12 Free-Software Movement

Re-decentralization of the internet and development of new ways of ownership and commons

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About the authors and their positions

This text has been written from a perspective of people who are part of the [Free-Software Movement](). Those who have been involved in writing this text are personally involved in the design of infrastructures, platforms and services as digital commons.[1]

1. What is the key idea of the Free-Software Movement?

Free, not just for free: running, checking, changing and redistributing software

The key idea behind the free software movement is to give the ability to the users of software - which is present in basically any electronic device we use today - to have the freedom to run, study and change the software, and to redistribute it in any way. The free software movement appears officially in the 1980's, as a reaction to the increasing dominance of proprietary software. This dominance emerged in the late 60s, with the increasing production costs of ever more complex software.

In contrast to proprietary software, which maps to an industrial competition environment protected by patent systems, the philosophy of free software focuses on removing any restrictions from the use and modifications of software, which are an obstacle to cooperation between peers. It aims in that way at promoting the progress of technology with the goal "to liberate everyone in cyberspace" (Stallman, 2006).

At this point, an important clarification and distinction between the terms open source and free software should be made. Although they are often used interchangeably and to a large point overlapping, open source software licenses may put restrictions on the (re)use of software. On "free" or "libre" software, such restrictions should not be present("free" is here not meant in the sense of "free beer", but rather in the sense of "free speech"). In order to overcome the debate, the term free/libre open source software (FLOSS) has been proposed. Nevertheless, it is the free software movement which appears as strongly politicized and therefore closer to degrowth. As a contributor at the *Chaos Communications Congress* (the biggest hackers congress in Europe happening yearly in Germany) argued, the concept of open source was pushed forward in order to include the emerging expansion of free software "into the neo-liberal ideology and the capitalist economy" ([Prug 2007]).

The development of the free software movement is historically bound with the vision of a world wide web (www, short web) as it was conceived by its founder Tim-Berners Lee. Core of his philosophy is that the internet as a

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1 *This text has been written collectively on github:* https://github.com/gandhiano/technology-degrowth

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platform provides freedom and agency to its users. Up to 1996, the Internet was mostly indeed a place for sharing knowledge and establishing communication, away from commercial interests - its' commercial use was in fact forbidden. Nowadays it is difficult to avoid commercial Internet: Google, Dropbox or Facebook are just a few examples of corporations making business out of our data, documents and relationships in the Internet. This delegation of agency (and often ownership) to corporate "data silos" on the cloud is one of the main threats to the movements' vision of a free web.

At the same time, we are observing the emergence of new patterns of production and consumption of technology. Social-technological innovations, rather than pure technological innovations, seem to be the dominant pattern of innovation. Code development and recombination "factories", such as the famous GitHub, have become social networks for a global sharing of digital production. The *Sharing Economy* brings new forms of relationships between producers and consumers, by establishing a peer-to-peer mode of access to resources.

These developments do not pass without critique also from within the free-software movement: GitHub is also a centralized commercial platform, and the Sharing Economy has been to a large extent cooptated by the for-profit interests and the controversial model of billion-worth start-ups, such as AirBnb or Uber. This led several organizations standing behind the idea of the *Sharing Economy*, such as *OuiShare*, to propose the alternate concept of *Collaborative Economy* to distinguish initiatives based on horizontal networks and participation of a community.

At the hardware level, FabLabs, Repair Cafés or Open Source Ecology are engaged in a worldwide knowledge sharing: people involved share their accumulated experiences while they engage in production and learn with their local communities (of practice). Further there are initiatives such as the fairphone or the fair mouse, which attempt to achieve more ecological and fair means of production. In doing so they are revealing how difficult it is, within the current political ecology of resource extractivism, to actually achieve a fair and ecological production of technological artefacts.

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2. Who is part of the Free-Software Movement, what do they do?

From software activists to technology creators: user and hacker communities interconnected in global networks

It is difficult to describe who is part of a movement that is so diffuse and embedded at different levels across other movements. A few key figures and institutions are nevertheless worth mentioning.

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Richard Stallman, the *GNU* Project and the *Free Software Foundation (FSF)* are probably some of the most important actors in the genesis of free software as a movement. The *GNU* project was founded by Stallman in 1983 at the Massachusetts Institute of Technology (MIT), with the aim of developing tools and eventually building an operating system consisting exclusively of free software. In 1992, the only missing part in the operating system was the *kernel*[2]. The release of the Linux kernel under a GNU Public License (GPL) in 1992 provided the missing piece to the operating system. The Linux kernel is an amazingly successful example of a convergence of global efforts: the 10,239 lines of code of the Linux Kernel, originally released by the Finnish student Linus Torvalds in 1991, has expanded to over 18 million lines of source code protected as a commons by the GPL. Its success has been immense: most of the internet as it is today, as well as a huge number of consumer devices - from smartphones running with Android to TomTom-GPS in cars - are built on top of the Linux Kernel. Because of the GPL constraints, any piece of software built with or from it must also make its source code available. As a consequence, all activity around GPL source code, be it non-profit or for profit, brings a contribution back to the global commons of source code and algorithms.

