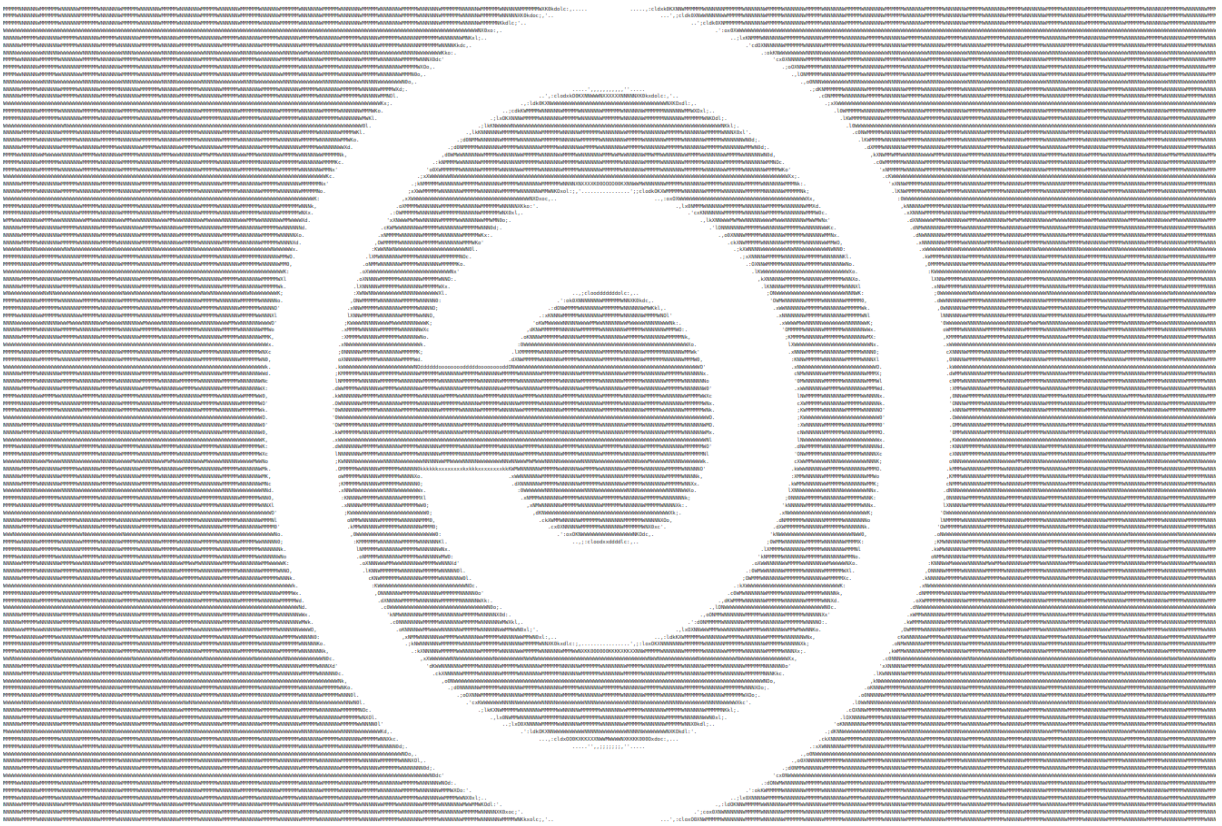
DIGITAL COMMONS

Cyber-commoners, peer producers and the project of a post-capitalist transition



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HETEROPOLITICS

Refiguring the Common and the Political

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REPORT 3

DIGITAL COMMONS

Cyber-commoners, peer producers and the project of a post-capitalist transition

Introduction

Research aims & rationale

The aim of *Heteropolitics* is to engage in theoretical reflection on the concept of *the political* in tandem with that of *community*. Why are we interested in these concepts? In the space of the last three decades, the notion of what a community is has been largely redefined by the emergence of a new type of communities on the Internet. Unlike the location-based communities that predated the modern mediascape, the communities homesteading the virtual frontier are distributed across space. Their members communicate and coordinate their activities through the Internet and so their physical whereabouts can be anywhere in the 'real world.' Liberated from the geographical constraints of the past, the members of online communities are typically scattered all over the planet, connected only by the strands of the Internet. Consequently, communities of that kind are *virtual* in the sense that participation in them is mediated through electronic devices like Internet-enabled personal computers and mobile phones.

One of the most interesting things about online communities is how they manage their common affairs. A point consistently raised by early studies of communities in cyberspace is that they develop their own autonomous structures and institutions of governance, which, in the majority of cases, are based on direct-democratic and anti-hierarchical models (e.g. Rheingold 1993). Bluntly, when they need to make a decision, they do it collectively based on the direct participation of all members, without anyone having the authority to tell others what to do. Subsequent studies, especially those that focused on online communities of free/open-source software (FOSS) developers and users, pointed out that they are also characterized by an alternative mode of production and property, which is diametrically opposed to the principles governing the dominant system of commodity production (e.g. Benkler 2002a, Raymond 1999, Weber 2005). As these studies remarked, communities of FOSS developers are actively engaged in the production of *the digital commons,* that is, they are the creators of shareable goods (like software that anyone can freely download and use), which community members produce and manage collectively. In so doing, commons-producing cyber-communities are paradigmatic of a new mode of production, which theorists of the digital commons define as 'commons-based peer production.' Evolving rapidly, this mode of production, they claim, has the potential to transcend capitalism, becoming thus the base of a new post-capitalist society (e.g. Bauwens 2005; 2009; 2012, Bauwens et al. 2019).

Based on what we have said so far, it must be obvious that commons-producing communities on the Internet redefine not only the notion of what a community is, but also *the political*, understood as a deliberate process of social self-construction, self-management and collective debate over institutions and social relations (see *Report 1. The Political*). As we mentioned, communities of FOSS developers built their own institutions of governance from the ground up. Most importantly, the development of these institutions is not the work of a few enlightened individuals, but the result of collective debate over the kind of institutions and social relations that the community of FOSS developers and users deliberately wishes to create. As such, it is intrinsically political.

This is why this Report delves more deeply into the literature of the digital commons: it attempts to elucidate the way in which the communities spearheading the development of the digital commons are constitutive of an alternative paradigm for the organization of economic, social and political life, which is claimed to have the potential to change the world.

The main argument in this Report reflects in a sense the trajectory of development of the digital commons literature over time. Its epicentre is the thesis that the digital commons are paradigmatic of a mode of production that has the potential to become dominant in the digital economy, paving thus the way for the institution of a new post-capitalist society. To probe into this thesis, the Report reviews the development of the literature on the digital commons over time. To begin with, it traces the origins of that thesis in the pioneering work of Yochai Benkler (2002a; 2002b; 2006) which, in a sense, represents the birth of this literature field. The concept of 'commons-based peer production' appears for the first time in a 2002 article by Benkler, as well as the thesis that 'peer production' –which is how Benkler defines the mode of production characteristic of the digital commons– has the potential to hegemonize the digital economy. Our discussion of Benkler's work brings to light the historical conditions underlying it: the growing visibility of the phenomenon of distributed free/open-source software development on the Internet by online communities. To put it simply, what Benkler theorized as a new mode of production, governance and property, which can antagonize the capitalist mode of production, is the community-driven development model of free/open-source software.

Subsequently, the Review looks at how Benkler's thesis evolved over time. It discusses how it was radicalized through the work of Project Oekonux and Michel Bauwens/P2P Foundation. Both Oekonux and Bauwens 'gave teeth' to Benkler's thesis. By laying emphasis on the 'transcendent' character of peer production, they argued that it has the potential to usher in a post-capitalist society organized on the basis of the principles of the commons. In a nutshell, they both argued that peer production holds a revolutionary promise, forming the seed of a new mode of production that has the potential to become the organizational model of a post-capitalist society.

To elucidate the assumptions on which their argument rests, the Review delves deeply into the analysis by which both Oekonux and Bauwens/P2P Foundation substantiate

their expanded thesis. This, as the Report clearly shows, is basically an analysis of the transformative effects of distributed networks and peer production on the economy. It is an analysis of how commoners and peer producers antagonize the capitalists in the economic field, which underscores their potential to become the leading force in the digital economy. But from this point on, their analysis shades into a crude theory of techno-economic determinism. Oekonux and Bauwens assume that the hegemony of peer producers in the economy will spiral into the realm of social and political life. They argue that the economic leadership of peer producers will translate into social and political leadership, as their domination over the economic base of society will (somehow) provide them with the means to remold political institutions and shape them anew. That is, in a way, a logical leap that, as we point out in the Report, the theorists of peer production eventually came face-to-face with.

Thus, in contrast to their prior work, the recent work of Bauwens and his colleagues at the P2P Foundation is characterized by a rejection of crudely deterministic theories of social change that downplay the centrality of political struggle in the transition process to a new social order (see e.g. Bauwens et al. 2019). This signals an important *political turn* in peer production theory, which enriches the theory and expands its scope. In a sense, the emphasis on the political turns peer production theory into a weapon of political struggle. This is reflected in the concept of the 'partner state' (Bauwens et al. 2019), which has evolved into a full-fledged strategy for taking over the machinery of the State. The Report discusses how the partner state strategy has been re-conceptualized on the basis of the experience of citizen platforms like Barcelona en Comú. In the recent work of digital commons theorists, the partner state is synonymous with citizen platforms, which unite a large part of civil society around a commons agenda and run for public office with the aim of taking over the administrative apparatus of the State at city-level.

In the concluding sections (3.4.1.-3.4.3), we reflect on the findings of this Report. Our main argument is that the political turn of peer production theorists to what is basically a hegemonic strategy for taking over the local State has indeed the potential to strengthen the struggle of commoners against the hegemony of Capital in the realm of systemic political institutions. It is a step in the right direction: commoners must act politically. Their struggle is not only economic, but also political. In that respect, the conclusions of this Report give support to peer production theorists' revamped strategy: the economic struggle of the commoners and peer producers must be reinforced by their political praxis. However, despite its strengths, this strategy has one major weakness: it remains entrapped in the politics of hegemony. That is to say, the main weakness of the partner state strategy rests on the absence of a post-hegemonic vision that could serve as a roadmap for the transformation of state structures in accordance with the principles of the commons and peer production. In its present form, the proposed strategy of Bauwens et al. does not deal sufficiently with the question of what is to be done once the objective of the occupation of the administrative apparatus of the city has been attained. This question could be addressed by a post-hegemonic strategy focusing on the transformation of state power through open, collective and horizontal processes, which

effectively distribute the capacity of participation in decision-making across the entire community, thereby democratizing it (See *Report 1. The Political*, sections 1.16-1.27). In short, the task of a post-hegemonic strategy would be to make state power a kind of commons: a resource shared by all community members, who collectively define the terms of its sharing. Viewed from that perspective, the real promise that lies at the heart of the commoners' struggle in the political field is not the occupation of state power, but its transformation into a commons.

As the readers of the reports authored by the Heteropolitics project can see, there is a considerable overlap between this Report and *Report 2. The Common* (see particularly *Report 2. The Common*, chapter 2.3). They both share the same interest in the compelling argument made in the literature of the digital commons about the transformative potential of peer production. Most importantly, they arrive at the same conclusions with regard to the updated strategy proposed by Bauwens et al. Both reports support the view that it can be a valuable tool in the political struggle of the commoners, provided that it is reinforced by a post-hegemonic strategy focusing on the transformation of state power through open, collective and horizontal processes.

Aside, however, from highlighting the political turn of peer production theorists and drawing attention to the limitations of the hegemonic strategies which they champion, the content of the two reports differs remarkably. The review of the literature in this report in far more extensive and places more emphasis on the historical conditions underlying its specific trajectory of evolution. It brings to light the historical setting in which the development of this stream of the literature has been embedded. Furthermore, this Report discusses in greater detail the analysis by which peer production theorists substantiate their thesis that peer production has the potential to become the leading mode of production in the contemporary world. In short, this Report and *Report 2. The Common* come to the same conclusions about the updated strategy proposed by Bauwens and his fellow theorists. Their revamped strategy has strengths as well as limitations and both Reports highlight them. But the 'route' which the two reports follow to arrive at these conclusions is quite different. This will become more obvious as we proceed with our discussion of the relevant literature.

But before we proceed to that discussion, a few words on the methodology we followed in the context of the present study are in order now.

Research methodology

The present study is primarily based on the method of literature review. In order to collect all relevant contributions to the literature, we ran a search on Google Scholar (http://scholar.google.com) with the search terms *digital commons*, *peer production*, *politics*, *political*, and *community* on December 10, 2019 and consulted the first two hundred results returned by it. In order to ensure that non-academic contributions to the literature were not excluded, we repeated this process by using the popular Google search engine (http://google.com). Again, we consulted the first two hundred results returned by our search query. Another source of data collection was the author's personal archive, which includes more than five thousand papers published in various

academic journals since 1997 as well as an extensive collection of unpublished manuscripts by more than a hundred authors.

The methodology also has certain characteristics of participant observation, as several sections of the Report are based on my own personal experiences. A large part of section 3 –in specific, the discussion of Project Oekonux (in section 3.1.3) and the P2P Foundation (in section 3.1.4)– is based on my firsthand knowledge of these projects, which both have played a key role in the development of the theory of commons-based peer production. I was actively engaged in the debates on the Oekonux mailing lists and participated in the conferences that Oekonux organized from 2002 until 2013, and so the discussion of that project in section 3.1.3 draws largely on my recollections. The same applies to the discussion related to Michel Bauwens and the P2P Foundation, which occupies a central role in sections 3.1–3.4. I have personally known Michel Bauwens since 2002, whose acquaintance I made at the 2nd Oekonux conference[1] and with whom I have a long-standing friendship forged by our collaboration over time. We have collaborated professionally on several occasions. I was a member of the group of researchers that worked with him on the FLOK Society Project in Ecuador (2013-2014), whose significance is discussed in section 3.3.4. Moreover, I have been a research associate of the P2P Foundation for more than ten years, which means I have been involved in both its theoretical and activist work. I will not try to hide my sympathy for any of the above projects or my appreciation for their members. As a result, I cannot claim to be an unbiased observer. That said, I have tried my best to be as objective as is humanly possible of me in discussing their work from a perspective that is constructively critical.

We approached the analysis of this literature field from a historical perspective that is influenced by the methodological principles of Foucault's (2002) *Archaeology of Knowledge*. Following in Foucault's footsteps, we tried to bring to light the specific historical conditions underlying the emergence of the theses and arguments raised in the literature over time. Thus, the development of the theory of commons-based peer production in the 2000s, which forms the epicentre of section 3, is accounted for by the phenomenon of distributed free/open-source software development by online communities. In a similar fashion, the development of the theory of the partner state, which we discuss in sections 3.3.3–3.3.9 and 3.4.3, is connected to the ideological embrace of the commons by left-wing governments, such as Rafael Correa's Alianza PAIS in Ecuador. Likewise, the recent reformulation and the expansion of the scope of the partner state concept is largely attributed to the increasing visibility and popularity of the new municipalist movement, which is organized politically through citizen platforms like Barcelona en Comú (which governed the city of Barcelona from 2015 until 2019).

However, our analytical approach does not view the theses and the arguments made in the literature merely as descriptions or representations of the world, but as material practices acting upon it (Foucault 2002). The theories discussed in this Report have not yet been relegated to the pages of history books. On the contrary, we are talking about

[1] http://second.oekonux-conference.org, accessed 1/7/2020.

ideas that are alive and still evolving. In specific, what we are dealing with is the kind of ideas that captivate the imagination of real people, encouraging them to take action, especially political action. By mobilizing the humans of today, these ideas turn, as it were, into a material force for change in human history.

Needless to say, the valuation of ideas which have the potential to change the world is ultimately a matter of perspective. In this Report we look at them from the perspective of *Critical Theory*, which 'never aims simply at an increase of knowledge as such. Its goal is man's emancipation from slavery' (Horkheimer 1975: 246). That is to say, the theories of the digital commons and peer production discussed in this study were evaluated on the basis of their potential to expand the realm of human freedom and autonomy. But, of course, whether that potential will be realized is something that can only be determined by social struggles, the outcome of which, as we shall see in this Report, is anything but certain.

3. Digital commons

3.1. Paradigm shift

3.1.1. Introduction: the rise of the digital commons

The ‘commons’ is not something new. The concept has in fact been used for centuries to refer to natural resources, such as forests and fisheries, which are not owned privately, but are held in common. To put it simply, the commons are resources which are not owned or controlled by any private individual. Instead, they are freely accessible to all members of the surrounding local community, which self-manages those resources through its own institutions of governance. That is the case, for example, with communal grazing lands and open meadows, which have been a shareable resource for pastoralists around the world since antiquity. Until the end of the last century, that was essentially the type of resources that the concept of the commons encapsulated (see e.g. Ostrom 1990).

The coming of the new millennium, however, signaled the emergence of a new type of commons on the Internet, which are remarkably different from the traditional commons of nature. To begin with, the ‘new commons’ are *virtual*, which means that they can only be accessed through electronic devices like internet-enabled personal computers and mobile phones. Due to their digital form, which enables their reproduction at negligible cost, they are also ‘non-rival:’ that is, their ‘consumption by one person does not make them any less available for consumption by another’ (Benkler 2006: 36) and so they can be used over and over again without the fear of depletion of supply. Lastly, the digital commons are the fruit of the labour of communities which reside in cyberspace. In contrast to the environmental commons, which are typically managed by local (and usually small) communities, the digital commons are connected with online communities that can be truly huge with thousands of members all over the world (Schweik & English 2007).

In light of these differences, it is obvious that the digital commons diverge from the commons of nature in politically crucial respects (See *Report 2. The Common*, sections 2.2, 2.3). However, what, more than anything else, sets the digital commons *politically* apart from the traditional commons is their mode of production. According to the leading theorists of the digital commons, this mode of production –which they define as *commons-based peer production* (e.g. Bauwens 2009, Benkler 2006)– is antagonistic towards the capitalist mode of production, having in fact ‘the potential to succeed capitalism as the core value and organizational model of a post-capitalist society’ (Bauwens 2012). In specific, they claim that the mode of production of the digital commons is bound to expand and dominate the economy, paving thus the way for the institution of a new society (see, e.g., Bauwens 2005). From the perspective of the theory, then, the digital commons are nothing less than the foundation of a *new political project*.

In the next three sections (3.1.2–3.1.4) of the report, we will discuss the development of the theory of commons-based peer production in the work of the leading theorists of the

digital commons, giving particular emphasis on the underlying *project* of a post-capitalist society that pervades the more radical streams of the literature. So, let us start from the beginning.

3.1.2. The emergence of a new mode of production in cyberspace

The concept of commons-based peer production appears for the first time in 2002 in an article in the Yale Law Journal authored by Israeli-American law professor Yochai Benkler. In this piece, titled *Coase's Penguin or Linux and the Nature of the Firm*, Benkler (2002a) detects 'the broad and deep emergence of a new, third mode of production in the digitally networked environment,' which is distinct from both markets and firms, as neither the motivation of the participants, nor their coordination, depends on 'market prices or managerial commands.' To illustrate this new mode of production, which he defines as *commons-based peer production*, Benkler focuses on the development of free/open source software (FOSS) projects like the Linux operating system and the Apache web server. His analysis places special emphasis on two characteristics of these projects. The first is that the majority of contributors are volunteers mobilized by intrinsic motivations like 'the pleasure of creation' and self-fulfillment at work. Benkler does not deny that some participants are driven by the prospect of monetary rewards, yet he insists that the profit-motive is of secondary importance compared to 'hedonic and social-psychological rewards.' The other distinguishing feature of FOSS projects is their anti-hierarchical organizational structure: their production process is based on the self-selection of tasks by the participants, who coordinate their work without managers and bosses.

