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Citation for the published paper:

Seravalli, Anna; Agger Eriksen, Mette; Hillgren, Per-Anders. (2017).
Co-Design in co-production processes : jointly articulating and appropriating
infrastructuring and commoning with civil servants. CoDesign : International
Co-Design Journal of CoCreation in Design and the Arts, vol. 13, issue 3, p. 187-201

URL: <https://doi.org/10.1080/15710882.2017.1355004>

Publisher: Taylor and Francis

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ABSTRACT

The public sector, increasingly acknowledging a need for change but strongly influenced by market logics, is experimenting with new forms of co-production of public services based on collaborations between public providers, citizens and societal actors. At the same time, Co-design researchers, are using approaches of infrastructuring and commoning to navigate questions of participation and collaboration in co-production.

By discussing the case of ReTuren, a co-produced service for waste handling and prevention, this article presents how infrastructuring and commoning can offer guidance to civil servants engaging in co-production. In the case, civil servants on an operational level and an 'embedded' co-design researcher worked side-by-side in the co-production of the service, jointly articulating and appropriating approaches of infrastructuring and commoning.

The case reveals that the joint appropriation and articulation of these co-design approaches can lead to the development of new ways of operating and perspectives in the public sector. However, it also highlights that this joint effort needs to involve people across organizational levels in order to minimize possible contextual and worldview breakdowns within public organizations.

1. Introduction

Co-production is gaining momentum as an approach for developing and delivering collaborative and situated public services. This creates opportunities for co-design researchers to engage with questions of participation and collaboration in the public sector.

The term 'co-production' first appeared in the 1970s to describe informal collaborations between citizens and the public sector in the delivery of public services (Ostrom 1996). Today, the idea of co-production relates to public services that build on explicit (and sometimes formalized) collaborations between public providers, citizens and societal actors. These collaborations aim to deliver services that respond better to specific local conditions while activating and empowering citizens (Cahn 2008; Boyle et al. 2009; Bason 2010).

Co-production is part of a broader discourse exploring new ways of organizing the public sector based on close collaboration with citizens and other societal actors (Bryson et al. 2015). This discourse is an attempt to respond to the shortcomings of current public management practices. Largely adapted from the private sector, these practices have focused on economic efficiency and privatization as means to create better services (O'Flynn 2007). However, their aims have often failed (O'Flynn 2007), partially because logics of profit and economisation overrule criteria about equity and accountability (Stoker 2006; Coote 2010).

The increasing focus on co-production in the public sector has led to growing engagement from the co-design community. Co-design researchers have, for example, initiated platforms to explore community issues by engaging citizens and representatives from different sectors (Ehn et al. 2014; Huybrechts et al. 2016); explored collaborative relationships in public services (Hillgren et al. 2011; Botero et al. 2012; Lenskjold et al. 2015); and engaged with a public sector that is oscillating between broader aims of equity and empowerment and logics of standardization and economic efficiency (Staszowski et al. 2013; Emilson and Hillgren 2014).

This article aims to further articulate these challenges and how co-design approaches can be used to address them. It does so by reflecting on the case of ReTuren, an upcycling station, a co-produced public service for waste handling and prevention in Malmö, Sweden. The service was initially conceived by the municipal waste department, but developed into an extended co-production initiative through inclusion of local citizens, the local neighbourhood department, STPLN (Malmö's makerspace) and us, co-design researchers from Malmö university.

This article describes how, in the development of ReTuren, infrastructuring and commoning were jointly articulated and appropriated by civil servants and one of us, the authors and co-design researchers, who was embedded in ReTuren. It shows how infrastructuring and commoning can provide guidance to civil servants engaged with co-production on an operational level. Yet, it stresses the need to pay attention to gaps and breakdowns that might emerge between operational and management levels within public organizations during the development of new ways of operating and perspectives.

[Figure 1 near here].

2. Co-design and the contemporary public sector

This section examines how co-design relates to contemporary co-production processes. After providing an overview of co-production's relation to different public management models, it focuses on infrastructuring and commoning approaches as possible principles for co-production.