The membership-based institution *World Wide Web Consortium (W3C)* is defining standards for the web, while also promoting convergence of visions on what the web should look like. It is structured into multiple working groups, which are generally open for contributors to join. The *W3C* aims at developing common protocols that promote the evolution of the world wide web and at the same time at improving the conditions for collaboration of different actors.

Community networks supported by wireless (open source) technology such as the *Freifunk* initiative contribute to the development of "mesh networks" on the grassroots level. At the same time they directly contribute to distribut ownership of internet infrastructure. The low costs of a Raspberry Pi (a single-board computer) help to run a DIY cloud service (owncloud) on the own server, while costing as little as 30 €, consuming around 10 Watts of power and fitting into the palm of the hand. A growing number of collectives are recombining and further developing existing free software into stacks that provide a more democratic access to services, shaped to needs and uses of the target communities. The *IndieWeb community* for example aims at providing "a people-focused alternative to the 'corporate web'" by developing simple standards and tools for a cooperation across different platforms.

Even at the higher institutional level of the EU, concerns about the continu-

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2   *The kernel (also called nucleus) is a computer program that constitutes the central core of a computer's operating system. It has complete control over everything that occurs in the system: https://en.wikipedia.org/wiki/Kernel_(operating_system) (Access: 07/12/16)*

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ous trend of concentration of information into services hosted by corporations overseas and the global surveillance backdoors, exposed by *citizenfour* Edward Snowden, have prompted action. In recent years hundreds of millions of Euros have been released under the Horizon 2020 research and innovation program to support "collective awareness platforms for sustainability and social innovation". The fund specifically recognises the contribution of hacker communities and grassroots movements and looks favourably on consortia that include actors from these communities.

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3. How do you see the relationship between the Free-Software movement and Degrowth?
Questioning technology by commonly owning it

Within the degrowth movement, technology, and especially digital technology, is often taken as something to be reduced or removed as much as possible from life and society. While demanding this, it is dismissed the fact that we live in the age of digital communication, where digital technology - even when not directly used - is already part of the life of nearly every citizen in the world.

In this sense, not engaging and helping to shape the development of the digital infrastructure simply means that someone else will do it for you, with or without consent. Derrida's "paradox of hospitality" points to an interesting aspect here: the first violence a foreigner faces is the obligation to ask for hospitality in the language of the host – which is in contradiction to the idea of hospitality. This metaphor has been applied to technology by [Claudio Ciborra](#): if the host is to absorb the technology successfully, he must learn to speak in its language and adopt the culture of the tool where appropriate. In other words, if you don't develop your own technology, you will need to adapt to the language and patterns of the technology someone else developed - maybe in contradiction to your cultural values.

The complexity of the industrial-technological complex is today supported by large institutions and corporations. These progressively distance their users from the technological choices and agency, from the infrastructure that hosts it, the processes of technological production, and of the resource extraction necessary for its maintenance. Increasing centralization prohibits digital and analogue networks. Media theorist Douglas Rushkoff shows that the century we are living in is no longer shaped by the mechanical, huge, 19th century factory, but rather by brands, titans of the digital world, which establish their monopolies with socially networked platforms. These he understands as a spike of a late or new capitalism. Massive amounts of venture capitals are injected into ideas emerging into the digital society, with the ob-

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jective of capturing as many users and data as possible, and eventually establish a monopoly and universality in the service provision: no one should get a ride if not on *Uber*, no one should find friends if not on *Facebook*, no one should find a date if not on *Tinder*. Still Rushkoff, and along with him a few other intellectuals, hackers and activists in the collaborative economy, free software and commons movement, sees the internet as having a distributive power without precedent in the history of Humanity.

