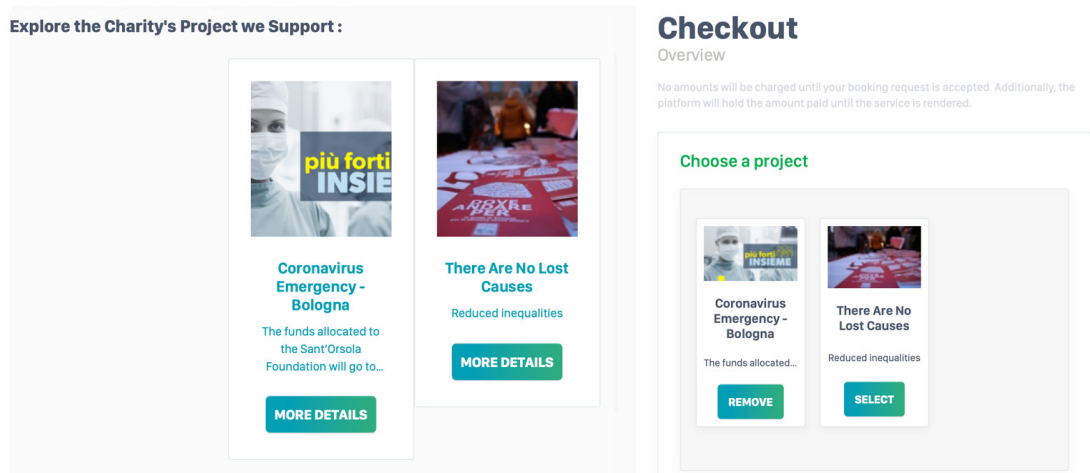


Figure SEQ Figure \^* ARABIC 10: Explore projects (listing) and choose a project for donation (check-out) screens

When creating an accommodation listing in Fairbnb, the user (host) is requested to provide information about local or national renting permits (incl. property code, registration code, and expiration date), her relation to the property (living in the same building, different building in the neighborhood, or different area), and tourist tax handling and calculations (Figure 11). These fields aren't mandatory, presumably since different countries and municipalities have different regulations.³⁴ However, the provided information is verified by the local node (Field Notes, October 2021). In this manner, Fairbnb actively verifies that hosts respect the local regulations before letting them use the platform. Furthermore, Fairbnb strengthens the autonomy of local communities by allowing them to enforce stricter rules than official legislations. These rules then apply to Fairbnb's operations in that community/area (see below). Additionally, hosts choose one to three projects that will receive donations from their rental fees (Figure 12). This is the choice that is then offered to guests (see above).

The image shows a form titled "Local Info" with several input fields. On the left side, there are four fields: "HOST RELATION" (a dropdown menu), "NATIONAL CODE EXPIRATION" (a date field with a calendar icon), "LOCAL CODE EXPIRATION" (a date field with a calendar icon), and "TOURIST TAX CALCULATION" (a field with a currency selector showing "EN"). On the right side, there are three fields: "NATIONAL REGISTRATION / PROPERTY CODE" (a field with a currency selector showing "EN"), "LOCAL ALLOWANCE/REGISTRATION CODE" (a field with a currency selector showing "EN"), and "TOURIST TAX HANDLING" (a dropdown menu).

Figure SEQ Figure \^* ARABIC 11: Local information fields in Fairbnb's listing registration form

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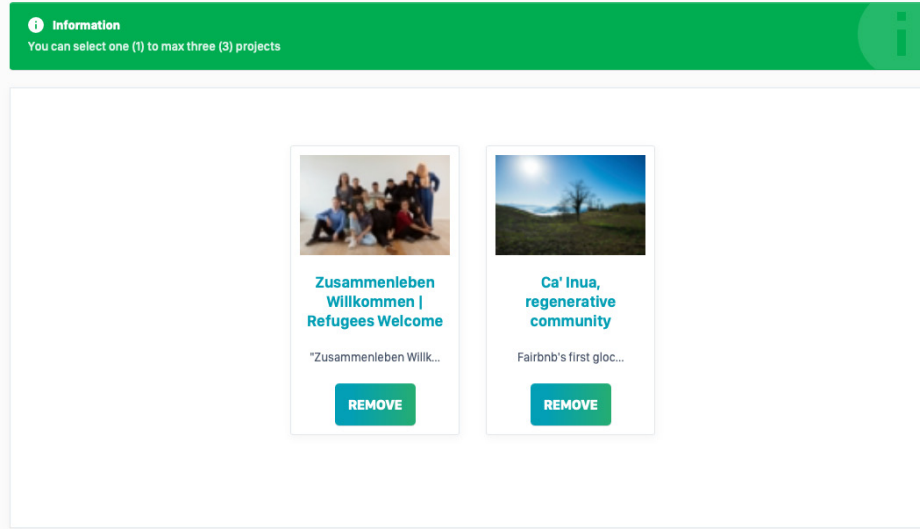


