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The Handbook of Peer Production

Chapter 7: Prophets and Advocates of Peer Production

George Dafermos, Aristotle University of Thessaloniki, Greece

1. Introduction: A New Specter is Haunting the World

Since the beginning of the 21st century, peer production has been theorized by various thinkers as an alternative model of production, governance and property which can antagonize and subvert capitalism. And without doubt it has come a long way since then: from being a theory that only a handful of academics and intellectuals were interested in twenty years ago, it has managed to find mainstream appeal, becoming a material force for social, economic and political change. It is important to realize that this did not happen automatically by itself. Various actors played a decisive role: scholars such as Yochai Benkler helped to popularize the notion in the academic world, while intellectuals-cum-activists such as Michel Bauwens were pivotal in framing it in ways that appealed to activists, progressive entrepreneurs and policy makers around the world. If one were to write a history of peer production theory, these actors would figure prominently in it as the key advocates of peer production in the beginning of the 21st century and as the "prophets," so to speak, of a new mode of production founded on its principles.

This chapter of the Handbook retraces the history of these attempts at theorizing and disseminating peer production. It looks at how the theory spread through the advocacy work of its leading proponents and discusses the differences in their approaches. In parallel, it explores the effect they have had so far on the academic, economic and political world.

The remainder of this chapter is structured as follows: in the next section, we discuss the enabling conditions for the emergence of the phenomenon of peer production in the 1990s, as typified by the development of online projects such as Linux, in connection with the theoretical works that prepared the ground for the development of peer production theory in the next decade. Then we look at how peer production was theorized in the 2000s through

the work of its main proponents in this period: Yochai Benkler, Michel Bauwens' P2P Foundation, and the Oekonux Project. Following on from this historical background, we discuss the wider effect that peer theorists have had in the current decade on the community of scientists, policy makers and collaborative economy actors.

2. Before 2000: A Period of Gestation

Although the concept of peer production had not yet made its appearance, the 1990s were critical for the development of the theory. To begin with, the 1990s established the necessary material conditions for its emergence. This period made personal computers and Internet connectivity accessible to a large part of the population, which meant that for the first time in human history, a critical mass of people could take advantage of the Internet as a medium that makes it possible to communicate and collaborate virtually with others around the world. The result of this democratization of access to technology was the development of a new generation of online community projects, such as Linux, which exemplified what could be achieved by unlocking the potential of the Internet for distributed collaboration. The development of a computer operating system like Linux is a rather complex undertaking that cannot be performed by just a single individual. It requires teamwork, that is, the collaboration of a group of people, who need to coordinate somehow what they do. Historically speaking, only large organizations could mobilize that kind of resources. On the one hand, they have the financial capacity to put a large number of people to work on a daily basis on something as complex and time-demanding as the development of an operating system. On the other hand, they have managers and hierarchies for coordinating the work of these people. That is why the development of Linux from 1991 onwards was so important: because it showed the world that sophisticated technology production does not necessitate the

financial resources or the managerial hierarchies of large organizations. In other words, the Linux project was paradigmatic of a mode of production that contrasted sharply with the dominant model in the software industry.

First of all, Linux was not just another product coming out of a company; instead, it was developed by an online community of hobbyists and technology aficionados sharing code improvements and "bug-fixes" over the Net. Strictly speaking, Linux was not a commodity: it was not produced for sale. On the contrary, Linux was developed by a global community of volunteer technologists on account of its *use value*: a tool they were developing with the aim of using it themselves for their own needs, "scratching their own itch," so to speak. Its production did not rely on the wage labor of professionals, but on the volunteer contributions of a multitude of self-motivated software programmers. And that was not all. Linux was special in yet another important respect: anyone could download the software and use it any way they liked. Unlike proprietary software with its usual copyright restrictions, Linux was distributed under the GNU General Public License (GPL),[1] which gives users the freedom to run the software, to study it, to modify it and to redistribute it, thereby ensuring its character as a *digital commons*. By contrast to proprietary software, which places restrictions on what end users can do with it, Linux treated its community of users as a base of potential co-developers, empowering them to participate in its development process by contributing modifications and bug-fixes to the project. It should come as no surprise then, given the character of its development model, that Linux seemed to suggest that distributed networks and the Internet render corporate hierarchies obsolete.