In any case, all that would be a matter of little importance, if FOSS was just a marginal phenomenon in the software industry. But, as Benkler (2002a: 371) remarks, 'what is happening in the software world' is actually the opposite: in fact, 'these volunteers...beat the largest and best financed business enterprises in the world at their own game.' Even though that may seem inexplicable at first sight, Benkler claims that it is accounted for by the fact that the rise of 'ubiquitous computer communications networks' has enabled a significant fraction of the world's population to become actively engaged in the production of information, knowledge and culture. Benkler analyzes the impact of these technologies from the perspective of Ronald Coase's economic theory of transaction costs. According to that theory, capitalist markets and hierarchical organizations are the two main institutional environments for coordinating the various tasks or stages of production. However, in the 'networked information economy,' as Benkler (2002a: 403) remarks, peer production emerges as a 'more cost-effective institutional form than either markets or hierarchical organizations.' As he explains, 'when the object of production is information or culture, and where the physical capital necessary for that production -computers and communications capabilities- is widely distributed instead of concentrated,' then the model of peer production has 'systematic advantages over markets and managerial hierarchies' (Benkler 2002b). Bluntly, the widespread availability of personal computers and Internet connections 'have, as a practical matter, placed the material means of information and cultural production in the hands of...a billion people around the globe' (Benkler 2006: 3). The mass diffusion of

the Internet, in particular, has made 'communication and information exchange across space and time...much cheaper and more efficient than ever before,' thereby permitting the coordination of geographically distributed groups of non-professional information/cultural producers and the aggregation of their individual contributions into 'usable end products' (Benkler 2002a: 404).

Most important of all, what we see happening in the sphere of software is bound to expand into every domain of the networked information economy. Although Benkler (2002a) illustrates the paradigm of peer production through the example of FOSS projects, he underlines at several points in that seminal paper that its application is not confined to the realm of software development. On the contrary, in his opinion, the peer production of software is 'only one example of a much broader social-economic phenomenon' that is bound to 'scale to much larger sizes', as computers and 'network connections become faster, cheaper, and more ubiquitous' (Benkler 2002a: 383).

Benkler continued to work on these ideas, and four years later he published his magnum opus, *The Wealth of Networks* (2006), which was received with great acclaim, establishing Benkler as the leading theorist in the then-nascent field. In fact, *The Wealth of Networks* remains to this day the most influential work on the subject of the digital commons, having been cited more than twelve thousand times.[2] In its pages, Benkler (2006: 5) elaborated on his thesis that peer production constitutes a new mode of production in the 'networked information economy,' which has the potential to expand into 'every domain of information and cultural production.'

The starting point of Benkler's argument is the acknowledgment of the fact that 'the most advanced economies in the world today' are 'networked information economies,' as he calls them. This means two things. First, they are economies in which information, cultural production and the manipulation of symbols play a dominant role. Secondly, they depend on the technological infrastructure of modern communication networks. At the same time though, these networks constitute an agent of disruptive change because they allow 'for an increasing role for nonmarket production in the information and cultural production sector, organized in a radically more decentralized pattern than was true of this sector in the twentieth century' (Benkler 2006: 3). The Internet, in other words, has given nonmarket actors the ability to produce informational and cultural goods. This being so, Benkler (2006: 3) predicts that the mode of peer production – 'nonmarket and radically decentralized– will emerge, if permitted, at the core, rather than the periphery of the most advanced economies.' To be sure, hierarchical organizations and capitalist markets may not disappear in the near future, but they are 'destined to shrink towards playing niche roles' in the productive matrix of advanced economies (Benkler 2006: 2). And that is a good thing, says Benkler (2006), as the mode of commons-based peer production reinvigorates core liberal-democratic values, such as individual autonomy of action and social justice.

[2] https://scholar.google.com/citations?user=EX_2G5wAAAAJ&hl=en, accessed 1/11/2019.

3.1.3. The germ of a post-capitalist society

Needless to say, Benkler was not alone in theorizing FOSS as a new mode of production. Already by the late 1990s, the phenomenal growth of FOSS projects like Linux had captivated the attention of several researchers and thinkers, who argued that FOSS should be seen as the quintessential example of a new mode of production brought to life by the distributed networks of cyberspace.

On the other side of the Atlantic, no-one delved into the subject of peer production more deeply than the group of critical theorists associated with the so-called *Project Oekonux* (*1999-2013*). Launched in Germany in 1999 by Stefan Merten, a software programmer with an anarchist-Marxist background, Oekonux was essentially an online discussion group interested in exploring the mode of production of FOSS and its transformative potential from an anti-capitalist perspective. Members interacted mainly through two mailing lists: one for German speakers[3] and another for anglophone members.[4] In addition to the debates on its mailing lists, which attracted thinkers from all over the world, such as Michel Bauwens (Thailand), Franz Nahrada (Austria), Mathieu O'Neil (Australia), Graham Seaman (UK), Johan Söderberg (Sweden) and Raoul Victor (France), Oekonux organized four international conferences (in 2001 in Dortmund, in 2002 in Berlin, in 2004 in Vienna and in 2009 in Manchester), which were globally the first ones that looked at FOSS and peer production from such a clearly *political* perspective. What is commonly referred to as 'Oekonux theory/ies' is basically a particular analysis of FOSS and peer production, which formed the epicentre of long-lasting debates on the Oekonux mailing lists and conferences.[5]

Generally speaking, the theory of Oekonux echoes many of the fundamental points of Benkler's analysis. 'Oekonuxers' were well acquainted with The Wealth of Networks, so it should come as no surprise that they were influenced by its theses. Characteristically, Oekonux adopted the term of commons-based peer production in the mid-2000s (Meretz 2012). As in Benkler's book, the starting point of Oekonux is the acknowledgment of the catalytic role of the Internet in spawning a new mode of production, which contrasts sharply with the capitalist mode of commodity production. The epitome of this new mode of production are FOSS projects like Linux, which are 'created on a voluntary basis, unlike any commodity' (Merten 2000). Thus, in consonance with Benkler's analysis, Oekonux highlighted the fact that FOSS is not a commodity produced by wage workers in a corporate structure, but the fruit of volunteer labour done for the sake of the pleasure and 'self-unfolding' involved in this activity (Merten 2000). In short, like Benkler, Oekonux conceptualized FOSS as a mode of nonmarket production driven by the 'pleasure principle,' rather than by the profit-motive. Similarly, it paid a great deal of attention to the pivotal role of self-organization in this setting. Its significance is epitomized in full-swing in one of the early Oekonux texts by Merten (2000), which

[3] http://www.oekonux.de/liste/index.html, accessed 1/7/2020.

[4] http://oekonux.org/list-en/index.html, accessed 1/7/2020.

[5] The discussion of Oekonux in this chapter is largely based on my own personal recollections as a member of the project from 2002 until 2013, when it ceased its activities. For a synopsis of its main theses by one of its leading figures, see Meretz (2012). For an outside perspective, see Euler (2016).

underlines that ‘no one tells the GNU/Linux developers what to do...Everything they do is done through their own initiative...No boss tells them what to do….GNU/Linux is organized by the developers themselves.’ Another point that Oekonux has in common with Benkler concerns the potential of peer production to become dominant in the digital economy. A main conclusion that Oekonux drew from its analysis of FOSS is that the peer production model, on account of its productive superiority, ‘promises to surpass and overcome the competition from commercial products’ (Merten 2000).

However, what sets Oekonux apart from Benkler is its thesis that FOSS is prefigurative of a post-capitalist society ‘beyond labor, money, exchange’ (Merten interviewed in Richardson 2001) and the emphasis it put on the zeitgeist-grabbing potential of peer production to supplant the capitalist mode of production on a global level, triggering thereby systemic change on a planetary scale. This is a conclusion that Oekonux was driven to by examining the historical development of peer production from a dialectical perspective. The approach of Oekonux, as we shall see, constitutes the first attempt at a methodical analysis of FOSS and peer production from a Marxian perspective. The key elements of this analysis are as follows: innovations like FOSS, the Internet, as well as related techniques and methods of production, represent ‘a tremendous advance in productive forces’ (Victor 2004). All these new technologies and techniques have been developed at the heart of the capitalist system. And so, they are initially dependent on that system. This means that those who produce them ‘are not nourished by their own product...[For instance,] those who work for free or are paid by an enterprise to create free software remain dependent on the revenues provided by the market world’ (Victor 2003). On top of that, the same technologies serve as critical infrastructures for the daily operation of the capitalist system. Quite simply, the modern economy would have been unthinkable without the Internet.

Image 1: Talk at the 1st Oekonux Conference in Dortmund in 2001. At the back can be seen Stefan Merten (left) and Stefan Meretz (right). Source: http://erste.oekonux-konferenz.de/dokumentation/db01.jpg

Those two characteristics of FOSS -i.e. its integration into the operation of the agents of the dominant economy and the material dependence of its developers on capital- imply the compatibility of peer production with the hegemony of capital. However, that state-of-affairs is ephemeral. Oekonux shared Marx's famous thesis that the potential of the new productive forces cannot be fully honed within the context of the capitalist economy, which, as a result, leads to rupture in the dominant system. At a certain stage of economic development, as Marx (1977) wrote in the Preface to *A Contribution to the Critique of Political Economy*,

> the material productive forces of society come into conflict with the existing relations of production or –this merely expresses the same thing in legal terms – with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution.

In a nutshell, 'Capital becomes a fetter upon the mode of production which has flourished alongside and under it' (Marx 1990: 929). To Oekonuxers, it was obvious that Marx's theory was now more relevant than ever. It could deepen one's understanding of FOSS and peer production by illustrating the clash between the new productive forces and the old social relations of production in the bosom of the software industry. At the heart of that clash, as Oekonux remarked, lies the question of property. By contrast to the capitalist mode of production, which is predicated on restrictive intellectual property rights such as copyrights and patents, peer production is intertwined with an entirely different type of property, which, in fact, constitutes an objective precondition for its emergence (Söderberg & O'Neil 2014: 2).

That explains why the historical development of peer production has been going hand in hand with the creation of free/open licenses, which ensure legally the free sharing of digital artifacts. The archetypal licensing mechanism of this kind, the GNU General Public License (GPL), was created in 1989 by Richard Stallman, founder of the Free Software Foundation (FSF), as a legal weapon in the struggle of the hacker community against proprietary software (Stallman 1999). The GPL is colloquially referred to as 'copyleft' due to the fact that it is the opposite of copyright: software that has been 'copylefted' under the GPL is free from the usual restrictions that copyrighted software imposes upon end users. Today, thirty years later, there is a plethora of GPL-inspired free/open licenses available to software developers.[6] In parallel, their popularity with FOSS developers has led to the development of similar licensing mechanisms for other types of digital artifacts. The Creative Commons licenses (whose first version was released in 2001), for instance, are geared towards the needs of artists and cultural producers. In any case, from the vantage point of Oekonux, the significance of copyleft rests on its opposition to and subversion of copyright. As Söderberg (2002) writes in *Copyleft vs. Copyright: A Marxist Critique*, one should not lose sight of the fact that 'to oppose copyright is to oppose capitalism' (Söderberg 2002). For Oekonuxers, the implications of Söderberg's point were obvious: viewed from that perspective, the development of FOSS could be construed as 'a revolt of the new productive forces against the old capitalist relations of production' (Victor 2004).

The elucidation of the subversive edge of FOSS remains to this day the most recognizable contribution of Oekonux to the development of the theory of peer production (Söderberg & O'Neil 2014: 3). One should not, however, forget that the debates on peer production in the early 2000s were characterized by polarization (Meretz 2012). On the one side were the proponents of peer production, for whom it signaled a radical break with capital. On the other side, the critics of peer production were convinced that it posed no threat to the dominion of capital. The approach of Oekonux was undeniably more balanced and methodical, allowing it to counterpose the characteristics of FOSS that render it compatible with capital against those which are disruptive toward its hegemony. More precisely, it allowed Oekonux to discern that the mode of peer production is characterized at one and the same time by the unity of these antitheses and by their struggle, both of which determine the changes which peer production undergoes over time.

Hence, by taking account of the dialectical opposition between peer production's *immanent* and *transcendent* characteristics, Oekonux avoided the trap of binary thinking into which the majority of peer production critics and proponents alike had fallen. Most importantly, its dialectical approach allowed it to resolve the antithesis between the forces of immanence and transcendence through the concept of the 'seed-form.' Using this metaphor, Oekonux drew a parallel between peer production and the stages of development of a seed. Like a seed, a new of mode of production needs the appropriate

[6] For a list of the various free/open licenses, see the relevant Wikipedia entry at https://en.wikipedia.org/wiki/Free_license, accessed 1/7/2020.

substratum and the right environmental conditions in order to emerge and break through the soil. According to that theory, in the beginning, a new mode of production usually occupies a 'niche' in the economy without posing any threat to the mode of production that dominates the broader economy. Oekonux argued that this was indisputably the case with peer production, which emerged and established itself in the software industry as a production model that is fully compatible with market imperatives. But as we mentioned before, that compatibility is quite fragile. The reason, according to Oekonux, rests on the endemic nature of crises in the capitalist system, which create the objective conditions for the expansion of the peer production model into increasingly more sectors of the economy. Under these circumstances, peer production 'gains relevance for the reproduction of the old system.' Despite the fact though that 'it can be used for the sake of the old system...its own logic is and remains incompatible with the logic of the dominant old system' (Meretz 2012).

Thus, due to the ever-recurring cycle of crises, Oekonux argued that the model of peer production finds fertile ground to grow and its field of application shifts from the periphery into the core of the economic system. Under this pressure, the capitalist mode of production is forced to fall back to 'marginal domains.' Logically following then, in the course of time, peer production evolves into the new dominant mode of production. This stage is marked by world-historical changes: 'market mediation using money is no longer required...The entire system has now qualitatively changed its character' (Meretz 2012). As a result of the transformation of the economy, then, a new society arises, which is characterized by the principles of peer production: a communal form of property and a new type of social relations without the alienation, the exploitation and the coercion inherent in capitalism.

Oekonux did not attempt to invest this future 'GPL society,' as it calls it, with an eschatological mantle. The role it plays in the theory of Oekonux is not that of an anti-capitalist version of the 'end of history.' As in the past, new contradictions may appear in the GPL Society, thereby triggering a new cycle of transformation (Meretz 2012). To its credit, Oekonux did not try to account for the conclusions of its analysis by reference to any ineluctable laws of historical necessity. As it recognized, there is no certainty that peer production will ever supplant the capitalist mode of production. That peer production has the potential to transcend capitalism does not mean that it shall actually realize that potential in praxis. In fact, as Oekonux warned, if commoners and peer producers do not fight to defend their principles, they run the risk of being co-opted and assimilated (Meretz 2012). In the last instance, therefore, a lot depends on their struggle.

When, twenty years ago, Oekonux formulated the argument that peer production is the germ of a post-capitalist society, it caused a stir among intellectuals and activists drawn to the subject of the digital commons. Admittedly, Oekonux was home to one of the most interesting and theoretically rich political analyses of FOSS and peer production. Its provocative theses fueled a plethora of heated debates on its mailing lists, which were buzzing with life for about a decade. Then, around the end of the 2000s, without any particular reason, the discussions on the mailing lists started to dwindle until they became inactive. Feeling that this was the end of Oekonux, in 2013 Merten announced

his decision to discontinue the project.[7] Thus, without much fanfare, Oekonux ceased its activities.

Yet, in spite of its short life span, Oekonux had a lasting impact on the development of peer production theory. Its theses had a tremendous influence on some of the most important contemporary thinkers. The case of Michel Bauwens, who was a long-time contributor to the debates on the Oekonux mailing lists and conferences, is characteristic. Bauwens became involved in Oekonux around 2002 at a time when he had just begun to theorize 'peer-to-peer' as a new paradigm of production that was going to shake the world (e.g. Bauwens 2002). His approach had many points in common with Oekonux, as well as with Benkler. As in their case, Bauwens' theses were the result of analyzing Linux and FOSS as an alternative mode of production, governance and property, which is enabled by the distributed technological infrastructure of the Internet. He similarly conceptualized peer production as a mode of production that is neither directed to market exchange, nor governed by bureaucrats and managers.

The antithesis between the immanent and the transcendent characteristics of peer production was, as we have seen, of decisive importance in the development of Oekonux's theory. The same is true of Bauwens' work, which, from a methodological point of view, also constitutes a dialectical synthesis of these antitheses. Thus, by following a similar (dialectical) method with Oekonux, he had already by the early 2000s come to the same conclusion that

> Just as serfdom arose within the slave-based mode of production of antiquity, and capitalism within dominant feudal structures, so does peer production arise and emerge within capitalism -but not without 'transcendent' aspects that hold an emancipatory promise and form the *seed* of a possible new mode of production that may emerge as the dominant logic of a new type of political economy (Bauwens 2009: 122-123; emphasis added).

[7] Merten's announcement of his decision to discontinue the project: http://oekonux.org/list-en/archive/msg06188.html, accessed 1/11/2019.

Image 2: Talk by Michel Bauwens at the 2nd Oekonux Conference in 2002 in Berlin. Source: author's personal archive.

It goes without saying that what, for Bauwens, as for Oekonux, creates the objective conditions for a paradigm shift is 'the inevitable crisis of...capitalism,' which could 'lead to a potential system transition, making peer-to-peer production the dominant logic' (Bauwens 2009: 137).

Of course, Bauwens was not the only thinker who shared that common ground with Oekonux. The same could be said of several other participants in the project. For instance, Johan Söderberg's *Hacking Capitalism: The Free and Open Source Software Movement* (2008) is also based on a dialectical analysis of FOSS, which supports the view that its model of production carries seeds of a post-capitalist society. The reason why the case of Bauwens merits particular attention is because of his decisive effect on the development of the theory since the mid-2000s. (In fact, the only other theorist who can be said to have exerted such a catalytic influence on the literature is Benkler). So, paradoxically, although Oekonux has fallen into obscurity, its main thesis that peer production is the germ of a post-capitalist society has actually become widely known through Bauwens. In that sense, he is the most important continuator of the work of Oekonux. That said, Bauwens did not just assimilate and reiterate its theses. As we shall see, he fleshed out the implications of the Oekonuxian analysis and fully developed its conclusions, leaving thus his mark on it.

