CHAPTER 3

The Reformist Commons

3.1 Introduction

As discussed in Part 1, Benkler sets out three basic future scenarios for the commons: 1) the capitalist commons on the model of firm-hosted peer production; 2) the transition from firm-hosted peer production into a broader collaborative economy that embraces commons-based peer production more openly; and 3) the autonomisation of commons-based peer production. Part 2 critically engages with the work of a number of thinkers who have built on the second scenario with the intent of pushing for the third. From a political viewpoint, the reformist approach to the commons combines liberal, social democratic, socialist and revolutionary elements in multiple variants.

David Bollier (2003; 2008) recalibrates the liberal state towards the support of the commons rather than the capitalist market. He introduces a green governance model aiming to tackle climate change and protect the natural commons. Along with Silke Helfrich (Bollier and Helfrich 2019), he provides an analytical roadmap towards a radical commons-orientated transition. Jeremy Rifkin (2014) introduces the model of green capitalism, connecting to the Internet of Things infrastructure, fuelled by renewables. He advocates the gradual shift of green capitalism towards the collaborative commons, supported by the Internet and free/open source software/hardware.

Trebor Scholz (2016a; 2016b) adds a cooperative twist to the collaborative commons by juxtaposing platform cooperativism against platform capitalism (the so-called sharing and gig economy). Platform cooperativism consists of online business models based on democratic self-governance, platform co-ownership and equitable distribution of value. Kostakis and Bauwens (2014) give a challenging spin to platform cooperativism by introducing the model of open cooperativism between the commons and ethical market entities, operating in terms of open protocols, open supply chains, commons-based

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licensing and open book accounting. They attempt to bridge local and global (digital) commons by incorporating the ecological model of Design Global–Manufacture Local (DG–ML) into open cooperativism, backed by a partner state through taxation, funding, regulation, education, and so on. DECODE (Decentralised Citizen Owned Data Ecosystems) is an ambitious EU-funded research project that attempts to push forward platform and open cooperativism by building the technological tools necessary to sustain decentralisation, democratic e-governance and alternative business models.

Adam Arvidsson and Nicolai Peitersen (2013) illustrate an ethical economy of productive publics, consisting of collaborative networks of peer producers, supported by the Internet and mobile applications. Commons-based peer production could be a model of economic democracy in which the universal measure of value would be the general sentiment. Arvidsson and Peitersen demonstrate a technologically advanced Habermasian transformation of the public sphere, which would open up a more rational and democratic negotiation of economic value, bringing together politics, the commons and a reformed capitalism.

Douglas Rushkoff (2016) suggests a hybrid business model of cooperation between corporations and the commons in the form of a 'benefit corporation' where the pursuit of growth is subsumed to a sustainable economy based on value creation and the equitable recycling of money among the commons. The 'benefit corporation' model would be framed by non-profit and social enterprises, crowdfunding, local currencies, time banks and platform cooperatives built on Blockchain protocols.

Erik Olin Wright (2009) posits a pluralistic and heterogeneous socialist transformation, grounded on a centrally coordinated decentralisation of power. His socialist transformation strategy is premised on the radical democratisation of both the state and the economy by civil society.

Overall, the reformist camp contributes to the discussion on the commons by offering a concrete link between the local and the global commons, embedded in a broader societal transformation steered towards a commons-orientated transition. But still, there is a considerable lack of the political with regard to the formation of a coherent counter-hegemonic block of the commons against and beyond neoliberalism. This lack translates into the absence of a set of concrete policies that would provide a clear path towards a broader commons-orientated social change.

3.2 The Green Governance Commons

David Bollier has offered one of the most widely accepted definitions of the commons as shared resources self-managed according to the rules and norms of the community (Bollier and Weston 2012, 343–352). His early work mostly relates to the preservation of the traditional commons of nature against the current tragedy of the commons caused by a predatory capitalism eating up

the earth's resources for the sake of profit maximisation and unlimited growth (Bollier 2001; 2003). He addresses the commons from the viewpoint of the human right to a healthy and clean environment, encapsulated in the long tradition of the 'commons law' that aims at securing the conservation of natural resources, while keeping them open for public use (Bollier and Weston 2012, 347). Bollier and Helfrich's later work encompasses all fields of the commons, from Ostrom's traditional commons, arts and cultural commons, neighbourhood commons, exchange and credit commons to the digital commons (Bollier and Helfrich 2015).

Bollier introduces a new policy and law architecture on the model of 'green governance'. On a local level, he adheres to Ostrom's design principles. On a macro-policy level, like Ostrom, Lessig and Benkler, he places the development of the commons in parallel with state and market operation:

> The overall goal must be to reconceptualise the neoliberal State/Market/Commons – to realign authority and provisioning in new, more beneficial ways. The State would maintain its commitments to representative governance and management of public property just as private enterprise would continue to own capital to produce saleable goods and services in the Market sector. (Bollier and Weston 2012, 350)

At first sight, Bollier's model of green governance seems to follow the liberal tradition. Yet Bollier holds that the state must shift its focus to become a partner not only of the market sector but mainly of the commons sector (Bollier and Weston 2012, 349–350). The state must assume a more active role in establishing and overseeing large-scale common-pool resources such as the atmosphere, the oceans, hard and soft minerals, timber, public land, national parks and wilderness areas, rivers, lakes and other bodies of water (Bollier and Weston 2012, 349–350). Like Lessig and Benkler, he goes along with wealthy corporations becoming business partners of the digital commoners (2008, 15–16, 20, 229). His perspective, however, extends well beyond the state and capital by envisioning the autonomous development of the commons.

In accordance with the General Public License (GPL) invented by Stallmann, Bollier points to the inversion of private contract and property to serve collective goals. New property regimes could combine with 'stakeholder trusts' and digital networking technologies for the purpose of sustaining a more transparent, participatory and accountable commons (Bollier and Weston 2012, 350–351). Bollier has also proposed a variety of measures for the democratic finance of the commons: social and ethical lending by credit unions and public banks, crowdfunding (for example, Goteo), complementary currencies, time banks, and so on (Conaty and Bollier 2015).

