Towards Commons Design in Participatory Design

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Abstract. This article probes what the Participatory Design (PD) field can gain from exploring the literature on commons. Through selected examples we point to some connections and commonalities between that literature and the PD field. In doing this, we also bring forward several contributions that this literature can make to PD in order to develop design strategies and approaches to *commons design*. We believe these can further PD practices and research and help PD to operate with and thrive within increasingly complex design issues and contexts.

1 Introduction

Commons-like frameworks for collective action are becoming increasingly more visible in our digitally networked society. People who operate in these frameworks develop new forms of participation and modes of production that rely on social networks, digital platforms and shared resources on the Internet. This presents new challenges to contemporary design research and professional practice, especially in terms of understanding what participation means. The Participatory Design (PD) community has already identified and reported the need to recognise and operate in new contexts other than those of the workplace and organisations, as well as the need to move beyond the traditional software project and embrace design-in-use that is undertaken by users (Henderson & Kyng, 1991; Dittrich et al., 2002). Concepts that foreground and engage with this demand

include *publics* (DiSalvo 2009; Lindström & Ståhl 2014), *things* (Ehn 2008; A. Telier 2011), community-based participatory design (DiSalvo et al., 2012; Le Dantec & Disalvo 2013) and *infrastructuring* (Björgvinsson et al., 2010/2012a/2012b). We aim to contribute to the ongoing discussion related to emerging new contexts for research and application of PD by providing insights into how research on collective action relying on commons could be relevant for the PD community. Furthermore, we ask: What could we as professional designers and researchers who operate in commons-like frameworks and aim to support collective action learn from the commons research? How can we link these ongoing discussions to the PD practices and research? Commons-related research has a long and established tradition (see e.g. Ostrom 1990; Hess 2008; Benkler 2013) and has branched out in many directions. In this paper we introduce selected examples of commonsrelated literature that we think could have relevance for the PD community. Our aim is to take the first steps in establishing an initial connection between these two bodies of knowledge and sketch some questions that could guide future research agendas in PD. We start by investigating some fundamental aspects of the concept of 'commons', as it is explored in selected contributions from the commons literature, in order to meet the special conditions for designing and sustaining commons. First, we look at Ostrom's (1990) 'design principles' of the robust and sustainable common-pool resources. We then look closer at the concept of 'infrastructuring' that has gained growing interest both in commons-related literature and in PD. Finally we discuss an alternative view – "commoning" – to rethink the roles of actors in commons-like frameworks, and we use this as a direction for 'commons design'.

2   Understanding Commons

The interdisciplinary research of commons is rooted in the study of shared natural resources and communities around them. Commons are often described as "shared resources that are vulnerable to social dilemmas" (Hess & Ostrom 2007). Potential problems – social dilemmas – of traditional commons are often located in the use and especially the overuse/overconsumption of shared resources. Hardin (1968), in his paramount essay 'The Tragedy of the Commons', claimed that freedom of commons leads to neglect and overconsumption and eventually ruins shared resources. Contemporary commons scholars have offered counter narratives and empirically grounded evidence of the existence of social trust and collaboration that can overcome the "tragedy" scenario (Hess & Ostrom 2007; Benkler 2013). In the commons literature it has often been necessary to highlight the difference between a commons as a resource or resource system (a.k.a. common-pool resources, CPR), and a commons as a property-rights regime (e.g. legal regime). In other words, the question is whether use of the resource is open for all (e.g. public goods) or limited to a pre-defined group (e.g. club model).

Broadly speaking, it is possible to identify three different approaches to the commons:

1) The first one is the *traditional commons* research that mainly focusses on understanding the role that institutional arrangements play in sustaining and managing shared natural resources in various sectors, such as agricultural production systems, floristries and fisheries (Ostrom 1990). The empirical studies on commons demonstrate that people themselves are able to create, govern and sustain natural resource commons despite their social dilemmas. This existing body of knowledge points to and analyses patterns and practices of collective action by identifying other forms of organising besides the market or the state.

2) A second strand of research focussing on the *new commons*, also referred to as the knowledge/information commons, emerged in the mid-1990s alongside the materialisation of intangible commons that is characterised by the networked society and especially visible on the Internet (Hess 2008; Hess & Ostrom 2007). There is an abundance of legal literature on commons that discusses the forms of public/common goods and their "open commons" nature, arguing that everybody should have equal rights to use and partake in governing the resources (Lessig 2001; Benkler 2006; Benkler 2013). New and open commons are mostly intangible and cumulative resources, such as knowledge and digital resources, which are not depleted by rivalry or overconsumption. Here, open collective actions initiatives relying on shared resources (e.g. open access, open source, commons-based peer production) and new forms of enclosure (e.g. digital rights management, intellectual property regimes and licensing strategies) form most of the empirical examples. This body of knowledge provides insights into the role of a variety of infrastructures in the digital networked society that by design can enclose or open these commons.