3.1.4. The form of the economic struggle of peer producers

From the mid-2000s onwards, Bauwens' work has been closely connected with the so-called Peer-to-Peer Foundation (P2PF).[8] That was basically an online mailing list that he started in 2005 with the aim of sharing his reflections. However, it soon attracted a lot of sympathizers from around the world, thereby encouraging Bauwens to add a wiki (http://wiki.p2pfoundation.net) with a view to developing an open repository of knowledge related to peer production. His collaborative approach towards the development of the repository appealed to many researchers and activists, who formed, in a sense, a research group around him and the P2PF. As a result of this 'mutation' of the P2PF into a veritable think-tank, Bauwens acquired several key collaborators. Of them, no-one has played a more important role than Tallinn University of Technology Professor Vasilis Kostakis, who has been Bauwens' main co-author since the early 2010s. In the context of his collaboration with Bauwens and the P2PF, in 2012 Kostakis founded the P2P Lab. Made up of his postgraduate and doctoral students from Tallinn, the P2P Lab has since been the research branch of the P2PF (Bauwens & Pantazis 2018).[9]

Strengthened by that group of competent researchers, the P2PF evolved into a distinctive school of thought on the topic of peer production. And like all schools of thought, so the P2F is characterized by specific theses. As one would expect, its main thesis is that peer production has the 'potential to succeed capitalism as the core value and organizational model of a post-capitalist society' (Bauwens 2012). The analysis, though, through which Bauwens and his collaborators substantiate that thesis is equally emblematic. This is essentially an analysis of the transformative effect of distributed networks and peer production on the economy, which lays particular emphasis on the breaking-up of the capitalist class into factions with differentiated and even antagonistic interests. Having little to do with ideological differences of any kind, this split, as the P2PF theorists remark, is due to the fact that increasingly more capitalists adopt 'strategies of adaptation' to distributed networks, as a result of which they have 'an objective interest in promoting the infrastructures of cooperation that make participation and peer production possible' (Bauwens 2009: 135). That is the case with many software companies that utilize FOSS as an input to their own production process.

What is most important is that they do not only take from the FOSS community, but also contribute to it. As is standard practice for all professionals who incorporate 'copylefted' software in their products, these companies release their own products under free/open-source licenses, as well, enriching thereby the common pool of FOSS. A characteristic example is Google's Android mobile operating system, which is based on Linux and is distributed under a dual free/open-source license.[10] In addition to sharing their products

[8] As we mentioned in section 2 on the research methodology, the author has been a research associate of P2PF for more than ten years. Consequently, the discussion of P2PF in this section is largely based on his own personal experiences as a participant in the project.

[9] For a more extensive discussion of the P2P Lab, see Bauwens & Pantazis (2018).

[10] In specific, the Android operating system is licensed under the Apache License and the GNU GPL, which means that its source code is freely shareable.

with FOSS communities, some of these companies also provide employment for FOSS developers, reinforcing thereby their economic sustainability. In this way, Bauwens and his collaborators argue that these agents of capital practically become *allies* of peer producers. And so, a 'generative relationship' can develop between the two of them. Obviously, this is a point of great strategic importance, for it suggests that the scaling-up of peer production does not presuppose a head-on collision with the entire capitalist class. On the contrary, the conclusion that Bauwens and his collaborators draw from this analysis is that the construction of *alliances* with 'generative entrepreneurs' constitutes an indispensable part of the economic struggle of peer producers (Bauwens et al. 2019, Bauwens & Kostakis 2015, Kostakis & Bauwens 2014). In their view, in fact, only by creating a supportive network of such alliances, which will allow them to transform the correlation of forces in the matrix of the economy, will peer producers ever become the leading force in it.

That does not mean, however, that alliances are a panacea. On the contrary, Bauwens and his collaborators highlight several points of rupture with capital, upon which there can be no reconciliation. As we will see in more detail in section 3.2.4, one of the main points of rupture concerns the practices of 'enclosure and commodification of the immaterial: knowledge, culture, DNA, airwaves, even ideas,' which are characteristic of the modus operandi of the class of cognitive capitalists (Kostakis & Bauwens 2014: 20). Obviously, as Kostakis and Bauwens point out, it is impossible to reconcile the practices or the interests of peer producers with those of cognitive capitalists. Consequently, they are at loggerheads with each other. Another point of rupture with Capital has to do with the exploitation of user communities by the proprietary platforms of the so-called 'sharing economy.' The main problem in this case is that the activities of users produce value, which is appropriated exclusively by the platform owners and administrators. This 'extraction of value' from user communities, as Kostakis and Bauwens (2014: 23) write, creates a highly antagonistic relation 'since the value creators are not rewarded'. Obviously then, in the context of that relation, there can be no space for the construction of alliances.

According to Bauwens et al. (2019: 35), the adversaries of peer producers are those agents of Capital that are bound up with 'extractive' business models, that is, those who 'impoverish the natural and community resources they use.' Against that kind of capitalists, the economic struggle of peer producers assumes a decidedly antagonistic form of confrontation. Characteristically, they have developed strategies (which we will discuss in section 3.2.3) in order to force free-riding capitalists to 'reciprocate.' Yet, the antagonistic character of the relation between peer producers and capital is nowhere more pronounced than in the case of their struggle against the platform capitalists of the so-called sharing economy. As we shall see in sections 3.2.6–3.2.7, the way in which peer producers antagonize these proprietary platforms is by organizing themselves into commons-oriented 'platform cooperatives.' From the perspective of Bauwens et al., this is a crucial strategy for their struggle: by setting up platform cooperatives for their livelihoods, peer producers break their bonds of dependence on the capitalist economy. At the same time, they become *cooperators* and that unites them with the present-day

Cooperative Movement. Thus, their 'mutation' into agents of the cooperative economy opens up the possibility for the construction of a strong alliance with the New Cooperative Movement, which, as the P2PF theorists argue, is bound to play a very important role in the struggle of peer producers for economic hegemony.

Summarizing the analysis of Bauwens and his collaborators in a few paragraphs would only be possible at the expense of downplaying many crucial details. As of the time of writing this Report, it is undoubtedly the most thorough analysis of the struggle of peer producers for economic hegemony. As such, it calls for an elaborate discussion. Prior to delving more deeply into the content of that analysis, however, we deemed it useful to underline some of its characteristics, which will allow us to better understand it. From what we have said so far, it must be obvious that an important aspect of this analysis lies in the distinction it makes between *allies* and *enemies*. In effect, what the analysis *does* is separate the friends from the foes. That is the main question for P2PF theorists: who is on the side of peer producers and who is against them? Hence, their analysis divides economic agents into two antagonistic camps. On the one side, there is the 'ethical economy' of peer producers along with commons-friendly 'generative entrepreneurs.' On the other side, there are only enemies. In that sense, the analysis of P2PF theorists is *political* par excellence.

However, the political character of the analysis of P2PF theorists does not consist solely in the distinction between allies and enemies. We should not forget that the theorists of peer production are simultaneously the chief proponents of the *project* of a post-capitalist society of the commons, whose institution presupposes the demise of the existing regime. Obviously, this project is their conscious choice and position. And like any project for a new society, this project, too, expresses a political stance and leads to a political action. Animated by that project, then, the analysis of P2PF theorists does not only aim to interpret the given historical reality. Rather, its ultimate goal is to transform it towards a specific direction. As Bauwens (2005) says, 'the aim of peer to peer theory is to give a theoretical underpinning to the transformative practices of these movements [of commoners and peer producers]. It is an attempt to create a radical understanding that a new kind of society, based on the centrality of the Commons...is in the realm of human possibility.' Of course, as he clarifies immediately afterwards, 'a crucial element of such a peer to peer theory would be the *development of tactics and strategy* for such transformative practice' (Bauwens 2005; emphasis added).[11]

To put it another way, we should not forget that the struggle of peer producers is a struggle in which theorists are actively engaged. Their role in that struggle is not purely theoretical in the traditional sense of the term. In fact, the involvement of peer production theorists is more akin to that of an intellectual vanguard of the movement centered on 'the development of tactics and strategy' (Bauwens 2005). That is something we should keep at the back of our mind when we discuss their analysis of peer producers' struggle for economic hegemony in the next section of the report. It is important to remember that for theorists such as Bauwens and his collaborators at the

[11] For Bauwens' views on the role of peer production theory, see also Bauwens (2012).

P2PF, the theory of peer production is not just a scientific analysis; it is also the ideology and the strategy uniting the commoners and giving a sense of direction to their struggles. Having clarified that point, let us now look at the analysis of the digital commons theorists and how it substantiates their thesis that peer production has the 'potential to succeed capitalism as the core value and organizational model of a post-capitalist society' (Bauwens 2012).

3.2. The coming hegemony of peer production

3.2.1. Introduction

In sections 3.1.2–3.1.4, we looked at how the community-driven, distributed development model of online projects like Linux has been theorized in the digital commons literature as a new mode of production, which has the potential to become dominant in the realm of the digital economy (e.g. Arvidsson et al. 2008, Bauwens 2005, Bauwens 2009, Bauwens et al. 2019, Benkler 2006; 2016, Weber 2005). As we remarked, that is an argument that the theorists of the digital commons substantiate through their analysis of the effect of distributed networks and peer production on the economy, which suggests that peer production antagonizes virtually every form of production coordinated through capitalist markets and hierarchies, leading thus gradually to a dramatic shift of productive activity away from the capitalist sphere of commodity production towards forms of nonmarket production coordinated through distributed networks of peer producers (see e.g. Arvidsson et al. 2008, Bauwens 2009, Bauwens et al. 2019, Benkler 2006; 2016, Kostakis & Bauwens 2014). We have already highlighted a crucial point with respect to the main contours of this analysis and its objectives –its focus on 'the development of tactics and strategy' for the movement of peer producers (Bauwens 2005). In this section, we will delve more deeply into it, attempting to elucidate the rationale underlying the thesis that peer production has the potential to dominate the economy.

As we mentioned in section 3.1.4, from the perspective of this analysis, the digital economy is effectively split in two parts (Arvidsson et al. 2008, Arvidsson 2009, Arvidsson & Peitersen 2013, Bauwens 2009, Bauwens et al. 2019, Bauwens & Kostakis 2015, Kostakis & Bauwens 2014). On the one side, there is the 'ethical economy' of peer production communities and commons-friendly enterprises, which represents a new ecosystem of value creation. On the other side, there is the part of the economy that is shaped by the imperatives of Capital. Crucially, this is not a homogeneous and monolithic field, but encompasses several business models, constituting thus a mosaic of heterogeneous economic agents. To put it differently, there is not just one capitalist model, but several of them. They can be roughly categorized as follows: there is (a) the model of traditional technology firms, (b) the model of *crowdsourcing* and *open innovation*, (c) the model of *cognitive capitalism*, (d) the model of *netarchical capitalism* and (e) the model of *distributed capitalism* (Bauwens 2009, Bauwens et al. 2019: 33-39, Kostakis & Bauwens 2014). As this categorization creates a picture of considerable complexity, let us look at each one of these models more closely, giving

particular attention to how they interface with distributed networks and peer production communities.

3.2.2. The traditional model of technology firms

First, there is the traditional model of technology firms. This is a mode of production characterized by the hierarchical organization of waged labour for commodity production. To give the concept some flesh, imagine a software company that employs computer programmers and various other types of professionals to produce some proprietary software product. In contrast to the openness of peer production, the mode of production characteristic of such firms is undeniably *closed*: this means, first of all, that their production process is largely closed to actors outside the firm, that is, it is carried out by a hierarchically organized and geographically collocated group of full-time professionals. It is a mode of production that exploits the resources and capabilities that are already available within the firm. And that is precisely wherein its disadvantage lies vis-à-vis peer production. There is very little, if any, sharing of ideas, information, knowledge, resources, skills, or collaboration with the broader community of software users and developers. The way that the production process is organized in traditional software companies does not make it possible to tap into that source of creativity and innovation. Consequently, these firms cannot take advantage of the productive potential of geographically distributed, online communities of users and developers. This means that they cannot compete with peer production. They can never be as productive or as innovative as peer producer communities. And so, their economic sustainability, that is, their very existence as a core capitalist economic institution, is undermined by the development of peer production (see e.g. Bauwens 2009, Bauwens et al. 2019).

In consideration of the fact that 'firms that can access the knowledge commons possess a competitive advantage over firms that use proprietary knowledge and can only rely on their research' (Bauwens et al. 2019: 6), digital commons theorists argue that more and more companies are becoming aware of the shift in the locus of innovation and creativity away from corporate silos to distributed networks of peer producers. And so, in order to take advantage of the new sources of innovation that have risen to prominence in the age of the new millennium, they resort to adapting their modus operandi. This strategy of adaptation has been theorized in the literature as the motive force for the development of various so-called 'crowdsourcing,' 'open business' and 'open innovation' models over the last twenty-five years, which have the aim of engaging (in varying degrees) online communities of users in the production process (Bauwens 2009, Chesborough 2003, von Hippel 2005).

3.2.3. Crowdsourcing and open innovation

A well-known example of how crowdsourcing and open innovation models work in practice is that of the popular construction toy Lego. In 2004 the company released a software program called 'Lego Digital Designer'. Using this software, Lego fans (that is, virtually anyone) could design their own models along with a box design, upload them to the Lego website and order them for delivery as a packaged product. This crowdsourcing strategy proved to be an incredible success, giving a spur to hundreds of

people around the world to contribute new designs for Lego toys. In this case, as we can see, one of the most important and labour-intensive stages of the production process - that is, the design of new products- is performed by actors outside the company without any monetary compensation. So, by adopting such a crowdsourcing model, companies can replace the waged labour of professionals with the volunteer labour of creative users. 'From the point of view of the for-profit companies,' as Bauwens (2009: 126) writes, crowdsourcing 'has the great advantage...of creating a tremendous amount of free labour from which they can benefit.' At the same time, crowdsourcing enables them to tap into a great source of creativity and innovation. In this way, by integrating the volunteer contributions of the end users into their production process, these companies become more productive, creative and innovative (Bauwens 2009: 126).

Image 3: LEGO Design byME set designed with Lego Digital Designer. Source: Wikipedia 2020a.

The case of Lego is not the only variant of the crowdsourcing model, but it is illustrative of the strategy of adaptation embraced by increasingly more companies in an attempt to upgrade their apparatuses of value capture. However, no example illustrates more succinctly how technology companies have reconfigured their productive processes in order to take advantage of commons-based peer production than that of Google and Apple. Both are corporate colossi with literally thousands of highly trained professionals on their payroll. They have the resources and the capabilities to develop *in-house* any technology they want. Yet, that is not how Google developed its Android mobile operating system. Instead of developing its own operating system from scratch, Google strategically chose to adopt Linux as the basis of its product. Same goes for Apple: its macOS operating system is based on BSD, which, like Linux, is a popular free/open-source operating system. The reason why both Google and Apple have chosen to incorporate free/open-source software into their products is, as in the case of Lego, obvious. From an economic perspective, using the software commons as free inputs to their production process makes perfect sense, as it results in a significant reduction of production costs.

But what Google and Apple are doing is actually more than just making use of some shareable digital resources in the production of their own products. They have evolved a business model which, in a sense, manages to integrate the distributed process of peer production into their own production process. Consequently, these companies are not threatened by peer production. On the contrary, by making it an integral part of their model, they have come up with a way to substantially profit from the fact that 'peer production creates a permanent process of social innovation and use value that is also freely available for market players' (Bauwens 2009: 125).

To many skeptical observers, such crowdsourcing practices are paradigmatic of the exploitation of free labour that has become the norm in the realm of the digital economy (e.g. Terranova 2000). In their view, this model is synonymous with the enclosure of the digital commons and implies the co-optation of the subversive edge of peer production. For the theorists of peer production, however, reality is more complicated. 'What is crucially important in the relations between the entrepreneurs, the community and the commons on which they depend, is whether their relationship is generative or extractive' (Bauwens et al. 2019: 16). What they mean by this is that the relationship between business organizations and commons-producing communities does not have to be exploitative. Rather, it may well be 'generative,' that is, mutually beneficial. That is often the case, as 'most businesses that use a commons as their basis of value...participate in adding to the common pool, creating mixed forms of practice, for example by paying programmers to produce software that will be put under the GPL' (Bauwens 2009: 125). Specifically, these businesses contribute to commoner communities in three ways. First, they enrich the commons by releasing their products under free/open-source licenses, in effect sharing them with peer production communities. For example, as we mentioned in section 3.1.4, the source code of Google's Android mobile operating system is distributed under a free/open-source license, which means that it is freely shareable: anyone can download it, use it, modify it and re-distribute it.

Second, they contribute to the commons through practices of 'benefit-sharing,' that is, by sharing some of their profits with the non-profit 'infrastructural organizations,' which support the technological and legal 'infrastructure of cooperation' underpinning peer production (Bauwens et al. 2019: 18). Indicatively, Google is a strongly committed supporter of the Linux Foundation, which is perhaps the most important infrastructural organization for the community of Linux developers. Third, these companies are actively engaged in recruiting from the community of peer production projects (Benkler 2006: 46-47). Needless to say, they do not do this out of philanthropy, but in order to influence the development process of the projects that interest them, so that they can steer them in the direction they want. Ultimately though, by means of this recruitment strategy, they reinforce the economic sustainability of commoners and peer producers (Bauwens et al. 2019, Benkler 2006).

Having said that, 'commoners cannot rely on capitalist investment and practices' (Bauwens et al. 2019: 7). Clearly, companies like Google and Apple are not exactly representative of the 'generative,' 'ethical,' 'progressive entrepreneurs' and

‘entrepreneurial coalitions,’ which P2PF theorists envision as *the* vehicle of organization of commoners and peer producers in the historical process of transition towards post-capitalism. As they clarify, ‘in the best of cases, the community of entrepreneurs coincides with the productive community. The contributors build their vehicles to create livelihoods while producing the commons’ (Bauwens et al. 2019: 18). So, when Bauwens and his colleagues underscore the significance of ‘generative entrepreneurs’ in the context of this process, it is not so much companies like Google or Apple that they have in mind, but associations of commoners and peer producers united voluntarily to meet their livelihood needs through a jointly-owned and democratically-controlled business enterprise. That is basically the type of business organizations that can ‘create the conditions for more commoners to emancipate themselves [from their dependence on the capitalist economy] and earn their livelihood through their contributions’ to the commons (Bauwens et al. 2019: 17). In the ideal scenario, then, generative enterprises are *cooperatives* (Bauwens 2009: 129-130).

However, although the organization of commoners into generative enterprises is a necessary condition for setting off ‘a commons transition,’ it is by no means sufficient to ensure that this process will result in the transfer of economic power from the capitalists to the commoners (Bauwens et al. 2019: 7). To push towards an outcome in which ‘the commons and its social forces become the dominant modality in society,’ peer production theorists argue that commoners must also develop strategies of ‘transvestment,’ that is, strategies resulting in the transfer of value from the sphere of Capital to the sphere of the Commons (Bauwens et al. 2019: 7). Such a strategy of transvestment is that of ‘commons-based reciprocity licensing.’ This is essentially a type of licensing that ‘allows commons-contributing [business] entities to use the commons material for free, but non-contributory for-profit market entities have to pay for a license for the right to commercialize’ it (Bauwens et al. 2019: 64). That is to say, reciprocity licenses constitute a legal mechanism by which businesses that make use of the digital commons without contributing to them will be forced to reciprocate a certain amount of money. In this way, the use of reciprocity licenses as a weapon against free-riding capitalists is envisaged to ‘help commoners become financially sustainable and independent,’ thereby rendering ‘commons-based production [even] more autonomous from the dominant political economy’ (Bauwens et al. 2019: 7).

In contrast to free-riding capitalists, economic agents that take from the commons, but also contribute to them, have been theorized as ‘generative entrepreneurs.’ They provide jobs for commoners and peer producers, enhancing thus their sustainability, and they have an avowed economic interest in the upkeep of commons-based projects. So, logically, this creates a synergistic bond between them and peer production communities. In a very pragmatic sense, they no longer compete against peer production projects, but collaborate with them. Under these new conditions, their competitors are none other than their ‘closed’ counterparts, that is, businesses which are self-enclosed and oblivious to the communities of peer producers around them, or which extract value from the productive activities of commoners without reciprocating in any way. However, by honing the productive potential of peer production communities, this is an economic

battle that generative enterprises are well prepared for. As Bauwens (2009: 128) writes, 'companies that adapt and integrate peer-to-peer aspects, practicing 'open business models' will tend to out-compete their closed rivals. Companies that can profit from social innovation...and crowdsourcing mechanisms will tend to out-innovate those that don't.'