Bollier and Helfrich (2012; 2015) document dozens of notable commons. In their most recent book (2019), they put forth the socio-ontological dimension of the commons to stress the deep interrelationality of the commons. They

formulate a language for the commons that contrasts the terminology of mainstream economics and neoliberalism. The commons language moves beyond misleading binaries such as collective/individual, cooperation/competition, consumer/producer, public/private by introducing terms such as the capping of common wealth instead of scarcity, care-wealth instead of wealth, affective labour instead of labour, collaborative finance instead of finance, commons–public partnership instead of public–private partnership, DIT (do it together) instead of DIY (do it yourself), reciprocity instead of trade, heterarchy instead of hierarchy, provisioning instead of production, semi-permeable membranes instead of closed boundaries, sharing and pooling instead of resource allocation, value sovereignty instead of price sovereignty, relationalised property instead of public–private–collective property (Bollier and Helfrich 2019, 51–73).

Under these terms, Bollier and Helfrich construct a theoretical 'umbrella' for numerous already existing commons-based patterns. By 'pattern' they mean a kernel idea for solving problems that shows up again and again in different contexts that require different solutions. For example, a co-op in a German city and in an American city may face similar problems but in different legal, economic and cultural contexts. Bollier and Helfrich demarcate a triad of commoning that consists of three interconnected spheres: 1) social life (the social sphere), 2) peer governance (the institutional sphere) and 3) provisioning (the economic sphere). All three spheres are penetrated by various patterns that transgress Ostrom's design principles: the cultivation of shared purpose and values, free contribution, gentle reciprocity, deep communion with nature, cultural diversity, the creation of semi-permeable membranes between the commons and the state/market, transparency, conviviality, consent in decision making, the relationalisation of property, monitoring and graduated sanctions, the distinction between commons and commerce, the support of care and decommodified work, the reliance on federated/distributed structures, and so on (Bollier and Helfrich 2019, 93–193).

Bollier and Helfrich (2019, 290) illustrate a relational approach to state power through which the state could support the commons in various ways. The state could provide infrastructure, technical advice and funding to help people acquire land and buildings for community-supported agriculture and housing commons, offer neighbourhood services such as care for the elderly, and launch maker-spaces, energy cooperatives, tool-sharing commons, repair cafés and time-banking exchanges. The state could serve as clearing house for technical, legal and financial issues concerning the commons in diverse contexts (agriculture, social services, energy, alternative currencies, etc.). The state could install open platforms inviting citizens to assist city councils in urban planning, government websites encouraging citizen feedback about public services, participatory budgeting programmes to allow citizens to co-determine spending decisions. The state could also support co-housing, volunteer networks for the elderly, food cooperatives, and so on. Free and open source software could become the default infrastructure in public administration and education.

Instead of schools turning into the quasi-captive extensions of large software corporations' marketing departments, they could educate students in the use of open source software, which would then have spin-off effects for higher education, municipal government and the general public. State-endorsed open design protocols for information services, housing, ride-hailing services and energy grids could foster open source innovation and benefit local communities, preventing proprietary lock-ins by larger companies (Bollier and Helfrich 2019, 307–311). Bollier and Helfrich call on us to imagine a town:

> in which supermarkets are run as cooperatives, helping residents to buy higher-quality, local food produced under fair and eco-responsible conditions. The local taxi service and tourist lodgings are managed by platform cooperatives, letting households and the community share the benefits. Nursing services are run by a neighborhood home care venture such as Buurtzorg [...] Electricity generated by rooftop solar panels is pooled and shared via distributed ledger technology software, which is reducing high electricity bills and allowing public divestment from fossil fuels and nuclear power. (2019, 305–306)

Ultimately, the state would facilitate a commons-orientated, post-capitalist transition by shifting power from the market to the commons. This would be supplemented by three distinct strategies by/for the commons: 1) the development of community charters as tools for constituting commoning; 2) the creation and use of distributed ledger platforms that can advance cooperation on digital networks; and 3) the design of commons–public partnerships, as outlined above, that could leverage state power for the commons (Bollier and Helfrich 2019, 310–311).

Overall, Bollier and Helfrich offer both a theoretical framework and an analytical roadmap for a commons-orientated, post-capitalist transition, aiming to bring together local and global (digital) commons under commons governance. Perhaps this scattered transition could be accelerated by a holistic political strategy seeking to bootstrap the spontaneous coalescence of the commons around a coherent post-hegemonic socio-economic paradigm moving beyond and against neoliberalism.

3.3 The Collaborative Commons

Jeremy Rifkin (2014, 1) makes the case that we have witnessed over the last decades a paradigm shift from market capitalism to the collaborative commons on the model of a hybrid economy, part capitalist and part commons. The term 'collaborative commons' is a contradiction in terms, since by definition there are no non-collaborative commons. Rifkin perhaps seeks to emphasise by that term the collaborative element inherent in the commons.

Rifkin (2014, 30) reads modern history through the lens of technological evolution, embedded in different business models and social norms. The commons date back to feudalism, when agricultural life was communally structured. The landlords leased their land to peasants who combined the individual plots into open fields and farmed them collectively. The birth of capitalism originated in the enclosure of the commons for the purpose of wool production. Capitalism began in the textile industry, powered by hydraulic energy. The synergies created by the print revolution and wind/water power democratised both literacy and energy, challenging the hierarchical organisation of feudalism (Rifkin 2014, 36). Later, the convergence of coal-powered printing and coal-powered rail transport, combined with the invention of the telegraph, created the communications/energy matrix of the First Industrial Revolution (Rifkin 2014, 46). The discovery of oil, the harnessing of electricity, the telephone and the internal combustion engine gave rise to the communications/energy matrix of the Second Industrial Revolution. Colonial capitalism, backed by government funding, was the business model for both the First and Second Industrial Revolutions, consolidating production and distribution under centralised, top-down management (Rifkin 2014, 46). Rifkin binds the rise of the commons in the last decades to a Third Industrial Revolution, fostered by the interlinking of renewables with ICTs.