Of course, Linux was not the only software project of that kind. An entire ecosystem of software had been using the GPL since the mid-1980s when that license was created by

1 https://www.gnu.org/licenses/old-licenses/gpl-1.0.html

Richard Stallman. We should not forget that until the early 1970s, sharing software was a common practice among computer programmers (von Hippel & von Krogh, 2003; Levy, 1984). That gradually changed with the emergence of a rapidly growing market for software: to put it simply, it was bad for business, as Bill Gates (1976) argued in his famous 1976 article, which criticized code sharing as an obstacle to the development of the software industry. The development of the software industry in the 1980s was synonymous with the expansion of companies like Microsoft, whose software was distributed with restrictive licenses that legally forbade users from copying it and giving it to others. In addition to employing such legal measures to control the use and re-distribution of their products, they also made it technically impossible to tinker with them: their software was distributed in binary copies without the source code, that is, the human-readable instructions that programmers need in order to understand how a computer program works "under the hood". Many technologists took issue with these restrictions. For Stallman, who was a well-known member of the hacker community at MIT,[2] this type of software was a serious threat against the freedom of computer users. Driven by the conviction that this threat should be actively resisted, in 1985 he set up the Free Software Foundation, devoting the rest of his life to the advocacy of free software (Moody, 2001, pp. 14-30; Williams, 2011). In the context of this objective, a few years later (1989) he created the GNU General Public License (GPL): unlike conventional software licenses, which are used to constrain what users can do with a given computer program, the GPL was designed with the aim of granting users the right to use, modify and share the software *freely*. Stallman was a prolific software developer in this period, who wrote some very popular programs for coders. He also authored many influential

2 In 2019 Stallman received harsh criticism on account of some comments he made on a MIT mailing list, which were considered sexist and utterly unacceptable. As a result of the outcry against him, Stallman was forced to resign from both MIT and the FSF.

texts, such as the *GNU Manifesto*, in which he calls on the hacker community to join him in the development of a free operating system (Stallman, 1985). His crusade resonated with the feelings of many members of the hacker community in the 1980s and 1990s, who distributed the programs they wrote under the GPL (Williams, 2011). As a result, the common pool of GPL-licensed software grew dramatically over time: by the early 2000s, hundreds of GPL-licensed programs were publicly available on software repositories like SourceForge (Krishnamurthy, 2002).

Neither was Linux the only software project that leveraged the Internet for distributed collaboration in the 1990s. Yet, it was certainly one of the most emblematic, with hundreds of developers and a rapidly growing community of users across the globe. So, its success meant that a lot of people started to pay attention. Up until the end of the 1990s, software released under the GPL was known as free software. But then in 1998, with the aim of making free software more attractive to businesses, a group of prominent figures from the free software community, who were emboldened by the success of Linux, came up with the term "open-source" and began to evangelize its adoption (Moody, 2001, pp. 166-169). The same year they formed the Open Source Initiative to support the promotion of the new brand name. In the context of propagandizing their ideas, the development of a new discourse, which would emphasize the business potential of free software, was critically important (Raymond, 1998b, 1999b).

An integral part of that strategy was a fresh theorization of the phenomenon of distributed software development by online communities. The prime mover of that effort was Eric S. Raymond, one of the main proponents of the term "open-source." In his 1997 essay *The Cathedral and the Bazaar*, which had a lasting influence, Raymond (1998a) argued passionately that Linux represents an alternative software development model that has the

potential to dominate the industry. As its metaphorical title implies, the essay makes a distinction between two rival models of software development: the "cathedral" and the "bazaar." "The cathedral model has been the default for almost all commercial software development since the invention of the computer" (Jones, 2003, p. 390): the development process is hierarchical and largely closed to actors outside the core developers' group. By contrast, Linux epitomizes the "bazaar," which is open and participative: the software is developed and shared over the Internet in full public view and anyone can participate, in accordance with their interests and skills. At the same time, the "bazaar" of Linux is distributed, making use of the Internet to harness the potential of a global community of developers and users. Raymond's comparison of the two models comes to the conclusion that Linux's open source development model is set to become a leading force in the software industry: its ability to mobilize a worldwide community of developers and users through the Internet means that it can be far more productive and innovative than any closed group of "cathedral-builders".