At the end of the day, the adoption of crowdsourcing and open innovation models makes these economic agents a potential ally of commoners and peer producers in the struggle against extractive modes of production. It is the conviction of digital commons theorists that the struggle of commoners and peer producers against the domination of Capital in the information economy cannot be waged effectively without the formation of alliances with those factions of the capitalist class that have developed a synergistic and generative relationship with commons-producing communities. Characteristically, Bauwens and his colleagues from the P2PF propose that 'allies should be found amongst the forces representing the other modes of production and allocation. This implies uniting the forces which support the commons...and ethical markets' (Bauwens et al. 2019: 56).

3.2.4. Cognitive Capitalism

Another business model encountered in the digital economy is that of cognitive capitalism, which is synonymous with the extraction of monopoly rents through the use of intellectual property (IP) rights, like copyrights and patents. This type of 'capitalism entails the enclosure and commodification of the immaterial: knowledge, culture, DNA, airwaves, even ideas' (Kostakis & Bauwens 2014: 20). According to the theorists of the digital commons, the effect of this model on innovation is undoubtedly negative (Kostakis & Bauwens 2014, Benkler 2006; 2016). An example that illustrates its extractive and parasitic character is that of Microsoft's use of a patent related to the scheduling of meetings to impose a licensing fee on Android mobile phones. In this case, which is paradigmatic of how cognitive capitalism works today, IP rights constitute a mechanism for sharing the profits without any participation in the actual process of innovation (Dafermos 2015).

It is clearly impossible to reconcile the practices of commoners and cognitive capitalists. Undoubtedly, the two models are diametrically opposed. As Bauwens (2009: 97) writes, 'adaptation to participatory modes of innovation, to open models of intellectual property, is antithetical to...the mode of cognitive capitalism.' The core value creation process in cognitive capitalism consists in the extraction of monopoly rents from knowledge that has been locked up in patents and copyrights. This is a type of capitalism that uses restrictive IP rights so as to create an artificial scarcity in immaterial resources. It encloses scientific and technological knowledge, thereby shattering its inherently social character. By contrast, the use of IP rights (i.e. free/open-source licenses) in the context of commons-based peer production is aimed at making such immaterial resources universally available. To put it simply, whereas the application of IP rights in cognitive capitalism is designed to restrict access, their application in peer production is inclusive, democratizing access.

For digital commons theorists, cognitive capitalism represents a variant of capitalism which is out of sync with the needs, the wants and the capabilities of human beings in the contemporary world. In that sense, it has become socially irrelevant. That, however, has not stopped it from becoming increasingly more aggressive. Most alarmingly, it has expanded into new enclosures of the commons of knowledge and culture, resulting in the privatization of resources like seeds that were hitherto considered the common heritage of humankind (Dafermos & Vivero-Pol 2015; see also Aoki 2009: 2279-96, Kloppenburg 2010: 370-372). Its driving force, as Kostakis and Bauwens (2014: 20-21) remark, 'is the eradication of all Commons and the commodification of all things.'

Undeniably, this is a powerful class of capitalists with strong connections to politicians and policy makers (Benkler 2006: chapter 11). That, however, does not mean that they will prevail in the struggle for hegemony in the information economy. As the theorists of peer production point out time and again, cognitive capitalism is confronted with many resistances and antagonisms. As a result of the legal war it has been waging against peer-to-peer technologies and file-sharing networks, it has made many enemies. Take, for example, the cyber-groups of 'pirates' who distribute copyrighted software programs out of ideological reasons, that is, as a form of direct action (Rajagopal & Bojin 2004), or the 'hacktivists' who develop new peer-to-peer technologies and file-sharing networks, with the aim of encouraging 'mass defection from the intellectual property regime' (Dafermos & Söderberg 2009: 54-55). Most importantly, by 'putting young people who share music in jail,' cognitive capital's campaign of legal repression has led to the politicization of the file-sharing communities that were repressed, which, in turn, has resulted in the formation of new political parties like the Pirate Party in various European countries (Bauwens et al. 2019: 66; also, see Benkler quoted in Frick 2012). Then, there is the vehement opposition from new social movements, like the Free Culture Movement, the Free Software Movement and the Open Access Movement, which are fiercely opposed to the capitalist enclosure of art, technology and science (Bauwens 2005).

The changing configuration of the global economy poses another serious threat to cognitive capital. Most notably, it is antagonized by the development of 'a new sector of commons-based petty production' in the Global South (Arvidsson 2019). This is none other than the 'global pirate or *shanzhai* economy' of 'cell phone charging and repair shops that proliferate on street markets in Asia, Africa and the Middle East' (Arvidsson 2019: 17). The reason why such 'petty traders' and 'popular entrepreneurs' are relevant to the analysis of the points of rupture and antagonism between the commons and capital in the contemporary world is because they 'rely on open source software and peer-to-peer hacker forums,' that is, 'on the common nature of the skills needed for even advanced forms of commodity production, along with open design practices and new collaborative business models' (Arvidsson 2019: 17). That is what practically unites them as a class of 'micropreneurs' and makes them a potential ally of commoners and peer producers. Furthermore, by taking into account the 'disappearance of stable industrial jobs in the West' and the creation of 'a new generation of outcasts' and 'middle-class university graduates, who are forced into freelance careers,' commons

theorists predict that this mode of commons-based petty production is bound to rapidly expand into the Global North (Arvidsson 2019: 17).

What is most important of all, the class of cognitive capitalists may be very powerful, but does not represent the most evolved form of the capitalist model. As Bauwens (2010) points out, cognitive capitalists, 'even as they ascend to the heights of power through restrictive copyright legislation, have already reached the zenith of their power, and they will eventually be replaced by new formats of capitalist exploitation, which accommodate themselves in much more intelligent ways to the peer to peer realities.' But if that is true, then it is not cognitive capitalists who are the 'arch-enemies' of commoners and peer producers in their counter-hegemonic struggle in the information economy. Perfectly suited to this role, a new sub-class of cognitive capitalists has arisen, which does not depend on patents and copyrights, but on the control of digital platforms. 'Rather than living off knowledge assets,' as cognitive capitalists do, 'this new capitalist sub-class'…'accommodates itself with the networks, places itself at crucial nodes and proposes itself as voluntary hubs' (Bauwens 2010). According to Bauwens and his colleagues, the manner in which value is created and captured through this new model is so profoundly different from the classic model of cognitive capitalism that it must be theorized as a distinct mode of production (Bauwens 2009, Bauwens et al. 2019, Kostakis & Bauwens 2014).

3.2.5. The new phase of cognitive capitalism

The new phase of cognitive capitalism is inextricably linked to the so-called 'sharing economy.' The concept has been in much vogue since the dawn of the new millennium. Originally it referred to websites like Facebook and YouTube, which allow users to create some form of digital content and then share it by posting it on the website. YouTubers share the videos they make. In the case of Facebook, one could say that users share bits of their private and social life. Over time, however, the milieu of the sharing economy came to encompass companies like Uber and Airbnb on account of providing an online platform through which people can supposedly share things like their houses or cars. Of course, as has been noted by various critics, the type of activity in which users of Uber and Airbnb are engaged can be hardly considered a form of sharing, as it always involves a commercial transaction (e.g. Eckhardt & Bardhi 2015). For instance, in the case of Airbnb, what users actually do is not house-sharing but house-renting. Even more contradictory from this vantage point is the growing use of the term in reference to so-called 'crowdsourcing platforms' like Amazon's 'Mechanical Turk' through which 'crowdworkers' are getting paid to perform various digital tasks requested by clients (e.g. Taeihagh 2017). It is hard, of course, to see how offloading work to the network of logged-in crowdworkers has anything to do with real sharing. On the contrary, as has been argued, the organization of productive activity in this manner is paradigmatic of the ongoing 'platformization of labor,' which, under present circumstances, amounts to a type of freelance work characterized by exploitation and precarity (Casili & Posada 2019, van Doorn 2017). The issues, however, raised by the sharing economy are not merely of a conceptual nature.

In examining the business model of leading sharing economy actors like Facebook and YouTube, digital commons theorists observe a significant commonality. They are all owners and administrators of online platforms whose content is contributed by end users. The owners and administrators 'valorize' this content (as well as the data that is generated as a by-product of users' activities and interactions) by exploiting it commercially. There is, therefore, a clear distinction between the users who create the content and the owners-administrators who reap the benefits of its economic exploitation (Bauwens & Kostakis 2016, Kostakis & Bauwens, 2014, Pazaitis et al. 2017a). Essentially, the appropriation of value by platform owners makes the concept of the sharing economy a euphemism for 'platform capitalism' (e.g. Bauwens & Niaros 2017, Gorenflo 2015, Kostakis & Bauwens 2014, Schneider 2018a, Scholz 2016). As Bauwens et al. (2019: 37) write:

> In the so-called 'sharing economy' there are distributed market (P2P) exchanges taking place over private platforms, whose owners extract a toll from the exchanges. The process is controlled by the owners of the platforms, who extract value (rents or fees) from these processes. The 'sharing' concept here is no more than a marketing ploy.

Just as traditional capitalists exploit and profit from the labour of their workers, so, too, do platform owners exploit and profit from the contributions and the immaterial labour of their users. As we mentioned in the previous section, leading theorists of the digital commons, such as Bauwens and Kostakis, claim that this model represents, in fact, capitalism in its most developed form. Interestingly, this is a conclusion they come to by engaging with the work of critical theorist MacKenzie Wark (2004). As in Wark's polemic, the starting-point of their analysis is that a new class of capitalists has arisen, which does not produce anything, but it controls crucial nodes in the computer network and media infrastructures of strategic importance, which enables it to capture and commodify a large part of the creativity of those using them. That is why these 'vectoral capitalists,' as Wark (2004) calls them, can be considered the most evolved segment of the capitalist class. They have managed to get rid of workers altogether by tapping into the creations of all those around the world who use their proprietary media channels and 'information vectors.'

Up to this point, the analysis underlying the digital commons theorists' critique of the sharing economy is largely the same. However, whereas Wark insists that 'vectoralism' implies the enclosure of the creations of the commoners and peer producers, Kostakis and Bauwens (2014) argue that the appropriation of value in the sharing economy platforms does not depend at all on the restrictive use of IP rights. Hardly ever do platform owners use restrictive clauses that enclose the creative property under their ownership. This is what makes the platform model so radically different. In contrast to Wark's vectoral capitalists who 'rely on monopolistic rents derived from intellectual property...platform capitalists enable and empower participation and sharing to occur, but they are able to convert part of the created use value into exchange value through the sale of user attention' (Bauwens 2009: 133), as happens in the case of YouTube and Flickr (Bauwens 2009: 126). In a nutshell, the capitalists who own the platforms 'no

longer rely on closed intellectual property strategies, but enable and empower the direct creation of value by sharing communities' (Bauwens 2009: 132). To emphasize their distinctiveness from both cognitive capitalists and Wark's vectoral capitalists, Bauwens and Kostakis call them 'netarchical capitalists.' Essentially, the problem with this new category of capitalists and their platforms is that:

> While individuals share through these platforms, they have no control over the design and the protocol of these networks/platforms, which are proprietary. Typically...while sharers directly create or share use value, the monetized exchange value is realized by the owners of capital. This...creates a longer-term 'value crisis,' since the value creators are not rewarded (Kostakis & Bauwens 2014: 23).

In short, the netarchical capitalists who own the platforms monopolize managerial authority and the means of appropriation of value. They do not share their profits with users, nor are the latter involved in the managerial process of the platform. In the light of this analysis, it is clear that the sharing economy constitutes a field of exploitation and antagonism. In specific, what defines the character of the conflict in this setting is the opposition of interest between the platform capitalists who own the platforms and the multitude of the users and precarious crowdworkers, who are the real value creators. In order to transcend this antagonism, commons theorists argue that an economy of genuine sharing would have to be organized along P2P lines, that is, by means of platforms collectively owned and managed by their users. In their view, the only way to stop netarchical capitalists from appropriating the lion's share of the value realized through the platforms is by collectivizing their ownership and management structure (Bauwens et al. 2019, Bauwens & Kostakis 2016; 2017, Kostakis & Bauwens 2017, Pazaitis et al. 2017a). This project of *commonification* is the basis of their proposal for the development of *open platform cooperatives*.

3.2.6. Platform cooperativism

In contrast to proprietary platforms like YouTube and Airbnb, platform cooperatives are owned and governed by their users. The crucial difference lies in their cooperative legal form, which renders them the collective property of their user-members. 'The central premise,' as Gorenflo (2015) writes, 'is that those who create the most value for the platforms -[for example, the] drivers and hosts [of Uber and Airbnb, respectively]- should own and control the platforms.' According to the critics of the sharing economy, there are two main problems with its current mode of organization. Firstly, the capitalists appropriate the value realized through their proprietary platforms, without sharing it equitably with the users (e.g. Kostakis & Bauwens 2014, Pazaitis et al. 2017a). Secondly, the problem of exploitation and precarity of 'platform labor' is inextricably linked to the fact that those who do this kind of work have no control over existing crowdsourcing platforms (like Amazon's Mechanical Turk), which are owned by capitalists (see e.g. van Doorn 2017, Zarkadakis 2018).[12]

[12] The general conclusion, as one of the critics says, is that 'only by seizing the platform can workers avoid digital serfdom' (Zarkadakis 2018).

Platform cooperatives are envisaged as a practical solution to these problems. The idea of developing platforms of this type arose against the backdrop of growing discontent with the way the proprietary platforms of the sharing economy (mis)treat their user communities in order to extract value from their activities. By as early as 2014, leading theorists of the digital commons, such as Bauwens and his collaborators from the P2PF, had come to the conclusion that the sharing economy of Google and Facebook is an ecosystem of capitalist platforms with the sole aim of valorizing their user communities (Kostakis & Bauwens 2014). What is more, they were fiercely critical of 'the parasitic nature' of Capital in this environment, which 'becomes evident by the fact that an empty networking platform is arguably a valueless platform' (Kostakis & Bauwens 2014: 26). Several like-minded activists and academics in the United States, such as New School Professor Trebor Scholz, journalist-cum-scholar Nathan Schneider and Neal Gorenflo of Shareable, were thinking along similar lines. In addition to a pronounced sympathy for the digital commons, their work (like that of Bauwens and his colleagues from the P2PF) is characterized by an advocacy of cooperatives in tandem with a harsh critique of the systemic abuses of capitalist-owned platforms. By putting them together - cooperatives and platforms- Trebor Scholz (2014) coined the term 'platform cooperativism' in a 2014 article, which agitates for building a new movement of 'cooperative alternatives to platform capitalism.' The same year he teamed up with Nathan Schneider, with whom he followed up on this piece with a series of polemical texts, which further propagandize the idea of applying the cooperative model to online platforms (see e.g. Scholz 2015; 2016, Scholz & Schneider 2015; 2016, Schneider 2014; 2015a; 2015b; 2018).

In the context of their strategy for mobilizing support for this idea, in 2015 Scholz and Schneider organized a big international conference at the New School in New York, which attracted more than a thousand participants and sympathizers from all over the world (Sullivan 2015). The success of that event encouraged them to organize three more conferences in New York in 2016, 2017 and 2019, which, like the first one in 2015, were intended to bring visibility and vision to the nascent movement of platform cooperators.

Image 4: New School auditorium packed with people at the Platform Cooperativism conference that Scholz and Schneider co-organized in 2015 in New York. Source: Cassano 2015.

In the space of these years (2014-2019), similar conferences began to take place on the other side of the Atlantic (like the 'Platform Cooperativism' conferences in London in 2017 and 2018), while a plethora of supportive texts was published on popular websites like *Shareable* (e.g. Gorenflo 2015, Sutton et al. 2016), *Wired* (Hulyer 2018, Thompson 2019), *Medium* (e.g. Loyola 2017, Scholz 2014), the *P2PF* (e.g. Clay 2015, Johnson 2016) and the *Washington Post* (e.g. Achenbach 2015, Dewey 2015), as well as in scholarly journals (e.g. van Doorrn 2017, Pasquale 2016, Pazaitis et al. 2017a, Schneider 2018).

As was to be expected, this agitation resonated also with the feelings of influential international organizations that champion the rights of workers and cooperators, such as the *International Labour Organization* (ILO 2018a; 2018b; 2018c; 2018d) and the *International Cooperative Alliance* (CICOPA 2018a; 2018b, ICA 2019, Mayo 2019), propelling them thereby to spread the idea of developing cooperative platforms even further through their own networks. All in all, the cumulative effect of these propagandistic actions was the development of a 'counter-narrative' of the sharing economy based on a critique of proprietary platforms in tandem with a proposal for the creation of platform cooperatives as an alternative vehicle of organization for Internet users and precarious knowledge workers (Pasquale 2016).

3.2.7. From platform cooperatives to open cooperatives

One of the most important contributions of the P2PF theorists to the debates on the sharing economy is the emphasis they put on the potentially subversive character of platform cooperatives as means of organization for the transition towards post-capitalism. For Bauwens and his colleagues from the P2PF, the importance of platform cooperatives goes well beyond the question of humanizing the labour conditions of

platform workers and redistributing the wealth of the sharing economy. Such platforms, in their view, can give a strong impetus to the further development of peer production in the online realm, catalyzing new structures of peer governance and peer property. Platform cooperatives, in short, can be instrumentalized as agents of the new paradigm of value creation constituted by commons-based peer production. To perform this transformative role, however, platform cooperatives must be oriented towards the commons. As Bauwens and his colleagues clarify, a negative feature of traditional cooperatives is that they are not actively engaged in the production of the commons (Bauwens & Kostakis 2014, Pazaitis et al. 2017a). As they explain, the problem is that

> cooperatives that work within the capitalist marketplace tend to gradually adopt competitive mentalities, and even when they do not, they chiefly operate for the benefit of their own members. They usually have to rely on the patent and copyright system to protect their collective ownership and may often self-enclose around their local or national membership (Pazaitis et al. 2017a).

From this point of view, cooperatives are not likely to evolve into a vehicle for the transcendence of capitalism if their products do not differ from those of their competitors in terms of their property character. To fulfill that purpose, in addition to democratizing the workplace and the management of production, cooperatives must be agents of democratization of the access to the fruits of production. To put it simply, cooperatives should not produce closed/proprietary products as the capitalists do. On the contrary, what they produce should be a commons. By producing commons, cooperatives do not only affirm their social relevance, but they also strengthen the 'counter-hegemonic movement' of commoners and the development of 'a commons-oriented counter-economy' that could challenge the rule of capital (Pazaitis et al. 2017a). That is why peer production theorists insist on the significance of the commons in the context of the development of platform cooperatives. By edging platform cooperatives on the path of the commons, they aspire to engender the enabling conditions for the diffusion of peer production and the expansion of the commons-based economy.