3.3.1 The Third Industrial Revolution

The Third Industrial Revolution disrupts the centralised capitalist model through the decentralised use of data analytics, artificial intelligence, 3D printers and FOSS, all sustaining the communications/energy matrix of the Internet of Things. Hundreds of start-up businesses infofacture their products using 3D printers in FabLabs powered by their own energy (Rifkin 2014, 70). The Internet is gradually becoming a neural network, transforming homes and businesses into micropower plants, harvesting renewable energy on site. Alvin Toffler (1980) coined the term 'prosumers' to describe the class of consumers who have evolved beyond passive consumption. Prosumers now produce their own energy across the net; manufacture almost everything using 3D printers and open source software; advertise their products for free on hundreds of websites; acquire education for free through massive open online courses (MOOCs); exchange products and services in the sharing economy, and so on (Rifkin 2014, 19).

The Internet and free software already disrupt several media industries in software production, web services, entertainment, communications and publishing (Rifkin 2014, 65). Blockchain may also have a significant impact on the finance sector, among others, insofar as it could support various sorts of micro-finance based on cryptocurrencies such as Bitcoin, enabling peer-to-peer transactions to take place instantaneously anywhere in the world with no intermediaries (banks, governments) or transaction fees (Rifkin 2014,

255–260). Alongside cryptocurrencies, community currencies and micro-currencies could also produce an alternative currency system (Rifkin 2014, 261). The democratisation of communication, energy and logistics could bring back the commons by distributing finance and the means of production to the people, thereby empowering individuals and collectivities. The commons, thus, emerge as the self-instituting power of the people on the web and beyond.

In the future, ICTs are expected to integrate into life sciences on the model of bioinformatics, which has the potential to convert the ones and zeros of digital information into the letters that make up the alphabet of DNA, thereby virtually unleashing unlimited information capacity and storage (Rifkin 2014, 86). Rifkin's core argument is that the coming together of the Communications Internet with the Energy Internet and the Logistics Internet in the intelligent infrastructure of the Internet of Things (IoT) is giving rise to a Third Industrial Revolution, fuelled by the renewables that will increase thermodynamic efficiencies in the marshalling of resources and the recycling of waste, thereby driving down the costs of production and distribution of goods to near-zero marginal levels:

> The Internet of Things will connect everything with everyone in an integrated global network. People, machines, natural resources, production lines, logistics networks, consumption habits, recycling flows, and virtually every aspect of economic and social life will be linked via sensors and software to the IoT platform, continually feeding Big Data to every node – businesses, homes, vehicles – moment to moment, in real time. Big Data, in turn, will be processed with advanced analytics, transformed into predictive algorithms, and programmed into automated systems to improve thermodynamic efficiencies, dramatically increase productivity, and reduce the marginal cost of producing and delivering a full range of goods and services to near zero across the entire economy. (Rifkin 2014, 11)

The end of capitalism and the rise of the collaborative commons

Rifkin repeats Marx's and Keynes's claim that capitalist competition will bring about new technologies that will increase productivity, decrease prices and replace human labour with machines. Automation will produce technological unemployment that will eclipse capitalism in the long run due to the absence of consumers to buy the cheaper products. Given the near-zero marginal cost of production, scarcity will give way to abundance that will deplete exchange value in favour of shareable use value, thus rendering the 'invisible hand' of the market obsolete. Put simply, nobody will be willing to pay for products if they can get them for free or produce them on their own.

Capitalism will then shrink to niche markets, clearing the ground for the rise of the collaborative commons, that is, a broad movement of civil society, comprising NGOs, charities, organisations, arts and cultural groups, social enterprises, cooperatives, scattered communities, Transition Towns, ecovillages, FabLabs and other formal and informal institutions that generate social capital. Thus, Rifkin simply reproduces the argument that dates back to Marx and is taken up by often disparate contemporary authors such as Barbrook and Benkler, arguing that technology will help create an abundance of the commons that will eventually replace capitalism with another socio-economic model, be it anarcho-communism or post-capitalism.

Capitalism's internal contradictions not only undermine its own survival, they also threaten the sustainability of the planet itself. Hyper-productivity accounts for the entropic bill of the capitalist machine in the Industrial Age, that is, the massive energy waste shown in the carbon emission rates and climate change. The collaborative commons, instead, champion the transition from carbon-based fuels to renewable energies and the use of fewer natural resources more efficiently on the model of a circular economy, supported by the Internet of Things. In contrast to the centralised, proprietary and profit-driven capitalist business model, the collaborative commons represents an alternative business model based on a communication/energy/logistics matrix that sustains a 'smart' infrastructure designed to be open, collaborative, decentralised and distributed. The end-to-end principle of the Internet provides autonomy for the users, enhancing commons innovation and creativity. The collaborative commons advance sustainability, open source innovation, access, transparency and the search for community. As Rifkin (2014, 18) eloquently puts it: 'The IoT is the technological "soul mate" of an emerging Collaborative Commons.'

Rifkin brings up the work of Brett M. Frischmann (2012) to criticise Benkler. Frischmann conceives of the commons as infrastructures rather than open access commons, addressing demand-side market failures that stem from positive externalities widespread in natural resources, roads, electricity systems, telecommunications and knowledge. Rifkin (2014, 194) claims that Benkler neglects the critical role that energy plays in infrastructure. The course of modern history is marked by the convergence of new communications media with new energy regimes that sustained the infrastructure of the First and Second Industrial Revolutions. Rifkin goes along with the liberal commons by introducing a three-stakeholder model in the Third Industrial Revolution, comprising the commons, the state and the market (Rifkin 2014, 196). But he takes a leap forward by linking local and global commons via the Internet of Things infrastructure, the operating logic of which is best served by commons management (Rifkin 2014, 195). He therefore introduces a commons-based business model as an alternative to capitalism, envisaging the gradual adjustment of the latter to the former.