The influence of Raymond's "manifesto" was enormous (Behrenshausen, 2016; Hamerly et al., 1999; Jones, 2003, p. 390; Moody, 2001, p. 152; Weber, 2004. p. 113; Wiley, 2014). Pregnant with meaning, the story of *the Cathedral and the Bazaar* captivated the imagination of an entire generation of aspiring high-tech entrepreneurs, who were fascinated by the prospect of tapping into the creative contributions of a global community of developers and users.[3] The most widely known case is that of Netscape, which, under the influence of Raymond's work (Hamerly et al., 1999; Jones, 2003, p. 390; Raymond, 1998a; Suárez-Potts, 2001; Williams, 2011, chapter 11), decided in 1998 to "open-source" its

3 Characteristically, Jimmy Wales, the founder of Wikipedia, mentioned in an interview that Raymond's book "opened my eyes to the possibility of mass collaboration" (Wales quoted in Schiff, 2006, July).

flagship product (that is, the predecessor of today's popular Mozilla Firefox web browser) by releasing its source code on the Internet under an open source license. Raymond followed up on this work with a series of essays, which further develop the narrative of the open source development model and the theories put forward in *The Cathedral and the Bazaar*.[4] Should anyone wish to trace the historical origins of peer production theory, Raymond's writings in the late 1990s should be the starting-point. Although he does not use the term "peer production," he theorizes the model of Linux and open source software development as a commons-based mode of production, with its own distinctive mode of governance and property, which has the potential to dominate the software industry and even expand beyond it into other spheres of economic activity. But that is fundamentally the same analysis and interpretation of the phenomenon of distributed software development that is encapsulated in later theories of peer production. For that reason, Raymond's work constitutes an embryonic form, so to speak, of the theory of peer production. Raymond's colleagues from the "open source camp" were also active in propagandizing the view that Linux represents an alternative model of software production, and the publishing house of Tim O'Reilly, who was a key figure in that group, played an important role in its diffusion.[5] In the space of just a few years, the work of Raymond, along with the contributions of his colleagues, formed a discourse which had a great influence (Behrenshausen, 2016; Weber, 2004, p. 113). And so, it is certain that it functioned as a catalyst for the development of the theory of peer production in the coming years.

4 Many of these essays, including *The Cathedral and the Bazaar*, were published in book form in 1999 by O'Reilly.

5 For those who wish to delve more deeply into the subject, the anthology *Open Sources: Voices from the Open Source Revolution* published by O'Reilly in 1999 includes many key contributions to the open-source discourse.

In short, the wide availability of affordable PCs and Internet connections in the 1990s was the enabling condition for the phenomenon of distributed software development by online communities over the Internet, with Linux being a shining example. This phenomenon, in turn, spurred the development of new theories on the "open source development model," which carry within themselves the seeds for the development of the concept of peer production, as theorized by thinkers in the next decade.

3. 2000s: Emergence of Peer Production Theory

The theory of peer production emerged in the new millennium. Israeli-American law scholar Yochai Benkler has been commonly credited with coining the term, which is first introduced in a paper he published in the *Yale Law Journal* in 2002. In that paper, titled "Coase's Penguin or Linux and the Nature of the Firm," Benkler detects in the development model of Linux the emergence of a "third mode of production" on the Internet, which is distinct from both markets and firms, as neither the motivation of participants, nor the coordination of their work, is achieved through "market prices or managerial commands." Here, Benkler argues for the first time that the development of free and open source software (F/OSS) projects like Linux cannot be accounted for by financial incentives: the majority of participants are volunteers, who are mobilized, above all, by intrinsic motivations such as creativity and self-fulfillment at work. The other main point that he makes in this article concerns the anti-hierarchical organizational structure of these projects. For Benkler, the reason why Linux is paradigmatic of the model of "peer production" is precisely because its developers self-select the tasks they perform and coordinate their work without bureaucrats

and bosses.[6] Benkler continued to work on these ideas and four years later he published his magnum opus, *The Wealth of Networks* (2006), in which he expanded on his definition of peer production, clarifying its characteristics and analyzing its various types and forms.[7] The influence of the *Wealth of Networks* was enormous: it remains to this day the most influential writing on peer production.[8] It established Benkler as a leading theorist of commons-oriented peer production and played an important role in establishing peer production, distributed networks and the digital commons as a promising research field in the social sciences, thereby giving many academic researchers an incentive to engage with the subject.

