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Phygital Project, Nicosia, 2017-2020

ISBN 978-9963-711-88-8

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The Unconference and Unconference proceedings have been organized and shaped by the University of Nicosia Research Foundation as part of the Interreg Balkan-Med project PHYGITAL, and co-organized in collaboration with Lakatamia Municipality and the Fine Arts Programme, Department of Design and Multimedia, University of Nicosia. The implementation partner is Future Worlds Center.



This work is licensed under a Creative Commons Attribution-Non-Commercial 4.0 International License. http://creativecommons.org/licenses/by-nc/4.0 Phygital is an Interreg V 2014-2020 BalkanMed, EU-funded programme implemented in Greece, Albania and Cyprus and which involves the development of makerspaces – one in each country – that work with local communities. In Cyprus, the project's work is being carried out by the University of Nicosia Research Foundation in collaboration with the Municipality of Lakatamia and focuses on social art practices exploring the melding of open technology, art and design. The project operates on the basis of the 'design global – manufacture local' model which introduces innovative organisational and business patterns allowing an unprecedented booming of communities engaged in do-it-yourself (DIY) activities. It wishes to support and enhance local capacities for innovation and utilise the opportunities decentralised modes of production can create. The Cyprus section of the project examines the importance of makerspace culture in the advancement of contemporary social art and design practices.



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# Delegating management, augmenting the mind: What could be the role for technology in commoning practices?

Selena Savić

#### Introduction

In 1974, French feminist writer Françoise D'Eaubonne identified two threats to humanity: the destruction of the environment and overpopulation (D'Eaubonne, 1974). "Feminism or death", she proclaimed alarmingly. The oil crisis of the 1970s heightened the awareness of the finiteness of resources (even though their scarcity was artificially generated in this particular case) and fueled a plethora of thoughts about alternatives to the capitalist economic system that was perceived as consumptive of the very energy and human resources it attempted to manage. Even though such counterculture ideas did not gain mainstream recognition, and precisely because they failed to cause deeper changes to the system, similar claims are being made today. The Global Footprint Network estimates that the pace of using resources is alarmingly faster than their regeneration capacity: in eight months we use twelve months' worth of resources. Climate change activists as young as teenagers address political and business leaders at World Economic Forums.<sup>2</sup> Commons-based economy and commoning are proposed by many as more stable, resilient forms of governance (Gibson-Graham, Cameron, & Healy, 2013; Bollier & Helfrich, 2015). It is not a surprise that Elinor Ostrom was given Nobel Prize in Economics for her work on the governing the commons (Ostrom, 1990) right after the biggest financial crisis we experience in recent times (2008). This discourse is often characterized by inflammatory statements. With the current text, I propose to think calmly about burning topics such as resource sharing, collective decision making and the role of technology in these processes.

The relationship between commoning and technology is explored here in the scope of the research project *Thinking Toys for Commoning*, looking into the ways media-based tools, such as computer-based models, can make complex commoning processes not only visible but also comprehensible. The multidisciplinary team gathers around questions raised by both lived experiences of commoning in a community of individuals, and the experimental approach to computer modeling. We explore, expose and make explicit different phenomena related to common living. We collaborate with three Swiss housing cooperatives, probing organizational and communication challenges they face.

# Technocracy, degrowth: What alternative visions?

The cooperatives we work with: *NeNA1* from Zurich, *LeNa* from Basel and *Warm-bächli* from Bern, are part of a wider movement *Neustart Schweiz*, which promotes sustainable living. Inspired by utopian fiction novel *Bolo'bolo* (P. M., 1983), these

- <sup>1</sup>Global Footprint Network identifies this as the Earth Overshoot Day: a day in a given year when humanity's use of ecological resources exceeds what Earth can regenerate in that year https://www.footprintnetwork. org/our-work/earth-overshoot-day/
- <sup>2</sup> The most recent talk given by teen activist Greta Thunberg in January 2019 at the World Economic Forum in Davos, Switzerland, urges the global elite to act on climate change with the statement "World is on Fire". The complete, edited transcript is available here: https://www.theguardian.com/environment/2019/jan/25/our-house-is-on-firegreta-thunberg16-urges-leaders-to-act-on-climate
- <sup>3</sup> Thinking Toys for Commoning project explores sustainable use and the organisation of common resources with the focus on alternative, utopia-inspired urban neighbourhood initiatives in Switzerland. The team is made of Shintaro Miyazaki (project lead), Michaela Büsse, Victor Bedö, Selena Savić and Yann Patrick Martins. More information about the process and project outputs can be found on the project website: http://commoning.rocks