Figure SEQ Figure * ARABIC 12: Project choice (Berlin) in Fairbnb's listing registration form

Economic sustainable home-sharing

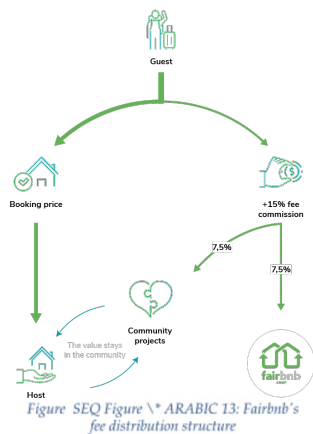
Fairbnb has implemented several institutional mechanisms (which are then technically implemented in the platform) to make home-sharing economically sustainable. That is, to develop a stable business model, which avoids home-sharing's negative social and environmental impact.

First, Fairbnb divides the platform's commission fee (15% of booking price) evenly between the Fairbnb co-op (to support the platform development and maintenance) and community projects (Figure 13). As will be discussed below, the projects are selected by the local communities (the "local nodes") according to social and sustainable criteria. Thus, Fairbnb doesn't only work to reduce the negative effects of travel and home-sharing; rather, it seeks ways for home-sharing to generate positive social and environmental impact at the travel destinations. This, in turn, reveals a further dimension of Fairbnb's ethical operations and politics – the platform's impact is considered in local and communitarian terms, instead of global terms.

Second, Fairbnb has a "1 host – 1 house" policy and prohibits corporate-owned units (apartments that aren't owned/rented out by a person).³⁵ One of Airbnb's most criticized aspects is the phenomenon of corporate-owned apartments and individual hosts renting out several properties.³⁶ An individual host with several properties is an indication of her (ab-)using the platform to increase the property's

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profitability. The unit is extracted from the renting market and used for more lucrative short-term rents. Hence, also exacerbating the commodification of living space. Furthermore, in such cases, the hosts/owning corporations are arguably not in personal contact with the properties' other renting parties. This, together with the constant change of guests, has the potential for significant negative impacts like noise disturbances and safety issues on indirect stakeholders (the neighbors). Thus, harming the neighbors' individual well-being as well as the social well-being in the community. Using the "1 host – 1 house" and no corporate-owned apartments policies, Fairbnb prevents these phenomena on its platform. In other words, these policies ensure that Fairbnb remains non-extractive, doesn't contribute to the commodification of living space, and mitigates risks for indirect stakeholders in the community. As noted above, the host information regarding compliance with local regulations and the platform's policies are enforced by the local nodes. However, according to Fairbnb, they currently develop technical measures for automating the verification process (that is, embedding the policies and their ethical/political consequences in the platform's design) (Field Notes, October 2021).



Local sovereignty

Through the institutional structure of local nodes and local ambassadors (who lead the local node), Fairbnb aims to give local communities sovereignty over the tourism model that the platform promotes. The community co-determination begins with the formation of such a local node, which organizes Fairbnb's local operations. The formation of an active community (local node) is also the basic prerequisite for activation as a travel destination on the platform. In other words, Fairbnb activates travel destinations (the ability to list and rent accommodations using the platforms) only in cooperation with the local community. The local nodes' general aim is to gather a local host community, share knowledge and

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best practices, and provide on-site customer care. Thus, they constitute “local communities that are connected to global networks of practice” (Fairbnb, 2020).