3) A recent strand of commons can be identified as the *activist/practitioner movement*, which treats commons as a vehicle for social change and democratic governance (e.g. Helfrich & Bollier 2012; Bauwens 2009). Here, commons are seen not as shared resources but rather as a relational quality that depends on actions and decisions taken by a group of people (Helfrich & Bollier 2012, Bollier 2014). An important focus of this strand is to identify alternative means for the provisioning and governance of commons, i.e. means that go beyond the market or the state. The rise of this movement is also seen as a reaction against the growing privatisation and commodification of public/common goods (Hess 2008). This strand focuses more on the *process* (how to create commons, how to sustain and govern them, etc.). Commons activists are not only advocating open access to shared resources; they are also interested in developing partnerships and educating people to *be part* of these processes (see e.g. Pór 2012). Important insights to take away from the practitioners' accounts are connected to the ways in which to make the patterns and practices within commons visible and accessible for others. In addition, activist thinking provides reflections on the roles of the

participants – both professional designers and other stakeholders – in commons-like frameworks that operate in an iterative open-ended process rather than in a specific project.

3 PD Principles for Successful Commons?

It is a common practice in PD to communicate practical knowledge in the form of articulated principles and strategies for designing. The knowledge obtained in practice (e.g. through projects) is reflected and shared within the community – not as "recipes for success" but rather as anchors that are useful as thinking guidelines when immersed in practical design work. Classical examples include Greenbaum & Kyng (1991) and Schuler & Namioka (1993). These examples expertly condense guidance and strategies for workplace interventions and for articulating work with identified organisations. As PD is increasingly concerned with providing spaces or platforms for participation, communication and collaboration in broader terms and also for unidentifiable collectives (Björgvinsson et al. 2010; Botero & Hyysalo 2013), there is a growing need to update and extend those principles and practices to new realities. An interesting point of departure to tackle this new challenge can be research on the traditional commons. In her seminal work, Ostrom (1990) conducted a metaanalysis of 86 case studies of small- and medium-scale natural resource commons. Through these case studies, she identified eight 'design principles' for long-enduring commons. She did not intend them as "recipes" to create new commons. For her, the design principles refer to certain sets of essential elements or conditions that account for the 'success of institutional arrangements in sustaining a particular common-pool resource (CPR) and gaining the compliance of generations after generations' (Ostrom 1990, 90). According to Ostrom, long-enduring CPR commons are characterised by strong collective action made possible by things such as clearly defined rules and boundaries that community members have the right to devise and revise; the presence of mechanisms for self-governance, monitoring and conflict resolution; and nested structures to guide use, appropriation and provision (Ostrom 1990; Hess & Ostrom 2007). One key finding of commons research is that 'an extremely rich variety of specific rules were used in systems sustainable over a long time period', where the rules are well matched to local needs and conditions (Hess & Ostrom 2007, 7). These factors are also becoming crucial for PD as new technological possibilities increase the prospects for people to 1) collaborate, create and share common resources and 2) take part in design activities earlier monopolised by professional designers and other established actors. Although these design principles were not intended to provide a model for designing a commons, they can help PD to develop a more nuanced understanding of design agency and its interplay with multiple mechanisms of collective action. In PD we might need to look at, understand and engage collectively in processes

distributed more radically in space and time and within more complex socio-material assemblies than what has been done previously. How are *processes* of selfgovernance, management and provision designed? How can the *rules* and *practices* for cooperation and use of shared resources be co-designed in fair, inclusive and sustainable ways?

4   Infrastructuring for Commons?

One important line of work in PD that could easily link to work on commons is 'infrastructuring'. Infrastructuring proposes that PD takes as a starting point previous work around the growing importance of information infrastructures as an integral part of contemporary life. An important reference point has been Star & Ruhleder's (1996; also Star & Bowker 2002) proposition of infrastructure not as some substrate that disappears – something that is built and left behind – but as something that only makes sense and is meaningful for someone within a particular practice. Infrastructures, including physical and institutional structures, affect how commons can be utilised (Hess & Ostrom 2007, p. 68). They also have a critical role in framing how commons are managed (Frischmann 2012).