Like Lessig and Benkler, Rifkin acknowledges that the adjustment of capitalism to the commons is not going to be a smooth one: 'The struggle over governance

of the three interlocking Internets that make up the Internet of Things is being aggressively waged among governments, capitalist enterprises, and champions of the nascent social economy on the Commons, each with ambitions to define the coming era' (2014, 195). Rifkin (2014, 202) invokes studies showing that the Communication Internet increasingly looks like a Monopoly board, where a handful of corporations compete for dominance: Google rules search; Facebook social networking; eBay auctions; Apple online content delivery; Amazon retail, and so on. Global media are concentrated in the hands of a few giant corporations that decide what is news (Rifkin 2014, 213).

'Algorithmic manipulation' is the name of the game for actors who have a commercial interest in tampering with the data and producing fake news, predatory advertising and corporate propaganda (Rifkin 2014, 203). Surveillance capitalism is engineered by the power of algorithms to create toxic feedback loops of class and ethnic racism, transforming into weapons of math destruction. Software used in job recruitment, college admission processes, criminal justice and crime prediction often encodes racial prejudices and biases into sloppy statistical models, reproducing unfairness and inequality (O'Neil 2016). Yet, for Rifkin, free software, creative commons licensing and free wi-fi are still islands of freedom in the capitalist ocean of control (Rifkin 2014, 147–151, 173–192).

On the Energy Internet, global energy companies aim to centralise the smart electricity grid and enable the commercial enclosure of new renewable energies (Rifkin 2014, 205). Countries, on the other hand, are introducing green feed-in tariffs to motivate users to produce their own electricity and share it across the net. In response, companies are changing their business model to accommodate decentralised energy production. They are focusing on the management of energy use rather than solely on sales (Rifkin 2014, 206).

Reality check

The struggle between prosumer collaborators and investor capitalists has only just begun, with the state calibrating corporate centralisation versus commons decentralisation. The main question is whether the digital oligarchy of surveillance capitalism can control the billions of prosumers who will have access to the means of production in the decades to come. The answer, obviously, depends on the future of class struggle in global politics.

At the moment, however, despite the fact that more and more people produce their energy locally, the EU follows the US in the adoption of a series of neoliberal policies well suited to large energy companies. Most EU policies and regulations have abstained from introducing community-based feed-in tariffs or micro-grid infrastructures to support local renewable energy production. Instead, the EU has been granting massive subsidies to large gas, coal and nuclear companies, promoting gas pipelines, enormous energy infrastructures and modest CO_2 reductions (Hammerstein 2019, 29–30).

Rifkin overstates the current status of the collaborative commons. He mentions that community currencies are proliferating in Greece and Spain (2014, 262). But this is not the case. While it is true that there are 1,100 cooperatives in Greece at the time of writing, most of them are struggling to survive and facing considerable financial strains. This holds true for most commons-based peer production across the globe. The major problem of the commons is their economic sustenance due to the lack of access to resources and capital. The commons depend almost exclusively on state funding and the volunteering of activists who can afford to contribute. However, most of society cannot exit capitalism, even if they aspired to. Additional barriers relate to the significant gap in managerial and technical skills, sectoral and operational isolation in a number of subsectors, and a lack of public policy and institutional support from both the state and larger cooperatives (Papadimitropoulos 2018b; Scholz 2016b). More than 90% of co-ops are consumer co-ops, with the main owners not being workers themselves. Even in worker-owned cooperatives, workers are often not co-op members. Therefore, many co-ops are co-ops in name only. They are basically market entities that have adopted capitalist practices, as their main interest is to get a higher selling price or lower buying price in the market (Gindin 2016).

3.3.2 Platform Capitalism, aka the Sharing Economy

Rifkin includes the so-called sharing economy in the collaborative commons. The term 'sharing economy' arises from the early development of a number of non-profit, peer-to-peer initiatives inspired by the moral values of a gift economy supported by ICTs (for example, Couchsurfing). Nowadays, the term sharing economy has evolved to refer to a collaborative economy where individuals are coordinated through online software platforms for the production, distribution, trade and consumption of goods and services, typically in a peer-to-peer fashion.

Yet not only does the online commercialisation of the gift economy in the last decade render the sharing economy a fallacy, it also misclassifies true aspects of the gift economy – manifested in commons-based peer production – under the wrong term. The term sharing economy is a greatly misleading marketing buzzword that deliberately confuses two different economic modes: sharing and commercial exchange (Lee 2015; Olma 2015; Schor 2015; Slee 2015; Walker 2015). Sharing is a feature of a gift economy that has been prevalent among communities (families, friends and colleagues) from society's inception (Mauss 1967). Sharing means giving something away as a gift, allowing someone to use something you own temporarily or having something in common with somebody else. Sharing can be an act of distribution, co-belonging and communication, as in the cases of sharing a chocolate, a room or thoughts and emotions (John 2012, 169–170). Sharing became widespread as a term particularly with the advent of Web 2.0, which gave Internet users the opportunity to generate

content online on platforms such as Facebook, YouTube, Flickr, Twitter, in wikis, on blogs and on several other websites (John 2012, 167). Sharing has transformed into a form of prosumption, that is, the blending of consumption with production that has served the creation of big data, fuelling marketing and advertising during the last decades (John 2012, 168).

The sharing economy is, then, a euphemism for the emergence of a neoliberal model of platform capitalism that creates value by facilitating exchange between consumers and producers. Platform capitalism is a vast digital ecosystem that interconnects cloud computing, big data and mobile apps (Norton 2018). Digitisation and networking on the Internet has helped expand the monetisation of goods and services, thus rendering on-demand commercial exchange of all kinds more viable and efficient.

Platform capitalism relies on the intersection of three economic laws: 1) Metcalfe's law of network effects, 2) the Pioneer Advantage Law and 3) the winner-takes-all law (Vercellone et al. 2019, 8–13). Whereas industrial capitalism is supply-side economics of scale, platform capitalism depends on demand-side economies based on network effects on the Internet, that is, social networking and demand aggregation enhanced by applications and algorithms controlling big data (Van Alstyne et al. 2016). Platform capitalism is actually a data-extractivism model generated by network effects.