The local nodes are responsible for finding and choosing local projects (for the fee donations), implementing local regulations, and suggesting and implementing additional policies (if the local regulations aren’t sufficient to mitigate home-sharing’s negative impact on the community). For example, the local community in Venice implemented the additional regulation that hosts must be city residents to list properties on the platform (Field Notes, October 2021). Through these structures, Fairbnb promotes values such as democracy (in terms of community co-determination), autonomy (local sovereignty), economic sustainability, and social well-being in the community. Furthermore, the embeddedness of these values in Fairbnb’s community-focus indicates a communitarian moral and political orientation, rather than a globalist approach of mainstream platforms such as Airbnb. Lastly, Fairbnb transfers 25% of the overall booking fees (half of Fairbnb’s share) to the local ambassadors (Fairbnb, 2020). Thus, Fairbnb aims at promoting fairness towards local node members and avoiding their initially benevolent work from tipping over to self-exploitation or unpaid labor. However, this measure’s impact varies between cities/local nodes, since the commissions depend on the actual bookings.

While at first glance, the local node’s function may seem a merely institutional construction, its implications are technically implemented into the platform. First, travel destinations are enabled/activated in the platform only when the local node reaches an operative state. Second, as shown above, the project selection (for donations) plays a central role in making the user journey ethically and politically laden. Third, regulation and policy-related functions (e.g., the local information fields) are implemented in such a way that gives the local nodes—and hence, the local community—control over them.

Environmental sustainability

Fairbnb gives the users (hosts and guests) a few options for making their platform use—and hence, home-sharing—more environmentally sustainable. First, by donating 50% of the fees to sustainability projects in the local community at the travel destination. Second, guests can use search filters for sustainability criteria to

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find more environmentally sustainable accommodation for their journey (Figure 14); an option that, to the time of writing, doesn't exist on Airbnb.

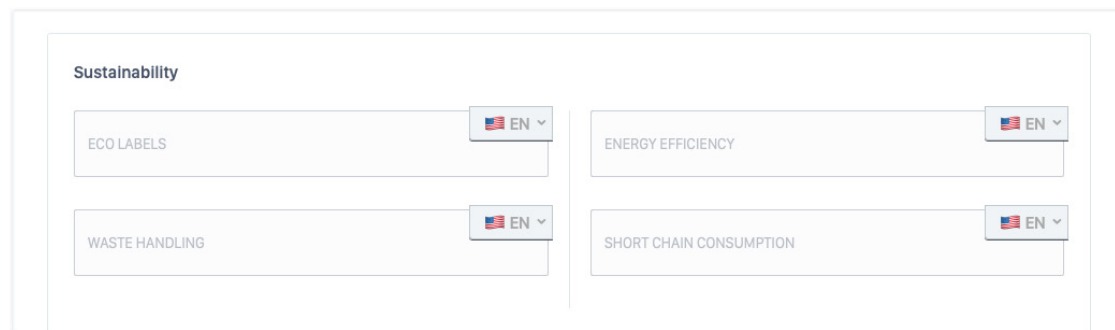


Figure SEQ Figure * ARABIC 14: Sustainability filters in the accommodation search on Fairbnb

There are very few systematic studies of the sharing economy's and home-sharing's (positive and negative) environmental effects (Frenken, 2017a, 2017b). An Airbnb-commissioned study has shown that in comparison to hotel guests, home-sharing guests generate less energy use, water use, greenhouse gas (GHG) emissions, and waste production (Airbnb, 2014). However, even if taken at face value, the extent of such improvements is questioned by the extent of the sharing economy's and home-sharing's overall rebound effects (Frenken, 2017b),³⁷ most notably the increase in travel activities and GHG intensive air-travel. This conclusion applies to Fairbnb as well. However, Fairbnb differs from mainstream home-sharing platforms, most notably Airbnb, in two ways. First, as discussed above, it seeks to mitigate the platform usage's (travel & home-sharing) environmental effect *on a local level* by financially promoting sustainability projects. Moreover, this measure has the additional ethical dimension of community co-determination; a further indication of the platform's communitarian orientation. Second, Fairbnb doesn't promote and engage in mass tourism, which arguably helps avoid rebound effects. Having said that, the question remains open, whether this argument would hold when the platform continues to grow (and hence, contribute to growing travel and home-sharing activities).