communities are organized around principles of sustainability, independence and degrowth. Resources such as living space, water, energy and food are shared and, ideally, produced by the community. Computers and communication media are rarely seen as a resource to be shared. Additionally, the philosophy of degrowth makes these communities unsympathetic towards cutting-edge technical solutions. Nevertheless, there are topics of interest that can be developed in this context. How could we integrate science and technology into the commoning efforts? How could we make technology such that it is common? With this work, we want to identify and develop specific areas of interest that concern commoning and technology, especially given the philosophy of degrowth and sustainability.

One direction is to think about existing alternative solutions for online tools and services used by community members, networking infrastructure and communication devices. Another axis brings together reflections on new services and needs that could be addressed by open source technologies, developed for and within the communities. Between the ambition to delegate management to computational systems and to envision technologies that augment communication and knowledge within a community, the discussion on the role of technology in commoning unsettles the common belief that technical systems are competing with human deliberation or sustainable use of resources.

Technology can be alienating when we are passive consumers of complex systems and services, such as Gmail, AirBnB, Uber, Roombas or self-driving cars. But technology is not only about efficient automation of otherwise human-driven processes. Technical knowledge and skills can be used directly against consumerist alienation. Especially in commoning efforts, there are points where technology could help rather than hinder cooperation and facilitate sharing.

#### Solving problems with boxes

In a recent post on his platform, Facebook CEO Mark Zuckerberg presented his design for an IoT object – a box that emits light when it's time to wake up. Zuckerberg articulated his motivation like this: "As an engineer, building a device to help my partner sleep better is one of the best ways I can think of to express my love and gratitude". He assumed the position of an engineer from a classical Silicon Valley narrative, characterized by addressing (human) problems with design of technologies. This short-circuits care and technics in a kind of consumerism that is foundational to corporate technology. Companies like Google, Amazon and Facebook (the popular Big Four, GAFA or Big Five, including Microsoft: GAFAM)<sup>5</sup> that heavily invest in the automation of information processing, communication and movement, have given us a model of technology that is highly unsustainable, always about producing more hardware, more information, more data and more interactions. But if we try to think more abstractly, what can this technology be good for?

Kevin Kelly, co-founder of the internet magazine *Wired*, wrote enthusiastically in his book *What technology wants* about the "technium", the extension of our human bodies, i.e. our skin (clothes), our feet (wheels) and our eyes (cameras). Inspired by Marshall McLuhan, Kelly defined "technium" as that which is not nature, in the sense that it is an expression of our minds and not simply manifestations of some processes coded in our bodies.

The fascination with technology as a way to think pervades the writing of the French philosopher Michel Serres:

Certain objects in this world write and think; we take them and make others so that they can think for us, with us, among us, and by means of which, or even within which, we think. The artificial intelligence revolution dates from at least as far back as neolithic times (Serres, 1995, p. 50).

Serres talks about quasi-objects that create relationships between living and inert things. Quasi-objects are not merely passive, they create relationships between

<sup>&</sup>lt;sup>4</sup> Quote coming from a Facebook post by Mark Zuckerberg on April 27th 2019 https:// www.facebook.com/photo.php?fbid=101072 65929036761&set=a.529237706231

<sup>&</sup>lt;sup>5</sup> See Wikipedia article on Big Four tech companies https://en.wikipedia.org/wiki/ Big\_Four\_tech\_companies

living and inert things. They are at the same time quasi-subjects: we handle the ball when we play, but we also play with the ball, it creates relationships; the spindle of the sundial uses the sun to mark the hour of the equinox, it tells time; machines and technologies create groups and change history.<sup>6</sup>

In our work on possible roles of media and networking technologies in commoning processes, we use the workshops with the communities, document discussions with specialists and review literature on commoning practices to identify challenges in housing cooperatives. We focus on the communicative aspect of technology and explore media-based tools and networking as sites for cooperation between "commoners".

