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Abstract

Data surveillance by private companies and public intelligence agencies is intricately intertwined, and research has shown how citizens have become willing participants in their own surveillance. This brings forth a new type of governmentality that is legitimised by hegemonic imaginaries on “Big Data” and innovation which are closely related to the imaginary of technological growth.

The Snowden disclosures made this a topic of public debate.

Yet a review of Degrowth literature shows that while there is a rich theoretic framework allowing us to think critically about technology, little has been written about privacy, data protection and data surveillance.

As was shown in France during the COP21 conference, the extension of the notion of terrorism to some categories of activists is a threat for the Degrowth movement itself. Furthermore, Quantified Self, Big Data and algorithmic surveillance fit into technical, managerial and social trends that are the continuation of the bureaucratic process of rationalising societies to promote productivity.

This paper first reviews existing Degrowth literature on information technology to analyse the technocapitalist imaginary on Big Data. It then explores the case of a “concrete utopia”, Free Software, in a critical perspective to see whether and how it could help Degrowth philosophy to shape alternative imaginaries and practices. It concludes that not only does Degrowth provide the ability to frame the debate on Privacy and technology in a way that challenges technocapitalist imaginaries on “Big Data”, but also sketches the outline of future research into alternatives in line with the principles of a future, desirable convivial society.

Keywords : Degrowth, data protection, Free Software, dataveillance, governmentality

Surprisingly little can be heard in Degrowth publications and circles about privacy, data governmentality, even since the Snowden disclosures have put surveillance and information technology related to public policies back on the political agenda. One reason that may explain this is that Degrowth is focused on developing practical, low-tech solutions and, in doing so, acquires the characteristics of what Sébastien Broca (2013) calls a “concrete utopia”¹. Yet I will argue that Privacy is very much a key topic that Degrowth needs to examine, for it touches many of its dimensions.

¹ A concrete utopia, in Ernst Bloch (*konkrete Utopie*) and Sébastien Broca (*utopie concrète*) words, is something that not only negates or at least takes distance with the present, by putting into perspective what is presently and what could or should be in the future (that would simply be an utopia), but also tries to reduce the distance between the present and a desirable future by the way of a set of practices implementing the utopic ideas (see : Broca, 2013:16-19).

Firstly, we need to keep in mind that the word “terrorism” has expanded its meaning. As events leading up to the COP21 in Paris last year showed, intelligence agencies and police authorities made little difference between violent criminals such as those who organised and committed the attacks in Paris on Nov. 13th, 2015, and green activists. As reported by Reuters on the 28th of November, 2015, 24 green activists, having no link whatsoever with terrorist organisations linked to the attacks justifying the state of emergency that was enacted on the 14th of November by Decree (Reuters, 2015), were placed under house arrest without the intervention of the judiciary. A few days later, during the COP21, demonstrations in Paris were banned. It takes no stretch of imagination to understand that the people placed under house arrest had been under scrutiny by intelligence agencies for a while, together with their friends and relatives. Let us remember that the NSA famously applies the “three degrees of separation” rule, which means that a person who was in contact with a person in contact with a suspect is also included on governmental watch-lists. As green activists across the globe become targets for government surveillance and become sometimes caught in an enlarged definition of terrorism and expanding tools of law enforcement such as France's 2015 state of emergency², data governmentality becomes a real threat for anti-system dissent, be it pacific dissent as in the case of Degrowth.

Secondly, Big Data and modern surveillance, both public and private, is the continuation of a long process of rationalising human relations and of controlling populations. All along the 20th Century, public and private bureaucracies have tried to quantify and scrutinise populations and individuals, to increase productivity or to detect and suppress dissent. This phenomenon dubbed *biopower* by Michel Foucault (1993 [1975]), relates to the way populations are controlled no longer using extraordinary punishments on bodies, but through various, more subtle and diffuse ways of control. The *Panoptikon*, that is to say a type of surveillance where all can be watched, but nobody knows when he or she is under scrutiny, is a powerful tool promoting self-censorship and discipline across a society. Then we are faced here with yet another privacy-related puzzle: while it is a known fact that the magnitude of the surveillance led by the NSA or other the GCHQ³ by far surpasses that of surveillance by Soviet-bloc agencies like the Stasi⁴, escape strategies are much less wide-spread across society than they were in Soviet-bloc societies, probably due to the gradual erosion of Privacy rather than the sudden shock that occurred around 1949 in the former Soviet bloc satellite countries (Raab, Jones and Székely, 2015). We are faced with a privacy paradox (Norberg, Horne and Horne, 2007): whereas people proclaim a high attachment to privacy, their behaviour as consumers of digital communication technologies are freely providing the data for their own surveillance. As David Lyon states in his book *Surveillance after Snowden*: “surveillance is not practiced on us, we participate in it” (Lyon, 2015:3). One possible explanation for this is how time, in our informational societies, has become more and more compressed in pursuit of ever more instantaneity: time has become a source of revenue (Castells, 2001:537), and we have reached the point where even war is, ideally, instantaneous (Castells, 2011:557). Social time is accelerating ever more. Technocapitalism seeks to accelerate life in order to lengthen it, in what Jacques Luzzi sees as an almost messianic, religious way (Luzzi, 2013). In such a context, where time is always the essence, and where one is always running out of time, digital tools are presented as ways to save