We should not forget that under existing conditions, peer producers and commoners are dependent upon the capitalist system for their sustainability. For most of them, 'commoning,' to use a term popularized by historian Peter Linebaugh (2008), is an activity in which they are engaged without any form of remuneration. A small minority makes a living by working at capitalist firms like IBM or Google, which profit by incorporating the digital commons into their own products and services. The fact that the majority of commoners find it impossible to sustain themselves directly through their engagement with the commons is extremely pertinent, as it implies that the commons ecosystem is not autonomous from the capitalist system, upon which it depends for its reproduction. For Bauwens and his colleagues, this is a strategic weakness that can and *must* be addressed through the development of commons-oriented platform cooperatives, which they call 'open cooperatives' (Bauwens & Kostakis 2014; 2016, Pazaitis et al. 2017a). By making it possible for commoners and peer producers to capture the value of their platform-mediated productive activities, such open cooperatives will help to 'emancipate [peer production] from the confines of the dominant system,' rendering it

a[n autonomous] system of value creation that can antagonize Capital (Pazaitis et al. 2017a). For the digital commons theorists, that is precisely where the subversive potential of platform cooperatives lies.

3.2.8. Distributed Capitalism

Netarchical capitalism does not constitute the only trajectory of evolution of cognitive capital in the age of distributed networks. Like netarchical capitalism, *distributed capitalism* can be seen as a strategy of adaptation to distributed networks that 'develops within the context of a new-feudal form of cognitive capitalism' (Kostakis & Bauwens 2014: 30). As Kostakis and Bauwens (2014: 33) explain, 'this new iteration of capitalism conforms to the characteristics of the network era' as it 'utilizes P2P [i.e. distributed technology] infrastructures.' But in contrast to netarchical capitalism, in distributed capitalism there is no centralized control of the underlying technological infrastructure.

Bitcoin is the archetypal example of distributed capitalism. To describe it simply without getting into much technical detail, Bitcoin is a software program that allows its users to create virtual coins (called 'bitcoins') by using their computers' processing power. This process is known as 'mining.' The significance of the metaphor is clear: Bitcoin users who 'mine' new virtual coins out of their computers constitute the 'gold diggers' of the digital age. So, that is basically how bitcoins are produced. Then, once they have been produced, bitcoins can also be exchanged. And what is very important, they can be exchanged in a way that is technologically both secure (thanks to cryptography) and distributed, in the sense that bitcoin transactions do not require any kind of 'trusted intermediaries' (like the banks or the government). Instead, the validation process of the transactions is distributed to the whole network of logged-in miners. That is, in short, how Bitcoin works.

Now, as regards its history, the first version of Bitcoin was released in 2009 by Satoshi Nakamoto as open-source software. On account of its openness and its reception by the software community as constituting a truly innovative approach towards digital currencies, it soon attracted many users and developers. Due to its increasing popularity, in 2011 bitcoins began to be exchanged through black markets like the 'dark web' website Silk Road, which developed into major bitcoin users. In parallel, bitcoins began to be traded on so-called 'digital currency exchanges' (aka 'cryptocurrency exchanges'), many of which were set up in response to the surge of interest in digital currencies (which was largely due to Bitcoin) in this period (Wikipedia 2019a). Most importantly, from that time onwards, the price of Bitcoin skyrocketed. Indicatively, in January 2011, its price started at $0,30. In January 2013, it had risen to $13,30. Six years later (Jan. 2019), it had reached the unbelievable price of $3 747 dollars per bitcoin (Wikipedia 2019b). That increase in the price of Bitcoin is, of course, indicative of the degree of speculation in the bitcoin economy.

To put it simply, some people have made a huge fortune by trading bitcoins on digital currency exchanges, which allow their customers to trade bitcoins for conventional fiat money or other digital currencies. Who are these people? First of all, it is the original

developers and the early adopters of Bitcoin. By virtue of its design, Bitcoin has privileged early users. A rule embedded into the design of the software is that the degree of difficulty of mining bitcoins rises in proportion with the number of 'miners' who are connected to the Bitcoin network and the volume of the transactions processed through it. In practical terms, this means that the capacity of the average user to produce new bitcoins has decreased dramatically over time; it was much easier for someone to create bitcoins five years ago than it is now. The unequal distribution over time of the capacity to create new bitcoins, in turn, has resulted in a great disparity in the ownership of the virtual coins themselves. That is to say, it has resulted in the formation of a 'Bitcoin aristocracy.' As Kostakis and Bauwens (2014: 33) write, the

> members of this aristocracy are those that got into the Bitcoin game early on, when it was easy to create new units. At the same time, the tendency towards the formation of an aristocracy of bitcoin users has been reinforced by the development of so-called 'mining pools,' that is, networks of powerful computers that specialize in Bitcoin mining.

As Pazaitis et al. (2017b: 8) write, 'in practice, the Bitcoin network is operated by a small number of [such] mining pools, which together control over 75% of the network.'

From the perspective of P2PF theorists, the fact that Bitcoin has led to the formation of a new class of plutocrats is not accidental. As they point out time and again, technologies are not neutral, but reflect the values and the strategic agendas of their creators. Bitcoin is no exception. The ideological principles of its developers are 'hard-coded' into the technology itself (Bauwens et al. 2019, Troncoso & Utratel 2019). More specifically, Bitcoin encapsulates the values and the principles of a type of stateless, 'laissez-faire' capitalism (sometimes referred to as 'anarcho-capitalism') which 'is premised on the idea that everybody can trade and exchange; or, to put it bluntly, that everyone can become an independent capitalist' (Kostakis & Bauwens 2014: 31). Although projects like Bitcoin 'purport to offer individual autonomy from both big business and the state,' they 'are driven by an underlying vision that society is just a sum of autonomous individuals' who transact with each other. But clearly 'there is no real society and no collectivity in these visions.' Nor are there 'any counter-measures that can prevent the creation of inequality and oligarchy' in this model (Bauwens et al. 2019: 37-38).

In any case, as P2PF theorists remark, Bitcoin reflects a model that commoners are practically opposed to. In fact, in much the same way that the new class of distributed capitalists is coalescing around digital currencies like Bitcoin, commoners are partnering with 'ideologically aligned coders,' with whom they are developing alternatives for commoners and peer producers (Troncoso & Utratel 2019: 55). In other words, the capitalists are not the only ones who embed their values and principles into the technologies they develop and use. Commoners do exactly the same: they develop and use technologies that promote 'commons transitions,' that is, outcomes that are antagonistic to Capital. In this way, commoners emphasize 'struggle through the construction of alternatives' (Kostakis & Bawuens 2014: 69). To understand how such alternatives work in practice and how in specific they antagonize bitcoin capitalists, let us look at a few of the examples mentioned in the literature.

To begin with, there is ECO, the digital currency used by more than forty so-called 'local exchange networks' in Catalonia. In a sense, each exchange network constitutes a self-organized marketplace for the local community, where one can buy and sell local products and services using ECOs. Unlike Bitcoin, the ECO cannot be converted into regular currencies (like the US dollar or the British pound), effectively precluding the possibility of using it speculatively. Also, in contrast to Bitcoin's globalized character, the ECO is locally grounded. ECO is designed to serve the purpose of an alternative digital currency for the people who live in Catalonia. It is intended to be used by local communities, which form 'a horizontally organized network of self-managed exchange networks with their own community currencies,' rather than by globally distributed online crowds, as in the case of Bitcoin (Dafermos 2017).

Another relevant example is that of Sensorica, which is a Montreal-based network of engineers, researchers and developers who design sensors. All these actors are affiliated with the non-profit Canadian Academy for the Knowledge Economy (CAKE). Sensorica is the CAKE-managed platform through which they 'organize around projects that produce open hardware technological solutions' (Bauwens et al. 2019: 21). But Sensorica is not just a commons-based community. It is also an 'entrepreneurial entity,' as business projects are often launched by community members, introducing Sensorica's innovations into the market. That is where 'blockchain' (the distributed database technology that is the backdrop for Bitcoin) comes in. With the aim of enabling the equitable and fair distribution of the revenue generated by these business ventures, Sensorica has developed an accounting system based on blockchain technology. This system ensures that 'all revenue is distributed back to the network and in particular to the people that have been involved' in the development process. It 'records and determines every member's input in every project and redistributes revenues in proportion to each contribution.' In this way, Sensorica is an example of a commons-based peer production community which uses blockchain in order to enable the development of a symbiotic relationship between the community and the business projects launched by its members (Bauwens et al. 2019: 21-23).

Image 5: Panoramic view of the audience at the Ouishare Festival in Paris in 2015. Source: Utratel 2015.

Sensorica is not the only example of an 'open-value accounting system,' as peer production theorists call it. They highlight various cases in which such systems have been supportive of the development of commons-based peer production projects. For example, the OuiShare community, 'a network of researchers, activists and entrepreneurs' from France used a similar (blockchain-based) open-value accounting system to organize a large festival in Paris in 2015 (Pazaitis et al. 2017b). In this case, contributors to the organization of the festival were rewarded with a reputation score and digital tokens (which could be used to acquire services offered by OuiShare community members), based on the value of their contribution, as perceived by the OuiShare community. Without getting into much detail, what peer production theorists consider to be most important about the case of the OuiShare festival is that it illustrates the possibility of using distributed technologies like Bitcoin in ways that support peer production (Pazaitis et al. 2017b). This is the point they constantly emphasize in all the examples they mention in their analysis.

Characteristically, in their recently published 'manifesto,' Stacco Troncoso of the P2PF and his fellow cooperators at the worker-owned cooperative Guerrilla Media Collective in Spain highlight how tremendously they have benefited from the adoption of such a blockchain-based open-value accounting system. Using the software, the members of the cooperative record all types of contributions which they consider to be valuable to their group, including volunteer labour and 'care work.' In this sense, the use of the open-value accounting system reinforced the 'value sovereignty' of their cooperative, enabling them to determine their own value standards, that is, what types of work are valuable to them and how to reward them (Troncoso & Utratel 2019).

3.2.9. Summing up: Antagonisms and the struggle for hegemony

In sections 3.2.1–3.2.8, we attempted to lay bare the rationale underlying the thesis that peer production has the potential to become hegemonic in the information economy. As we saw, digital commons theorists draw this conclusion from their analysis of how distributed networks (in general) and commons-based peer production (in specific)

establish an antagonistic relation of forces among the various categories of economic agents in the digital economy. The mode of peer production, as they write, 'should be seen as a challenge to capitalism and as a function of struggle and a balancing of forces' (Bauwens et al. 2019: 68). Their analysis is at the same time theoretical and strategic: it aims to 'size up' its opponents and develop strategies against them. Section 3.2 provided a synopsis of its main points.

First of all, according to this analysis, peer production communities are antagonistic towards several categories of economic agents:

(1) traditional technology companies based on 'closed' production models

(2) generative entrepreneurs (that is, businesses based on open innovation models)

(3) cognitive capitalists who depend on restrictive intellectual property rights

(4) netarchical capitalists (i.e., 'sharing economy' platforms)

(5) Bitcoin-type of distributed capitalists

By analyzing how these models are antagonized by peer production in the digital economy, we ascertained that some of them (e.g. the open innovation model) constitute strategies of adaptation to this antagonism, which succeed to some extent to harmonize the interests of the for-profit enterprises adopting them with those of the commoners. For example, traditional technology companies are antagonized by the mode of peer production. But as their production process is closed to actors outside the firm, they cannot tap into the productive potential of distributed networks and peer production communities. As a result, they can compete neither against them nor against rival capitalists that adopt crowdsourcing and open innovation models. Under these conditions, the only way they can survive is through the adoption of similar open innovation models, following thus the example of their competitors. Ultimately, by means of this strategy of adaptation, these entrepreneurs find a way to synergize with peer production communities. And so, they turn from competitors into potential allies of commoners and peer producers.

Such a business alliance, however, does not seem to be possible with any of the three categories of cognitive capitalists. In its classical form, cognitive capital is synonymous with the enclosure of the commons of knowledge and culture, which effectively precludes any type of generative relationship with commoners from ever developing. Although it is a powerful enemy with a strong influence upon the State, it is being undermined from within by economic agents which represent a more highly developed form of cognitive capital. As a consequence, the rapid development of these new variants -that is, the netarchical capitalists who own the platforms of the sharing economy, as well as the new generation of Bitcoin capitalists- marks the end of cognitive capitalism (as we knew it).

In the final analysis then, the development of a synergistic relationship between peer production communities and cognitive capitalists of any type seems hardly feasible. But if that is so, how can commoners and peer producers antagonize the sharing economy

platforms controlled by the netarchical capitalists? From a vantage point that is simultaneously theoretical and practical, peer production theorists find the answer in the development of cooperative platforms. As is in fact happening, in order to escape from exploitation, commoners are organizing themselves into 'open' (i.e. commons-producing) cooperative platforms. That is how they antagonize in practice the capitalist platforms: by setting up their own jointly owned and democratically controlled platforms, which support the creation of dignified livelihoods for commoners. By enabling them to break their bonds of dependence with the capitalist economy, this type of platform cooperatives strengthens the autonomy of commons-based peer production from Capital (Pazaitis et al. 2017a).

In addition to antagonizing platform capitalists through the development of commons-oriented platform cooperatives, commoners are also antagonistic towards Bitcoin capitalists. The form of their struggle against Bitcoin, we could say (using Bauwens and Kostakis' characterization), is prefigurative in the sense that commoners create practical alternatives to Bitcoin, which demonstrate that another trajectory of economic and technological development is possible. As Bauwens et al. (2019: 69) put it, this approach 'stresses struggle through the construction of alternatives.' In other words, commoners develop competing technologies, which show that digital currencies can be used in ways that contrast sharply with how the capitalists of the 'Bitcoin universe' have so far been using them. As peer production theorists remark, commoners develop and use digital currencies which, unlike Bitcoin, cannot be used as instruments of speculation and individual enrichment. A well-known example is the ECO, the digital currency used by tens of local exchange groups in Catalonia. As we mentioned in section 4.8 on 'distributed capitalism,' unlike Bitcoin, the ECO cannot be converted into regular currencies, which makes speculation impossible. Furthermore, it is locally grounded, which means that it is adapted to the specific needs of the local communities using it (Dafermos 2017).

In a similar vein, commoners demonstrate how the blockchain (one of Bitcoin's core components) can be used to enable practices like open-value accounting, which, as we have seen, are supportive of peer production communities, promoting their 'value sovereignty' and enabling them to determine their own value standards, that is, what type of contributions are valuable to them and how to reward them (Troncoso & Utratel 2019). In sum, both commoners and Bitcoin capitalists make use of distributed networks and digital currencies to fulfill their purposes. But whereas Bitcoin capitalists put digital currencies into an anti-social use driven exclusively by the profit-motive, commoners appropriate them as enabling infrastructures for the collaborative organization of peer production projects.

Let us draw the conclusions from the above analysis. Traditional technology companies are rapidly becoming obsolete due to their closed production models. They constitute a dwindling figure in the capitalist economy, whose only chance of survival rests on their capacity to open up their production process through the adoption of crowdsoucing and open innovation models. And so, by virtue of this transformation, they are led to the development of a generative relationship with peer production communities, which

reconciles their hitherto antagonistic interests, making them allies. To put it bluntly, the model of traditional technology companies is bound to be eclipsed by the combined forces of peer production communities and business enterprises based on open innovation models. Similarly, as a result of its own anachronistic character, the classical (IP-dependent) model of cognitive capital is giving way to more evolved models that antagonize it from within.

However, the new variants of cognitive capital remain closely anchored in extractive business models. And so, there is no space for reconciliation between them and peer production communities. To antagonize them, commoners organize themselves into commons-oriented cooperatives and generative enterprises, which create dignified livelihoods for commoners, thereby strengthening the autonomy of peer production from the capitalist economy. In parallel, they develop strategies of transvestment, which are aimed at transferring value from the capitalist economy into the commons-based economy. And, lastly, as one would have good reason to expect from a mode of production that emerged in the field of technology, commoners antagonize Capital through the construction of alternatives to capitalist technologies. That is, in a nutshell, how the potential of peer production to become hegemonic in the realm of the information economy has been theorized in the literature.

There is, however, an important element in the analysis of peer production theorists that we have not yet touched upon. In the space of the last decade, they have become increasingly aware of the limitations attendant upon any commons transition strategy that does not take seriously into account the role of institutions. 'In order to transcend capitalism,' as Bauwens and Kostakis (2015) have come to realize, it is not enough 'to create a sustainable ecosystem consisting of ethical markets, commoners and cooperatives.' The reason is because that ecosystem, in spite of its productive superiority, 'might not survive a hostile capitalist market and state without necessary changes at the macro-economic level' (Bauwens & Kostakis 2015). The problem, in other words, is that 'as long as we live in an unequal class-based society' (Bauwens et al. 2019: 52), in which capital holds sway over public institutions, there is always the danger that 'the state can favour capitalist development, expropriations and repression and its own mediations can leave the commons playing a relatively subordinated role, that of reducing the cost of social reproduction to the state and capital' (De Angelis 2017: 303). As a matter of fact, therefore,

> peer-to-peer economic relations can be undermined...[and] distorted by the extra-economic means of a political context designed to maintain profit-driven relations of production into power. This subversion can arguably become a state policy, and the subsequent outcome is the full absorption of the Commons as well as of the underpinning peer-to-peer relations into the dominant mode of production (Kostakis & Stavroulakis 2013).

Consequently, the sustainability of the commons ecosystem presupposes *de facto* the development of supportive institutions 'on the macro-economic level' (Bauwens & Kostakis 2015). From the early 2010s onwards, as we shall see, the work of peer production theorists has been characterized by an acute awareness of the strategic role

that such institutions could play in the struggle of commoners and peer producers against the hegemony of Capital. That is the subject of the next section of the report.

3.3. The struggle for political power and the hegemonic strategy of the commoners' movement

3.3.1. Introduction

In section 3.2 we discussed how digital commons theorists substantiate the thesis that peer production has the potential to become the dominant mode of production in the digital economy, thereby transcending capitalism. As we remarked in section 3.2.9, peer production theorists have become increasingly more emphatic over the past few years about the importance of supportive institutions 'on the macro-economic level,' which have taken on a strategic role in their commons transition proposals as a countervailing force against the influence of capital over systemic institutions.

In this section, we will discuss the character and the form of these institutions, laying particular emphasis on how they are integrated into 'the development of tactics and strategy' (Bauwens 2005) for the struggle of commoners and peer producers against capital. As we shall see, the forms of the struggle undertaken by their movement pass through both systemic and non-systemic institutions. On the one side, the commoners movement is engaged in the development of autonomous alternative institutions, such as the so-called Assemblies and Chambers of Commons, which focus on the economic interests of peer producers and commons-friendly entrepreneurs (Bauwens et al. 2019). On the other side, the struggle of commoners passes through systemic institutions. Characteristically, commoners organize themselves in 'citizen platforms' (such as Barcelona en Comú, which governed the city of Barcelona from 2015 until 2019), which aspire to take control of local power in order to implement 'revolutionary reforms,' such as the commonification of urban resources (Bauwens et al. 2019).

State institutions, as peer production theorists have come to emphasize in recent years, constitute a terrain of struggle of decisive importance. Realizing their significance, they developed the theory of the 'Partner State,' which, as we shall see, has evolved into a full-blown hegemonic strategy of the commoner class. That is to say, the concept of the Partner State has been 'weaponized' over time, turning into a strategy of alliances with other forces on the institutional level, which, according to P2PF theorists, is key to setting off a post-capitalist transition.