In contrast to 'pipeline' businesses creating value by controlling a production line where inputs at one end of the chain transform into outputs at the other end, platform capitalism incorporates the classic value-chain model into a digital landscape marked by three major shifts: 1) from resource control to the orchestration of the network of producers and consumers; 2) from internal optimisation to network interaction; and 3) from a focus on customer value to a focus on ecosystem value (Van Alstyne et al. 2016). In short, platform capitalism is set up by the algorithmic top-down orchestration of the bottom-up networking between producers and consumers on the Internet.

Network effects reinforce the competitive advantage that a pioneering platform gains in a market thanks to a technical innovation or commercial intuition. Pioneering platforms 'lock in' consumers and producers, thereby preventing potential competitors from penetrating. This progression leads to the establishment of a monopoly, with a few players capturing the largest share of a market.

Platform capitalism employs several business models (Torregrossa 2018). A key one is the multi-sided platform model based on intermediaries (companies) acting as matchmakers in multi-sided platforms that create value primarily by enabling direct interactions between two or more customer or participant groups. Prominent examples of multi-sided platforms and the participants they connect include Alibaba.com, eBay (buyers and sellers); Airbnb (dwelling owners and renters); the Uber app (professional drivers and passengers); Facebook (users, advertisers, third-party game or content developers and affiliated third-party sites); Upwork, Freelancer (professionals and companies).

Online platforms help companies to realise monopoly rents on big data, advertising space and cloud-based computing (Facebook, Google, Amazon); to sell products and services (Amazon); to extract fees by enabling peer-to-peer and peer-to-business transactions (eBay, Alibaba.com, Airbnb, Uber, Upwork, Freelancer); or a combination of the above (Amazon) (Kenney 2014; Lobo 2014; Pasquale 2017, 312; Srnicek 2017).

The illusion of economic freedom

Platform capitalism is considered to transform consumers into micro-entrepreneurs, trading, sharing, swapping and renting products and services, thus unlocking the untapped value or excess capacity of underutilised assets and services (cars, rooms, consumer goods, labour, capital, wi-fi, etc.). The online on-demand economy creates a 24-hour global marketplace, supposed to reduce waste and transaction costs, deepen human capital specialisation and increase efficiency in labour markets, employment, asset management and pricing, thus resulting in higher levels of productivity, innovation, environmental sustainability and inclusive growth (Codagnone et al. 2016a; 2016b; Sundararajan 2016).

Rifkin's inclusion of the so-called sharing economy in the collaborative commons reflects a neoliberal economic account, represented by some thought leaders in Silicon Valley such as Tad Friend (2015) and Nicholas Lemann (2015), who conceive of the emergence of platform capitalism as a natural transition towards a more autonomous, deregulated and flexible market where both companies and independent contractors are now freer to work outside the conventional time and place framework (Codagnone et al. 2016a, 13; Pasquale 2017, 309–311). Freelancers can now have a more creative, autonomous and flexible work life, thus leading to a more balanced private life. Platform capitalism can bolster a decentralisation of power that would translate into an economic democracy and participatory culture, thus leading to the highest possible freedom for firms, households and individuals (Bruns 2008, 227–228; Jenkins 2006, 275; Tapscott and Williams 2006, 267).

Silicon Valley's techno-populist tales of 'user empowerment' and 'digital socialism' are made of promises to bridge the gap in consumption and income inequality (Morozov 2014; 2015). However, equalising access to communication services and digitising disintermediation between idle capital and consumers via online platforms do not automatically eliminate or weaken inequalities. On the contrary, they can augment existing inequalities concentrating the new markets of platform capitalism into the hands of a few corporations (Morozov 2018).

Arun Sundararajan (2016) mistakenly claims that the so-called sharing economy consists of crowd-based 'networks' rather than centralised institutions or 'hierarchies'. While it is true that platform capitalism has decentralised economic activity, by no means does this point to a truly decentralised economy. Online platforms are available to front-end users who are controlled by back-end

centralised server infrastructures, managed hierarchically by decisions made in Silicon Valley and executed by black box algorithms (Scholz 2016a, 26). Consumers, providers and producers pay a fee to exchange products and services online, thereby bringing enormous profits to platform owners. The big money goes to the oligarchy of the shareholders, and the scraps to on-demand workers. In short, platform capitalism represents a digital oligarchy that leverages market power via network effects to extract rents from participants.

In Marxian terms, platform capitalism captures the use value of the general intellect, produced by the sociality of Internet users in social media, online platforms, search engines, blogs and mobile applications. It leverages the network effects generated by user interaction on the Internet, thereby sustaining a digital oligarchy that commodifies the social imaginary (Fuchs 2014). Trebor Scholz has termed the commodification of network effects 'crowd fleecing', meaning a new form of exploitation, put in place by four or five upstarts, to draw on a global pool of millions of workers in real time (Scholz 2016a, 4). Platform capitalism is a technologically advanced form of exploitation, resulting – on average – in a 'race to the bottom' with regard to workers' wages and living standards. Earnings in platform capitalism range from very low to modest, with only a small minority of workers making above middle-level incomes (Codagnone et al. 2016a, 6).

What is at stake in platform capitalism is the meaning of work per se. A number of authors have built on the Marxian notion of the proletariat, arguing that digitisation has created a new, diverse type of proletariat. Already in the 1980s, Andre Gorz (1980, 69) argued that automation and computerisation had rendered the underemployed, probationary, contracted, casual, temporary and part-time worker a 'post-industrial neo-proletariat'. This tendency is even more pronounced today in the context of digitisation. Ursula Huws (2003; 2014) speaks of a new class of information-processing workers – the cybertariat. Guy Standing (2011) and Nick Dyer-Witheford (1999, 88, 96) claim that poorly paid, insecure and deskilled service workers constitute the new type of precariat. Castells (2000, 244) considers low-paid service workers as a new 'white collar proletariat'.