2 The state of emergency, which gives police sweeping powers – such as the possibility to conduct house searches without judicial warrants – to the detriment of the judiciary was enacted by a Decree following the November 2015 terror attacks, and extended twice – as of the end of February, 2016 – for a total period of 6 months

3 GCHQ's Tempora program is even more pervasive than what, according to documents leaked by Edward Snowden, the NSA does, because it consists in the bulk collection not only of meta-data, but also of content data (MacAskill, Berger, Hopkins, Davies and Ball, 2013)

4 The East-German Stasi had collected about 200 km of files, which corresponds to approximately 0,019 sq. kilometers, whereas according to estimates, printed data held by the NSA would fill up 42 billion shelves, covering 17 million sq. kilometers. (Estimates were made by Open Data City.de, based on reports from the NPR: <http://www.npr.org/2013/06/10/190160772/amid-data-controversy-nsa-builds-its-biggest-data-farm> ; estimates are available on-line: <https://apps.opendatacity.de/stasi-vs-nsa/francais.html>). Of course, these are mere estimates, as it is impossible to know the exact extent of NSA surveillance, therefore there can be no foolproof scientific methodology to calculate them. However, such estimates are useful to give an order of scale.

that time. The GPS is supposed to calculate the quickest route to our destination, and of course, e-mail is much more time efficient than traditional mail. Furthermore, modern information technology, by overloading us with information, has turned our capacity for attention into a scarce resource. Therefore, marketers are competing more and more for consumer attention, and collect more and more personal data to customise services and target their advertisements better, in way that attracts individuals' attention (Rochelandet, 2010:48). This technocapitalistic relation to time is part of a digital imaginary of progress and growth. EU2020, the European Commission's official "strategy for growth", relies a lot on slogans such as "smart and inclusive growth" and hopes "disruptive technologies" emerging from the IT sector will boost growth. This is why, when one explores Horizon 2020 calls for European research funding, one will see that big data and the Internet of Things (which allows the ubiquitous and permanent collection of even more data) are the two hegemonous themes in the Information and Communication Technology Call (European Commission, 2015).

As we can thus see, Privacy and data governmentality have all to do with Degrowth, and I also believe that Degrowth theory can help frame the debate in such fashion that it can pave the way for exit strategy from a digital imaginary reinforcing this type of governmentality. In this paper, I will first explore the manner in which technology is framed in Degrowth literature. I will then proceed in proposing a more detailed analysis of Privacy in a technocapitalist context, before exploring how, together with work inspired in large part by Sébastien Broca's work on the Free software movement, I will explore ideas on how to propose both an alternative to the technocapitalist discourse and practice of data and information technology that can be compatible with the idea of Ivan Illich's call for a *convivial* society (Illich, 1973).

A final methodological element that should be noted is that this article departs from the usual academic prescription that research should adopt an axiologically neutral stance, for indeed it was written based on the assumption – that I personally share – that Degrowth is desirable.

1. Degrowth and Information and Communication Technologies (ICT)

Besides including a few background references such as Jacques Ellul's *Le système technicien* (2004 [1977]), the elements contained in this paragraph are based mainly on the analysis of the topics discussed in a special issue of a French peer-reviewed publication called *Entropia* dedicated to "Degrowth and Technique", published in 2007.