However, Benkler was not the only prominent figure in the early years of the development of the theory. Equally influential was the work of Belgian intellectual Michel Bauwens on the other side of the Atlantic, who had already from the early 2000s began to theorize "peer-to-peer" as a new template for society, economy and politics (see, for example, Bauwens, 2002). The views of those two thinkers had much in common. Bauwens' theories were based on a similar analysis of Linux and F/OSS as an alternative mode of production, governance and property (Bauwens, 2002, 2005). Like Benkler, Bauwens argued that peer production is a mode of production that is neither directed to market exchange, nor governed

6 For the sake of clarity, Benkler nowhere argues that peer production is entirely devoid of authority: rather, his thesis is that the authority that project leaders, like Linus Torvalds, do exercise in the context of peer production is certainly not of the "command-and-control" type encountered in hierarchical organizations. As he writes: "Torvalds' authority is persuasive, not legal or technical and certainly not determinative" (Benkler, 2006, p. 105).

7 As one of the reviewers of this chapter pointed out, early peer production theory is characterized by the omission of any discussion regarding the variants of peer production commonly encountered in Asia, Africa and South America, in which people engage for livelihood purposes. This is certainly true and can be largely explained by the fact that early peer production theory was primarily focused on "pure" models, that is, modes of production which cannot be accounted for by financial incentives, as they are geared for use, rather than market exchange. However, as the theory began to attract wider interest, various researchers and theorists drew attention to a plethora of market-oriented "hybrid" models of peer production in the global North as well as the global South, which are geared towards the production of commodities (see, for example, Arvidsson's [2019] study of commons-based petty production in countries outside the Global North).

8 Indicatively, according to Google Scholar, *The Wealth of Networks* has been cited more than ten thousand times.

by bureaucrats and managers. He, too, emphasized that it is inseparable from a commons-based property regime. The only substantial point on which his views differed from Benkler's was with regard to peer production's transcendent character: they shared the conviction that the phenomenon of peer production was bound to spread beyond the confines of the software industry, but Bauwens went even further, arguing that peer production has "the potential to succeed capitalism as the core value and organizational model of a post-capitalist society" (Bauwens, 2012). Aside from this crucial point, the differences between their theories do not so much lie in their content, as in their "targeting" and mode of diffusion. Benkler's work was very well-received by the academic community, but Bauwens' discourse appealed to a different audience. As an Internet-age intellectual, Bauwens was an active participant in online mailing lists and discussion forums related to peer production theory. His passionate and provocative contributions to these debates influenced many "netizens" much more than Benkler's dense academic prose.

In 2005, Bauwens founded the P2P Foundation (P2PF). In the beginning, this basically consisted in an online mailing list devoted to the discussion of peer production. It became very popular and attracted a lot of sympathizers and followers from all over the world. Within a short time, Bauwens added a wiki, which he and his numerous online collaborators began to develop into an all-encompassing online repository of knowledge on the topic of peer production. Bauwens' collaborative style and his open-source approach towards the documentation and development of peer production theory appealed to many researchers and thinkers who formed, in a sense, an online research group around him and the P2PF. Much of the work of that group had an activist bent, attracting many radicals who were interested in exploring peer production as a weapon in the struggle against the capitalist system. Reflecting the aspirations of the actors in its network, the P2PF soon began to evolve

into a think-tank for the theory of peer production, advocating social, economic and political change. In the context of its advocacy, it also began to get involved in the organization of events and conferences. The first one was in 2007 when Bauwens co-organized a workshop with Andreas Wittel,[9] out of which came the inspiration for a special issue of *Capital & Class* titled "Parallel Visions of Peer Production." Based on the contributions of the participants of this workshop, it was published in 2009 (Moore & Karatzogianni, 2009). This was the first time that an established scientific periodical had devoted an entire issue to peer production.

The P2PF was not alone in theorizing peer production from a radical perspective at the time. A project that was heavily involved throughout this period in the development of peer production theory was Oekonux. The project was launched in 1999 in Germany by Stefan Merten and a small group of activists and intellectuals who were interested in exploring the subversive potential of this model. Its main thesis was that the development of Linux and F/OSS is prefigurative of a mode of production without the alienation that is characteristic of wage labor, which can transcend capitalism, leading to a free "society beyond labor, money, exchange" (Merten interviewed in Richardson, 2001). In this "GPL society," there would be no coercion and people would engage in productive projects out of intrinsic motivation: this would allow their "self-unfolding", while benefiting society as a whole. Based on an analysis of peer production's transcendent potential that was largely influenced by the work of Karl Marx, Oekonux theorized peer production as a "germ form," thus hypothesizing that the peer production model could gradually become hegemonic, superseding capitalism (for a more extensive discussion of Oekonux theories, see Merten, 2000, 2009; Merten & Meretz, 2009; Meretz, 2012; Richardson, 2001; Euler, 2016).

