A commons creation framework for co-designing new commons

Rosendy Galabo, Justin Sacks

ImaginationLancaster, Lancaster University, UK
*Corresponding author e-mail: r.galabo@lancaster.ac.uk

Abstract:
In this paper, we present a framework to support people to organise tools for creating a commons infrastructure. A commons is a shared resource governed by a community of people rather than solely a government entity or private company. The commons literature offers robust frameworks for analysing an existing commons but lacks approaches to support communities to create a commons. To address this gap, we turn to co-design as an approach to developing processes that support communities to create a commons. This paper builds on an established framework used to analyse an existing commons to propose a new framework to organise tools for co-designing a commons. To explore this framework, we apply it as a lens to consider three engagement tools used for the transition of libraries into neighbourhood centres. The framework offers an approach for communities to build commoning processes to manage resources produced as part of co-design projects.

Keywords: co-designing commons; commons creation; commoning; co-design structure

1. Introduction

In this paper, we present a framework to support people to co-design a commons. A commons is a shared resource governed by a community of people rather than solely a government entity or private company. Wikipedia is a well-known example of a commons, in which people collectively create and manage an encyclopedia outside the direct control of a government or company. The social practice of managing a commons is called commoning. Similar to co-design, commoning requires that members of a community control the design of a resource. Unlike co-design, commoning also explicitly requires that the members of a community control the ongoing management of that resource. One of the key design principles of commoning is to make sure that those affected by the rules can participate in modifying the rules (Ostrom, 1990, p. 90).

The commons/commoning literature offers robust frameworks for analysing an existing, functional commons but lacks infrastructure to support communities to create or improve a commons. To address this gap, we turn to co-design as an approach to developing processes that can support communities to create a commons. In turn, bringing the commons perspective to co-design can generate long-lasting positive impacts in communities, enabling them to sustain and manage

resources produced during co-design projects. Contemporary co-design challenges involve sustaining resources and initiatives after the research team leave the project (Iversen & Dindler, 2014; Smith & Iversen, 2018).

Co-design emphasises the micro-political scale, where researchers are directly involved in supporting communities in their daily practices, enabling people to actively engage in decision-making processes. Co-design researchers are interested in creating "things" for design (resources as socio-material structures) and infrastructuring processes (Bjögvinsson, Ehn, & Hillgren, 2012) that can support social practices, such as commoning. In this paper, infrastructuring means aligning socio-material structures (e.g. tools, templates) with commoning processes, enabling communities to further create and manage a commons. We understand co-design approaches as a community of people working together to make sense of their situations and develop ideas within their social practice using familiar "things" that enable them to be creative in their own way (Galabo, 2020).

This paper considers how co-design's focus on infrastructuring can address the gap in the commons/commoning literature. First, we outline the primary framework and language used to analyse an existing commons. Second, we propose a framework to organise the infrastructuring process. Third, we review the tools created by a project to support a community to manage a library to test how this framework could be populated by socio-material structures to support commoning. Finally, we discuss how the framework could support the research agendas in both the commons/commoning and co-design fields.

2. Understanding how people manage a commons

A commons refers to a shared resource that is governed by a community of people. The focus of commons research originated with natural resources like irrigation systems and forests. Over time, scholars have expanded analysis to include digital commons like Wikipedia and Linux (Benkler, 2006) as well as "peer-to-peer" production like prosthetics and farm tools (Bauwens, Kostakis, & Pazaitis, 2019). The term "commoning," most often attributed to Linebaugh (2008), describes the social practice of people managing a commons. A commons is the combination of resources, the people working together to govern those resources, and the arrangements those people use to govern the resources.

The most robust and respected framework for understanding how people work together to manage a commons is the Institutional Analysis for Development (IAD) framework, which was first published by Ostrom (1990). Scholars, including Ostrom, have adapted this original framework since 1990 (for a good synopsis of these changes, see Cole, Epstein, & McGinnis (2019)). This paper focuses on the revised framework created by Ostrom (2010, p. 646).