To people discovering Degrowth theory for the first time, it may come as a surprise to read that "Degrowth thought is not technophobe" (Dias, 2007:31), especially as some Degrowth theorists use the word "technophiles" (Cochet, 2007) to describe proponents of the technocapitalist imaginary they oppose. Degrowth does not in fact reject technical artefacts as a whole, but it invites us to distrust technology, which is seen as a self-reinforcing system of beliefs: "the technological spirit substitutes, to the tedious reflection on the limits of human actions from which technical inventions are born, the exploration of infinite possibilities offered by the Reason of technic" (Dias, 2007:32). As we can see from this quote, Degrowth leaves room for alternatives. For instance, Alain Gras, in *Entropia*, calls for the use of non-thermic techniques to replace thermal techniques in energy production, in what he calls the comeback of water over fire, reminding us that past technical choices are always open to be challenged (Gras, 2007). There is also the notion that technical systems need not be centralised and authoritarian, but may also be convivial, as can be read for example on various Degrowth related blogs⁵. Technology can for instance be high tech or low tech, centralised or decentralised, and so on. Finally, Ivan Illich (1974) reminds us technical progress can reach a state of *counterproductivity*, which means that the continuing evolution of a

5 For example: <http://www.degrowth.de/en/2014/06/technology-beyond-growth-the-role-of-technology-in-the-postgrowth-economy/>

technical system or artefact ends up decreasing the social value of the invention. A typical example is that the development of personal cars has reached a stage where traffic jams and resources spent maintaining an individual car supersede its value for the consumer, or, at the very least, is far from fulfilling its intended promise of autonomy, mobility and time saving.

As a summary, the discussion on technology led by Degrowth authors is framed by these three elements:

1. Degrowth does not see itself as being technophobic, or against technique as such, but distinguishes between desirable and undesirable technical artefacts and systems;
2. Degrowth admits that beyond a certain stage of evolution (or progress), technologies can become counterproductive to the social need from which they arose;
3. Degrowth criticises the technical system and technological imaginary fueling it, because it is seen as a self-reinforcing dynamic where technology is being developed following reasons internal to its own unsubordinated process instead of it arising from a reflection on social needs. This element in particular makes technology potentially destructive for both nature and mankind it supports.

Against this background, reading the 16 articles of *Entropia's* special issue on technology shows that, besides the general theoretic aspects listed above (Dias, 2007) (Singleton, 2007) (Besson-Girard, 2007) (Dubey, 2007) (Ariès, 2007) (Garcia, 2007) (Lannoye, 2007), topics of interest for Degrowth authors include: energy (Gras, 2007) (Bourg, 2007) (Cochet, 2007) (Dobigny, 2007) (Lannoye, 2007), agriculture and biotechnologies (Venturini, 2007) (Testard, 2007) (Lannoye, 2007), and to a lesser extent work relations in a digital society (Flipo, 2007), law enforcement (Dubey, 2007), transportation (Charbonneau, 2007), waste (Flipo, 2007) and the enigma of digitalisation (Bourg, 2007) (Flipo, 2007) (Duclos and Koster, 2007).

The latter topic, the enigma of digitalisation, is of closer interest to this paper's topic. The enigma is based on yet another paradox related to ICT:

- On the one hand, technology is often presented as a tool for emancipation, freedom of information, and also, dematerialisation: in the virtual space, we tend to forget the materiality of digital infrastructures;
- Yet, while digital supports may allow for a lesser use of paper – using electronic documents instead – or of transportation – using cyberconferences instead – one must not forget the material impact of digital infrastructure on the environment:
 - In 2003 already, 7% of the total consumption of electricity in Germany was related to ICT infrastructure (Cremer and Eichhammer, 2003, quoted by Flipo, 2007:68);
 - In 2014, about 41, 8 millions of tons of electronic waste was produced, among which 6,5 millions of tons were reportedly treated by national take-back systems. Between 2010 and 2014, the global average of amount of often highly toxic electronic waste generated per inhabitant per year rose from 5 kg/year/inhabitant to 5.9 kg/year/inhabitant, that is to say, about 20% (Baldé, Wang, Kuehr and Huisman, 2015)

Displayed as such, the enigma of digitalisation is no longer an enigma: virtualisation and digitalisation are just hiding the true material imprint of ICT on the environment. Yet Alexandre Duclos and Raphaël Koster (2007) would partially disagree with such a simplistic approach, as they add in their article another layer to the enigma. They based their article on a study of users of *Second Life*, a massively multiplayer online role playing game (MMORPG) where users can literally have a second, albeit virtual life. Using the software, users engage in a game that mimics the economic game of “real life”, and seek virtual profits counted in Linden dollars that can be converted into “real life” money. Economic activities pursuing Growth constitute a game with dramatic consequences on the environment if played out in real life. But what if we were to transfer “this “frenzy” (“*frénésie*” in the French text) of growth into virtual realities? This, according to

Alexandre Duclos and Raphaël Koster, would have a significantly lesser impact on the environment than keeping on with playing this growth game “in real life”. Of course, this idea, which relies heavily on virtualisation as a solution to environmental issues, may not be mainstream among Degrowth authors, but it did make it past the review process of *Entropia*, and should therefore be taken into account when considering the way in which Degrowth debates the enigma of virtualisation and digitalisation among its supporters.