2.1 Co-production and public management models

Market-inspired models began being adopted in the public sector around 30 years ago as a response to the perceived shortcomings of the traditional bureaucratic system: inflexibility and economic inefficiency, but also poor responsiveness to citizens' and societal needs (Stokers 2006). The idea was then to adapt logics and practices from the business sector, especially by subjecting expenses and results to systematic monitoring and opening up public service provision to private actors (O' Flynn 2007). This led to the use of new managerial arrangements as part of an approach known as New Public Management, characterized by: explicit standards and

measures of performance; greater emphasis on output controls; greater discipline and parsimony in resource use; increasing fragmentation and specialization of the public sector; and the externalization of service provision to private companies (O’Flynn 2007; Stoker 2006). These kinds of arrangements are increasingly criticized because their strong focus on outputs and efficiency often overlooks the importance of interdependencies across different domains in the delivery of public services (O’Flynn 2007). Most significantly, market-based models repeatedly miss the importance of equity, transparency and accountability to citizens in service delivery (OECD 2003).

In response, new ideas about how to organize the public sector are emerging (an approach known as Public Value Management) (Stoker 2006). These ideas underline the importance of continuous dialogue and interaction between public institutions, citizens and other societal actors in defining priorities for the public sector. Further, they consider public services in terms of efficacy rather than efficiency, viewing them both in terms of outcomes and processes. Additionally, public services should be adaptable, to a certain extent, to local conditions and monitored by ongoing evaluation processes whose criteria are established through consideration of different stakeholders’ interests.

Co-production is often considered to align with these new ideas as it strives to deliver services better tailored to local needs, create social connections and empower citizens (Nesta 2012). However, in some cases, co-production manifests itself as a shrinking of the public sector’s role favouring concentration of power in the hands of private actors rather than communities (Civil Exchange 2015).

2.2. Infrastructuring and commoning as possible principles for co-production

Co-design and service design researchers have focused on constraints that existing public sector logics and structures pose to co-production (Staszowski et al. 2013; Emilson et al. 2014; Hillgren et al. 2014) and the importance of considering democratic aspects within these processes (Blyth et al. 2011; Seravalli et al. 2015). Two approaches persist across these different experiences and reflections: *infrastructuring* and *commoning*.

Infrastructuring builds on the work of Susan Leigh Star and her colleagues emphasising the relational and invisible aspects of information infrastructure (Star and Ruhleder 1996; Star 1999). Within the field of co-design, infrastructuring is often used to highlight the importance of a tentative, flexible and open design work where adaptation and appropriation are seen as crucial elements (Hillgren et al. 2011; Karasti 2014).

Commoning, developed within commons studies, highlights how organizing and managing

shared control and ownership is not just a matter of organizational arrangements (Ostrom 1990) but also of actions that are influenced by social and cultural aspects (Linebaugh 2009; Bollier and Helfrich 2015). Co-design researchers, in designing in and for commons, further developed an understanding of commoning as a located socio-material practice (Martilla et al. 2014, Seravalli 2014).

As a guiding principle for co-production, *infrastructuring* has been articulated as a long-term effort aiming at reworking existing relationships among societal actors by exploring possible alignments between their different interests (Hillgren et al. 2011; Dreessen et al. 2015). Additionally, we consider infrastructuring an helpful approach in recognizing possible frictions with existing logics and structures of the public sector. An infrastructure does not grow *de novo*, but rather ‘it wrestles with the inertia of the installed base and inherent strengths and limitations from that base’ (Star 1999, 338). Thus, in the development of infrastructures, possible breakdowns might emerge at three levels: first, in relation to practical aspects; second, across specific contexts; and third, in relation to different worldviews and values (Star and Ruhleder 1996). We see these as crucial aspects in co-production processes that, in striving towards new practices and approaches, may encounter frictions with existing frameworks, procedures and ways of thinking informed by new public management.