But prior to discussing the emergence of the Partner State concept in the work of peer production theorists and how it evolved into a hegemonic strategy of the commoners movement, let us look at the non-systemic institutions that the community of commoners and peer producers developed over the last decade in order to promote its interests.

3.3.2. Autonomous institutions

A characteristic example of the kind of non-systemic institutions that the movement of commoners and peer producers has been busy with over the last decade are the so-called *Chambers* and *Assemblies of Commons*. The idea of setting up a 'Chamber of

Commons' was originally proposed by David Ronfeldt in 2012 as a commons-oriented alternative to Chambers of Commerce. By emulating the function of the latter, Chambers of Commons would cater for the interests of commons-friendly entrepreneurs. The idea drew the attention of Bauwens, prompting him to propagandize it through the P2PF. Underscoring the significance of such institutions to the nascent commoners' movement, Bauwens (2013) supplemented Ronfeldt's proposal with the concept of the 'Assembly of Commons.' In the same way that Chambers of Commons could represent the interests of the regional ecosystem of commons-friendly entrepreneurs, Assemblies of Commons could function as a direct-democratic forum for local communities of commoners.

Image 6: Photo from the 2nd day of the European Commons Assembly, which took place at the European Parliament in Brussels in 2016. Source: European Commons Assembly (https://www.flickr.com/photos/146782260@N04/30493268003/).

As a result of that agitation, in 2015 a group of sympathizers in Chicago were mobilized to set up a Chamber of Commons in their city (Troncoso 2015), while 'several Assemblies of Commons begun to emerge...in Lille, Toulouse, Brest and several other big cities in France' (Bauwens & Ramos 2016). Concurrently, various groups began to experiment with the organization of such Assemblies in other cities, such as Gent (Belgium), Melbourne (Australia), Berlin (Germany), London (UK) and Amsterdam (Netherlands; Wiki des Communs 2018). These molecular processes in the milieu of the commoners' movement intensified in the following year with the organization of the first meeting of the European Commons Assembly in Brussels on 15-17 November 2016, which drew about a hundred activists from all over the world, including some sympathetic members of the European Parliament.[13]

Since then, various commons activists, such as P2PF director Stacco Troncoso, have propagandized the idea at big events and conferences, like the 4th European Social & Solidarity Economy Congress in Athens in June 2017, the international summit 'Fearless Cities' in Barcelona in June 2017 and the Transeuropa Festival in Madrid in October 2017.

Nevertheless, the development of autonomous institutions like the Chambers and Assemblies of the Commons does not constitute the only 'macro-economic' strategy by

[13] With the aim of reaching out to policy makers, on the second day the Assembly was hosted at the European Parliament.

which peer production theorists and commons activists aspire to strengthen the ecosystem of peer production communities and commons-friendly entrepreneurs.

3.3.3. Hacking the State

Systemic institutions of political power constitute another important terrain of struggle in which the commoners are actively engaged. To begin with, commoners participate in parliamentary struggles through new political parties, such as the Pirate Party, which is a running candidate in the national elections for government in several European countries. Although the content of its program varies from country to country, the fact that its basic political demand invariably revolves around the right of citizens to copy digital files and share them via the Internet resonates with the feelings of the commoners' community. This common ground, in the view of peer production theorists, makes the 'Pirates' an obvious ally of the commoners in their struggle against cognitive capitalists (Bauwens et al. 2019).

At the same time, and even more subversively, commoners struggle to 'hack' the institutions of state power from *within* with the aim of transforming them into 'partner institutions.' On this point, it is instructive to look at how the terrain of that struggle -that is, the State- has been theorized in the digital commons literature. In general, the State is conceived as a datum of present reality, something akin to a necessary evil (Bauwens et al. 2019, Benkler 2006: 20-28, Pazaitis & Drechsler forthcoming; cf. Bollier 2016). Bauwens et al.'s recently published *Peer-to-Peer: The Commons Manifesto* (2019) is paradigmatic of this conception of the State. In the book, Bauwens et al. (2019: 58) expound the view that infrastructural organizations like the Linux Foundation 'operate as mini-states of the CBPP ecosystems.' This is not to say that they have the powers or the functions usually ascribed to modern governments. The characterization 'mini-states' simply indicates that they 'enable the infrastructure of collaboration' undergirding peer production. As we mentioned in section 3.2.3, infrastructural organizations like the Linux Foundation constitute a crucial supportive structure for the commons-based ecosystem of value creation. Thus, given their significance in the framework of peer production projects, Bauwens and his collaborators deduce that the scaling-up of the commons ecosystem into 'a full social form' requires the formation of similarly enabling institutions at the state-level, which would ideally 'empower and enable the direct creation of value by civil society...by creating and sustaining infrastructures for CBPP ecosystems' (Bauwens et al. 2019: 58-59). That is what they call the '*Partner State*:' a systemic institution, which enables the expansion of the mode of peer production by strengthening the capacity of citizen participation in commons-oriented projects.

3.3.4. The Partner State #1: The FLOK Society Project

The concept of the Partner State took on a central importance in the work of the theorists affiliated with the P2PF in the last decade. Initially, it was incorporated into their discourse as a strategic proposal for building commons-friendly institutions at state-level. But as institutions of this type did not yet exist, the concept was methodologically constructed as an ideal type with no empirical validation. The opportunity to put flesh on its bones came in 2013, when Bauwens was invited to Ecuador to lead the FLOK

Society Project (the acronym FLOK stands for Free, Libre, Open Knowledge), a government-funded research project aimed at the development of a set of public policy proposals for the transformation of the Ecuadorian economy through peer production and the digital commons.[14] The project, as Bauwens immediately realized, had an enormous symbolic significance, as this was the first time that commons theorists had ever come so close to public policy makers. The fact that the socialist government of Rafael Correa's Alianza PAIS had given them free rein to envision a commons transition process at the national level meant that the commons and peer production were becoming a force to be reckoned with in the world of politics (Schneider 2018b). This solidified Bauwens' (2009: 132) view that peer production represents 'the socialism of the twenty-first century' and encouraged him and his FLOK collaborators to think strategically about what form the Partner State could assume in Ecuador. Here, the influence of one of the FLOK researchers, John Restakis, who emphasized the relevance of the region of Emilia-Romagna in Italy, was decisive.

Image 7: FLOK seminar at the Instituto de Altos Estudios Nacionales (IAEN) in Quito in 2014. The speaker on the right is then-Minister of Knowledge and Human Talent, Guillaume Long. Source: http://floksociety.org

For Restakis, the cooperative ecosystem of that region was a tangible example of what the Partner State looks like in practice. Multi-stakeholder cooperatives are responsible for the management and provision of public goods and services, such as care and support for the elderly, whereas the role of the State is basically confined to funding them and evaluating their performance. This conception formed the backdrop for all the policy proposals that Bauwens and his FLOK colleagues developed with the aim of empowering 'the direct creation of value by civil society' (P2P Foundation 2017). Thus, in the context of FLOK's policy documents, the Partner State is synonymous with a state government that supports cooperative organizations by developing policies and regulations that allow them to play a central role in the economy (see e.g. Bauwens & Kostakis 2015, Restakis 2015).

[14] The discussion of the FLOK Society Project in this report is largely based on my own experiences as a member of its core researchers group. For an extensive discussion of the FLOK Society Project from a journalist's perspective, see chapter 7 in Schneider (2018b).

Nevertheless, despite his initial enthusiasm, Bauwens soon became disillusioned with the project. Although FLOK was funded by the Ecuadorian government, nobody in its higher echelons of power seemed to really care about it. Apparently, there was no political will to implement any of its proposals. Based on this experience, Bauwens (2014) came to the conclusion that 'we have to abandon the romantic idea that we can hack a country' by appealing to the reason and the willingness of traditional political parties and their leaders. That, however, does not mean that he or his collaborators abandoned the idea of the Partner State. On the contrary, they re-conceptualized it at the city-level. Actually, this scaling-down of the concept had very little to do with the failure of FLOK to transform the Ecuadorian government into a partner state. Rather, as we shall see, the emphasis on the city as the epicentre of a commons transition reflected the growing political momentum of new municipalist movements in various European metropolises, such as the Barcelona en Comú citizen platform which has governed the city of Barcelona since 2015 to-date (2020).

3.3.5. The Partner State #2: Barcelona en Comú and the Bologna Regulation

The meteoric rise of new municipalist movements and citizen platforms in the mid-2010s like Barcelona en Comú drew the attention of P2PF theorists, who did not take long to start theorizing them as examples of a 'partner state approach' (Bauwens et al. 2019: 59-64). What, in their view, sets these 'citizen platforms' apart from conventional political parties is the emphasis of their political vision on the commons, as well as the fact that their programs push for 'openness and democratization of local government institutions and direct citizen participation in local governance' (Bauwens et al. 2019: 60). To better understand why such citizen platforms constitute examples of strategic importance for a commons transition, let us look at two main examples from the recent literature.

The first example is the Barcelona en Comú citizen platform, which, according to Bauwens et al., is 'a momentous case that signifies a new form of radical municipalism' (Bauwens et al. 2019: 60).[15] In contrast to previous municipal governments, Barcelona en Comú's strategy was not to reform the city from the top down, but to transform it from the bottom up. Thus, it put emphasis on enabling citizen participation in its collective processes. Characteristically, by adopting the use of open assemblies and online platforms in the context of drafting its electoral program, it enabled over five thousand people to contribute to that process. And then, in the space of the four years that it governed the city of Barcelona during its first term, it developed a wide spectrum of policies that 'embrace cooperatives and citizen activism' along with the commons (Bauwens et al. 2019: 60-61).

But aside from its policies, what truly makes Barcelona en Comú unique is that it constituted in practice a new municipal institution of political authority 'created by social movements along with political parties to reimagine citizen participation in

[15] For an extensive discussion of the new municipalist movement in Barcelona from the perspective of Heteropolitics, see *Report 6. Case Studies in Spain* (2020) by Manuela Zechner and *Report 2. The Political* (2020) by Alexandros Kioupkiolis.

governance' (Bauwens et al. 2019: 60). In a sense, citizen platforms like Barcelona en Comú are a hybrid between social movements and political parties. They constitute a new institution of municipal governance that makes it possible to build an alliance between those two forces.

The second example, which serves as 'a paradigmatic case for developing new institutional processes for public-commons partnerships,' comes from the region of Emilia-Romagna in Italy and, in specific, from the city of Bologna (Bauwens et al. 2019: 61-62).[16] As we mentioned in section 5.4, in the context of the FLOK policy proposals, the partnership model between cooperatives and the local government of Emilia-Romagna was theorized as a real-world manifestation of the Partner State. More specifically, the example of Emilia-Romagna served to showcase the enabling role that the State can play in the development of a strong cooperative economy. Yet, aside from this synergy between the State and cooperatives, what confers particular importance on this part of the world is the so-called 'Bologna Regulation on Civic Collaboration for the Urban Commons,' which was adopted by the City of Bologna in 2014.

The Regulation basically allows the citizens of Bologna to 'claim urban resources as commons and to declare an interest in their care and management' (Bauwens et al. 2019: 62). Practically speaking, it means that citizens can propose to the City of Bologna to hand over to them the responsibility of managing urban resources such as, for example, unused public buildings which they consider to be badly managed or under-utilized. In that way, the Regulation constitutes a process by which the stewardship of urban resources can be entrusted to the citizenry. At the same time, it exemplifies a partnership model between the institutions of local administration and the commoners in the context of the commonification of city resources. By 'giving citizens the direct power to produce policy proposals and transform the city and its infrastructure' (Bauwens et al. 2019: 63) in the direction of the commons, the Regulation, in a sense, represents the basis of a 'new form of municipal government' in Bologna. What is more, its popularity has encouraged other Italian cities to follow: 'for instance, Torino is already planning to adopt the Regulation, while Milan, Rome, and Florence have expressed specific interest' (Bauwens et al. 2019: 63). According to P2PF theorists, if that happens, it will result in a great shift of power from Capital to the Commons. In a word, it will be a historic step towards a commons transition.

3.3.6. Recuperating systemic institutions from below

It would be an error to underestimate the importance of these attempts to redefine the notion of the Partner State. First of all, it is made patently manifest through the analysis of P2PF theorists that commoners antagonize systemic institutions of political governance by organizing themselves into citizen platforms, which act as a fermenting agent upon the expansion of peer production and the development of an alternative mode of governance at the city-level. As can be clearly seen in the case of Barcelona en

[16] For an in-depth discussion of the Bologna Regulation from the perspective of Heteropolitics, see *Report 1. The Common* (2020) by Alexandros Kioupkiolis and *Report 4. Case Studies in Italy (2020)* by Antonio Vesco.

Comú, such citizen platforms constitute a new political actor with the capacity to take over municipal governance institutions and transform them into enablers and accelerators of peer production. In recognition of the pivotal role that such supportive institutions could play in a commons transition, Bauwens et al. (2019) have come up with the strategic proposal of utilizing citizen platforms like Barcelona en Comú as a 'Trojan horse,' that is, as an instrument for invading systemic institutions and revolutionizing them from within. In that sense, we could say that the setting up of citizen platforms constitutes a political strategy by which commoners attempt to recuperate systemic institutions *from below*.

What is also remarkable about the partner state approach crystallized into the examples of the Barcelona en Comú citizen platform and the Bologna Regulation is the fact that it results in the expansion of peer production from cyberspace to the urban space of the city. By approaching urban resources as a commons in which local communities should have the right to be actively engaged, such institutions open up the possibility of tapping into urban resources and using them as a springboard for the development of peer production projects in the offline world. In a nutshell, this form of commoners' struggle opens up the possibility of applying the principles and the methods of peer production and governance to anything that can be possibly conceived of as an urban commons, such as a public park or an abandoned factory building. In this partner state approach, then, resides the possibility for an extension of the field of application of peer production/governance to the metropolitan field and its cornucopia of resources (Bauwens et al. 2019).

3.3.7. The political turn of peer production theory

In any case, the manner in which the concept of the Partner State has been theorized since the early 2010s signals a shift of emphasis in the digital commons literature towards *the political*. We should keep in mind that the Partner State strategy constitutes a rather recent addition to the arsenal of commoners and peer producers. Prior to the 2010s, there was hardly any mention of the role of political struggle in the analysis by which the theorists of the digital commons substantiated the argument that peer production has the potential to transcend capitalism. Presumably, commoners did not need to worry too much about politics, as, in the view of the theorists, the decisive terrain of struggle was that of the economy (see e.g. Bauwens 2009: 135-137).

Of course, as one would expect, peer production theorists have been fiercely criticized for downplaying the role of political struggle in the process of social transformation. Indicatively, Kioupkiolis reproaches them for downplaying the importance of political struggles by putting forward a technocratic vision of social change in which technological, legal and entrepreneurial fixes are the main catalysts of historical transformation (see *Report 2. The Common*). For political theorists such as Kioupkiolis, the problem with the *early* work of peer production theorists rests on its affinity with that well-known axiom of Marxism, which, by holding that the 'superstructure' of political institutions is merely a reflection of the 'economic base,' has been construed as implying that political struggles are insignificant in comparison to economic struggles.

On their part, peer production theorists have tried to fend off that critique by arguing that 'a critical mass of initiatives needs to be operating before political action can be summoned and relevant institutions can be designed' (Bauwens et al. 2019: 64).

Be that as it may, the experience of the first decade of the 21st century convinced them that it is not possible to 'change society merely by producing open code and design' (Bauwens & Kostakis 2015). Because obviously, if the economy was all that mattered, then the phenomenal success of the Linux operating system, which has been established for some time now as the undisputed market leader for operating systems, would have resulted in the demise of capitalism in the software industry. On top of that, the rise of new municipalist movements in the mid-2010s made them rethink their Partner State strategy. As a result of that re-conceptualization of their strategy on the basis of the experiences of Barcelona en Comú and the Bologna Regulation, the recent (post-2015) work of peer production theorists is characterized by a rejection of crudely deterministic theories of social change that downplay the centrality of political struggle in the transition process to a new social order.

Quite simply, as Pazaitis and Drechsler (forthcoming) clarify, 'a change of production alone cannot really transform society...the relationship between economics and politics is not linear, i.e. a radical change in the former is not necessarily followed by corresponding ones in the latter.' On the contrary, 'things can go many ways' (Pazaitis & Drechsler, forthcoming). In fact, as Bauwens et al. (2019: 29) point out in their last book, 'there have been many historical opportunities for such a transition, but capitalism has demonstrated high resilience as an economic system, adaptability as a cultural framework, and brutal force as a political apparatus.' Consequently, then, the struggle of peer producers against the capitalists in the digital economy does not suffice to bring out radical social change. In order to really transform society, there is no other way: commoners must also struggle *politically*. For that reason, therefore, commoners should not underestimate the potential role of 'the state as the agent for social reform and change' (Pazaitis & Drechsler, forthcoming). That is precisely what gives the edge to the Partner State strategy: it constitutes a form of struggle through which state power can be put at the service of the commoners (Bauwens et al. 2019).

3.3.8. The hegemonic strategy of the commoners

The re-appropriation of the State as an instrument of 'revolutionary reforms' is not an easy task. It would be absurd to propose that commoners can achieve it by themselves. Anyway, they do not need to. The Partner State is a form of struggle that presupposes the formation of alliances and coalitions among different types of political actors. As we underlined in our discussion of Barcelona en Comú, commons-oriented citizen platforms have proven to be capable of integrating political actors as diverse as social movements and traditional political parties. Their inherently pluralistic character consequently implies that they could serve as mobilization strategies for 'the emergence of majoritarian coalitions in which the commons would be a binding element' (Bauwens et al. 2019: 66-67). As Bauwens et al. (2019: 66-67) believe, 'the acceptance of a commons agenda could be the basis for new progressive coalitions with already existing political

forces' like the Pirates, the Greens and the contemporary New Left. In parallel, it could be the 'substratum' of commons-oriented municipal coalitions with social movements and civil society actors.

In this way, by establishing an alliance between all these political forces through a commons agenda, the commoners' struggle takes on a pluralistic and mass character. Fueled by the momentum of such an alliance, their struggle becomes more diffuse and generalized, transcending thereby their hitherto particularistic interests. The escalation of the commoners' struggle, therefore, hinges on the formation of alliances with other agents. At this point, the strength of the Partner State strategy becomes clearly visible: its emphasis on the construction of alliances as a fundamental principle makes it a *hegemonic* political strategy, which has the potential to unite a wide spectrum of social agents in support of the commons.

At the same time, the Partner State approach does not simply establish an alliance between heterogeneous political actors but modifies the very identity of the participants in that alliance. Consequently, to the extent that the commonification of urban resources becomes a binding element in a municipal coalition, the various political actors engaging in it are effectively transformed into commoners. Even if they do not call themselves by that name, the fact that the commons have become a core part of their vision for the city speaks for itself. Of course, they are still Greens, municipalists or whatever they called themselves upon entering the alliance. But as the alliance itself is based on a commons agenda, the political identity of the actors engaged in it is infused with the values and principles of the commons. Hence, the social agents who participate in a commons-oriented municipal coalition, even if they do not identify themselves as commoners, effectively act as agents of a commons transition.

3.3.9. Summing up

Let us recapitulate the main points of the foregoing analysis. According to peer production theorists, the struggle of commoners is not confined to the sphere of the digital economy, but extends to the field of political institutions, both systemic and non-systemic. More specifically, commoners build their own autonomous institutions of governance, such as the Chambers and the Assemblies of the Commons. In this case, they antagonize the status quo by developing alternatives to systemic institutions, which allow them to organize themselves collectively (Bauwens & Kostakis 2015, Bauwens et al. 2019, Kostakis & Bauwens 2014).