9 http://wiki.p2pfoundation.net/Nottingham_Peer_Production_Workshop

Oekonux members interacted mainly through two mailing lists: one for German speakers and another for discussions in English. In the beginning, most of the members of the group were from Germany, but because of the open and outward-looking character of the project, that soon changed. From 2001 until 2009, Oekonux organized four important international conferences: in 2001 in Dortmund, in 2002 in Berlin, in 2004 in Vienna and in 2009 in Manchester.[10] These conferences were unique in that they were the first (and only) ones to focus exclusively on the exploration of F/OSS and peer production as a mode of production for the transition to post-capitalism. Their unique character attracted thinkers from all over the world, such as Graham Seaman (2003; 2004), Christian Siefkes (2007; 2009), Johan Söderberg (2008), and Raoul Victor (2003; 2004; 2009) who made significant contributions to the project. Michel Bauwens was also involved in the project and as a long-time member of the mailing list, he played an active role in the Oekonux debates. In fact, the ideas of Oekonux resonated so well with his own that in 2009 he co-organized the fourth and final Oekonux conference on "Free Software and Beyond: The World of Peer Production" in Manchester, highlighting the affinity between the theories and aspirations of the P2PF and Oekonux. This synergy between the two projects attracted the interest of many people from the network of the P2PF, thereby helping the propagation of Oekonux theories.

4. Post-2010: Peer Production Theory Moves into the Mainstream

Until 2010, the number of academics focusing on peer production was quite limited. That changed in the 2010s with the development of increasingly more research groups in various universities around the world. Benkler and his colleagues from the Berkman Klein

10 http://second.oekonux-conference.org, http://third.oekonux-conference.org, http://www.oekonux-conference.org

Center for Internet and Society (which Benkler co-directs) at Harvard have been very active[11] and helped to establish peer production as a serious research field in the social sciences. Equally extensive and influential has been the work of the P2P lab of researchers led by Vasilis Kostakis at the Tallinn University of Technology[12] and of the research group on the digital commons ("Dimmons") led by Mayo Fuster Morell at the Open University of Catalonia.[13]

From a more general point of view, the 2010s was the decade in which the theory of peer production matured and began to have a wider impact. The P2PF played a crucial role in this process. Bauwens has been very actively writing and publishing articles, organizing events and conferences and promoting the P2PF as a think-tank, to which commons-friendly policy makers, ethical entrepreneurs and activist organizations can turn for advice. In parallel with the P2PF, he also contributed to the development of like-minded projects that shared the P2PF's objective to agitate for the commons and peer production, such as the Commons Strategies Group (CSG), which he founded in 2009, with the American commons theorist David Bollier and Silke Helfrich, a German author and activist. CSG organized two large international conferences in Berlin in 2010 and 2013, with two hundred speakers from all over the world, and published two important anthologies in 2013 and 2015 (Bollier & Helfrich, 2013, 2015).

Bauwens' influence was also instrumental in the development of the P2P Lab, which constitutes the research branch of the P2PF (Bauwens & Pantazis, 2018). This was founded in 2012 by Vasilis Kostakis, a core member of the P2PF and one of the most active academic researchers in its network, who has been Bauwens' main theoretical collaborator since then.

11 See, for example, the list of publications at Benkler's homepage at Harvard at https://hls.harvard.edu/faculty/directory/10071/Benkler/publications
12 http://www.p2plab.gr/en/
13 http://dimmons.net

The P2P Lab is a research collective made up of Kostakis and his postgraduate and PhD students from Tallinn University of Technology. The group has been a rich source of publications in academic journals, helping to spread the theories of the P2PF to the community of social scientists. At the same time, it has been P2PF's main vehicle for participating in various scientific research projects (such as P2P Value,[14] Phygital[15] and Cosmolocalism[16]) which function as a platform for the advocacy of peer production.