Before moving on to criticise, using the theoretic framework briefly described in this paragraph, the technocapitalist imaginery surrounding and justifying surveillance, it may worth pointing out the absence, in all the analysed literature, of any reference to the notion of privacy or personal data. The only link to such topics may be found in a reference to Daniel Bigo's work on surveillance in Gérard Dubey's article (Dubey, 2007:85).

2. Analysing the technocapitalist imaginery of surveillance

The decolonisation of our imagineries is one of the main priorities of Degrowth political action, as growth has become a hegemonic ideology across the globe. In the technocapitalistic world we live in, information has become the basis of a new cycle of capital accumulation, based on a new socio-technical paradigm, that of the informational society (Castells, 1996). In this paradigm, technology acts on information, whereas before, only the reciprocal was true. Information technology is ubiquitous, has a flexible network morphology and is characterised by the convergence between formerly separate technical subsystems such as information technology, biotechnology and nanotechnology (Castells, 1996). Information thus becomes a good, and so does personal information. Indeed, personal information is now an important asset to know more about a target population, such as consumers. It gives the person detaining the information and capable of analysing it information on the population, so that it can control it, for instance through the captation of individuals' attention in a context where individual attention (for example to an advertisement) is scarce and demand for attention growing (Rochelandet, 2010). A new market has emerged for the trading of personal data, and the merchandisation of personal data and of the quantified self appears as the continuation of the Great Transformation identified by Karl Polányi (1983 [1944]).

As was discussed in the introduction, contemporary technical devices and software are configured in a way inciting us to provide ever more information about ourselves (Carré and Panico, 2011). Now, wearable devices and other sorts of devices pertaining to the universe of the “Internet of Things”, heavily funded under Horizon 2020 European grants for research and innovation, will be able to collect data with even less user control, and even more ubiquity. Such data is becoming increasingly centralised: whereas the Internet was invented, as opposed to old Teletext or Minitel (X.25 protocol based) services to “put the intelligence at the periphery”⁶ with a lot of peer-to-peer services, Cloud Computing introduced a trend where data is more and more likely to be stored in central data centers and accessed through Web or smartphone applications. For example, we use Gmail and Hotmail instead of e-mail clients or instead of running our own e-mail servers. Applications such as Office 365 and Google Docs incite users to put all their documents online and edit them through a Web application, instead of storing them on their own computers. This makes users loose control over their data, including personal data. And this data can be used to spy on its subjects: for example, in France, Allianz has started selling car insurance deals with discounts for “good drivers”, called “Allianz Conduite Connectée”. In this example, the driver sets up a box manufactured by TomTom that tracks his driving behaviour and sends this data to the insurer. Based upon an algorithmic evaluation of this behaviour, the driver may then get up to a

6 In the words of Benjamin Bayart, president of French Data Network, a French civil organisation providing Internet access services based on the principles of Free software. Here is the link to one of his conference on the political importance of changes to the architecture of the Internet: <http://www.fdn.fr/internet-libre-ou-minitel-2.html>

30% discount on insurance prices⁷. This latter example is a prime example of day-to-day data governmentality, where code is law, and where this new type of law is not even publicly available to the knowledge of the citizens, since source codes are more often than not protected under copyright laws. In France, the General Direction of Public Finances (DGFIP) has blocked initiatives by NGO's such as Free software proponent APRIL, the Commission of Access to Administrative Documents (CADA, 2015) and even the Secretary of State for the Digital Economy Axelle Lemaire to publish the source code of software calculating citizens' taxes⁸. This software is supposed to be the strict transposition into code of legislative measures, but if nobody can have access to it, how can one be sure that the government is not cheating in one way or another? How can one know, even if no cheating is involved, that there are no errors in the code?

The discourse on Big Data and the Internet of Things has very obviously reached the point of counterproductivity in many domains. For example, there are now electronic toothbrushes that upload your tooth brushing data into a central database owned by the producer of the brush. Such a product will produce electronic waste, increase data flows and energy consumption for no obvious purpose, except for the fact that it is now possible to spy on people's dental hygiene habits. Of course, that aspect is hidden by the marketing discourse attempting to create the economic demand for this product: for example, Kolibree promises to be “the Best Interactive Electric Toothbrush with App”, turning “tooth brushing into a game, [educating] kids and [empowering] parents”⁹.