## A theory of commoning practices

Bolo'bolo, the starting point for the Neustart Schweiz communities imagination, is a utopian novel in which the author P.M. (pseudonym assumed by the Swiss writer Hans Wiedmer) proposes and describes the transformation of society from today's growth-obsessed economy to a decentralized network of "neighborhoods" formed by small communities (no larger than 500 people), whose economy is fully sustainable and self-sufficient (P. M., 1983). He developed 27 concepts/words that describe the new planetary system of living, working, exchange, and even conflict in a transformed society. Bolos are communities gathered around a nima, common values, interests and lifestyle. Everyone must produce food and tools for themselves, but some will prefer to grow and others to read. Individuals contribute to the community on a voluntary basis. Common goods are distributed as needed. Interestingly, communication here is both essential for the working of communities, and a subversive technique, a way to dismantle the planetary work machine.

In his critique of the capitalist control of tools for production (and technology in general), philosopher Ivan Illich proposed a triadic relationship between persons, tools and new collectivity so that the tools would serve those that are politically mutually interrelated (Illich, 1975). Contrary to inherently oppressive tools that by their very nature restrict the liberty to use them in an autonomous way, Illich (1975, p. 25) sees the tools for conviviality as a "guarantee for each member of the most ample and free access to the tools of the community", spelling out the philosophy of open source movement in software as well as hardware.

More recently, Paul Virno talked about "common places" (topoi koinoi) as infrastructure for thinking, the condition for reason (Virno, 2003). Common places are where we, the strangers "without a home", turn in the face of the contemporary condition of "not-feeling-at-home". Those "without a home" behave like thinkers: they turn to the most essential categories of the abstract intellect in order to protect themselves from the blows of random chance, take refuge from contingency and from the unforeseen. While reason has always been the way out of disorder, Virno stresses the contemporary condition of distributed responsibility and thinking in a democratic but neoliberal world.

In a book that affirms artistic tinkering with technology (Newman, Tarasiewicz, & Wuschitz, 2018), commoning of knowledge is given an important place. The authors observe that sharing skills on how to produce, manufacture, hack and repair things, makes communities more autonomous and resilient, even when this happens out of necessity. Sharing skills seems to have an effect on a community longevity too, the authors claim. Against consumerist alienation, such attention to technical problems guarantees fast, collective "debugging".

## Phantasms of decentralization

How and when do technology and technical skills become important for commoning? In a panel discussion the team of the *Thinking Toys for Commoning* project organized at the 2019 edition of the Transmediale festival, <sup>7</sup> under the title *Phantasms* 

<sup>&</sup>lt;sup>6</sup> For a more complete understanding of these examples that Serres brings up to demonstrate the *quasi* of the subject and object see Serres, *Angels. A modern myth*, pp. 47-48.

of Decentralization, we raised questions about personal interfacing with commoning processes, about economy and governance, with a focus on technology and in particular, communication. The two invited guests were Cade Diem (lead designer at Tactical Tech) and John Evans (a member of a programmers cooperative and developer of the Wobbly app).<sup>8</sup>

We discussed a number of concrete examples of protocols (TCP/IP, Bit Torrent), online services and communities (What.CD, 4chan, Plan C, Wobbly) and techniques (improvisation, LARP explorations of extreme community scenarios, collective dreaming) around which communities gathered or emerged. We observed how organic cooperation of people lead to a form of media, or a cultural programming element based entirely around a piece of technology (Bitcoin, What.CD). We discussed existing alternatives to corporate tech solutions (Protonmail instead of Gmail, Nextcloud instead of Dropbox, Wobbly instead of WhatsApp, MAZI for independent wireless networking), as well as reflections on new services and needs that could be addressed by open source technologies, developed for and within the communities. Three main threads crystallized in this discussion:

- Communication systems and the difference in speed and kind of content that needs to be exchanged in commoning context.
- **Technical infrastructures**, their independence and resilience.
- Decision making and perception of fairness about negotiation and taking note.

In these three areas, more concrete proposals can be speculated on. Evans pointed out the importance of building a communication system with several layers that move at different speeds. This would mean that "commoners" could communicate about different topics in temporalities that are appropriate to a particular issue: quick messages about urgent issues, weekly/monthly communication on meetings, long-lasting wiki about how to do things in the community. Not using proprietary services for these purposes is important not only ideologically but also as a gesture of ownership of one's own tools.