During this period, the work of Bauwens and the P2PF began to have a strong influence on public policy actors. In 2013, Bauwens was invited to become the research director of FLOK Society Project,[17] a government-supported activist-research project in Ecuador, with the aim of developing a set of policy proposals for the transformation of the country through peer production and the commons. Bauwens recruited the core team of researchers, with whom he worked closely for about a year in Ecuador. In the summer of 2014, FLOK Society organized a large international conference in Quito, with hundreds of participants from all over the world, which attracted a lot of media attention. Funded by three ministries of the Ecuadorian government, it was the first time that peer production theorists had ever worked in such close proximity to political decision-makers: that in itself was a strong signal that the theory was becoming a force to be reckoned with in the world of politics.[18]

That actually seemed to be true in some parts of the world in the mid-2010s, as in the case of Greece where Bauwens' theories and the example of FLOK Society had caught the attention of some Syriza party members and work-groups, who invited Bauwens and FLOK

14 https://p2pvalue.eu
15 https://phygitalproject.eu
16 https://www.cosmolocalism.eu
17 https://floksociety.org
18 For a more extensive discussion of the FLOK Society Project, see chapter 7 in Schneider (2018).

researchers George Dafermos and John Restakis to Athens in the autumn of 2014 for a series of seminars (Bauwens, 2014). This marked the beginning of a period of close collaboration, which continued for several months, between Syriza's work-groups and Bauwens' team of colleagues from FLOK Society and the P2PF. It is indicative of its legacy that Syriza's official "Government Program", which was released in 2015, refers to commons-based peer production as a pillar of the productive transformation of the Greek economy (Syriza, 2015). With a view to reinforcing their advocacy of the commons and peer production, in 2014 Bauwens and his colleagues launched Commons Transitions as a think-tank focused on research and consulting.[19] In 2017, Bauwens followed up on this work with another FLOK-like project. This time he went to the city of Ghent in Belgium, where he spent three months with his colleague from the P2P Lab, Vasilis Niaros, in order to lead a research project, which had the support of the mayor and the political coalition of the city, on the "commons city of the future" (Bauwens & Onzia, 2017a, 2017b). The emphasis on the *city* as a locus of policy intervention has a strategic significance in the work of Bauwens and his P2PF colleagues since the mid-2010s, reflecting the growing political momentum of new municipalist movements in various European cities (such as the Barcelona en Comú citizen platform that governed Barcelona from 2015 to 2019), which aspire to bring about radical change by taking control of their local government (Utratel & Troncoso, 2017). Most importantly, reaching out to these new political forces has been quite a fruitful endeavor, judging by the fact that the "cornerstone of new municipalism," as some participants and researchers of Barcelona en Comú have remarked, "is a reinvigorated notion of the commons, as proposed by ... Yochai Benkler, ... Michel Bauwens and organisations like Commons Transition" (Calafati & McInroy, 2017).

19 http://commonstransition.org/about-commons-transition-2/

One of the main concepts that the above projects emphasized in their advocacy of peer production to public policy actors was that of the so-called "Partner State," which is a proposal for the development of a commons-friendly government (at both local and national levels) that enables community organizations to participate in the management and provision of public goods. Practically speaking, the concept denotes a local or national government that is supportive of cooperative organizations by developing policies and regulatory frameworks that enable them to play an important role in the economy.[20] Through their advocacy of the "Partner State," research projects like FLOK Society infused peer production theory with a theory of the State, in the context of which cooperatives are actively involved in the management and provision of public goods and services. At the same time, the emphasis of their work on cooperatives brought Bauwens and his colleagues in touch with actors from the *new* cooperative movement, who were receptive to the idea that their goals synergize well with those of the commoners and peer producers. From a theoretical point of view, this dialogue between peer theorists and cooperators led to the development of the concept of "open cooperativism" (Bauwens & Kostakis, 2014, 2015; Conaty & Bollier, 2014; Pazaitis et al., 2017): the concept, which is basically a proposal for cooperatives to become more actively engaged in the production of the commons, has been at the epicenter of Bauwens' recent work (e.g. Bauwens & Pantazis, 2018). At a more practical level, it resulted in influencing cooperative projects, like the famous Catalan Integral Cooperative (CIC) in Catalonia, to become vocal proponents of the commons and peer production (See, for example, Catalan Integral Cooperative, 2015, Dafermos, 2017 and Duran interviewed in Bauwens et al., 2014).[21]

20 For a discussion of the "Partner State" concept, see Bauwens & Kostakis (2015), Kostakis (2011a, 2011b), Kostakis & Bauwens (2014), Orsi (2009) and Restakis (2015).