Commoning has been proposed as a compass in the design of co-production processes (Seravalli et al. 2015) to suggest how the public sector can act as an enabler of collaborative processes of value creation and ensure shared control and responsibility among participants (Orsi 2009; Foster 2011). This requires an ongoing effort (Seravalli et al. 2015) that needs to consider the specificities of the context (Martilla et al. 2014). Thus, we see commoning as a matter of supporting ongoing articulation of accountability in co-production, i.e. considering whose needs and interests co-production processes answer to.

Infrastructuring and commoning have until now mainly been used by researchers, so our interest was in exploring if and how they could be appropriated by civil servants engaged in co-production.

3. Case: ReTuren, co-production for waste prevention

ReTuren is an upcycling station in the neighbourhood of Lindängen in Malmö, Sweden, a place where citizens can dispose hazardous and cumbersome waste, exchange things in good condition; repair and build things in a small makerspace. ReTuren was established as a pilot-project and mainly financed by the municipal waste department. Different actors have been contributing to its development, including the authors as co-design researchers, one of us being

“embedded”¹ at ReTuren, spending half of her working time there for one year. Together with the coordinator and the project leader², she has been part of the core team, and was involved in developing the station and jointly articulating and appropriating co-design approaches.

The data used in this article has been collected through observations and field notes from the activities at ReTuren. Additionally, to evaluate the process, two of us carried out interviews with the core-team and different managers from the waste department at the beginning and at the end of the pilot-project. The focus was on what knowledge was developed and how it travelled through the department.

[Figure 2 near here].

3.1 Towards waste prevention

The field of waste handling is faced with the challenge of working towards waste prevention. This goal has been established on a EU level and adopted on a national level by all European countries. In Sweden it is represented as a matter of ‘climbing up the waste staircase’, where landfill, burning and recycling represent the three lowest steps and reusing and waste prevention the two highest ones (Naturvårdsverket 2016). Acting towards waste prevention represents a break in traditional waste management (Corvellec and Czarniawska 2014). It challenges existing procedures and views within waste departments since it entails a shift from organizing material flows (of waste) and informing citizens to working (even more) with behavioural change and developing new services and procedures for reusing and upcycling.

It is important to highlight how, at least in the Swedish context, waste handling is very much dominated by market-inspired management arrangements. Malmö’s waste department, for example, is responsible for collecting and processing only household waste. Their accountability is strictly delimited by their financing that comes from a dedicated waste fee paid by property owners. Both services of waste collection and processing are externalized through procurement agreements. Consequently, the waste department’s main tasks are monitoring services and communicating to citizens. Within the department, the users of the service (i.e. citizens) are called ‘clients’, as if the waste department was a private company. It is also important to underline how, even though the department serves only the Malmö municipality, it is part of a bigger public organization that is responsible for water and sanitation in Malmö and other cities nearby³.

¹ This is not a new approach in co-design. It has previously been framed both as a matter of striving towards change from within public organizations (Lenskjøld et al. 2015), and as a matter of exploring the co-designers’ role in engaging not just with the design but also the implementation of co-production initiatives (Seravalli 2014).

² The project leader is employed at the waste department and was the main initiator of ReTuren.

³ This information has been collected from interviews with waste department employees.

ReTuren aimed explicitly at working with waste prevention by encouraging citizens to reuse and upcycle things rather than throw them away. In order to do so it was considered important to develop connections with the local context and engage citizens. These two aspects have been key in initiating the collaboration between ReTuren and us.

3.2 The co-production of an upcycling station

The idea of the upcycling station was first conceived in 2012. The collaboration between us and the project leader started in the autumn of 2014 when we were looking for opportunities to further investigate how maker culture⁴ could enhance sustainability in Malmö. From the first meeting with the project leader, we discussed how makers' activities with a focus on upcycling and repair could be a part of ReTuren as a way of engaging citizens and local initiatives. During the autumn we met several times to discuss location, financing, possible partners and how a small makerspace could be part of the premises. Additionally, we also explicitly discussed how co-design approaches could be applied in the development of ReTuren to integrate waste prevention with local interests and foster local appropriation.