Big Data is defined by the three V's: Velocity, Variety and Volume. It is the quick analysis of vast amounts of heterogeneous data through automated or at least semi-automated processes (Laney, 2001). It is often presented as a way to achieve sustainable development, a term heavily criticised in itself by Degrowth literature studied in the previous paragraph of this paper. Connected electricity meters, such as the one sold in France under the name “Linky”, is supposed to offer the following benefits: “Linky is not just an electricity meter. As well as providing accurate meter readings, it can perform remote operations, such as measuring the consumption and production of electricity, or resolving accidental outages. Linky also helps to control electricity consumption.”¹⁰. The trade-off, of course, is privacy, but also security, since it will make electric infrastructure open to cyberattacks. But the marketing presentation of Big Data is often shown as “paving the way to green, sustainable, inclusive smart growth”, or a variation thereof, and this promise legitimises privacy sacrifices made by citizens. The green argument is here clearly used to legitimise bulk collection of citizens' private and often sensitive data.

One must also not believe that there is a real distinction between private data collected for private (commercial) purposes, and State surveillance (Lyon, 2015). The Snowden revelations have shown that programs such as PRISM allow intelligence agencies to tap massively into private databases. There is even sociologic proximity between top executives of communications

7 More information is available on the insurance company's website: <https://www.allianz.fr/assurances-particuliers/mon-vehicule/assurer-ma-voiture/service-conduite-connectee/> (last accessed on January 16th, 2016)

8 This is one of the conclusions from research on the pre-legislative process on the Bill for a Digital Republic (Projet de loi pour une république numérique) presented by Axelle Lemaire to the Parliament on December 9th, 2015 to the French Parliament. The original leaked document contained provisions to include source code in the list of documents of public interest (in art. 3 of the August 2015 version) that must be opened by public bureaucracies, but these provisions were later excluded, but this provision didn't make it to the public consultation phase as it was erased from the Bill project some time between August and the end of September. Part of the research on this is based participatory research, as part the APRIL, conducted in the frame of a doctoral research for the COSTECH research lab of the University of Technology of Compiègne. Other interesting results on the creation process of this Bill can be reached on the website of a Hackathon organised by a consortium of university research groups and NGO's on Dec. 12th, 2015, analysing data from a web consultation platform on this Bill: <https://git.framasoft.org/c24b/republique-numerique/wikis/home>

9 Quotes from Kolibree's official website, accessed on January 15th, 2016: <http://www.kolibree.com/en/>

10 Quotes from the official website of Electricité Réseaux Distribution de France (ERDF), accessed on January 15th, 2016: <http://www.erdf.fr/linky-communicating-meter>

corporations and the transgovernmental network of security and intelligence (see: Lyon, 2015 and Bigo, 2005). Furthermore, privacy is more often than not framed as being opposed to security (Epstein, Roth and Baumer, 2014), and events such as recent terror attacks are used as a justification for ever more invasive laws and intelligence practices on the population, thereby sacrificing privacy. Let us remember, as the ECHR recently reminded us, that mass surveillance does not happen only in the United States, but is also present in European countries. While Hungary has been recently condemned by the Strasbourg Court (ECHR, 2016), other countries, such as France, which recently adopted a law granting sweeping powers to its intelligence agencies, or the United Kingdom, with GCHQ's Tempora program, are also implementing mass electronic surveillance technology.

Yet not only is digitalisation seen as a way towards environmentally friendly growth, it is also seen by many as the ultimate solution for citizen participation and the renewal of democracy¹¹. On Nov. 5th, 2015, Frédéric Lefebvre, a French right-wing deputy, from Nicolas Sarkozy's political party *Les Républicains*, organised a conference on the renewal of democracy through digital means in the building of the French National Assembly. The title of the seminar was, in French “Premières assises parlementaires de la Démocratie Digitale : Internet, une arme pour la démocratie”, which roughly translates into “First Parliamentary Seminar on Digital Democracy: Internet, a Weapon for Democracy”¹². As an organiser of this event, he saluted the efforts by the Socialist cabinet to improve consultation with citizens through digital means, citing as a positive example the website “République Numérique.fr” where citizens could vote, amend and debate the contents of a bill on digital rights drafted by the Secretary of State for the Digital Economy Axelle Lemaire. A wide variety of guests and lecturers were there, from Taiwanese open data activist and developer Audrey Tang to Anton'Maria Battesti representing Facebook or Wala Kasmi, a young Tunisian activist who took part in the Tunisian revolution. What united all these people was the shared belief in the possibility for Internet to offer solutions to decreasing participation by citizens in democratic processes such as elections. Some were also there to advance marketing strategies, such as GOV, which proposes a smartphone App allowing people to debate using 140 characters and to vote on politicians or on proposals. Their self-revealed ambition is to become the “Facebook of politics”. But what of privacy and surveillance issues? Those were not discussed. Bazille, a young French political party pledging, if elected, to vote in Parliament as the users of their eponymous application tell them to, were also present. What they want to do, in their own words, is to “short-circuit representative democracy”. Two significant issues were absent from the discussion on digital democracy: surveillance, and content, for nobody tried to challenge the idea that “There Is No Alternative”, proposing a new narrative capable of engaging with citizens' imaginaries and create a dynamic for a constructive social project that can be an alternative to the current imaginary of austerity and recession.