21 As CIC's founder Enric Duran says characteristically: 'Commons-oriented peer production has proven to be highly successful in initiatives such as LINUX, Wikipedia and many others. We feel we're part of this,

Unlike the P2PF, which evolved into the most important hub for the theory of peer production, Oekonux did not fare well in this decade. For no particular reason, discussion on its mailing lists had dwindled since the end of the 2000s. And so, by 2013, the project was officially over.[22] The radical perspective of its work, however, continued to have a strong influence on researchers and activists engaged in the development of the theory, playing a very important role in the development of other activist-research projects, such as the online *Journal of Peer Production (JoPP)* which released its inaugural issue in 2011.[23] The initiative was proposed at the fourth Oekonux conference in 2009 in Manchester by newcomer Mathieu O'Neil, who was inspired by the conference, and was supported by Athina Karatzogianni, Michel Bauwens, George Dafermos, Stefan Merten, Christian Siefkes, and Johan Söderberg (later joined by Nathaniel Tkacz and Maurizio Teli). This group of people had met each other through Oekonux and were, to various degrees, attuned to its theories (O'Neil, 2012a). This was a key event in the propagation of peer production as an object of interest: since 2011 when the inaugural issue came out, no other scientific periodical has featured as many theoretical and empirical investigations of peer production as the *JoPP*.[24] In the beginning, the journal was closely associated to Oekonux, with the journal website and mailing list hosted on the Oekonux server.

However, in 2012, "a series of serious disagreements" between lead editor Mathieu O'Neil and Stefan Merten, who administered the Oekonux infrastructure, "about the way the

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and it has inspired many of our approaches. It's clearly the best method for producing collective knowledge and information, as it combines functionality and participation without hierarchy' (Duran interviewed in Bauwens et al., 2014).

22 Merten's announcement of the decision to discontinue the project: http://oekonux.org/list-en/archive/msg06188.html

23 http://peerproduction.net

24 That is not to say that other academic journals have not shown an interest in the subject. From 2010 onwards, papers on peer production have been published in journals such as Fibreculture, First Monday, Triple-C and Information, Communication & Society. But as the first and only journal in which peer production theory occupied center-stage, the contribution of JoPP has been decisive.

journal should operate" led O'Neil and some core members of the journal's editorial board to the decision to "fork" the project (O'Neil, 2012b). In the context of this process, the journal 'migrated' to a server run by the P2PF and, in parallel, its name was changed from *Critical Studies in Peer Production* (*CSPP*) to the *Journal of Peer Production* (O'Neil, 2012b). This move was received positively for the most part by the rest of the members of the journal's editorial group, who gave their support to the new project. A few months later, the *Journal of Peer Production* (JoPP) released its first issue, and the *CSPP* release was rebranded as *JoPP* #0. Since then, the *JoPP* has published twelve other issues that span a wide range of subjects related to peer production. What is more, in contrast to traditional academic journals, the project has been organized in accordance with commons-based peer production principles: *JoPP* articles are freely shareable,[25] and the original submissions and reviews of scientific articles are also made public. Moreover, the *JoPP* exemplifies a truly democratic and transparent governance model, based on decision-making through dialogue on the project's publicly archived mailing list, to which anyone can subscribe.[26]

To recap: in this period, peer production theory had a visible impact on the academia, leading to the development of various research projects and groups around the world, such as the P2P Lab. Influenced by the radical core of the theory, many of these projects (like the *JoPP*) had a decidedly activist bent. Moreover, the theory began to have a wider effect outside academia. Through projects like FLOK Society which combined research and advocacy work, peer theorists embarked on a dialogue with public policy actors in various countries like Ecuador, Greece and Belgium. At the same time, by reaching out to the new

25 JoPP articles are distributed under the Creative Commons Attribution-ShareAlike 4.0 International (CC BY-SA 4.0) license.

26 https://lists.ourproject.org/cgi-bin/mailman/listinfo/jopp-public

cooperative movement, peer theorists managed to successfully create a collaborative link between peer producers and cooperators.