Conclusions

Fairbnb has set up a variety of institutional structures that redistribute power toward the local communities at travel destinations. Most notably, the local nodes and the local community's sovereignty over the platform's local operations. Furthermore, Fairbnb's business model abstains from mass tourism and the commodification of living space. These aspects find technical expressions in the platform's design, for example through the "local information" fields, technical limitations for enforcing the "1 host – 1 house" policy, and the overall user journey of hosts and guests. Through donations to local projects and community co-determination, Fairbnb mitigates travel and home-sharing's negative impact, especially on a local level. Having said that, it remains a challenge to sustain these goals as the platform scales. All in all, Fairbnb engages the user, makes the platform's values and ethical operations explicit, and thus, re-politicizes travel and home-sharing (and their social, economic, and environmental impact). However, Fairbnb's noteworthy transparency regarding the platform's institutional structures and business model stands in contrast to its opaqueness regarding the platform's technical design (lack of open-source code, software documentation, etc.). More technical transparency, like in the positive example of CoopCycle, would contribute to Fairbnb's position as an ethical and political alternative to Airbnb; not only in terms of home-sharing but also in the platform's role in the sharing/platform/digital economy.

5.

DISCUSSION

5. DISCUSSION

On the surface, CoopCycle and Fairbnb share a similar application as their mainstream platform counterparts (Deliveroo, UberEats, Wolt, and Fairbnb). However, as the disclosive analysis revealed, they fundamentally differ from mainstream platforms in a variety of issues that extend beyond—or lie beneath—the mere functional level. To name a few examples: algorithmic management, information asymmetry, surveillance, data collection, gamification, habit-forming design, and the politicization of the user journey. These differences have profound ethical implications that influence direct stakeholders (platform workers, hosts, guests) and indirect stakeholders (neighbors, local communities, business partners). They also constitute fundamentally different politics than mainstream platforms. In the following, I provide a preliminary discussion on how these individual findings come together to form a generalizable notion of platform cooperatives' ethical operations and politics.³⁸

Redistribution of power

Both CoopCycle and Fairbnb use a set of technical and institutional mechanisms to redistribute power from the platform (both the technical tool and the institution) to local co-ops, local communities, and individuals (workers, users, hosts, and guests). I regard this as a core aspect of these platforms' politics that is arguably related to their democratic foundation. Furthermore, this goes against the main logic of platform capitalism (concentration of power through network and lock-in effects, data aggregation, etc.). CoopCycle's and Fairbnb's emergence as an alternative to mainstream platforms, therefore, indicates the emergence of a techno-political alternative to these platforms.

(Re-)politicizing the platform economy

Although in different ways, both platforms make the platform use *explicitly* value-laden and thus, also (re-)politicize the platform economy (in the areas of food delivery and travel/home-sharing). Throughout the user journey, Fairbnb engages the user explicitly and extensively with the ethical implications of the platform use. In CoopCycle, the platform use itself is an ethical choice and political act; although the platform's design doesn't emphasize it as Fairbnb. Furthermore, these are emancipatory approaches to the platforms' use and impact. They are radically different from habit-forming and gamified approaches that are arguably manipulative, undermining autonomy, and de-politicizing.

Environmental sustainability and contextual moral decisions

Both platforms are in a bind regarding environmental sustainability – food delivery is related to the generation of packaging waste and tourism to GHG emissions. At the same time, both platforms emphasize the importance of sustainability and offer the user a variety of options to reduce the environmental impact; often with unique measures that aren't available on mainstream platforms. When in conflict with other values, both platforms negotiate and balance environmental sustainability with these values. This aspect, I would argue, is generalizable to other platform co-ops as well. For mainstream platforms, sustainability is mostly understood in terms of efficiency gains and optimizing access to under-utilized physical objects³⁹ (Frenken, 2017a, 2017b) but remains secondary to profit generation. For platform co-ops, however, sustainability is thought of *in the context* of the platforms' operations (e.g., reducing packaging waste, contributing to local sustainability projects) and it is a matter of negotiation. My findings show that platform co-ops prioritize sustainability over financial profits, but not necessarily over co-determination, diversity, non-discrimination, or generating fair wages for platform workers (which is different than generating profit for shareholders). In such cases, democracy sets the framework and mechanisms for balancing values and making contextual moral decisions – a feature I would ascribe to the politics of platform co-ops in general.