[Figure 3 near here].

In the spring of 2015, we involved the city makerspace STPLN. The plan was that the future coordinator of ReTuren would be formally employed by STPLN (with financing from the waste department) and spend her time between ReTuren and STPLN. Moreover, people from STPLN would be involved in carrying out upcycling activities. Through STPLN, we also found the future coordinator of ReTuren. She had a background in environmental sciences and was working with upcycling activities. Formally, she was employed first by us (as a research assistant) and then, when the station officially opened, by the waste department. Together with the project leader we also secured external funding for the 'embedded' co-design researcher and for makers' activities.

At that time a location for the pilot-project was also found. The project leader started a conversation with civil servants of the neighbourhood department of Lindängen, who offered the possibility of renting a space within a community centre facing its main square. Lindängen has around 7000 inhabitants and is a very vital neighbourhood with a strong identity and engaged citizens. However, it is also affected by social exclusion, unemployment and criminal gang activities. The neighbourhood department has been working towards reinforcing social sustainability in the area by supporting citizens' initiatives and collaboration among local initiatives. Lindängen civil servants were enthusiastic about the idea of ReTuren since they

⁴ Makers are non-professionals that engage in making, repairing, upcycling things by sharing knowledge, tools, materials and by collaborating. They are e.i. driven by curiosity (exploring technology possibilities), ethical/political interests (e.g. criticizing mass-consumption and the actual production system) but also just by the fulfillment generated by making something together with others (Seravalli 2014).

believed it could easily integrate with ongoing local efforts towards holistic sustainability.

From August 2015 to September 2016, ReTuren was set up and driven by the core team⁵ in co-production with the makerspace STPLN, the regional waste-processing company, Lindängen's neighbourhood department, the local school, the local library, different initiatives and citizens from Lindängen and the café located in the community centre.

ReTuren officially opened in November 2015. The plan was that the pilot-project would run until December 2016. However, in September 2016, after a number of incidents happening around ReTuren, the waste department managers decided to terminate the pilot-project. The motivations were that the pilot-project was too far from the core of the department and too demanding when it came to workplace safety.

The people involved in and around ReTuren quickly responded to this decision. Local citizens protested and asked for the decision to be reconsidered. They expressed that they wanted ReTuren to continue and how they were tired of temporal projects that 'are just coming in and using our neighbourhood as a place to test things that are then moved somewhere else' (*Malmö Lokaltidningen*, September 16, 2016)⁶. They signed a petition that was sent to the city's mayor. Citizens' voices reached the politician overseeing the waste department, who publically stated on different occasions that ReTuren had to continue.

[Figure 5 near here].

At the same time, Lindängen's neighbourhood department took the lead in finding with the other involved organizations a solution for ReTuren's continuation. A few weeks later, ReTuren reopened with shorter opening times and with citizens partially taking over the workshop. At the same time, a process was set up among the involved organizations to find a solid long-term solution, based on formally shared responsibility and ownership. The new ReTuren is planned to open in September 2017.

4. Infrastructuring and commoning for waste prevention

This section discusses how infrastructuring and commoning approaches were at play in the development of ReTuren. It gives an overview of how the core team jointly articulated and appropriated them in their everyday work and what related challenges emerged.

⁵ 'Core team' refers to the project leader, the coordinator and the 'embedded' co-design researcher.

⁶ <http://malmo.lokaltidningen.se/det-ar-sa-typiskt-att-man-gor-sa-har-mot-var-typ-av-omrade-/20160916/artikler/709219937>

4.1 Infrastructuring and Commoning: new ways of operating

A key element of infrastructuring at ReTuren has been, already before its official opening, the organization of makers' activities and events together with local actors. These were jointly designed by the core team and local actors, combining upcycling and repair practices with existing neighborhood activities. They aimed to collaboratively explore possible alignments between the goal of waste prevention and local interest in how to make Lindängen more inclusive and safe. All activities and events were jointly evaluated by the core team, considering to which extent they were promoting waste prevention among citizens and collaborations with local initiatives.