2.1 Institutional Analysis for Development (IAD) framework

The IAD framework is used by commons scholars to analyse how and why a commons evolves, functions, and/or fails. In economics, "institutions" are "the prescriptions that humans use to organise all forms of repetitive and structured interactions" (Anderies & Janssen, 2013, p. 28). For example, the "institution of marriage" refers not to a specific organisation but to an evolving set of explicit and tacit practices, beliefs, artifacts, etc, that signify marriage. Thus, the IAD framework analyses how people work together to manage repeated interactions to sustain a shared resource.
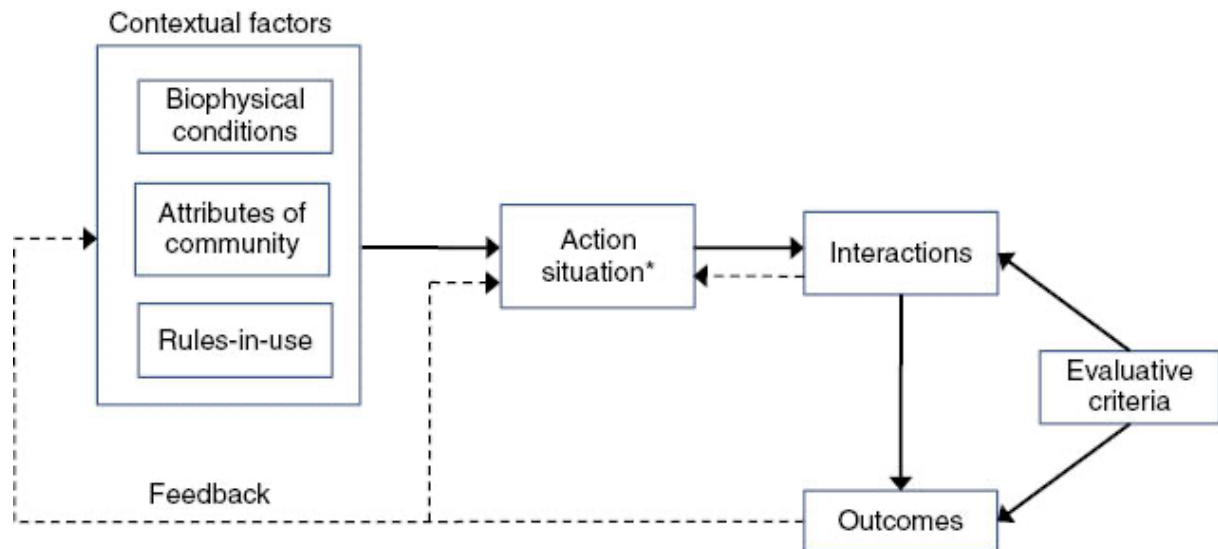
Figure 1. IAD framework from Ostrom (2010, p. 646) adapted from Ostrom, Gardner, & Walker (1994, p. 37)

We will only discuss the broader operation of this framework. On the left side are "contextual factors." A functioning commons relies on the combination of resources (biophysical conditions), people (attributes of community), and formal and informal rules (rules-in-use). These three factors combine in the middle section, the "action situation." An action situation can be thought of as a scenario where "two or more individuals are faced with a set of potential actions that jointly produce outcomes" (Anderies & Janssen, 2013, p. 43). A commons is comprised of multiple action situations, and each one could be analysed using this framework. On the right side, people interact, observe and learn from outcomes, and then re-enter the action situation (or a different action situation). The next time these people interact, however, the contextual factors may have changed based on what people learned from the last round of interactions.