Nevertheless, the Internet is being increasingly reduced to the usage of a few platforms, which most often act as isolated silos of information. This is blocking the core of the decentralized web: the hyperlink. The famous Iranian blogger Derakshan writes how he, after spending a few years in prison (2008-2015), was confronted with the dominance of the social networks and feared how these would make the hyperlink obsolete:

"The hyperlink was my currency six years ago. Stemming from the idea of the hypertext, the hyperlink provided a diversity and decentralisation that the real world lacked. The hyperlink represented the open, interconnected spirit of the world wide web-a vision that started with its inventor, Tim Berners-Lee. The hyperlink was a way to abandon centralization-all the links, lines and hierarchies-and replace them with something more distributed, a system of nodes and networks."
Derakshan 2015

The web with the hyperlink, represents in a way a tool in the digital world to build an autonomous society as described by Castoriadis. The current threats that the hyperlink faces, are therefore also threats to the emergence of degrowth utopias.

Networks of learning

It is possible to draw parallels to Illich's concept of the "learning webs" (Illich, 1970). In Deschooling Society, Ivan Illich argues that a good education system should follow three purposes: to provide all that want to learn with access to resources at any time in their lives; to make it possible for all who want to share knowledge to find those who want to learn it from them; and to create opportunities for those who want to present an issue to the public to make their arguments known. Illich develops an example of a decentralized scheme of learning: a network of tapes. People would be provided with tape recorders and empty tapes, which "would provide opportunity for free expression: literate and illiterate alike could record, preserve, disseminate, and repeat their opinions". Reference services and other mechanisms for bringing peers in exchange would facilitate access to the resources the student is looking for. Illich's network of tapes as well as the Internet of hyperlinks replaces the radical monopole over the hegemonic discourse with a multiverse of narratives.

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Up to now, research and praxis on degrowth has unfortunately brought too little contribution in building up a coherent, critical vision on different innovations and movements that are emerging on the digital technology scene. On the contrary, there is often a distancing of the actors of degrowth from taking part in the technological and cultural developments of the digital age - as if diving in and getting busy with it would be in contradiction with a meaning of life rooted on voluntary simplicity and harmony with nature.

4. Which suggestions do they have to each other?
Degrowth debates can help to critically guide social and technological developments

The main historical contributions of the free software movement have probably been on the production of digital commons: source code, data, information, algorithms, knowledge. In addition to it, a whole culture of collaboration based on the ideas of freedom and autonomy developed, as seen in the previously mentioned global collective efforts such as the Wikipedia or the Linux Kernel.

The developments and new modes of production and consumption being pushed by the so-called "Sharing Economy" also provide interesting insights into the degrowth debate. Rather than completely dismissing the patterns of exchange of the sharing economy because of their current institutional framing, Maurie Cohen (2015) argues that "reciprocal relationships, producer-consumer cooperatives could bring the intentions of production and consumption into closer alignment". The challenge would be to develop a "more efficacious sharing economy" capable of constraining the "expansion of mediated micro-entrepreneurship and serialized rental in favour of modes consistent with communitarian provisioning". Cohen calls for *Platform Cooperativism* as an alternative institutional setting for enabling these new patterns of reciprocal relationships. Research on institutions and democratic practices as present in the degrowth movement can give valuable insights on how the Sharing Economy could be (re)designed.

This blurring of roles between producers and consumers, enabled by technology, is at the core of the praxis of the Sharing Economy, and a broad range of social businesses. It leads to the emergence of a new type of economical agent, which the futurist Alvin Toffler called "prosumers". Critics have expressed concern that this dynamic may contribute to the generation of new forms of capitalist exploitation by generating unpaid labour, while keeping power and decision structures untouched (Ritzer and Jurgenson, 2010; Rogero, 2010). Bauwens (2005) and Benkler and Nissenbaum (2006), argue, however, that production which follows the distributed logic of peer-to-peer

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and commons-based peer-production may operate independently of a market logic or existing power structures. Also here the degrowth movement could critically engage in the debate and contribute to a systemic understanding of these emerging pruduction and consumption patterns.

Another ongoing debate is on the optimal architecture for the infrastructure and services being provided: should we have fully distributed (peer-to-peer) or decentralized, federated and autonomously controlled networks? Technologies that enable the construction of divided networks (such as Blockchain) recently make headlines. A debate discussing social and political questions which are arising with such new networks are on the other hand largely missing. Approaches for a global distributed system will necessarily need a global algorithm, which defines criteria for allowed transactions or which creates a basis of trust between crypto-anonymised users. But is it possible to reach a "global consensus" for an automatized judgement of trust? Who decides about the technology to be used? How is privacy assured? How can trust between people be built if there is no institution or place where it can be attached other than the algorithms placed in machines that take care of their transactions?

Supporters of decentralization, such as the federated approach practised by the *Indieweb*, argue for distributed processes, rather than consensus. They rather trust in the creative powers of the people involved, rather than in the automation of all transactions. Local or thematically bound communities can localise, control and determine such processes. On a technical level it than only needs minimal standards of cooperation (interoperability) such as with the hyperlink.