These activities made it possible to create local connections and bring together diverse competences to deal with emerging issues in and around ReTuren, e.g. in relation to safety. For example, by collaborating with an after-school initiative, it was possible for the coordinator to get to know and improve her relationships with local youth, with whom there had been some previous tensions. Additionally, staff from ReTuren, the local library and local civil servants attended courses on how to handle dangerous situations; they shared strategies for dealing with troublesome visitors and provided each other with support on occasions of more serious accidents.

Through infrastructuring, waste prevention was integrated in a broader effort aimed towards holistic sustainability. One of the most significant examples of this integration has been "Colourful Notes" a project engaging local schoolchildren, the neighbourhood department, ReTuren and a recording studio in a process of upcycling and repairing old pianos at ReTuren. The pianos were then placed in Lindängen square and used for a number of organized and spontaneous concerts. The project provided the opportunity to reach out to citizens that otherwise would have been difficult to engage.

[figure 4 near here].

The commoning approach guided that of infrastructuring as it entailed a focus not only on aligning with citizens' and local initiatives' interests, but on providing them with space for influence and appropriation. From deciding possible activities to defining opening times, decisions about ReTuren were often taken together with users and Lindängen actors. The core team was continually in dialogue with local actors. This required time and resources, but proved to be extremely important in creating co-ownership of ReTuren. When the decision of terminating the pilot-project was taken, many citizens expressed that they saw ReTuren and its personnel as part of Lindängen. The involved organizations also stressed that they considered ReTuren as a co-owned initiative.

Commoning has not just been important from a practical perspective, it also provided lenses to critically discuss and reflect on the quality of participation in ReTuren. Particularly, it foregrounded the question of who ReTuren serves, making citizens and their concerns a central compass in the everyday operations. This did not always go smoothly. The core team has often discussed how to reconcile the goal of waste prevention with that of fostering co-ownership of ReTuren. While continually seeking dialogues and being open for appropriation, the core team found it was important to be upfront about the specific frames and constraints of ReTuren. Transparency and consistency were important when communicating with citizens to avoid false expectations, and, when communicating with other actors, to openly address possible divergences.

To sum up, infrastructuring and commoning led to ways of operating based on an interactive process: the close collaboration with citizens, local initiatives and other actors; ongoing evaluation; and located accountability.

4.2 Joint articulation and appropriation

Infrastructuring and commoning have not just been applied in the development of ReTuren, but also articulated and appropriated by the core team in a way that led the coordinator and the project leader into new ways of operating. In the interviews at end of the pilot-project, both the coordinator and the project leader emphasized how infrastructuring and commoning became key approaches in their ways of working. The coordinator discussed how collaborative prototyping with local initiatives and an interactive approach have been central in developing ReTuren. The project leader pointed out that she was accustomed to working according to traditional project management methods, but that these methods proved to be insufficient in this case. Infrastructuring, as a more open-ended and iterative approach, allowed her to better navigate the complexity and context-dependency of ReTuren. Further, she stated that while her previous work involved a lot of networking and lobbying across departments, the collaborations with the ‘embedded’ co-design researcher and Lindängen civil servants were stronger than what she was used to. Infrastructuring expanded her understanding of who might be part of an infrastructure for waste handling.

In discussing commoning, the coordinator pointed out how local co-ownership has been key for ReTuren’s functioning. This was also emphasized by the project leader, who, in addition, underlined how commoning expanded her understanding of possible forms of relationships in the delivery of a public service. Initially, her understanding was informed by the purchaser-supplier model and by considering citizens only as service receivers. With ReTuren she realized how citizens and other actors could play a role as co-producers of public services.