Given such positioning, how do we infrastructure? Star and Bowker (2002) suggest that what should be taken into consideration with infrastructuring is 'when' something is being perceived as an infrastructure by its users rather than 'what' an infrastructure is. While most design approaches tend to focus on particular artefacts, neglecting – more or less – the surroundings in which the artefacts are placed, it is precisely these surroundings that become a concern for infrastructuring (Pipek & Wulf 2009). Accordingly, when doing infrastructuring, a lot of design work turns towards a continuous alignment between contexts and the ways in which agency is socially achieved (Björgvinsson et al. 2010/2012a/2012b, Seravalli 2012; Lindström & Ståhl 2014). From this point of view, infrastructuring becomes an engagement in experimenting with ways of achieving this alignment (Hillgren et al. 2011; Pipek & Wulf 2009) while accounting for the creative 'design' activities of professional designers and users across the divide and beyond technology (Karasti & Syrjänen 2004, Pipek & Syrjänen 2006) without necessarily privileging either view.

Can we see the ways in which contemporary PD infrastructuring processes are (or can be) a type of "design commons"? That is, are they processes that are structured in particular ways of doing and managing design contributions where contributors are not just designers, users or producers but start to resemble a collective of commoners?

5 Commoning as Designing?

If commons are seen as a vehicle for change (Bollier 2014), a new vocabulary for actors within the commons is needed. Despite the professions or skills in the activistdriven commons movement, participants are often addressed as *commoners,* described through the act of 'commoning'. The term 'commoning' was initially coined by historian Peter Linebaugh (2009) in an attempt to portray aspects of the commons that are linked with activities, not just with the more widespread understanding that sees commons as material resources (i.e. traditional commons research).

Commoning is being advocated as a way of providing a new and needed vocabulary to make visible both "the social practices and traditions that enable people to discover, innovate and negotiate new ways of doing things for themselves" (Bollier & Helfrich 2012). On the other hand, commoning has also been explained as a design activity and "creating a commons culture" in partnership with other actors (Pór 2012). Commoning thus emphasises the active nature of the commons and the commoners that are taking part in the creation and maintaining of local and global commons. It also highlights the notion that commons can *only* be managed through social relationships and shared knowledge (Bollier 2014).

The activist commons movement can provide inspiration for PD to rethink our practices and roles. PD has a longstanding interest in supporting people to design for themselves. However, the question is, are we ready to reconsider our *designer role* when operating in commonslike frameworks, and can we see ourselves as codesigning commons with other commoners?

PD is moving beyond software projects towards more fluid configurations and collaboration. For this, the commons literature could also offer insights from already-conducted empirical work.

6 Conclusions

People construct commons every day and everywhere in their efforts to share resources and tackle common problems in our societies. As discussed in this article, this poses a challenge for professional designers, asking us to think about how we can design better infrastructures and frameworks that enable, mediate and foster the emerging and increasingly complex 'commoning practices'.

This brief overview shows that the commons discourse has many connections with PD. The first one refers to a shared democratic political agenda. PD's interest in democratisation (Ehn & Kyng 1987; Greenbaum & Kyng 1991) is also fundamental to commons-related studies. By linking PD endeavours to commons frameworks, we could link our efforts to knowledge production, sustainability and resilience on a broader scale than just technology development. Both PD and commons literatures build upon stakeholders and communities' capabilities and right to act and decide upon their future.

Both PD and commons studies discuss the potentials and dilemmas of collective action (using different vocabulary) and its infrastructuring needs. Insights from commons research can offer much more elaborate notions about why, how and under what conditions people do things together, and not only how we seek or are invited to 'participate'.

Furthermore, scholars writing on commons have already tackled some of the issues that are now also becoming relevant for PD, such as questions related to intellectual property (IP) and matters related to (distributed and shared) ownership. We suggest that we, the PD community, should turn more seriously to the implications coming from the contemporary commons literature to ensure the relevance of PD in the future.

7 References

Bauwens, M., (2009). Class and Capital in Peer Production. Capital & Class, 33: pp. 121–141.

Benkler, Y. (2006). The Wealth of Networks: How Social Production Transforms Markets and Freedom. Yale University Press.

Benkler, Y. (2013). Commons and Growth: The Essential Role of Open Commons in Market Economies. U. Chi. L. Rev., 80, 1499–1499.

Björgvinsson, E., Ehn, P. and Hillgren, P.A. (2010) 'Participatory design and "democratizing innovation"', *Proc. PDC 2010*, 41–50

Björgvinsson, E., Ehn, P., & Hillgren, P.-A. (2012a). Agonistic participatory design: working with marginalised social movements. *CoDesign*, 8(2-3), 127–144.