Transparency

A notable difference between CoopCycle and Fairbnb concerns transparency. Both platforms emphasize operational transparency (e.g., allocation of resources, revenue distribution, decision-making structures). CoopCycle is remarkably transparent concerning its software, its infrastructure, parameters, design choices, etc. Fairbnb, in contrast, keeps its platform software relatively opaque. As consequence, Fairbnb's data transparency (which data is harvested, how is it managed and used, and to whom it is transferred or sold) rests solely on the platform's operational transparency (e.g., in the platform's privacy statement and reports). CoopCycle's data transparency, on the other hand, is reinforced by making the technical conditions for data collection, storage, handling, etc. transparent and accessible.

This indicates that the approach of platform co-ops to transparency *as a value* is rather nuanced and context-related than generalizable. Operational transparency on an institutional level appears to be common. A fact that is arguably related to the democratic foundation of these co-ops. Technical and data transparency are clearly

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more present than in mainstream platforms. However, I would cautiously argue that technical and data transparency play a role in the ethical operations of platform co-ops, but aren't ingrained in their self-conceptions and identities (in contrast, for example, to the redistribution of power).

The dialectic relationship between values and growth

Both platforms prioritize their core values over efficiency and financial growth. Fairbnb even sketches the yard lines for growth by explicitly resisting mass tourism. This commitment, however, contains implications and drawbacks that are relevant for platform co-op in general.

First, it creates challenges in terms of scaling *while maintaining their values* and posing an economically meaningful alternative to mainstream platforms. On the one hand, platform cooperatives share this challenge with traditional—"non-platform"—cooperatives; they can learn from their mistakes and successes. On the other hand, due to the technical and systematic specificities of digital platforms and the platform economy (network effects, the role of data, etc.), it is safe to assume that platform cooperatives also face distinct challenges than traditional cooperatives.

Second, the platforms seem to set high moral (and practical) demands on certain stakeholders – especially couriers and hosts. In a sense, the co-op membership (CoopCycle) or platform use (Fairbnb) is exclusive because the couriers/hosts have to share certain values and commitments.

Third, as Nick Srnicek warns, "all the traditional problems of coops (e.g. the necessity of self-exploitation under capitalist social relations) are made even worse by the monopolistic nature of platforms, the dominance of network effects, and the vast resources behind these companies" (Srnicek, 2016, p. 76). According to my findings, CoopCycle and Fairbnb are fully aware of the self-exploitation risk and act proactively to find sustainable ways for its mitigation (Field Notes, October 2021). Having said that, further work is needed to find ways for platform cooperatives to achieve economic sustainability and avoid being drawn into self-exploitation.

Fourth, Niels van Doorn raises the concern that "[w]hile platform cooperativism operates in tandem with local organizers and activists, its proponents have a tendency to assume the universal applicability of its solution, which posits

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collaborative software and cooperative ownership as technologies that have the capacity to move us beyond the antagonisms and inequalities that historically shape particular social settings. This tendency risks a perverse reproduction of Silicon Valley's own vision of the good life, which equates frictionlessness with social justice" (van Doorn, 2017, p. 13). This is a strong argument that platform cooperatives need to (self-)critically take into consideration. However, the study's findings point in a different direction – rather than frictionless, platform cooperatives implement friction as a "design feature" to support their values (and vision of the good life) which are often diametrically opposing to the values of mainstream platforms. While they arguably (re-)politicize the platform economy, van Doorn's argument strengthens the need for platform cooperatives to be considered as a part of a broader political agenda, rather than standalone solutions. Such an agenda could go beyond the democratization of the digital economy—an ambitious goal in itself—and aim for a radical redistribution of power and attack on structural inequalities.

6.

CONCLUSIONS
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OUTLOOK

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In this study, I have used the disclosive computer ethics (DCE) approach to empirically analyze moral and political values in the platform cooperatives CoopCycle and Fairbnb. I demonstrated how these values materialize to concrete ethical operations and politics through actual technical operations (e.g., functions, policies, and practices) that promote certain values while demoting others. Doing so, I also contributed to refuting the neutrality thesis and mainstream platforms' claims of "being mere intermediaries/marketplaces". However, a broad and coherent conceptualization of the platform economy's (both platform cooperatives and mainstream platforms) ethical operations and politics exceeds the scope of this study; I will pursue this objective in my further research work.