Additionally, the interviewees also stated how the ‘embedded’ co-design researcher had been important not only in terms of introducing co-design approaches, but also in terms of supporting ongoing reflection during the development of ReTuren. This happened both in dedicated meetings during which the core team focused on evaluating and discussing current activities and issues, and in everyday practical organization and carrying out of makers’ activities and events. The coordinator highlighted that the ‘embedded’ co-design researcher provided inspiration and examples and continuously reminded her of the importance of citizens’ perspectives. Moreover, she described how the researcher had been important in supporting ongoing evaluation and by taking important decisions. In a similar vein, the project leader described how the researcher was important in defining ReTuren as a concept and, further on, in helping navigating the complexity of the pilot-project.

Along the way, together with the project leader, we also attempted to engage the waste department managers. We proposed a process of joint evaluation and articulation of ReTuren which would have engaged the closest managers of the waste department and the core team. The managers, however, decided to postpone the process, arguing that the evaluation should be made after the pilot-project had run its course. At that time, we and the project leader considered this a acceptable compromise. We sensed the importance of engaging the managers, but did not fully grasp the growing gap between operational and management levels.

4.3 The gap between operational and management levels

The sudden decision to terminate the pilot-project was taken by the waste department managers after the occurrence of a number of accidents raised concerns about the safety of ReTuren staff. An additional factor was a report commissioned by the managers to an external consultancy to investigate to which extent ReTuren could be financed through the waste fee. This report considered makers’ activities and engagement with social sustainability outside the waste department’s mandate. Thus, the managers got concerned about the legitimacy of the waste department being the main driver of ReTuren.

The decision to end the pilot-project came unexpected to the core team, the involved organizations, local initiatives and citizens involved in ReTuren. This was a moment of truth that revealed both the achievements and limits of setting up and running the station. Particularly, it showed how ReTuren developed a robust infrastructure on the operational level, with civil servants from Lindängen’s neighbourhood department, citizens, the staff from the regional waste-processing company and STPLN feeling shared responsibility and ownership.

However, this infrastructure was not anchored among the managers of the different involved organizations. After the decision to terminate the pilot-project was taken, the waste department

managers organized a meeting with representatives of the involved organizations to explain their decision. During the meeting, the managers were asked why, before taking such decision, they did not reach out to the other organizations to see if an alternative solution could be found. The managers answered that while they saw the engagement of the different organizations and citizens, they did not grasp the strong sense of co-ownership surrounding ReTuren and that they had felt alone in bearing the formal responsibility.

In the weeks after the termination of the pilot-project, it emerged that there was a gap between the people at operational level (i.e the project leader and the coordinator) and the managers of the waste department. More specifically, this gap was related to different understandings and views of ReTuren.

5. Discussion

This discussion articulates the described gap between operational and managerial levels as a matter of contextual and worldview breakdowns (Star and Ruhleder 1996). It then reflects on the joint articulation and appropriation of co-design approaches, highlighting how this needs to happen across organizational levels.

5.1 The gap as a matter of contextual and worldview breakdowns

In the final interviews with the project leader, the coordinator and the waste department managers, the gap between operational and managerial levels was often framed as a lack of communication between different levels. We noticed how the gap was only partially related to lack of knowledge about operational aspects of ReTuren. Rather, there seemed to be a number of contextual and worldviews breakdowns (Star and Ruhleder 1996) related to the fact that, throughout the project's development, the coordinator and the project leader developed views of co-production and waste handling that diverged from those of the department.

Information and knowledge about practical insights had travelled (at least to some extent) within the organization. One of the closest managers became increasingly engaged in the operation of ReTuren by supporting the project leader in dealing with staff management. Additionally, we found that even managers quite far from ReTuren's daily operation were aware of specific insights related to how questions of safety were addressed through local collaborations. In the last interview, the project leader stated that she had regular meetings during the pilot-project to update the managers about ReTuren's operation, but that she missed opportunities to discuss in depth long-term strategies and her approaches in collaborating with other organizations and local actors in the development of the pilot-project.