In addition to setting up their own autonomous institutions, commoners antagonize systemic institutions from *within*. They organize themselves into citizen platforms such as Barcelona en Comú, which run for public office with the aim of taking municipal power into their own hands. Most importantly, in those cases where citizen platforms do succeed in taking control of the administrative apparatus of the city, they proceed to implement 'revolutionary reforms,' such as the commonification of urban resources. In that way, therefore, we could say that commoners recuperate systemic institutions from below. This strategy of re-appropriation of the State by the commoners is what peer

production theorists call the *Partner State* (Bauwens et al. 2019, Pazaitis & Drechsler forthcoming).

However, the significance of the Partner State strategy does not rest solely on re-purposing the State into an instrument of commonification. What is actually at stake here is the shape of the future. As peer production theorists underline, there is absolutely no guarantee of radical social change (Bauwens et al. 2019, Benkler 2006: 17-18). Hence, even if peer production becomes the dominant mode of production in the digital economy, there is no certainty that it will trigger a commons transition across the whole of society. But if 'things can go many ways,' as Pazaitis and Drechsler (forthcoming) put it, political action is then obviously necessary. In order to transform society, commoners must act *politically*. And that is precisely what they are trying to do through their participation in commons-oriented citizen platforms like Barcelona en Comú (Bauwens et al. 2019).

From one point of view, the Partner State strategy looks like a continuation of the economic struggle of commoners with other means. But it is actually much more than that, for the reason that the expansion of the scope of commoners' struggle beyond the economic field implies the opening-up of their struggle to the whole of civil society. To put it another way, to the extent that the struggle of commoners remains confined to the economic field, it is condemned to marginality. That much is certain, according to peer production theorists. Quite simply, it is not possible to scale up peer production from the 'micro-level' to a 'full social form' without taking up the struggle in the terrain of politics. At the end of the day, a commons transition rests on the possibility of taking control of state power. As Bauwens et al. (2019: 42) tell us, 'it is an illusion that such a development of the commons forces can be done with a hostile state.' In the context of this struggle, institutions of municipal governance are of paramount importance. As 'the city context appears more mature for a commons transition' (Bauwens et al. 2019: 65), the commoners organize themselves into citizen platforms like Barcelona en Comú with the purpose of taking control of municipal power.

In walking this path, commoners are not alone. The strength of citizen platforms lies in their capacity to mobilize a wide spectrum of actors in support of the commons. It is no coincidence that citizen platforms are invariably constituted by a coalition of forces: they do in fact constitute a strategy for organizing broad coalitions of social agents in the urban metropolises of the world today. By definition, therefore, citizen platforms are metropolitan *alliances*, which encompass actors as diverse as metropolitan movements and left-leaning political parties. The diversity and broadness of their social and political base constitute the real source of their strength. By virtue of uniting all these social agents, citizen platforms can accomplish more things than any of them, acting on their own, could. But aside from opening up the possibility of radical social change at the local level, the pluralism that lies at the base of citizen platforms makes them an ideal vehicle for a *hegemonic* strategy of the commoners' movement. That is, above all, what confers upon citizen platforms their enormous strategic significance in the context of the commoners' struggle: they are a prototype for the construction of a metropolitan alliance that is capable of uniting a large part of civil society around a commons agenda.

That is, in short, how the commoners antagonize the status quo in the realm of political institutions: they are engaged in setting up citizen platforms, which try to unite civil society in support of a commons agenda. These commons-oriented citizen platforms run for public office. Their plan is to take the apparatus of municipal governance into their hands and then put it to work in the service of their agenda. By means of that hegemonic strategy, as peer production theorists tell us, the 'commoners could evolve to become the new ruling class' (Bauwens et al. 2019: 53). That is to say, the commoners can become the leading and dominant class to the extent that they succeed in setting up a structure of alliances, which will allow them to mobilize a critical mass of metropolitan actors against the injustices of neoliberal capitalism and the hierarchies of the bourgeois State.

In section 3.3, following up on our discussion in section 3.2 of how commoners antagonize capital in the economic field, we looked at the form of their struggle on the institutional level. At this point, therefore, we have a complete picture of how commoners antagonize the status quo, according to peer production theorists. As we can see, their economic and political struggles have a common denominator, which lies in their strategy. Clearly, the commoners' struggles, both economic and political, are based on a strategy of alliances with other forces. In the context of their economic struggle, as we discussed in section 3.2, their strategy is based primarily on the construction of a strong alliance with the new cooperative movement and commons-friendly entrepreneurs. Similarly, the strategy of their struggle in the institutional field is centered on the development of an anti-capitalist alliance with new municipalist/metropolitan movements and left-leaning political parties. In both cases, therefore, the creation of a structure of alliances plays a decisive role. Ultimately, commoners' struggle against capitalism is inseparable from the practical implementation of that strategy of alliances.

In the following sections (3.4.1–3.4.3) of the report, we will look at the issues raised by that strategy of alliances, which are practical as much as they are theoretical. In particular, the increasingly greater emphasis that peer production theorists put on that strategy over the last decade raises the question whether it fits the purpose for which it was designed, as a key enabler for the transition towards post-capitalism.

3.4. In lieu of a conclusion: commoners and their strategies of struggle -immanent or transcendent?

3.4.1. Introduction

In sections 3.2 and 3.3, we discussed the strategies that peer production theorists have developed for the transition towards a commons-based economy. As we saw, they place particular emphasis on the alliances that the commoners will have to build in order to be able to antagonize capital. In fact, it would not be an exaggeration to say that these alliances constitute the core of the commoners' strategy against the status quo. In this section we will examine the issues, that are practical as much as they are conceptual, raised by that strategy of alliances and we will try to explore, from the perspective of *Heteropolitics*, how it contributes to a re-conceptualization of the political and the common in tandem.

To begin with, the strategy proposed by peer production theorists revolves around two main axes. To put it simply, it is made up of two sub-strategies. One of them pertains to the realm of the economy and the alliances that the commoners must engage in with other economic agents in order to establish peer production as the dominant mode of production. The other strategy (i.e. the 'partner state') focuses on the state, putting weight on the alliances that the commoners must build with other social and political forces in order to invade state institutions and then deeply transform them from within.

For the sake of clarity, let us look first at the issues raised by that strategy in the realm of the economy.

3.4.2. The struggle of the commoners in the realm of the economy

Let us recall the key elements of the commoners' strategy in the realm of the economy. As we explained in section 3.2, the strategy puts much weight on the creation of a structure of alliances with the new cooperative movement and commons-friendly entrepreneurs. The rationale underlying that strategy -that is, the reason why alliances are of such importance- comes down to the fact that the commons ecosystem depends on the capitalist economy for its reproduction. To put it simply, peer producers have livelihood needs, which under current conditions they cannot meet through the sphere of the commons. Like all human beings, they too need food, clothing and shelter to sustain themselves. In capitalist societies, however, these goods are not available through the commons sphere. They are commodities and as such, one needs money to procure them through the capitalist market. In other words, the problem, as matters stand today, is that peer producers 'are not nourished by their own product' (Victor 2003), that is, they 'cannot live on their own produce' (Seaman 2003). And so, insofar as they cannot meet their (basic, at least) needs through the commons, they remain dependent on the capitalists and their commodities. But that, of course, implies that they also need money, since the capitalists do not usually give their products away for free.

The problem, in short, is that peer producers cannot sustain themselves through the commons ecosystem. They need goods that are not available through the commons sphere, which means that they need money in order to procure those goods through the market. Under these circumstances, therefore, neither the commons (as an economic ecosystem) nor the commoners (as individual producers) can be considered self-sustainable. But if the commoners are dependent on the capitalist system for their sustainability, then how could they aspire to transcend it?

Undoubtedly, for as long as the commoners remain locked in this situation, it would be absurd to harbor any hopes of transcending capitalism. That is, in the last instance, the reason why the theorists of peer production have come up with a strategy that is designed to expand the commons sphere as well as to strengthen the sustainability of the commoners *in the here and now*. The strategy, as we have seen, proposes that peer producer communities partner up with businesses that synergize with the digital commons ecosystem and have therefore an economic interest in its sustainability. P2PF theorists call these economic agents 'generative entrepreneurs' to highlight the fact that they take from the commons, but they also give back to them. In specific, they

reciprocate in three ways. They release their own products under free/open-source licenses. Second, they provide funding to non-profit infrastructural organizations like the Linux Foundation, which enable the infrastructure of collaboration underpinning peer production. And, thirdly, they provide paid employment for peer producers. In this way, these capitalist entrepreneurs make a key contribution to the commons. By distributing their products under free/open licenses, they expand the commons sphere. At the same time, by providing paid work for peer producers, they strengthen their economic sustainability. That is basically the sense in which they constitute strategic allies of the commoners movement: they contribute to the expansion of the commons sphere and create livelihoods for peer producers, strengthening thereby their sustainability.

The limits of the above strategy are more than obvious. No matter what peer production theorists call them, it does not change the fact that these entrepreneurs are nonetheless capitalists. So, by relying on these businesses in order to sustain themselves, peer producers remain in effect dependent on capitalist firms, which are in the hands of others. That means they remain dependent on organizational entities which are not controlled by them, but by corporate hierarchies of managers and other professional experts. This strategy, then, though it strengthens their sustainability here and now, does not really enhance their autonomy. Consequently, its main weakness is that it does not help the commoners to organize themselves *autonomously*.

Peer production theorists are not blind to this problem. As they admit themselves, the fact that peer producers can make ends meet by getting a job at a commons-friendly company does not mean that they do not need to develop their own autonomous organizations. On the contrary, a point that Bauwens et al. (2019: 18) emphasize time and again is that peer producers must 'build their [own] vehicles to create livelihoods while producing the commons.' In practical terms, they encourage peer producers to set up their own jointly owned and democratically controlled organizations, that is, to organize themselves into cooperatives. By following that course of action, as they write, peer producers will enhance their autonomy: they will no longer depend on a capitalist employer for putting food on the table. In parallel, they will be able to 'reinvest the surplus in the well-being of themselves and the overall commons system they co-produce' (Bauwens et al. 2019: 18). In a nutshell, the development of commons-oriented cooperatives can 'create the conditions for...commoners to emancipate themselves [from wage labour] and earn their livelihood through their contributions' to the commons (Bauwens et al. 2019: 17).

Certainly, by organizing themselves into cooperatives, peer producers will enhance their autonomy. That is for sure. Thanks to their collective ownership and control of the enterprise of which they are working members, cooperators are by definition more autonomous than wage workers vis-à-vis capital. This is all well and good, but does it actually lead to a post-capitalist transition? Many doubt so. For Marxists such as Jakob Rigi (2014), the development of commons-oriented cooperatives may be part of the solution, but it is definitely not a panacea. In order to create the conditions for a post-capitalist transition process, a much 'broader revolutionary peer produced movement that aims at replacing capitalism with peer production' is required (Rigi 2014: 402). Rigi

agrees that commons-oriented cooperatives can play an important role in that revolutionary movement, but only with the qualification that they 'work against the market and money and break with them' (Rigi 2014: 397). From his point of view, therefore, peer producers must do more than just organize themselves into cooperatives; these 'cooperatives must be revolutionary' as well. This requires of them, as we said, to 'reduce their relations to [the capitalist market] to an absolutely unavoidable necessary minimum' (Rigi 2014: 390). Ideally then, these cooperatives do not sell their products and services as the capitalists do with their commodities. Rather, they make them available to their local communities through commons-based, cooperative models. In the opposite case, as Rigi (2014: 398) warns, 'they must adopt the logic of capital or will go bankrupt.'

The views of Rigi echo a well-known critique of cooperatives, which is as old as the cooperative movement itself (see e.g. Webb & Webb 1921). According to that critique, cooperatives are plagued by a host of constraints. A big part of the problem is that 'over time a democratic, worker-owned firm will tend to fall into decay' (Cheney 1999: 17). That happens presumably because, by operating under the pressure of the logic of the market, cooperatives are destined to lose their social dynamism, degenerating thus into business entities that are hardly distinguishable from capitalist firms.

P2PF theorists are well aware of that danger. In fact, they share the concern that cooperatives run the risk of degenerating into conventional firms, given the tension between the individualistic self-interest of the cooperatives and their political goals. As they write, 'cooperatives that work within the capitalist marketplace tend to gradually adopt competitive mentalities, and even when they do not, they chiefly operate for the benefit of their own members' (Pazaitis et al. 2017a). In their opinion, however, these problems can be mitigated by edging cooperatives onto the path of the commons. As they argue, by becoming actively engaged in the production of the commons, cooperatives become part of the commons ecosystem (Bauwens et al. 2019). At an immediate and practical level therefore, their production process results in the expansion of the commons sphere. And that is what sets them apart from traditional cooperatives and capitalist firms alike. By producing commons rather than commodities, these cooperatives strengthen *here and now* 'the counter-hegemonic movement' of commoners and the development of 'a commons-oriented counter-economy' that could challenge the hegemony of capital (Pazaitis et al. 2017a).

However, in contrast to the P2PF theorists who believe that this strategy is appropriate in the context of a commons transition, its critics, such as Rigi (2014), find it still lacking. The problem, they claim, is that regardless of whether they are commons-producing or not, cooperatives whose sustainability depends on the capitalist market are bound to be assimilated in the system. And that, in their opinion, is precisely the weakness of the strategy proposed by P2PF theorists. As Rigi (2014: 402) comments, 'Bauwens and Kostakis' cooperatives aim at defeating capitalism on its own ground, namely the market.' Inevitably, 'therefore, in order to be profitable they must compete with other similar enterprises, whether cooperatives or capitalist enterprises,' which means that 'they must adopt the logic of capital or go bankrupt' (Rigi 2014: 398). On that basis,

Rigi (2014: 398) concludes that 'Bauwens and Kostakis' project is not a road towards subversion of capitalism and building an alternative economy but a way to access capitalism.' In short, that strategy 'is doomed to failure' (Rigi 2014: 402). Unless those cooperatives find a way to cut themselves off from the capitalist market, sooner or later they will be absorbed into it.

The issue of co-optation becomes all the more pressing once we take into account the fact that we are not talking about something that is just likely to pop up in the future. Co-optation is a problem that is rearing its ugly head in the bosom of peer producers' community *today*. The case of the *RepRap* 3D printer is paradigmatic. The RepRap project (http://reprap.org) was launched in 2005 by Dr. Adrian Bowyer, an academic at Bath University in the UK, with the aim of developing an open-source 3D printer that could replicate itself by reproducing its own components. Ultimately, though, by creating a small-sized, affordable, home-brewed manufacturing device for most of the objects people use in daily life, the real objective of the project was not technological, but political. And that was none other than transcending capitalism. According to its founder, RepRap would render capitalism superfluous by allowing 'the revolutionary ownership, by the proletariat, of the means of production' (Bowyer 2004). And it would do so 'without all that messy and dangerous revolution stuff' (Bowyer 2004). The spread of RepRap technology would simply suffice to liberate ordinary people from their dependency on the capitalist market. And so Bowyer envisioned that capitalism would collapse under the weight of its own redundancy. Besides, as he stated in an interview with *The Guardian* in 2006, 'if people can make anything for themselves, what's the point in going to the shops?' (Bowyer quoted in Randerson 2006).

In order to develop that subversive technology, Bowyer leveraged the Internet for distributed collaboration. He open-sourced the design of the 3D printer and its technical specifications so that others could experiment with it and improve it (Dafermos 2015).[17] That strategy proved quite successful, leading to the formation of a global community of RepRap developers who shared modifications and improvements. Five years later, the community had about five thousand members and was still growing fast (de Bruijn 2010). It did not take long until some of them took the initiative to launch their own start-ups for selling RepRap 3D printers and plastic filament on the market. In the beginning, that was not considered a problem at all. On the contrary, RepRap developers thought that 'their ideals had to be realised through the market, or not at all...Paradoxically, the undoing of [capitalist] markets and firms' would 'come about through a co-existence with the same' (Söderberg 2014: 14). Using the market was essentially their strategy for liberating end users. By bringing 3D printers to the homes of ordinary Joes and Janes, it was hoped that these start-ups would set them free. In that sense, the market constituted the gateway of liberation.

However, the contradictions of that strategy soon became obvious. 'A turning point came in 2012 when Makerbot Industries' -a start-up launched by some of RepRap's core

[17] The RepRap design is licensed under the GNU General Public License, the archetypal free/open-source license.

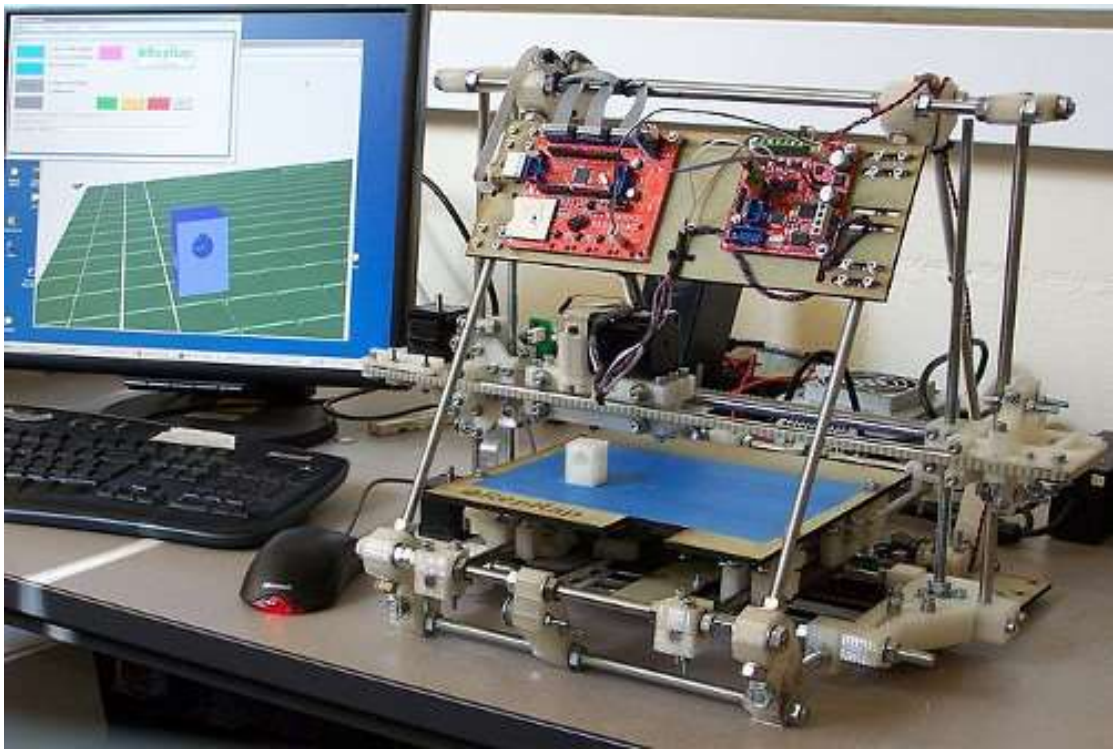

Image 8: RepRap 3D Printer. Source: Wikipedia 2020b.

developers, including Bowyer himself- 'announced that it no longer allowed the community to access the design of its latest products' (Söderberg 2014: 16). But it was not just Makerbot. The 'ecosystem' of those start-ups as a whole adopted a modus operandi that clashed with the original norms of the RepRap developer community. In order to strategically position themselves on the market as 'an obligatory passage point for hobbyists wanting to build a RepRap 3D printer' (Söderberg 2014: 14), these start-ups ended up using methods that are indistinguishable from those employed by cognitive capitalists. Characteristically, one of them is the enclosure of plastic filament, which has been strategically adopted by RepRap start-ups to lock-in customers, obliging them to buy their plastic filament from official vendors (Söderberg 2014: 14). Naturally, the effect that this 'degeneration' of business practices had on the original principles and values of the RepRap community was detrimental. As is documented by Johan Söderberg (2014: 16) in his study of RepRap, tensions in the community grew 'in proportion to the growth of a consumer market in 3D printers.' And so, within a few years, the original vision of the project was replaced by 'a norm of free-for-all, *enrichez-vous*' (Söderberg 2014: 16). As a result of that change in attitude, the RepRap community eventually broke down. More precisely, it splintered into factions. It goes without saying that its rhetoric changed as well. No one in the community talks anymore about bringing down capitalism (Söderberg 2014).