These new processes and roles will beyond doubt have a great influence on institutional settings – on a social as well as a technological level. Debates within the Degrowth movement around democracy, autonomy, institutions and technology can help to shape the still to be built networks and platforms and the relations between them.

The TransforMap project, an initiative involving dozens of networks, NGOs and initiatives worldwide, is building a federation of many maps of alternative economies. Within this process it combines network and community building and agile management practices, with events such as mapping jams, hackathons and vocamps. The goal is to develop a technological stack and an associated social process that is capable of providing meaning and use for the diverse narratives and movements emerging as a response to the limits of growth and current multiple crises.

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5. Outlook: Space for visions, suggestions or wishes

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Individual and collective freedom

An alliance between the free software movement and the degrowth movement is not only possible, but has the potential to be a melting pot for the emergence of new visions and utopias.

Along this chapter, reference was made to important degrowth sources, in particular to the visions of Illich and Castoriadis. We saw how Illich presents the *learning webs* as a proposal to overcome the *radical monopolies* on education; or how Castoriadis' autonomism materialize in the philosophy and praxis of the *web*. To take the words of the latter,

"a free society is a society in which power is actually exercised by the collectivity, but a collectivity in which all effectively participate in equality. And this equality of effective participation, as goal to attain, must not remain a purely formal rule; it must be insured, as much as possible, by actual institutions" (Castoriadis 1993, 317-318 *cit* Papadimitropoulos, 2016).

The dimensions of democracy and justice have been equally subjected to strong focus and debate among some of the main references of the free software movement: these converge on the importance of not only having access to technology, but also on the capacity to understand and use the technology autonomously. Richard Stallman, speaking at the 2015 *Chaos Communication Congress*, synthesizes the concern and awareness of the movement on the radical monopolies forming around digital technology: "teaching children to use proprietary software is like teaching them to smoke". Collective ownership of technical infrastructures and data, interoperability, linked open data (LOD), and the semantic web with its vocabularies and ontologies are some words that are expected to appear more and more in the discourses engaged in building up postgrowth futures.

It is hard to imagine that Ivan Illich would not feel excited about the convivial, deschooling and deinstitutionalization potential of the world wide web and an underlying commons infrastructure. Making research projects to accumulate even more knowledge on how things work or should work is really not the interesting thing to do today. We rather need more convivial research (Vetter 2015) in the field, capable of bringing scientists - also non-technical ones - to the collaborative development of platforms, ontologies and vocabularies for data openness and interoperability. Supporting events such as hackathons, or using (and supporting) commons server infrastructure and free software services are examples of actions that support the transformations and resistances happening in the field of technology and the digital commons.

Stallman, Rushkoff, Cohen, and most free software activists and hackers would probably not consider themselves as part of the degrowth movement. But we see a pattern emerging, which brings together (some) social busi-

degrowth
in Bewegung(en)

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nesses, the do-it-yourself culture, the capitalist-critical grassroots, the commons and free software movements. They converge on the will to (re)appropriate and decommercialize technology. They organize and often collaborate in building up Illich's "learning webs".

The web in fact enables us to come a step further in overcoming the institutional boundaries and centralization of the learning process, of which Illich is so critical. The vision for a web that provides freedom and agency to its users - and which is currently under threat - is part of the core and philosophy of the world wide web. And this freedom of individuals is the central piece to building up the utopian autonomous society that Castoriadis envisions on his Project of Individual and Collective Autonomy:

"An autonomous society implies autonomous individuals – and vice versa. Autonomous society, autonomous individuals: free society, free individuals. Freedom – But what is freedom? And what freedom? What is at issue is not inner freedom, but effective, social, concrete freedom, namely, to mention one primary feature, the largest possible space for movement and activity the institution of society can ensure for the individual. This freedom can exist only as dimension and mode of the institution of society" (Castoriadis 1993, 317-318).

The struggle for free software and the free web is also a struggle of the degrowth movement.

Links and Literature

Links

Citizenfour – documentary: http://thoughtmaybe.com/citizenfour/

Ecobytes – list of librehoster: https://github.com/ecobytes/awesome-librehosters

Steal this Film – documentary: https://www.youtube.com/watch?v=Ijo98_nUhrk

The Internet's Own Boy – documentary: https://www.youtube.com/watch?v=7ZBe1VFy0gc

The Pirate Bay: Away from Keyboard – documentary: https://www.youtube.com/watch?v=eTOKXCEwo_8

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