However attractive the prospect of transforming workers into micro-entrepreneurs or flexible freelance workers, platform capitalism puts – on average – the worker at a disadvantage, as it transforms labour into an auction, creating a disproportionate supply and demand feedback. On the one side, it favours the 'haves' over the 'have-nots' – as every auction does – while, on the other, it obliges the exploited amateurs to push professional prices down by selling their services cheaper. In the name of entrepreneurship, labour flexibility, autonomy and freedom of choice, platform capitalism shifts the burdens of risk (unemployment, illness, old age) on to the workers' shoulders. It offers no minimum wage, no security, no health insurance, no pension, no unemployment insurance, no paid holiday or paid sick days (Scholz 2016a). The elimination of workers' rights and democratic values such as accountability and consent

indicate the lack of dignity for workers who are in a position of unfavourable information and power asymmetry (Newlands et al. 2016, 9, 14).

Platform capitalism has colonised the public and private sphere to such an extent that it has integrated communication and information technologies into a global cyber-market, blurring the boundaries between 'virtual' and 'real', 'work' and 'play', 'production' and 'consumption', 'private' and 'public'. Dallas Smythe speaks of the 'audience commodity', which portrays the media audience as a commodity sold to advertisers. Especially today, social media on the Internet commodify the sociality of users by converting the latter into data sold to advertisers. Personal data are used in the creation of targeted advertisements, and the user's click and buy process generates profit for the advertising company. Off-the-job time becomes a marketing playground, serving the reproduction of commodities. Everything, including leisure, play, friendship, love and sexuality, becomes a 24-hour commodity market. Consumers of social media become prosumers, producing commodities in the form of personal data (Fuchs 2014, 89–95).

Christian Fuchs (2014) holds that the use value generated in social networking and search engines is part of digital labour that produces surplus value for the social media corporations, thus creating a new form of exploitation. Not only do digitisation and automation result in unemployment and precarious labour, they also render *produsers* and *prosumers* part of the working class, transforming society into a cyber-factory. Digital labour splits into waged and unwaged online labour. Whereas waged online labour consists in labour performed on crowdsourcing platforms, unwaged online labour includes almost any social activity on the Internet, from chatting, posting and searching to reviewing, commenting, and so on (Fuchs 2014; Scholz 2012).

Micro-tasking, that is, the decomposition of work into small parts, on platforms such as Amazon Mechanical Turk is a further expansion of Taylorist logic in the field of digital labour that disconnects the worker from the overall product of his work, thereby rendering her a mere cog in the machine of a faceless production. Labour alienation, exploitation, precarity and insecurity are the outcomes of the strategic nullification of federal law in platform capitalism by corporations making use of legal grey zones to misclassify employees as independent contractors, avoid taxes, and violate local laws, labour laws, privacy and anti-discrimination laws (Codagnone et al. 2016a; Huws 2014, 26–39; Scholz 2016a; Standing 2011). There is also strong evidence that insecure employment and precariousness result in psychological morbidity (Virtanen et al. 2005).

Beyond social democracy

Rifkin's optimism is only partially supported by the facts. The expansion of neoliberalism across the globe has been accompanied by the rise of neo-fascist

far right-wing populism in the United States and Europe. Neoliberal neocolonialism spreads from public assets, real estate and agriculture to big data and biotechnology, privatising the very genes of nature. On the Internet, platform capitalism is making billions by exploiting FOSS development and the digital commons to the extent that a number of open source software companies are now adopting a more closed approach with regard to their copyright licences (Krazit 2018). Hence, rather than the so-called sharing economy paving the way for the collaborative commons, it signals a new era of cyber-exploitation. Koen Frenken (2017) anticipates three possible futures for the sharing economy: 1) the neoliberal development of platform capitalism, where several micro-platforms integrate into super-platforms; 2) the social democratic development of platforms where the state intervenes to tax and redistribute rents from winners to losers; and 3) the citizen-led democratic control of platforms in the form of platform cooperativism.

Rifkin advocates a social democratic, commons-orientated transition, in which the developed nations in concert with big corporations would be the leaders of the Third Industrial Revolution, which is projected to gradually align around the collaborative commons. Rifkin has succeeded in linking local with global commons via the Internet of Things infrastructure, best served by self-management. Yet he overstates the role of technology while underplaying the role of democracy. Similar to the liberal approach to the commons, he abstains from addressing the contradictions of capitalism and the state, thus reproducing the lack of the political in the reformist approach to the commons.

The transition to the commons is not merely a technical issue of algorithms programming win–win partnerships between capitalism, the state and the commons. It requires a shift to another model of society, anchored in the abolition of the division between directors and executants; hence the need for the creation of a novel anthropological type. Rifkin (2014, 274–286) touches on this issue by considering humans equipped with empathy, affection, reciprocity and companionship rather than self-interest alone. He downplays, though, the right to have a direct say in the economic and societal affairs that determine one's life. Instead of assigning politics to technocratic elites, supposed to represent the people, freedom as autonomy consists in the equality of participation in the formation of the law governing society. Freedom translates into the self-instituting power of the people. Therefore, the key to the commons transition is the establishment of direct democratic procedures on a post-hegemonic political level that encompass the reconfiguration of power in the direction of the commons.

3.4 Platform Cooperativism

Trebor Scholz (2016a; 2016b, 23–24) juxtaposes platform cooperativism against platform capitalism in a mission to bring together the roughly 170 years of the

cooperative movement with commons-based peer production. The idea is to use the algorithmic design of apps such as Uber in the service of a cooperative business model premised on communal ownership, democratic governance, sustainability and equitable distribution of value (Scholz 2016a; 2016b). Instead of workers earning paltry fees from precarious labour that makes investors rich, they would design, manage and own apps themselves. Platform cooperativism operates on the model of a multi-stakeholder cooperative of consumers, providers, investors and producers. It aims to reunite existing cooperatives and labour unions under digital self-governance.