Björgvinsson, E; Ehn, P; Hillgren, P-A. (2012b). Design Things and Design Thinking: Contemporary Participatory Design Challenges. In *Design Issues* 2012, 28:3, pp. 101—116.

Bollier, D., & Helfrich, S. (Eds.). (2012). *The Wealth of the Commons: A World Beyond Market and State*. Levellers Press.

Bollier, D. (2014). *Think Like a Commoner: A Short Introduction to the Life of the Commons*. New Society Publishers.

Botero, A., & Hyysalo, S. (2013). Ageing together: Steps Towards Evolutionary Co-design in Everyday Practices. *CoDesign*, 9(1), 37–54.

DiSalvo, C. 2009. Design and the Construction of Publics. *Design Issues* 25(1): 48-63.

DiSalvo, C., Clement, A., & Pipek, V. (2012) Communities: Participatory Design For, With, and By Communities Disalvo. In *Routledge handbook of participatory design*.

Dittrich, Y., Eriksén, S., & Hansson, C. (2002, June). PD in the Wild; Evolving practices of Design in Use. *Proc. PDC 2002*, 124-134.

Ehn, P. (2008). Participation in design things. Proc. PDC 2008, 92-101.

Frischmann, B. M. (2012). *Infrastructure: The social value of shared resources*. Oxford University Press.

Greenbaum J., & Kyng, M. eds. 1991. *Design at work: Cooperative Design of Computer Systems*. NJ: Lawrence Erlbaum.

Hardin, G., (1968). The Tragedy of the Commons. *Science* 162:1243—1248.

Henderson, A., & Kyng, M. (1992). There's no place like home: continuing design in use. In *Design at work* (pp. 219-240). L. Erlbaum Associates Inc..

Hess, C. (2008). Mapping the New Commons. In Governing Shared Resources: Connecting Local Experience to Global Challenges. 12th Biennial Conference of the International Association for the Study of the Commons.

Hess, C. and E. Ostrom (Eds.) (2007). *Understanding Knowledge as Commons*. Cambridge, Ma: The MIT Press.

Hillgren, P.-A., Seravalli, A., & Emilson, A. (2011). Prototyping and Infrastructuring in Design for Social Innovation. *CoDesign*, 7(3-4), 169–183.

Karasti, H., & Syrjänen, A.-L. (2004). Artful infrastructuring in two cases of community PD. *Proc. PDC 2004*, 20–30.

Le Dantec, C. A., & DiSalvo, C. (2013). Infrastructuring and the formation of publics in participatory design. *Social Studies of Science*, *43*(2), 241-264.

Lessig, L. (2001) *The Furure of Ideas: The Fate of the Commons in a Connected world*. New York. Random House.

Linebaugh, P. (2009). *The Magna Carta manifesto: liberties and commons for all*. University of California Press.

Lindström, K., & Ståhl, Å. (2014). *Patchworking publicsin-the-making: design, media and public engagement*. Malmö University.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press.

Ostrom, E., Chang, C., Pennington, M., & Tarko, V. (2012). *The Future of the Commons: Beyond Market Failure and Government Regulation*. Institute of Economic Affairs.

Pipek, V., & Syrjänen, A.-L. (2006). Infrastructuring As Capturing In-Situ Design.   In 7th Mediterranean Conference on Information Systems,. Venice, Italy: Association of Information Systems.

Pipek, V., & Wulf, V. (2009). Infrastructuring: Toward an Integrated Perspective on the Design and Use of Information Technology. *Journal of the Association for Information Systems*, 10(5).

Pór, G. (2012) School of Commoning. In *The Wealth of the Commons: A world beyond market and State*. Eds. Bollier & Helfrich. Levellers Press.

Seravalli, A. (2012). Infrastructuring for opening production, from participatory design to participatory making?. In Proc PDC 2012, ACM Press, 53-56.

Star, S. L., & Ruhleder, K. (1996). Steps Toward an Ecology of Infrastructure: Design and Access for Large Information Spaces. *Information systems research*, *7*(1), 111–134.

Star, S. L., & Bowker, G. (2006). How to Infrastructure. In L. A. Lievrouw & S. Livingstone (Eds.), *The Handbook of New Media – Student edition* (pp. 230–244). Sage Publications, Inc. Schuler, D., & Namioka, A. (Eds.). (1993). *Participatory design: Principles and practices*. CRC Press.

Simonsen, J., & Robertson, T. (Eds.). (2012). *Routledge handbook of participatory design*. Routledge.

Telier, A., Binder, T., De Michelis, G., Ehn, P., Jacucci, G., & Wagner, I. (2011). *Design things*. MIT Press.