Figure 2 shows the IAD framework for a community-run toy library. In this example, the action situation (scenario) is that a member damages a toy.
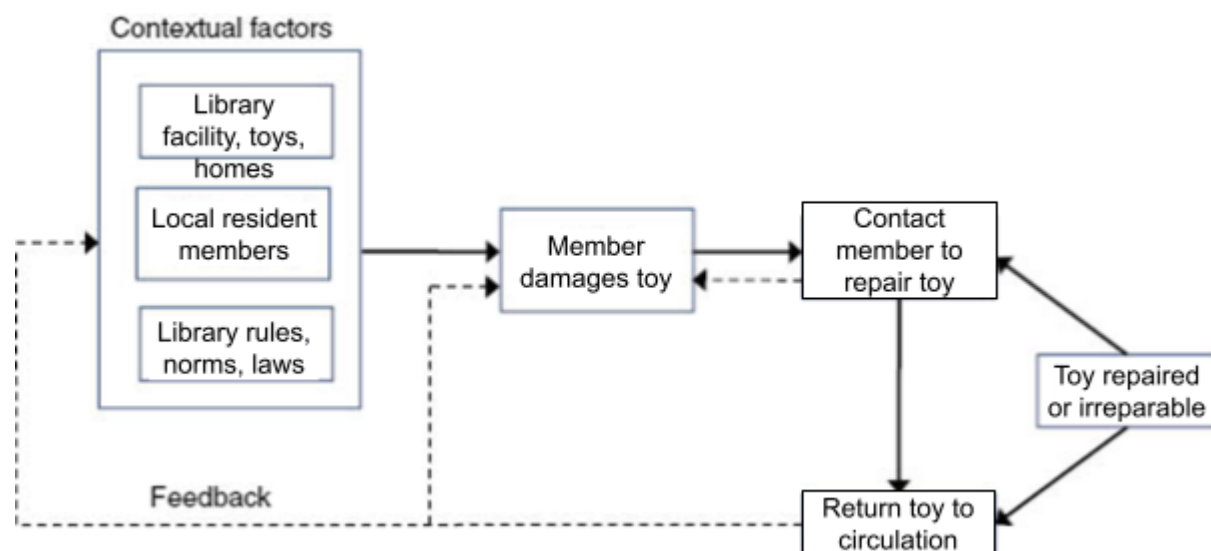

Figure 2. IAD framework example for a community-run toy library with the action situation being a member damages a toy.

The contextual factors are:

- Biophysical conditions: Library building, toys, people's homes
- Attributes of community: Toy library members and staff
- Rules-in-use: Toy library regulations, local laws, and social norms

The action situation is that a member damages a toy and must now contact other members to try to repair the toy. How could a community address this action situation, either as part of creating a toy library or as part of improving an existing one? They could review how other toy libraries manage this action situation if such processes are published; however, rules-in-use are often tacit. Even if the community does find examples from other toy libraries, the community needs to adapt rules-in-use appropriate for their community. How can they adapt existing knowledge if they are able to access it?

The IAD framework shows the community how three contextual factors combine to sustain a commons and what issues to consider as the community creates or improves its toy library. However, the IAD framework provides no infrastructure to support the community to create or improve the contextual factors required for their commons. This is the critical gap that we propose could be addressed through engagement tools.

2.2 Arenas of choice

The IAD framework occurs at three levels of analysis. Ostrom discusses these levels of analysis (Ostrom, 1990, p. 142), and they are developed in more detail by McGinnis (2011, p. 52) as "arenas of choice". Arenas of choice describes three nested levels of decision- or rule-making that communities use to manage arena commons:

- Constitutional choice rules determine who can participate in managing a commons,
  - Collective choice rules determine how decisions are made, and
    - Operational choice rules address everyday management.

These three layers cascade because constitutional choices affect who can participate in making collective-choice rules, and collective-choice rules affect who can modify operational-choice rules. Operational-choice rules are easier to modify, while constitutional-choice rules are less fluid.

In the case of damaged toys at the toy library, the members would need to make decisions at all three levels. One example could be:

- Constitutional: Who gets to make policy decisions about damaged toys?
  - Collective: What policies will we have regarding damaged toys?
    - Operational: How will we monitor toy damage?

As part of the IAD framework, arenas of choice are most often used to analyse an existing commons. The arenas of choice help us understand what level of decision-making may be responsible for changes to a commons.

In the toy library example, action situations will move between the three arenas of choice particularly when problems or conflicts arise. The example in Figure 2 depicts an action situation at the operational-choice level, when a member has damaged a toy. For this example, the toy library community decided that members must live within the county where the library is located to be members, as many libraries do. The member who has damaged a toy cannot find anyone in the community with the repair skills but does find a person with these skills in an adjacent county. This person cannot obtain the repair materials from the toy library because he is not a member of the toy

library. This is a rule that the member cannot change on her own, so she engages members at the collective-choice level, where policies are made. At a meeting, the members decide they should change the rule to include residents from adjacent counties as members too. This change to who constitutes membership criteria is a constitutional-choice change.