As a conclusion, the technocapitalist imaginary proposes a tale where ICT, especially Big Data and the Internet of Things, is about to bring “smart and inclusive green growth” and real direct democracy, whereas in fact, it reinforces a type of governmentality that stifles dissent and promotes a mechanical vision of human beings, in which transhumanists see humans as brains and brains as computers (Searle, 1980 and Besnier, 2013).

3. Exploring alternative discourses and practices: the case of Free Software and Degrowth

Data protection laws are a tool that helps counteract part of the tendencies towards pervasive surveillance, but it is not sufficient (Lyon, 2015), especially considering the fact that one of the principles these laws heavily rely on – anonymisation – is a myth that is usually impossible to

11 This “Net Delusion” or “Google Doctrine” is further analysed in a very critical fashion by Evgeny Morozov (2012)

12 The Facebook event of this conference can still be accessed on-line (last accessed on January 15th, 2016): <https://www.facebook.com/events/177416365931680>

achieve from a technical point of view (see Ohm, 2010 for the general demonstration of this impossibility, and Rossi, 2015, for further research on how that applies to research data). Besides, data protection legislation requires a type of bureaucracy that, especially for compliance with data security principles prescribed for example by art. 17 of Data Protection Directive 95/46/EC, is strongly hierarchic and procedural (Meits, 2009:260), and therefore its logic isn't foreign to the movement of bureaucratisation and centralisation of power.

At first, from the end of the 1950's until about the end of the 1960, according to Fred Turner's research (Turner, 2006), the New Left and Free Speech movements pictured and opposed computers that were huge centralised machines reinforcing bureaucratic processes, and that were the produce of the military-industrial complex they so despised. Yet at the same time, another movement often confused with the New Left, born from the hippie and communalist counterculture, started becoming interested in computers as a tool for emancipation. The Declaration of Independence of Cyberspace by John Barlow (1996), that Fred Turner (2006) anchors in this counterculture from the 1960's genealogically, begins with: "Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, *the new home of Mind*. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather." (Barlow, 1996). Computers would allow the free flow of information, and destroy hierarchies, but also bring about Cyberspace, a new type of global consciousness¹³. People like Steve Jobs are often portrayed as having been part of such a movement. Here is not the place to go into the details of how digital utopias were born, but it is important to remember its origins in one part of the 1960's Left, the same time as when the first politically organised green movements were born. This context explains, perhaps, and at least in part, why so few critical thought has been directed towards ICT and Internet utopias from the radical left and from Degrowth authors.

Ivan Illich's notion of a *convivial* society seems antithetic with the idea of a quantified self, with Panoptical social discipline, and with the counterproductive development of ubiquitous computing involving myriads of tiny connected devices for which, often, no practical social use has been defined, but instead follow a technological self-reinforcing logic that was denounced notably by Jacques Ellul and dubbed the *technical system*. Whereas not all Big Data discourses include a transhumanist dimension, it is worth mentioning that Big Data is not entirely disconnected from discourses on augmented reality (see the development of technology like Google Glass or Oculu Rift), a first step towards "transcending" human nature according to some. From an environmental point of view, the more we become reliant on digital connected artifacts, the more e-waste is bound to be produced, and the more energy consuming data centres we will have, for reasons sometimes as trivial as brushing our teeth or letting an insurance company spy on our driving.