The study's predominantly descriptive approach and findings have several normative implications. First, they substantiate the ethical and political claims made by platform cooperatives, activists, and scholars. Second, they undermine mainstream platforms' claim of "being mere intermediaries/marketplaces" and reinforce their responsibility towards the platforms' impact on society. Third, by undermining this claim, the study counterbalances the de-politicizing effect of technology-centered and data-driven governance approaches (Morozov, 2013; Shelton, 2017). In other words, it contributes to the (re-)politicization of the digital economy's governance discourse; thus, opening new horizons for socio-technical struggles and emerging alternatives in further areas of technology and society. Fourth, such disclosive work builds the foundation for arguing for platform cooperatives' ethical and political preferability (over mainstream platforms); thus, creating a political tailwind for policy action such as regulating the platform economy and supporting alternative, democratic platform models.

The study, however, has some limitations. First, the attitudes towards the morality of technologies (that is, the values that should be embedded in digital platforms) as well as towards cooperatives⁴⁰ vary between cultures. Indications of such differences and the resulting moral conflicts are visible in the aforementioned case of CoopCycle in South America. These differences have, of course, implications for the ethical operations and politics of platform cooperatives in these cultures. Second, while the study focused on the ethical and political impact of cooperative platforms, more research—and activism—is needed to highlight feasible pathways for cooperative platforms to scale up *while maintaining their values*. This is crucial for achieving meaningful moral and political change in the digital economy. Third,

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more work is needed on how to incorporate platform cooperatives and a wider political movement and strategy to democratize the (digital) economy. I believe this research's findings provide valuable insights to support these goals in future research and activism.

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1. When discussing *moral and political values*, I refer to guiding principles, theoretical reasoning, and worldviews regarding what is right and wrong, how to shape society, etc. By *ethical operations*, I refer to actual operations such as functions, policies, actions, and behaviors that promote certain interests, intentions, and outcomes while demoting others. Likewise, *politics* refer to actual operations that (re-)distribute power and (re-)produce social order. With that in mind, I intend to reconstruct platform cooperatives' ethical operations and politics.
2. Please note that this study doesn't include the research of mainstream platforms (which I will conduct in a later stage of my research).
3. With the notable exception of Airbnb's work to reduce discrimination on the platform (Murphy, 2016). However, as the following examples show, depending on the context, Airbnb takes different approaches toward the platform's role as intermediary and its neutrality.
4. This differentiation is crucial since: "If services provided by transaction platforms satisfy all the mentioned features of information society services, they may also fall within a narrower concept and be regarded as *intermediary services*. The latter have a different meaning under current EU secondary legislation, which depends on the regulatory scope. In particular, EU Regulation 2019/1150 on promoting fairness and transparency for business users of online intermediary services in Article 2 (2) defines online intermediary services as the ones that (a) allow business users to offer goods or services to consumers, with a view to facilitate initiating direct transactions between those business users and consumers, and (b) that are provided to business users on the basis of contractual relationships between the provider of those services and business users which offer goods or services to consumers. Thus, here the focus is on the middleman position of a transaction platform fostering communication and bargaining process between its users." (Filatova-Bilous, 2021, p. 6)
5. Platform cooperatives often have scarce timely resources. Out of respect to their work, it was crucial for me as well as further researchers to avoid the representatives' dedication from blurring the lines between paid work, benevolence, and self-exploitation. Therefore, the conversations/interviews were conducted in a group setting (that is, a joint session with platform representatives and multiple researchers). In total, I conducted three such joint

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sessions (two with CoopCycle, one with Fairbnb) and two semi-structured interviews/conversations (one with Fairbnb and one with Khora, a Berlin-based CoopCycle member co-op).

6. By values I refer to guiding principles, theoretical reasoning, and worldviews regarding what is right and wrong, how to shape society, etc.
7. Put differently, ethical operations refer to the practical side of moral values. However, the ethical operation doesn't have to be moral and vice versa. For example, a code of ethics can collide with a person's ideas of morality (e.g., lawyer not disclosing his client's crime or a doctor breaking the law by giving an abortion treatment to women).
8. This approach is inspired by Lucas Introna's use of the terms ethics and politics in the context of DCE (Introna, 2005).
9. <https://coopcycle.org/en/>
10. 62 in Europe, 5 Central America, 2 in North America, and 1 in Australia.
11. <http://demo.coopcycle.org>
12. <https://github.com/coopcycle/>
13. <https://docs.coopcycle.org/en/admin/intro/>
14. Please note that the term Coopyleft paraphrases the Copyleft license, but is not identical to it. The full license text is available under: <https://wiki.coopcycle.org/en:license>
15. Positive liberties refer to the possibility for individuals to take control of their actions, their lives, and strive for realization of their goals. Negative liberties refer to the absence of obstacles and constraints ("freedom from...") (Berlin et al., 2002).
16. GitHub is a platform for source code management and version control which often used for open-source projects.