The arenas of choice provide structure to how a community constructs how a commons works, but as with the IAD framework, the arenas of choice alone do not provide any infrastructure for how a community tackles these challenges. How can communities be supported to explore such questions, either as preparation to create a commons or as part of improving it? In the following section, we propose a "commons creation framework" to address this gap.

3. Commons creation framework

The IAD framework shows people where they want to go, but communities need infrastructure to support their journey. Infrastructures includes physical, digital, or institutional structures that affects how a commons can be utilised (Hess & Ostrom, 2007, p. 68). To meet this gap, we therefore draw on co-design as an approach to support communities to select engagement tools and structure a commons like the toy library.

In co-design, there is a variety of engagement tools that have the potential to support communities in different social practices. Researchers have proposed frameworks for selecting and organising tools in different fields, such as participatory design (Sanders, Brandt, & Binder, 2010) and social services (Cruickshank, Whitham, Rice, & Alter, 2017). However, each framework requires considering requisite features in each social practice. Therefore, we propose a framework to enable communities to select tools for co-designing a functional commons and commoning processes.

The proposed framework draws on the key variables of commons analysis as previously discussed. We place the IAD contextual factors against the arenas of choice to consider the types of questions a community might need to answer for a specific action situation, as illustrated in Table 1. In this case, the action situation is how a member might repair a damaged toy from the toy library. The community can explore multiple action situations using this matrix to develop a more robust understanding of the commons it wishes to create.

Table 1. Commons creation framework as a matrix for the toy library example.

Action Situation: Repair a damaged toy from the toy library			
Factors / Choice	Rules-in-use	Biophysical conditions	Community attributes
Constitutional	Who should be involved in making this rule?	Should we acquire toys that are harder to damage?	How do we ensure we have members skilled at toy repair?
Collective	What policies will we put in place for repairing toys?	How will we acquire or repair toys?	How can we help members repair toys?
Operational	How will we enforce our policy on toy repair?	How do we acquire repair materials for members to use?	How do members get repair materials from the library?

The commons creation framework primarily serves to co-design the contextual factors that would sustain a commons. In this paper, we focus on how the commons creation framework can support a community to prepare to create a new commons.

4. Applying the framework to a commoning project

We analyse one case from a project called Leapfrog (2015-2018), to consider how the tools generated from the project could populate the commons creation framework. In this project, the research team collaborated with library practitioners in Lancashire UK (Figure 3) with the aim to transition half of the county's libraries into "neighbourhood centres" that would respond to local needs. Participants co-designed a set of tools through a series of workshops to help them engage with the community to make this transition. We selected this case because, while the project did not result in a commons, the project did require participants to develop tools to address commoning that are very similar to the contextual factors of the IAD framework (biophysical conditions, attributes of community, rules-in-use).

Figure 3. Co-designing and sharing tools during the Leapfrog neighbourhood centres project

We return to the proposed framework as a lens to consider how the types of tools created could support the creation of a functional commons. The Leapfrog team co-designed seven tools with the library practitioners to support their engagement processes. In the following sections, we review three of these tools to understand how they might address the factors and choices in the commons creation framework.

4.1 Tool 1: Building Success

Participants co-designed the "Building Success" tool (Figure 4) to support new teams to explore what they needed from the space and how they could work together to run a diverse set of activities