As was recalled in the first part of this paper, Degrowth does not perceive itself as technophobic, but it calls for technics to be reincorporated into broader social activities and goals, instead of following its own technologic logic. Sébastien Broca's in-depth study on the Free software (2013) movement brings to our attention interesting elements in the light of this paper's topic. Free software is defined famously by Richard Stallman by four liberties:

- “0. The freedom to run the program as you wish, for any purpose (freedom 0).
1. The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
2. The freedom to redistribute copies so you can help your neighbor (freedom 2).
3. The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access

to the source code is a precondition for this.”¹⁴

Free software is considered by a Sébastien Broca a “concrete utopia”, an utopia defined largely by *praxis* rather than by mere theory (Broca, 2013). An utopia is defined by him in a way similar to Karl Mannheim (2006 [1929]): it is a meaningful political discourse capable of challenging a set order enforced by a hegemonic ideology. What makes Free software so concrete is that not only does it advocate, via classical political advocacy strategies implemented by actors such as the Free Software Foundation or APRIL in France, not only does it want to see certain legislative evolutions, but it has also developed an ecosystem of software that fulfils its goals. The whole GNU/Linux ecosystem is based on these ideals, and so is to a large extent the Mozilla web browser, and many building blocks of the Internet such as (OpenSSL and BIND are prime examples of such crucial free software fundamental to the functioning of the Internet). Proponents of Free software also advocate self-hosting, with NGO's supporting such activities such as, in France, the Network of Free and Independent Webhosts (the RHIEN, now defunct) or the non-profit Internet Service Provider French Data Network (FDN). FDN also advocates the decentralisation of the Internet¹⁵.

The interesting – but also, in a way, the most controversial – aspect of Free Software is that it had the ability to create momentum, to generate dynamics favouring against all commercial, ideologic and economic odds, its spreading across society. Many aspects of the Internet (net neutrality, decentralisation, interoperability) are the produce of free softwares making it run. More and more users use Free technologies without always realising it: for example, TomTom Go GPS's run on a GNU/Linux operating system. Android phones are also based on the Linux kernel. Of course, once co-opted, free software becomes part of the technocapitalist ecosystem, which explains Richard Stallman's criticism of companies like Ubuntu, which profess faith in Free software, but also spy on their users if it suits their needs¹⁶. Yet a major difference between free software, even co-opted by technocapitalist logics, is that because at least part of he source code remains available for review to all, it is much easier to detect intentional spyware than with proprietary, closed software and operating like Microsoft Windows and Apple iOS. Decentralisation is also a key aspect helping fight centralisation of data and thus surveillance.

The invention of the copyleft¹⁷ contributes to this dynamic. Described as a hack of copyright law, its principle is that it is included in free licenses, such as the GNU General Public License or the Creative Commons Share Alike category of licenses, and that it forces its user to release any modification he makes to the existing work under similar conditions. This has served as protection against abusive re-use of free software by companies, such as was the case originally with Dutch GPS producer Tomtom B.V., who used free software but did not share it under the same conditions (Civil Action No. 01-11031, introduced on the 15th of June 2001 at the Federal Court in Massachussets, quoted by Van Holst, Soek, Sujecki and Visser, 2005:184).

A key illustration, perhaps, of how Free software can be analysed as convergent with the conviviality aspect of Degrowth, is this excerpt of the movement's anthem sung by Richard Stallman at the end of each of his conferences:

“Hoarders can get piles of money,
That is true, hackers, that is true.
But they cannot help their neighbors;

14 From „What is Free Software” on the GNU Operating System's website, sponsored by the Free Software Foundation: <http://www.gnu.org/philosophy/free-sw.en.html> . Retrieved on January 14th, 2016

15 For more information on their advocacy of a decentralised Internet, see Benjamin Bayart's conferences available on-line: <http://www.fdn.fr/internet-libre-ou-minitel-2.html>

16 See Richard Stallman's blog note on the GNU Operating System's website: <http://www.gnu.org/philosophy/ubuntu-spyware.en.html>

17 See “What is Copyleft” on the GNU Operating System's website: <http://www.gnu.org/licenses/copyleft.en.html>

That's not good, hackers, that's not good.”¹⁸

Finally, Free software is not a source of revenue by itself. Revenue is generated through services, like maintenance and training, around free software. This is also an interesting element to explore from the point of view of social resubordination of technical production into society. Main motivations for free software developers can be fun or the need to fulfill a given use (Broca, 2013). Because of this relation to work and production, Free software also appears as a proponent of universal revenue (Broca, 2013). It therefore proposes a discourse and imaginary of ICT that is an alternative to the technocapitalist discourse on Big Data legitimising and enforcing data surveillance governmentality.