5. Conclusion: What is the Impact of Peer Production Theory Today?

Peer production theory has undoubtedly come a long way since its emergence in the early 2000s. That is most easily discernible in the academic world, where it has had an important research impact, leading to the development of increasingly more research groups at various universities around the world. The three research groups (at the Berkman Klein Center for Internet and Society at Harvard University, the Open University of Catalonia and Tallinn University of Technology, respectively) mentioned in the previous section are merely the most influential, but in fact there are more, such as the Heteropolitics research project[27] led by Alexandros Kioupkiolis at the Aristotle University of Thessaloniki in Greece or the P2P Models research project at the Complutense University of Madrid.[28] The effect of the practice is also apparent in the growth of academic literature on the subject: the development of journals like the *Journal of Peer Production* and the publication of academic *Handbooks* such as the one you are now holding in your hands attest to its growing influence. Another indication of its far-reaching effect is the development of several university courses related to peer production across Europe and the USA.[29]

Aside from its academic impact, an important accomplishment of peer production theory is that it has managed to connect with the collaborative economy actors par excellence, that is, cooperatives. This *cooperative turn* in peer production theory is largely

27 http://www.heteropolitics.net
28 https://p2pmodels.eu/
29 For example, the University of Colorado has a class on "Peer Production and Crowdsourcing," Tallinn University of Technology has a course on "Peer Production and the Theory of the Commons" and the University of Texas runs a class on "Social Media, Peer Production and Web 2.0".

due to the advocacy work of Bauwens and his fellow theorists from the P2PF, who transmitted the theory to the new generation of cooperators, thereby attracting them to commons-oriented production models. However, through their preoccupation with the new cooperative movement, these theorists soon realized that the cooperative legal form can be a valuable tool for peer producers who wish to formalize their entrepreneurial activity. That is, they realized that the cooperative legal form can reinforce the democratic governance of a peer production project, ensuring the democratic participation and equality of its members in the decision-making process. Thus, it did not take them long to start propagating the "cooperative idea" through their network of contacts with peer producers. In other words, their propaganda was "bi-directional:" on the one hand, they turned cooperators to the commons and peer production as a potential ally in the struggle for the development of a truly collaborative economy that is capable of antagonizing and subverting capitalism. On the other hand, they oriented peer producers towards the cooperative legal form, familiarizing them with its advantages. In this way, peer theorists contributed decisively to the creation of a productive bond between cooperators and peer producers, which is very likely to have a significant impact in the coming years.

In addition to its influence on the cooperative economy, the contemporary effect of peer production theory extends into the world of politics. To a large extent, that is due to projects like FLOK Society in Ecuador, which were instrumental in establishing peer production in the eyes of policy makers as a credible alternative to capitalism. By familiarizing public policy actors with the main tenets of the theory of peer production, these projects raised awareness of its strategic benefits. Their advocacy highlighted two main advantages of peer production compared to capitalism: first, it emphasized its productivity, pointing out that it is a model of producing quality products, which can out-compete

capitalism in terms of efficiency. Second, it underscored its democratizing effect on the governance of productive projects in the economy as well as on the relationship between citizens and the State. These are ideas that various progressive political forces around the world seem to be receptive to, as they form a weapon for challenging the ideological hegemony of the capitalist system (as the most productive and democratic of all existing economic systems). What remains to be seen is whether these progressive political forces can further "weaponize" the theory.[30] If they manage to sharpen its subversive edge, that will make the theory of peer production cut like a well-honed knife, opening up an incredible range of potentialities for a radical break with the whole organizational framework of social, economic and political life in its present form.

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30 Obviously, I do not claim that this will be an easy task. In fact, several researchers have raised the concern that the discourse of peer theorists could be assimilated to capitalist ideology. Their critique focuses on two main points. First, they reproach peer theorists for the emphasis they put on conceptual categories, such as that of ethical entrepreneurs or ethical markets, which are anything but disruptive to the hegemony of bourgeois ideology (e.g. Rigi, 2014). As Kioupkiolis writes, "the lexicon of entrepreneurship is the essential vocabulary of neoliberalism...to advocate for the commons by mobilizing time and again the discursive 'apparatus of capture' of neoliberalism bespeaks political shallowness, if not a commons-washing of capitalist business as usual" (Kioupkiolis, 2017, p. 74; also, see Rigi, 2014, p. 394). Second, the critics argue that the theories of the leading proponents of peer production encapsulate a deterministic and technocratic vision of system change that downplays the crucial role of social and political struggles in the process of historical transformation (Kioupkiolis, 2017, pp. 52-84; Rigi, 2014, pp. 401-403). Without going into detail (as an extensive discussion of the question of recuperation is, for the sake of brevity, beyond the scope of this chapter), these critiques admittedly raise questions that peer production advocates have to seriously engage with in order to harness the subversive potential of the theory.

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