Platform cooperativism spans the economic landscape. Since 2015, platform co-ops have emerged across a broad range of sectors, including e-commerce, cleaning services, culture, finance, software development, transportation and more. Over 300 case studies of platform cooperativism have been documented thus far.[1] A non-exhaustive typology classifies cooperatives as follows: cooperatively owned online labour brokerages and market places (for example, Loconomics, Fairmondo); city-owned platform cooperatives (for example, Fairbnb); producer-owned platforms (for example, Stocksy, Resonate); union-backed labour platforms (for example, National Domestic Workers Alliance); data co-ops (for example, MIDATA); and protocolary co-ops enabling peer-to-peer interaction (for example, Backfeed, La′Zooz). These innovative organisations are increasing in numbers and testing a range of operating models. In the following, I illustrate the cases of Stocksy and Fairmondo to exemplify the organisational principles of platform cooperativism.

3.4.1 The Stocksy Case

Stocksy is a platform cooperative that accepts and provides royalty-free stock photography and video via an online marketplace that provides sustainable careers to artists through co-ownership, profit sharing and transparent business practices (Scholz 2016b, 78). Stocksy was started by iStockphoto co-founders Bruce Livingstone and Brianna Wettlaufer, who in 2000 pioneered the idea of selling stock photos online in exchange for small fees (Cortese 2016). iStock caught the attention of Getty Images, which acquired it in 2006 for $50 million. Livingstone and Wettlaufer grew dismayed as the community spirit they had cultivated and the royalties photographers received began to erode under the new ownership. Photographers grumbled that they were being underpaid and exploited by online sites, thereby feeling disenfranchised. This is a general trend in the creative industry where workers are likely to have no control over their artistic work, experience precarity and are poorly paid.

For this reason, using money from the sale of iStock to Getty, Livingstone and Wettlaufer founded Stocksy in 2013 with the aim of putting power back into the hands of the artists. Stocksy pays photographers 50–75% of sales.[2] This is well above the going rate of 15–45% that is typical in the stock photography

field. The company also distributes 90% of its profits at the end of each year among its photographers. Contributing Stocksy photographers receive 50% of a Standard Licence Purchase and 75% of an Extended Licence Purchase. Every Stocksy contributor receives a share of the company, with voting rights.

At the time of launch, Stocksy had about 220 contributing photographers, with plans to grow to approximately 500 photographers in its first year. Stocksy now has over 900 contributing members, selected from over 10,000 applications. Its revenue doubled from 2014 to 2015 to $7.9 million. For 2015, Stocksy paid out over half of its revenue as royalties to its contributors, totalling $4.3 million. Revenue for 2016 grew to $10.7 million, with $4.9 million paid out to contributors. In total over its first four years of business from 2013 to 2017, Stocksy paid out over $20 million to its nearly 1,000 artists. After starting with six founding members, Stocksy's staff numbers reached 50 in early 2018.

Stocksy is a multi-stakeholder cooperative divided into three membership classes: founders, staff and artists (Gordon-Farleigh 2017); 90% of the dividends are awarded to Class C (artists), and 5% each goes to Class A (founders) and Class B (staff). Every member has an equal voting share. The governance does not follow a vote-by-committee approach, but a transparent, flat decision-making process, with members participating through an online system. The board includes directors from each class and any member can propose resolutions. An exhaustive resolution and voting process is considered bureaucratic and costly. Having open conversations on a simple platform is more effective.

3.4.2 The Fairmondo Case

Fairmondo is an online marketplace that aims to challenge the big players in e-commerce such as Amazon and eBay (Scholz 2016b, 79). Founded in Germany in 2012, Fairmondo is a multi-stakeholder cooperative open both to professional and private sellers. The products on offer have no general restrictions unless they are illegal or run counter to Fairmondo's core values such as fairness and sustainable consumption. The fairness of the products is assessed by shared criteria, which remain open to discussion and improvement by the members and the more than 12,000 users. Currently, Fairmondo offers over 2 million products, the majority being books and media articles.

Its governance model is based on a legally binding commitment to uncompromising transparency and democratic accountability.[3] Democratic control is guaranteed through the one-member-one-vote principle. The managing board is elected by employees. Decision making is based on a majority consensus; 90% of Fairmondo constituents must agree prior any modification to the general principles. Fairmondo's inclusive and transparent principles actively build on members' trust by avoiding the deceptive information that plagues traditional marketplaces, such as false externalities or hidden costs. The Fairmondo crowd receives real information about what they are buying.

Fairmondo was financed through crowdfunding, with over 2,000 members investing over €600,000 in shares. There is a cap of €25,000 for the number of shares that anybody can hold. Thus, disproportionate financial investment or investment by non-cooperative associations are prohibited. Dividends are distributed as broadly as possible: 25% is distributed to co-op members through shares; 25% is distributed through 'Fair Funding Points' (voluntary work is rewarded by points that legally stake a claim on future surpluses); 25% is donated to a number of non-profits chosen by Fairmondo members. The last 25% is pooled into a common fund used for the development of the wider Fairmondo project. Internal stakeholders (partners, staff, etc.) operate under a defined salary range ratio of 1 to 7 from lowest to highest paid.

Fairmondo co-ops are committed to open source and innovation. The code used for its online marketplace platforms must be published under a licence that ensures full openness regarding developments or forks. The code can be found on Github. By contributing to the digital commons, Fairmondo represents a model of open cooperativism, the operating principles of which will be detailed in the following section.

3.4.3 The Challenges of Platform Cooperativism

The two cases illustrated above adhere to the seven principles of platform cooperativism defined by Scholz (2016a, 18–21; Platform Coops Infographic 2017) as follows: 1) voluntary and open membership; 2) democratic member control; 3) members' economic participation; 4) autonomy and independence; 5) education, training and information; 6) cooperation among cooperatives; 7) concern for community. Platform co-ops respond to the market failures of platform capitalism by lowering transaction and retention costs, transferring surplus revenue to members, protecting workers from exploitation, disincentivising short-termism and offering a prospect of data democracy.

Scholz identifies a number of challenges for platform cooperativism. He touches upon the main obstacles that the cooperative movement has faced from its inception, such as competition, financing, regulation, education, member involvement and identity. Some scholars (Frenken 2017; Van Doorn 2017) have argued that platform cooperativism needs to address three major problems regarding: 1) self-government, 2) financing and 3) market competition/value proposition.