There is nevertheless a risk for Free software to be subordinated to technocapitalist logics. Indeed, the *Open Source* movement advocates the same practices as those of Free Software activists, the same four liberties and the same approach to software development... but for radically different reasons. Indeed, they view these managerial techniques as a better way to do technological innovation, not as a new way of rethinking the relation between humans and technique. This difference in framing is significant. For example, whereas French NGO APRIL lobbied for provisions on encouraging free software to be included in a French Bill debated by the National Assembly in January 2016¹⁹, because they view it as a way to ensure ICT is subordinated to social needs and human rights, Axelle Lemaire, minister in charge of the digital economy, and several members of Parliament argued in favour of open source... because it represents a market of 4 billion euros in France²⁰. This tension between Free Software – which is incompatible with the technocapitalist imaginary – and Open Source is illustrated by the ongoing intellectual conflict between Richard Stallman, founder of the Free Software Foundation, and Linus Torvalds, inventor of the Linux kernel and long time proponent of Open Source.

As pointed out by Sébastien Broca himself, informational commons (such as free softwares) may be exploited by corporations that thereby alienate free software developers from their own work (Broca, 2013:226). This happens for instance when Google uses Linux as the kernel of its Android operating system. Even if it ensures Google's contribution to Linux, it also uses Linux to draw more profit by incorporating it into an operating system playing an important role in world-wide dataveillance, and of which only the kernel remains free. This “general intellect” that is shared by proponents and developers of free software can become enclosed in a new sort of way. Contributions made freely by communities of hackers become incorporated in corporate profits as some sort of new type of overwork²¹ (Broca, 2013:236).

Other obstacles and sources of criticism remain. For instance, the ability to use, modify and share free software (or free hardware) is constrained by time and technical knowledge (Broca, 2013:161). This is not helped by the existence of a paradox, in the Free software movement, between the will to democratise the human and citizen appropriation of technology in a convivial way, and some forms of elitist social practices (Broca, 2013:163).

A final matter is that just because a piece of software is Free (as in Free Software, not the price), does not mean that it is respectful of human rights, among which privacy. But unlike what happens with proprietary software, one – for example an NGO – can audit the code, and modify it

18 “The Free Software Song”, by Richard Stallman, on the GNU Operating System's website: <http://www.gnu.org/music/free-software-song.html>

19 Projet de loi pour une République numérique

20 See the debate on January 13th at the National Assembly's Standing Committee on Constitutional Acts, Legislation and General Administration, available on-line on the National Assembly's website: http://videos.assemblee-nationale.fr/video.3535597_56968097b935b.commission-des-lois--republique-numerique-13-janvier-2016

21 Overwork is described in marxist theory as the added value generated by technical innovation, as workers become more productive but still work the same amount of hours and get paid the same wages

to make it comply with such principles.

This does not change, however, the fact that Free Software, but indeed not Open Source, seems indeed compatible with the frame set by Degrowth theory on human-technology relations. And by opening up the black box of technology, now still largely protected by centrally kept industrial and state secrets, it allows communities to reshape existing techniques according to their own needs, and to exercise better democratic oversight.

Also, and perhaps most importantly, from a methodological perspective, the transformative effects of Free Software on the digital ecosystem is interesting as a study topic. Indeed, whereas it hasn't entirely "freed" ICT, free software has managed to produce an almost complete software ecosystem along its political principles, to a degree where their methods (open source style development) and some of their principles are core elements of key technologies such as the Web and the Internet in general, or individual products like the Canonical's Ubuntu or Tomtom's GPS's. Hypothetically, I posit that the copyleft mechanism, as a "system hack", is the key factor explaining this phenomenon, but it would deserve further in-depth research. If confirmed, then the exploration of key elements, such as here copyright law, enabling what an activist group sees as an unfavourable social dynamic (the alienation of software and ICT from its users), in order to invent hacks changing the course of this dynamic, would be an interesting method and standpoint to adopt generally speaking in the Degrowth movement.

Conclusions

Privacy seems an under-represented topic in Degrowth literature. This paper hasn't been able to present privacy in its many aspects: historical, philosophical, economic... But as we have seen, some key aspects of the privacy problem, especially those revolving around data surveillance governmentality and the imaginary of Big Data, are topics that are directly connected to Degrowth topics such as conviviality, counterproductivity, and the criticism of technological Reason. Furthermore, tackling data governmentality should be a priority, given how it reinforces reliance on environmentally destructive artefacts, and also stifles dissent across societies. Studying the Free Software movement – that is to be distinguished from Open Source – from a Degrowth perspective is therefore interesting for two reasons at least. The first one is that it proposes an alternative imaginary that appears at least after a first, cursive analysis, as compatible with Degrowth. The second one is that its unique method and activist practices, those of a "concrete" and "hacker" utopia (Broca, 2013), could offer interesting tools and concepts for the use of Degrowth activists.

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