Within the department we found a general consensus on ReTuren being a successful concept and

on the importance of close relationships with citizens and other actors. However, there were very different perspectives about how ReTuren could be replicated in different neighbourhoods. The coordinator and the project leader stressed the importance of working with an iterative approach that was responsive to local conditions, while the managers highlighted the importance of formulating a standard model that could be replicated regardless the context. These perspectives were certainly informed by the two different contexts in which the interviewees were standing: the operational context that revealed the value (but also the need) of considering local conditions for the development of collaborations; and the managerial context emphasising logics of efficiency and standardisation in public service delivery. These contextual differences are also grounded in different views of the role of the waste department. The managers stressed the limitations of waste department's mandate and, thus, the need to focus on their specified tasks. While, to the project leader, ReTuren showed how focusing on aligning the department goals with those of other actors could deliver waste handling services that better respond to citizens' needs.

To sum up, the gap between the operational and management levels seemed to relate not so much to the fact that the managers were not informed about what was happening in ReTuren, but rather to the fact that the development of the pilot-project led to differences in ways of operating and views. The process of developing ReTuren missed the opportunity to address these differences.

5.2 Joint articulation and appropriation across organizational levels

ReTuren showed how infrastructuring and commoning can be jointly articulated and appropriated by civil servants and co-design researchers in co-production and how this can inspire new perspectives and ways of operating in the public sector. The presence of the 'embedded' co-design researcher meant that infrastructuring and commoning were not presented and/or applied as general concepts. The core team tailored these approaches to the context of waste handling and Lindängen. They considered practical opportunities and technical constraints but also values and worldviews of the different people and actors involved.

However, ReTuren highlights how, in engaging with the public sector, it is crucial to consider existing procedures, views and values—what could be defined as the 'installed base' (Star 1999) of public organizations. What emerges in particular is the importance of addressing possible practical, contextual and worldview breakdowns (Star and Ruhleder 1996) that might emerge when new ways of working and views are introduced. As described, during the development of ReTuren the involvement of the waste department and its managers was quite limited and often focused only on practical issues. This meant that the growing gap between the ways of operating and views at ReTuren and those at the department was overlooked. Though we can only

speculate, we believe that a joint reflective process bringing together the managers and those involved on the operational level could have reduced the gap by providing them a space to articulate and confront their different views.

ReTuren reveals that the engagement of civil servants and co-design researchers in jointly articulating and appropriating of co-design approaches can favour the emergence of new ways of operating and views in the public sector. Nevertheless, as co-design researchers engaging with co-production, we emphasise the necessity for such a joint effort to engage people across organizational levels, in order to support confrontation and reflection between different contexts and, thus, address possible breakdowns that might emerge between existing ways of operating and views and new ones.

6. Conclusion

Infrastructuring and commoning have been used by co-design researchers to understand and navigate questions of participation and collaboration in co-production. Based on the case of ReTuren (a co-produced service for waste handling and prevention), we further claim that infrastructuring and commoning can support (at least on operational levels) civil servants engaging in co-production of public services. Particularly, these approaches can inspire different ways of operating and views in a public sector strongly influenced by new public management logic.

Through the case of ReTuren, we discussed achievements and limitations of the joint articulation and appropriation of these co-design approaches. The case emphasised the necessity of engaging people across organizational levels in order to address possible contextual and worldview breakdowns that might emerge between operational and management levels when new ways of operating and views are developed.

Acknowledgments:

This article discusses insights that have been developed with Savita Upadhyaya and Anna Strannegård, the project leader and coordinator of ReTuren. We are extremely thankful for our joint efforts in designing, making and reflecting together. We would also like to thank the Malmö waste department and particularly Ebba Sellberg and Annika Sevrell for their time and insights. Special thanks to Mashaal Alsalmay and all the people and organizations who engaged in infrastructuring and commoning around ReTuren. Further thanks to Vinnova and the JPI Urban Europe project Urb@EXP for financing our participation. Special thanks also to the reviewers for their insightful comments.

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