Building community networks is another opportunity to claim autonomy from centralized systems. These efforts animate a belief that independent or alternative modes of accessibility will evoke different modes of social organization. For example, in the wake of 2014-15 Greek elections and the subsequent political changes, an alternative mesh network created in 2002 by a group of citizens became instrumental in information exchange amongst activists. The association known as the *Athens Wireless Metropolitan Network* (AWMN)<sup>9</sup> allowed citizens to exchange data quickly, both online and offline. Similarly, *Occupy.here*, <sup>10</sup> was a mesh of extendible points that provided local, offline information and/or access to the internet. Alternative internet services that cost little and protect against government surveillance are increasingly set up by digital activists with avid technical knowledge and creativity. Spanish network *Guifi*<sup>11</sup> or mesh networking tool *Commotion*<sup>12</sup> are some of the existing alternative services.

In terms of organization, it is interesting to think about mechanisms to distribute labor in an actual commoning community. The Wobbly app developed by Evans (2018) is an interesting example of a workplace organizing platform, an organizing tool for precarious union struggle, communication and organization techniques. It connects workers on different layers (by location, task, time) and enables them to organize, while at the same time owning the infrastructure and data they exchange. Another example in this area of thinking is the agent-based model of shared work contribution that we developed in the scope of the *Thinking Toys for Commoning* project.

## Commoning tech with "commoners"

To work out different scenarios for technology to play a role in commoning situa-

- <sup>7</sup> Transmediale is a yearly festival held in Berlin, Germany, with a focus on media-art, technology and communications.
- 8 Wobbly is a workplace organizing platform. See: https://notesfrombelow.org/article/ an-introduction-to-wobbly
- <sup>9</sup> Athens Wireless Metropolitan Network (AWMN) is http://www.awmn.net/
- <sup>10</sup> Occupy.here is a project developed in parallel with the Occupy movement, offering a network of virtual spaces to share collective network infrastructure using customized router firmware. Occupy.here has been active since October 2011, http://occupyhere.org/ (current release November 2013).
- <sup>11</sup> Guifi.net is a telecommunications network built through a peer to peer agreement of its users who extend the network and grant connectivity to all. Guifi is released under Wireless Commons Licence (WCL) and is in operation since 2006 (https://guifi.net/en).
- <sup>12</sup> Commotion is a free, open-source communication tool that uses wireless devices to create decentralized mesh networks https://commotionwireless.net

tions, we created a special workshop format, around a currently hyped social media hashtag, #10yearschallenge. The ten years challenge surfaced recently in social media as a way for celebrities to publicize how little they changed over the past ten years. It was quickly picked up by more diverse social groups, including technically minded people, posting for example, the old Nokia 3310 phone that has lost only one percent of battery power in ten years.

With this workshop, we were hoping to identify the kinds of technology and services the "commoners" would find relevant for their organization and how do they envision it develops in the future. We tested this at a workshop with the Zurich-based community NeNa1 in March 2019. In a similar gesture to the panel discussion, three general topics of relevance for commoning crystallized in the workshop with the NeNa1 community:

- Personal communication: ten years ago, it was email → today it is Wikis and chat platforms → in ten years, there might be a commons app.
- Ubiquity and autonomy of infrastructure: ten years ago we relied mostly on telephone lines → today it is the internet → in ten years, we might have a significant presence of self-determined autonomous networks.
- Cultural considerations: ten (and many more) years ago we were into dialogue → today it is mostly chat groups → in ten years, we can expect a convergence of local and global discussion through technology and personal deliberation.

It is interesting to observe the ways in which these topics overlap with those identified in the panel discussi on. Communicating through a system at different speeds is exactly what a commons app should do. Self-determined autonomous networks are an additional iteration of community-managed alternative networks. Dialogue is a more abstract form of deliberation and decision making across a community. Same social skills are needed: 'commoners' need to be able to agree on, and discuss rules, opinions, plans, and so on.