throughout the day. The tool uses bricks as metaphors for building related issues on a coloured building and formulating a plan to share resources and spaces.
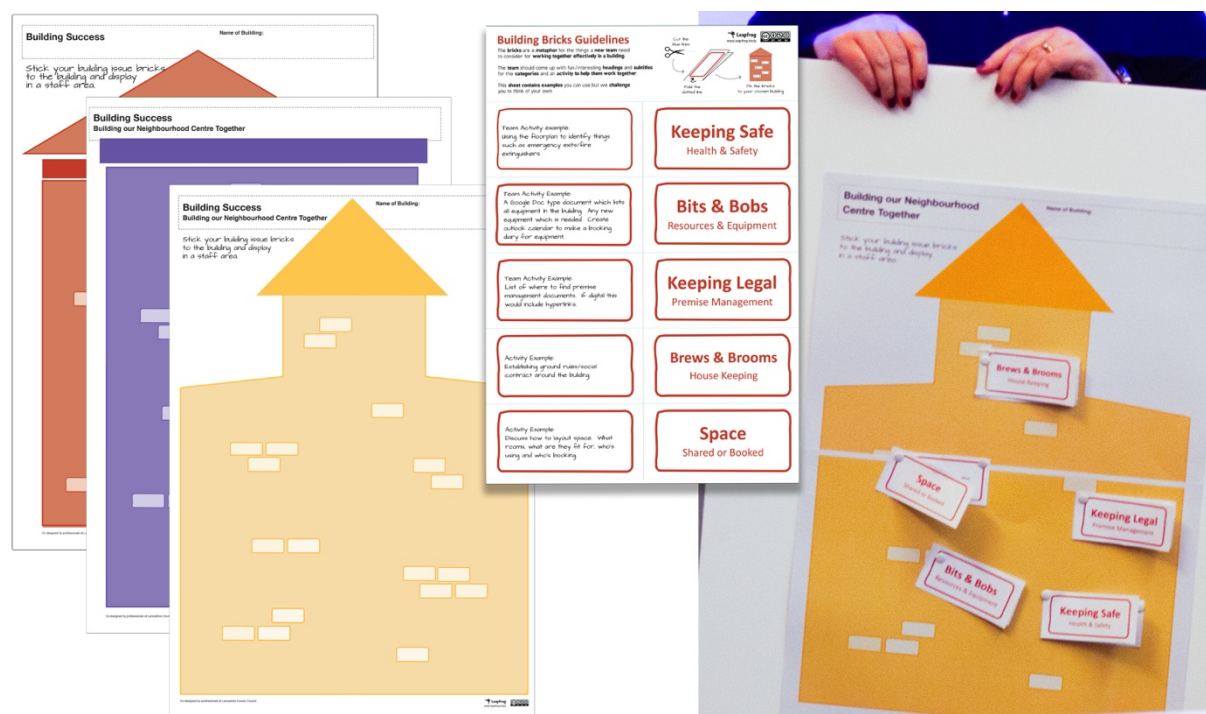

Figure 4. Building Success tool

This tool is a good example of a tool that could support the construction of the biophysical conditions to sustain a commons. At this early stage in transforming the library to neighbourhood centres, Building Success could be used by members to understand what biophysical conditions help or hinder their membership (Table 2). In the co-design workshops, for example, participants explored health and safety procedures using this tool.

Table 2. Constructing biophysical conditions at a constitutional-choice level

Action Situation: Work together in a shared space			
Factors / Choice		Biophysical conditions	
Constitutional		Building success	

4.2 Tool 2: Flow Customer tools

Participants co-designed the Flow Customer cards and tools (Figure 5) to understand how to meet the service needs of the diverse groups within the community. The cards enable teams to map out the types of people in their communities and match them with neighbourhood services and activities. The map enables teams to visualise the types of users according to their preferences and interests to have a clear idea about who frequents the multi-centre.

Figure 5. Flow Customer tools

This is a good example of a tool that could be used to address community attributes at the collective-choice level. For example, Flow Customer tools helped the initial library practitioners understand who else should be involved in decision-making, as illustrated in Table 3. While the language of the Flow Customer tools is reminiscent of service design, adaptations of this tool for commoning might change language to reflect people as members of the commons rather than customers.

Table 3. Constructing community attributes at a collective-choice level

Action Situation: Understand who should be involved in decision-making			
Factors Choice			Community attributes
Collective			Flow Customer

4.3 Tool 3: The Small Things

Participants co-designed "The Small Things" tool (Figure 6) to offer a creative way for different teams to prompt, provoke, ask questions, share quick notes, and obtain feedback from each other. This is a good example of an operational-choice tool that could be used across situation factors. In shared spaces such as staff kitchens, common issues like who buys milk for the staff kitchen can be solved in a friendly and fun way. The small things that this tool tackles will often be dictated by the biophysical conditions (what size fridge do we have?) and community attributes (how many people use this

kitchen?). This tool is especially helpful for exploring the rules-in-use required to sustain the commons, as shown in Table 4.