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17. <https://www.legifrance.gouv.fr/loda/id/JORFTEXT000029313296/>
18. <https://docs.coopcycle.org/en/admin/intro/>
19. <http://demo.coopcycle.org>
20. Slack is a communication tool for organizations and workplaces.
21. Loomio is a decision-making tool for organization.
22. <https://khora.berlin>
23. According to Wolt, “[c]uriers are free to accept or reject any task offered to them” (Wolt, 2021). Deliveroo doesn’t enable couriers to actively deny a task (Woodcock & Waters, 2017). While there is no data regarding this aspect in UberEats, the fact that platform workers in other platform segments (especially ride-hailing) cannot deny tasks (Lee et al., 2015) suggests that this is the case in UberEats as well.
24. Tom Slee terms online reputation systems as Lake Wobegon systems “after the town in the Garrison Keillor short stories where “all the children are above average.” Such systems fail to discriminate among good and bad service providers, and researchers have confirmed that there is often no real relationship between rating and quality. There is no evidence that an Uber driver with a rating of 4.9 is better than one with a rating of 4.6, even though the latter is in danger of being kicked off the Uber platform.” (Slee, 2017, p. 160)
25. In my analysis, I used Nir Eyal and Ryan Hoover’s (2014) influential *Hook Model for Habit Forming*. The model includes a four-step process (“hook cycles”) that subtly influences user behavior and cultivates usage habits: (1) internal and external triggers, (2) initiate (user) action (in anticipation of reward), (3) variable reward (leave user wanting more), and (4) investment in the product (by the user). I examined whether the platforms include design features that correspond with these steps.
26. Having said that, some scholars build on this critique and urge designers to use habit-forming design features in ways that *promote* autonomy, interpersonal

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communicate, or enforcing (instead of blurring) the boundaries between work and play (Alter, 2018; Sunstein, 2014). However, this is arguably not the kind of habit-forming or gamification that is present in sharing and gig platforms.

27. An application programming interface (API) refers to the connection for data exchange between computer programs.
28. An open-source JavaScript library for interactive maps for mobile devices.
29. An open-data service for maps and geographic data.
30. This also relates to the cooperative principle of cooperation between cooperatives (International Cooperative Alliance, 2018).
31. <https://fairbnb.coop>
32. A *user journey* refers to the overall interaction and user-experience of a person interacting with a software.
33. See discussion of gamification and habit-forming design in the CoopCycle case study.
34. Due to the surge in so-called “Airbnb-flats”, many cities have implemented different regulations on short-term rentals such as registration requirements for the property, a cap on the maximum number of rental days per year, etc.
35. According to Fairbnb, the platform allows certain flexibility in the policies for cases that don’t collide with the platform values. For example, accommodations in rural areas and small (e.g., family run) hotels (Field Notes, October 2021).
36. For example, data from the research project Airbnb vs. Berlin have shown that in 2015, 10% the users in Berlin offered more than one unit, while the top 10 users offered over 20 units each and 281 units conjointly (Airbnb vs. Berlin, 2015). However, since Airbnb don’t share its data with researches and local authorities, the precise extent of the phenomenon is unclear.
37. Rebound effects occur when the expected saving potentials and efficiency

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increases (e.g., technologies with reduced GHG emissions) produce a negative overall effect due to behavioral and systematic responses (e.g., heavier use of the technology).

38. Please note that thorough and coherent conceptualization of platform cooperatives' politics exceeds that scope of this study and will be pursued in future research.
39. An claim that was popularized in (Botsman & Rogers, 2011) and since then became a dogma in the platform economy discourse.
40. For example, the different and in part negative experiences with cooperatives in countries from the Eastern Bloc and former British colonies.



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Published by the Platform Cooperativism Consortium, March 2022.

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