What lessons can be drawn from the experience of the RepRap community? As we saw, the members of the community set up their own start-ups, which, however, soon degenerated into conventional companies. To put it in terms of peer production theory, this is a case in which a peer producer community developed its own commons-friendly, generative enterprises in order to pursue its political goals. But apparently, that was not

enough. Despite their original aims, these start-ups detached themselves from the commons-producing community in which they were initially embedded. They succumbed to the individualistic self-interest of the enterprise, that is, the profit-motive, which eventually clashed with the political goals of the community surrounding them. In a word, they were co-opted. And realistically speaking, there is no reason to assume that things would have turned out differently if *ceteris paribus* they had been legally set up as cooperatives. At the end of the day, the danger of cooptation is indeed so great that, as Rigi (2014: 402) warns, commoners' strategy of organizing themselves into commons-friendly cooperatives is inevitably going to be 'hazardous, unstable, ridden with problems and riven by contradictions.' Granted, but what is the alternative for the commoners and peer producers? Are their organizations doomed to degenerate into conventional businesses insofar as they have dealings with the market?

Obviously, in the ideal case, the associated peer producers would not need to have any dealings at all with the capitalist market. That would not be necessary because they would satisfy their needs through the cooperative economy and the commons sphere. But if that was indeed possible, the situation at hand, from the perspective of the commoners and peer producers, would be entirely different. Unfortunately, though, this possibility does not exist at present. The fact of the matter is that they need things which they cannot procure from the cooperative ecosystem or through the commons. And that, in the last instance, compels them to have dealings with the market. It is obvious, therefore, that their 'unplugging' from the matrix of the capitalist economy presupposes the strengthening of the existing cooperative economy and the expansion of the range of goods that are available through it as well as through the commons sphere. In parallel, however, with the implementation of that strategic effort, it is reasonable that peer producers are still going to have needs that they cannot meet through the commons sphere or the cooperative economy. Consequently, they will still be needing to transact with capitalist firms. It should be taken for granted, therefore, that they will continue to have dealings with the market, at least for some time. In consideration of this fact, the issue of decisive importance, according to the theorists of peer production, is whether the entrepreneurial action of the associated peer producers, despite all the issues raised by their incorporation into the capitalist market economy, has the effect of expanding the commons sphere and the counter-economy. Under the given conditions, this is, they claim, the most one can realistically aim for.

From the point of view of peer production theorists such as Bauwens and Kostakis, insofar as the operation of peer producer cooperatives results in the expansion of the commons sphere and the cooperative economy, they are a step in the right direction. That is, they argue, a realistic perspective on the contribution that commons-oriented cooperatives can make to the economic struggle of peer producers against capital here and now. The setting-up of commons-producing cooperatives, as they write, is 'not based on utopian desires,' but on a 'realistic picture…of transition strategies that strengthen the commons sphere in a hostile environment' (Bauwens et al. 2019: 69). In other words, the development of these cooperatives is a 'struggle, in which commoners

develop their strategies to gain strength within capitalism...for a subsequent re-arrangement of power, leading to system change' (Bauwens et al. 2019: 68).

The above strategy is not foreign to activists and theorists engaged in the anti-capitalist struggle. The idea itself of developing cooperatives in the mid-19th century was a strategy of struggle for increasing the power of the workers within capitalism 'for a subsequent re-arrangement of power, leading to system change' (Bauwens et al. 2019: 68). However, the strategy of cooperative organization proposed by peer production theorists is deemed insufficient by militants and thinkers who favor a more 'maximalistic' program. As in the past, the strategies that captivate the imagination of revolutionaries today tend to be those that demand radical change here and now, that is, strategies that do not accept the compromises that dealing with the capitalist market entails. The common ground of those strategies, as Gibson-Graham (2003) point out, is the conception of the economy as a monolithic, homogeneous field, as a territory that is controlled and dominated fully by the logic of capital. In other words, the economy is considered a realm in which there is nothing worth salvaging. However, that way of looking at things is not necessarily correct. According to Gibson-Graham (2003: 157), it is 'blinded by a vision of the economy as singular and capitalist. If we see the economy as always and already diverse, then the project of replacement is transformed into a project of strengthening already existing non-capitalist economic processes and building new non-capitalist enterprises.'

We could not agree more with Gibson-Graham (2003). There is without a doubt more than just one economy; capitalism is not the only game in town. In consideration of the fact that the ecosystem of cooperative business organizations constitutes an existing alternative economy, it is obvious that its expansion, by 'strengthening already existing non-capitalist economic processes and building new non-capitalist enterprises' (Gibson-Graham 2003: 157), represents a realistic strategy for what can be done under present circumstances. Undoubtedly, to be on the market will seem as a 'pact with the devil' to some. But as De Angelis (2017: 370) writes, this is actually 'the starting point of commons in contemporary capitalism,' whether one likes it or not. In order to be able to sustain themselves and engage in the production of the commons, peer producers have 'to deal with several aspects of existing...markets and the circuits they reproduce:' they 'need them to various extents, and fight against them on other occasions' (De Angelis 2017: 312). From one point of view, it looks as if the commoners and peer producers 'both struggle against capital and then make pacts with it' (De Angelis 2017: 336). That way of acting might seem contradictory at first glance, but as De Angelis (2017: 336) underlines, in this way the commons ecosystem tries to 'construct its force to fool capitalism.' Consequently, the key issue for the commoners' movement is how to make their interactions with the market the basis upon which the commons can develop further (De Angelis 2017: 274). The expansion of the commons sphere is a goal that the strategy of setting up commons-producing cooperatives seems to be capable of accomplishing here and now. To the extent that, by organizing themselves into such cooperatives, peer producers set into motion a 'process of growing commons powers vis-à-vis capital' (De Angelis 2017: 358), this strategy is clearly aligned with the goal of gaining strength

within capitalism 'for a subsequent re-arrangement of power, leading to system change' (Bauwens et al. 2019: 68).

3.4.3. The political struggle of the commoners' movement

In sections 3.3.3–3.3.9 we discussed the strategy by which P2PF theorists aspire to strengthen commoners' power in the realm of political institutions -which they refer to as the *Partner State*. As we saw, the content of that concept has undergone significant modifications over time. In the space of less than ten years, the concept has turned from an appeal to public policy-makers for the development of a cooperative economy into a full-fledged hegemonic strategy for taking over the State. In specific, the partner state strategy rests on the construction of a structure of alliances with social and political forces that become united through their support of a commons agenda and their opposition to the capitalist enclosures of today.

In practical terms, the partner state strategy comes down to setting up *citizen platforms*, such as Barcelona en Comú (that governed Barcelona from 2015 until 2019), which aspire to take over the administrative machinery of the city, with the aim of implementing radical reforms in the direction of commonification. The focus on modern metropolises is accounted for by pragmatic reasons. Given the ability of 'city administrations' to 'shape the conditions for generative models of production and exchange' in the metropolitan field, P2PF theorists reckon that 'the city-context' is therefore 'mature for a commons transition' (Bauwens et al. 2019: 65). In their view, then, the question of who runs the city is at the epicentre of the political conflict between the commoners and the capitalists.

As we remarked in sections 3.3.5–3.3.9, the strength of citizen platforms lies in their capacity to mobilize a wide spectrum of actors in favor of the commons. Who are these actors? To begin with, one constituent part of citizen platforms is left-leaning political parties, both old and new, such as SYRIZA in Greece or the various Pirate Parties that have sprung up in several European countries. According to commons theorists, what unites these political parties under the banner of a citizen platform is their opposition to neoliberal capitalism and their affinity for a commons-friendly political agenda. At the same time, citizen platforms incorporate civil society actors and activists from the milieu of social movements. These include movements, such as the Free Culture Movement, the Free Software Movement and the Open Access Movement, which champion the rights of commoners in fields as diverse as art, technology and science. Furthermore, citizen platforms are made up of emerging urban, metropolitan and municipalist movements, which agitate against the capitalist enclosure of urban-public space, the transformation of the city into a commodity (occurring, for example, through practices of gentrification) and the devastating effect of the 'politics of austerity' on the lives of city dwellers.

The significance of that strategy is obvious. It would not be possible for the commoners to challenge the hegemony of Capital without the active support of other social and political forces. Citizen platforms, like Barcelona en Comú, create what Ernesto Laclau and Chantal Mouffe (2014) call 'chains of equivalence' between different social

movements and struggles. That is, they create relations and bonds of solidarity and camaraderie between them, thereby allowing them to develop shared goals and a common perspective on what is to be done. To put it another way, citizen platforms are an organizational medium for turning 'the subjects of movements into commoners' and radicalizing commoners at the same time (De Angelis 2017: 371). On the one hand, they serve the purpose of radicalizing the commoners and peer producers, transforming them thus into anti-capitalists. On the other hand, they aim to turn the gaze of anti-capitalist activists towards the vision of a commons-based society, imbuing them with the conviction that the anti-capitalist struggle is, as a matter of fact, inseparable from the commoners' struggle. In that way, we could say that citizen platforms have the potential to accomplish what Greig de Peuter and Nick Dyer-Witheford (2010) refer to as 'the circulation of the common(s),' that is, the linking up of all the various social struggles and movements that militate in favor of the commons in some domain of human activity.

Yet, despite its strengths, the partner state strategy has a major weakness. It remains entrapped in the realm of the politics of hegemony, failing to perceive that this strategy has been disputed in practice by the experience of the last fifty years. As several students of social movements have pointed out, the so-called 'new social movements' of the post-1968 period, such as the *Squatters Movement* in Holland and the *Autonomen* in Germany, are paradigmatic of a model of social self-management that contrasts sharply with the hierarchical logic of the organization of the State (Katsiaficas 2006). These social movements reject the notion of top-down representation by political parties and trade unions. And more generally, they are opposed to all forms of hierarchical authority and the logic of representation. That, however, does not hold only for the movements of the past. We encounter the same negative attitude towards hierarchical authority and representation in the 'newest social movements' of the 1990s and 2000s, such as the *Reclaim the Streets* movement and the *Indymedia* network of activist media collectives (Day 2004; 2005, Kioupkiolis 2011: 125-136). The same could be said of the social movements that emerged in the 2010s, such as the *Indignados* and the *Occupy* movement, which also reject the political strategy of hegemony. What does that mean? Let us remind ourselves that hegemony is a strategy based on alliances for the capture of the State (cf. *Report 1. The Political*, chapters 1.14-1.17, for a definition of hegemony that is more extensive than the one we use here). That is its core characteristic: that is how Gramsci conceived it and how it has been utilized by subsequent thinkers, such as Laclau and Mouffe (in their landmark work *Hegemony and Socialist Strategy* [1985], which remains hugely influential to this day). Most importantly, that is also how it has been used by left-wing political parties and governments around the world, viz. as a strategy for taking over the State.

However, both new and newest social movements reject that hegemonic goal. In general, they are not interested in participating in systemic institutions and have no intention to engage in the struggle for state power. Instead, they are focused on the construction of their own autonomous institutions, which are governed under direct-democratic models based on the principle of direct participation of all members. At the same time, it is their conviction that society does not need the mediation of political parties for managing its

affairs. That is something society can do on its own by means of open, horizontal, collective processes of debate and decision-making. It goes without saying that these social movements do not have much sympathy for strategies of struggle which aspire to occupy the State. The practical critique of the politics of hegemony by new and newest social movements, whether one likes it or not, is a fact that peer production theory should take seriously into account. That is not only dictated by the experience of the social movements of the past fifty years, but also by the very mode of governance of peer production projects: let us not forget that the majority of peer production projects are being managed collectively by their developers through open, collective, horizontal processes. From that vantage point, the very mode of organization and governance of peer producer communities constitutes a practical critique of hegemony.

That said, we will not go as far as to claim that commoners and peer producers reject all state structures and institutions as a matter of principle. In contrast to the aforementioned social movements, which are defined by their autonomy from political parties and their conscious abstention from systemic institutions, commoners do not regard the state as inherently authoritarian and oppressive. On the contrary, in the past few years, commoners have begun to develop a conception of the State as a particularly important terrain of social antagonism. According to that conception (which is largely influenced by Nicos Poulantzas' theory of the State [1978]), the State is the crystallization of a correlation of forces between rival classes (Bollier 2016, Linera 2015). To put it simply, society is made up of classes with conflicting interests, which are pitted against each other. In a sense, the same holds true for the State, which is not a homogeneous entity, but the condensation of a correlation of forces between competing classes, that is, the outcome of a balance of social forces. However, that balance is intrinsically unstable, given the antagonistic relation of social forces within the State. Hence, social antagonism is always present within the State, as rival classes fight each other to shift the correlation of forces in their favor.

At the same time, the State represents a monopoly of a broad range of common resources and goods, which include natural commons like forests and beaches, but also things such as taxes, educational certifications, national narratives, dominant ideas, common sense and the moral principles by which individuals lead their lives. But although these commons are supposed to belong to the entire society, the manner in which they are actually managed is anything but democratic. Society is cut off from their management, which is exclusively in the hands of political operatives, state functionaries and other professional experts. In that way, the state monopolizes the managerial process of the common goods, which it is responsible to provide to society at large. As Alvaro Garcia Linera (2015) writes, the main visible function of the State is the oligarchic management of the commons, which it has been entrusted with by society.

The conclusion to which the conception of the State as the crystallization of a correlation of forces between competing classes leads to is obvious. The State should not be abandoned to the class enemy. The critique of the oligarchic management of the commons by the State reinforces that conclusion. In fact, it provides a compelling reason as to why commoners should become actively engaged in the struggle for state power.

That is the only way forward should they wish to open up and democratize the managerial process of the plethora of commons that are controlled by the State. In that way, what can be accomplished is the commonification of the State, that is, its transformation into a structure based on open, horizontal, collective processes of decision-making in which anyone can participate. Therefore, the ultimate objective of the commoners' movement is not the occupation of the State, but its commonification through the adoption of open, horizontal, collective processes for the management of state-controlled common goods.

What is missing from the theory and the strategy of the partner state is a reflection on the limitations of the strategy itself. It is evident that the hegemonic strategy of occupying local state power through citizen platforms must be combined with a *post-hegemonic* strategy in order to achieve the desired democratization of participation in institutional organs and processes of managing the commons (also, see chapters 1.17-1.24 in *Report 1. The Political*). The way it is formulated today, the partner state strategy puts emphasis on the relevance of a hegemonic strategy for taking over the state to the commoners' struggle. What it does not sufficiently emphasize is that this strategy is not an end in itself, but a means for radically democratizing the State through the de-bureaucratization and collectivization of the processes related to the plethora of state-managed common goods, such as public health and sanitation, public education, public infrastructures (e.g. public roads and parks), the forests and the beaches. In that way, by putting the spotlight on the commonification of state structures and processes related to the management of state-controlled common goods (rather than on the capture of state power), it becomes obvious that the ultimate goal of the commoners' strategy is not the substitution of one hegemonic class with another, but the subversion of what Michel Foucault (2010) calls the governmentality of the State, that is, the very logic and mode of state governance, through the democratization of citizen participation in the managerial process of state-controlled commons.

One of the most important lessons we can draw from the digital commons pertains to their mode of governance. Peer production projects like Linux, which thrive on the contributions of thousands of developers, have evolved a governance model which, in all its variations, is based on horizontal, open, collective processes of debate and decision-making. Of course, this should not be construed as implying that there is no authority whatsoever in peer producer communities. Surely, there are leaders in these communities. But their authority 'is persuasive, not legal or technical and certainly not determinative' (Benkler 2006: 105). What is of utmost importance is that peer producer communities have crafted a mode of governance which consciously and intentionally strives to mitigate the development of hierarchical structures. As several researchers have pointed out, peer producers' aversion to hierarchical control and authority goes a long way towards explaining why they have an affinity for open, horizontal, collective processes of decision-making (Dafermos 2012). By virtue of their mode of governance, digital commons communities are prefigurative of a new model of political governance, in which the exercise of authority is decoupled from its characteristic command prerogatives, which give authority figures in bureaucratic-disciplinary organizations the

ability to give commands to their subordinates in the organizational hierarchy. Peer production projects rely on open, collective, horizontal processes, which effectively distribute the capacity of participation in decision-making across the entire community, thereby democratizing it. In a sense, the result of investing decision-making authority into a horizontal, open, collective process in which anyone can participate is that this authority becomes a kind of commons: something that is shared by all community members.

Let us recapitulate. Reflecting on the experience and the Zeitgeist-grabbing potential of the new municipalist movement -that is, citizen platforms like Barcelona en Comú- led theorists of the digital commons to modify their theory of the partner state, expanding thus its scope into a full-fledged hegemonic strategy for taking over the state at the city-level. In essence, the partner state is a strategy based on the development of a structure of political alliances in the metropolitan field with anti-capitalist and pro-commons forces, encompassing actors as diverse as metropolitan social movements and left-leaning political parties.

The political turn of peer production theory to what is basically a *hegemonic* strategy for taking over the state is very important for two main reasons. Firstly, it is conceptually important. P2PF theorists' recent reworking and reformulation of the concept of the partner state updates the theory of hegemony and the related strategies in a way that ingenuously harmonizes it with the political aspirations of the commoners' movement. Secondly, it is practically important. By taking into account the success of Barcelona en Comú -that is, the fact that it succeeded in laying hold of the administrative machinery of the city of Barcelona by uniting a large part of civil society around a commons agenda- and the growing momentum of the new municipalist movement which acts as a catalyst for the formation of citizen platforms in increasingly more cities around the world, it becomes obvious that the partner state strategy proposed by P2PF theorists is highly relevant in the present circumstances. The fact that it is grounded in the real world makes it even stronger and more potent, increasing thus its potential to bear fruit.

At the same time, the main weakness of the partner state strategy rests on the absence of a post-hegemonic vision that could serve as a roadmap for the transformation of state structures in the direction of commonification. In its present form, it does not address sufficiently the question of what is to be done once the objective of the occupation of the state has been attained, that is, how the state apparatus must be reconfigured in order to function as an instrument of commonification. By paying more attention to the occupation of the state than on its transformation, the theory of the partner state runs the risk of degenerating into yet another statist ideology. However, the real promise that lies at the heart of the commoners' movement is the transformation of state power into a commons rather than its fetishization as the scepter of the new hegemons.

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