# Decentralization of knowledge and decision making: what perspectives

We explore these topics with the interest in communication as the act of making common or letting information circulate, but also as a space of different kinds of technical applications (wireless networking, wikis, chat platforms, etc). There are two directions in thinking about decentralization: decentralization of decision making and decentralization of sharing knowledge. Then, there is another dimension of differentiation, between technologies that delegate human work – such as the management of resources or decision making – and technologies that augment the mind.

This distinction is parallel to several directions we already discussed here: Zuckerberg's light box is an example of the former (delegating management) while the thoughts of Kelly and Serres are closer to the latter (augmenting mind). Similar to Langdon Winner's (1980) articulation in *Do artefacts have politics*, Ivan Illich discussed two kinds of tools: the one, within which machines are used to extend human capability (Winner: politically undetermined or open-ended) and the other in which they are used to contract, eliminate, or replace human functions (Winner: technologies with inherent internal authoritarian patterns).

Of course, the distinction between delegating and augmenting is not about making a categorical cut – techniques we invent to delegate human work, such as memorizing or communicating knowledge also augment human mind – we are able to keep knowledge and engage our thinking on a more abstract level.

The three topics that we identified in the panel discussion and at the workshop with "commoners" can be represented in a three-dimensional graph, where decentralization of decision making and knowledge define one plane, and the "delegating management – augmenting the mind" axis is perpendicular to it.

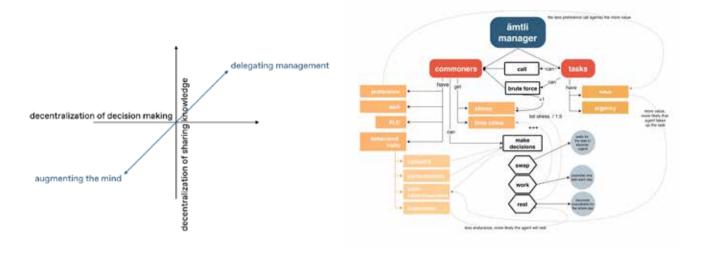


Figure 1. The three axes of decentralization and technology (image courtesy of the author).

Figure 2. Concept map of the Ämtli manager agent-based model (image courtesy of the author).

## Ämtli manager: distributing labour in a community

Ämtli manager is the name given to our model of shared work. In the model, "commoners" are invited to contribute work on common tasks related to the maintenance of common spaces and infrastructures. They work in the food depot, the common kitchen, clean common areas and rotate in watching children. "Commoners" have different traits: they can be more or less curious, perfectionist, enduring and more or less conscious of the value of certain tasks. Based on these traits, and some other conditions, they make decisions whether to work or not. Their work is directly rewarded with the right to take some rest, directly after or whenever they would like to skip a task later. This results in them being more or less stressed and more or less able to rest.

On a very general level, we are interested in the perception of fairness, as well as in a kind of smoothness of community operation, when work is organized in this way and individual contribution rewarded by the right to rest. Fairness is defined:

- On the individual level as the relationship between stress and possibility to rest and
- On the community level, as the measure of tasks being done and agents being free to choose work.

Just as with automation and optimization-oriented technology, "commoners" in the three housing cooperatives tend to perceive (with some notable exceptions) computational modeling as related to tidy quantitative, mechanical modeling paradigm that is of high value to economists and policy makers. This is precisely the challenge we pick up and explore how it can be thought differently, how these technical tools could be made so that they serve the community and are owned by it.

## Problem finding, not problem solving

With the work on the model as well as in discussions, we propose to develop "thinking toys" for commoning: setups and artifacts that foster reflection on complexity and make processes in communities understandable and negotiable. The work on "thinking toys" is partly speculative design, based on fiction, partly simulation, agent-based modeling, and partly interaction design, entailing questions of physical prototyping. With the notion of the "thinking toy" as a method for design and research, we hope to inspire the thinking about the agency of objects and artifacts in creating knowledge.

In this sense, the model that we have developed is a kind of a toy in the game, like a black box that problematizes technocratic decision making, or like the essence of a *nima* of a bolo. It diffracts different roles technology can play in thinking through the organization of common work, and common life. Our experimental design practice is about buildings models but also the design of a workshop model, design of these toys and their documentation. On all these levels we explore design of/about complexity. The importance of this work is not in creating or generalizing solutions for specific problems that the housing cooperatives are experiencing (though this might happen) but in tracing and carefully documenting the problem-finding process.

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