Figure 6. The Small Things tool

Table 4. Constructing rules-in-use at an operational-choice level

Action Situation: Communicate with different teams in the multi-centre			
Choice \ Factors	Rules-in-use		
Operational	Small things		

5 Discussion and future research

The framework proposed in this paper is a starting point to address a critical gap in the commons literature and practice, and the challenge of sustaining co-design resources and initiatives. We have sought to translate a robust framework from the commons literature into a design framework to support communities to create a commons. In particular, we use co-design's emphasis on infrastructuring processes through socio-material structures as the building blocks to populate and develop the commons creation framework.

The use case and engagement tools can help communities explore tough issues through creative ways of problem solving. Infrastructuring the commoning process not only encourages communities to try diverse approaches to engage all potential commons members but also supports those facilitating the process even if they do not possess innate facilitation skills. The primary concern of the commons creation framework has been to make engagement with the requisite features of a functional commons accessible to communities of all backgrounds.

The commons creation framework can work as a meta-tool to support communities to build an infrastructure of tools to co-design a new commons and commoning process. For example, community members in the neighbourhood centre project could go on to adapt and generate tools tailored to different action situations to create a functional commons. The proposed framework in this paper supports people in the commons/commoning field who are interested in expanding commoning activity and people in the co-design field who are interested in how co-design can expand to support not only design but also management of local resources. Further research could explore adaptations to the framework and learning from application by communities seeking to create a commons.

References

Anderies, J. M., & Janssen, M. A. (2013). *Sustaining the commons*. Arizona State University.

Bauwens, M., Kostakis, V., & Pazaitis, A. (2019). *Peer to peer: the commons manifesto*. University of Westminster Press. doi: 10.16997/book33.

Benkler, Y. (2006). *The wealth of networks: how social production transforms markets and freedom*. Yale University Press.

Bjögvinsson, E., Ehn, P., & Hillgren, P.-A. (2012). Design things and design thinking: contemporary participatory design challenges. *Design Issues, 28*(3), 101-116. doi:10.1162/DESI_a_00165

Cole, D. H., Epstein, G., & McGinnis, M. D. (2019). The utility of combining the IAD and SES frameworks. *International Journal of the Commons, 13*(1), 244-275. doi:10.18352/ijc.864

Cruickshank, L., Whitham, R., Rice, G., & Alter, H. (2017). Designing, adapting and selecting tools for creative engagement: a generative framework. *Swedish Design Research Journal, 15*, 42-51.

Galabo, R. (2019). A framework for improving knowledge exchange tools [Doctoral thesis, Lancaster University]. Lancaster. doi:10.17635/lancaster/thesis/1011

Hess, C., & Ostrom, E. (2007). *Understanding knowledge as a commons from theory to practice*. MIT Press.

Iversen, O. S., & Dindler, C. (2014). Sustaining participatory design initiatives. *CoDesign, 10*(3-4), 153-170. doi:10.1080/15710882.2014.963124

Linebaugh, P. (2008). *The Magna Carta manifesto: liberties and commons for all.* University of California Press.

McGinnis, M. D. (2011). Networks of adjacent action situations in polycentric governance. *Policy Studies Journal, 39*(1), 51-78. doi:10.1111/j.1541-0072.2010.00396.x

Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press.

Ostrom, E., Gardner, R., & Walker, J. (1994). *Rules, games, and common-pool resources*: University of Michigan Press.

Ostrom, E. (2010). Beyond markets and states: polycentric governance of complex economic systems. *American Economic Review, 100*(3), 641-72. doi: 10.1257/aer.100.3.641.

Sanders, E., Brandt, E., & Binder, T. (2010). A framework for organizing the tools and techniques of participatory design. In T. Robertson, K. dker, T. Bratteteig, & D. Loi (Eds.), *PDC '10* (pp. 195-198): ACM.

Smith, R. C., & Iversen, O. S. (2018). Participatory design for sustainable social change. *Design Studies, 59*, 9-36. doi:10.1016/j.destud.2018.05.005

Author Bios:

Rosendy Galabo is a Post-doctoral Research Associate (Community & Public Sector) for Beyond Imagination at Lancaster University. His current research interest focuses on creating new distributed co-design online approaches, digital engagement, creative interactions, digital commoning and community governance.

Justin Sacks is a doctoral researcher at ImaginationLancaster at Lancaster University. His research interests include commons and commoning, more-than-human design, and postcapitalist economics. His research seeks to develop theory and practice of commonized design and more-than-human commoning.