Platform co-ops seeking to scale up in the digital landscape need to accommodate a wider range of member identities with divergent needs and interests that tend to produce conflicts and ideological oppositions (Frenken 2017, 12). Blockchain could perhaps offer solutions to the problems inherent in digital decision making. It might enable decentralised trust-creation mechanisms and provide automatic and secure coordination of network interactions through smart contracts (Morell et al. 2017, 60). The present discourse on Blockchain,

however, is rather libertarian and conceals the danger of replacing the current oligarchies with new oligarchies in the name of democracy, decentralisation, and so on. Attention, therefore, should be drawn to shifting the discourse from libertarianism to cooperativism.

Platform co-ops also have difficulty in raising venture capital, and embark on R&D on their own, which is significantly detrimental to their capacity to innovate and produce new lines of products and services (Frenken 2017, 12). New funding structures (crowdfunding, cooperative banks and credit unions, Blockchain and alternative currencies) and locally focused commissioning from the public sector could provide vital revenue to platform co-ops (McCann and Yazici 2018, 4). Attracting funding relates directly to the need of platform co-ops to offer a convincing value proposition if they are to survive market competition (Van Doorn 2017). If platform co-ops are to move beyond 'luxury cooperativism', they must address the needs and limited resources of low-income workers, their households and their neighbourhoods. To do so, they need to serve a specific need better than competing platforms, while embodying a concrete set of values for specific consumer categories.

One central problem that potentially undermines platform cooperativism is the pitiless competition it faces from traditional and platform capitalism. In light of the 20–30% that companies such as Uber are taking as profit, one solution put forward by Scholz is for platform cooperatives to run on 10% profit, which could then be partially translated into social benefit for workers (Scholz 2016a, 13). Indeed, this is one of the competitive advantages of platform co-ops compared to capitalist platforms. Yet Scholz is aware that the competitiveness problem of platform cooperativism cannot be dealt with solely through a pricing strategy. A broader regulatory framework is a *sine qua non* for the advancement of platform cooperativism (Smorto 2017).

Scholz founded the Platform Cooperativism Consortium (PCC) in 2016, which has received funding to support the cooperative platform economy through research, experimentation, education, advocacy, documentation of best practices, technical support and the coordination of funding and events.[4] In 2018, the PCC received an additional Google.org grant of $1 million to further enhance the economic development of cooperatives in the digital economy.[5] The PCC focuses specifically on creating a critical analysis of the digital economy, and designing open source tools for education, governance and finance, among others. The goal is to create a platform ecosystem that can be variously supportive for local co-op initiatives. Several other incubators and accelerators have emerged in recent years such as CoopVenture (France), Start. Coop (US) and incubator.COOP (Australia), aiming to finance the development of co-ops across the globe. Resonate, a platform co-op made by and for musicians, recently received $1 million from Reflective Venture Partners, which funds Blockchain technology-related start-ups and organisations (Hurst 2018).

Scholz has also been involved in lobbying to introduce regulation on cooperatives. The Platform Cooperativism Consortium Policy Group recently

submitted an agenda to promote and build support for platform cooperatives through a new bill of rights for American workers to US Senator Kirsten Gillibrand.[6] Andrea Nahles, head of the Social Democratic Party of Germany, committed to support platform cooperativism in Germany. Jeremy Corbyn's Labour Party in the UK included platform cooperativism in its Digital Democracy Manifesto.[7]

Scholz has met critiques from the far left that, especially with the Google.org co-signing, platform cooperativism still mimics the gig economy, a capitalistic structure (Anzilotti 2018). To truly dismantle capitalism, those critics argue, fundamental changes are needed at the national political level to regulate against monopolies such as Google, and to provide for equity-creating, distributive resources such as Universal Basic Income and universal healthcare. Scholz counter-argues there can still be reforms that work within capitalism and that really change power relationships. He contends that it is unrealistic to think that platform co-ops will dominate capitalist markets. Rather, he envisions a more diversified economy. Therefore, there is a tension here between his radical pretensions and his projecting a mixed economy. A more radical line of argument holds that platform cooperativism should integrate into a broader model of open cooperativism.

3.5 Open Cooperativism

Bauwens and Kostakis (2017a) argue that cooperatives in general and platform cooperatives in particular usually function under the patent and copyright system, and they are, consequently, not creating, protecting or producing commons. They are limited to local or national membership, thereby leaving the global field open to be dominated by capitalist enterprises. As a result, traditional and platform cooperatives are closed market entities, bending over time to the competitive pressure of capitalist enterprises. To address these issues, Bauwens and Kostakis advocate for the incorporation of platform cooperativism into a broader model of open cooperativism grounded on the principles of commons-based peer production. Before delving deep into this argument, it is essential first to examine its broader normative premises.

3.5.1 Extractive Peer Production

Bauwens and Kostakis (2014; 2019) build on the work of Ostrom, Lessig and Benkler, but they differ from them in that they seek to transform capitalism into the commons. From this angle, they are closer to Bollier who follows Michel Bauwens in his argument that the state should support the commons instead of market capitalism. As with Rifkin, Bauwens and Kostakis's general argument echoes Marx's claim that capitalism is doomed to failure as the evolution of technology reduces the costs of production to the degree that capitalism

can no longer sustain itself. The evolution of technology undermines capitalism inasmuch as it makes workers redundant for the reproduction of production. Bauwens and Kostakis's core argument is that the digital commons can merge with local cooperatives and replace capitalism from within, just as capitalism did with feudalism. *Pace* Rifkin, they take a radical stance, introducing a post-capitalist model that will force capitalism to adjust to the commons in the long run with the aid of a commons-orientated partner state.

Instead of a Marxist revolutionary party capturing state power and implementing central planning of production in a long-term mission to establish communism, Bauwens and Kostakis concentrate power *ab initio* on commons-based peer production. They demonstrate a post-capitalist version of the commons on the model of Design Global–Manufacture Local (DG–ML) or 'cosmolocalism', which connects local with global commons via the Internet and free and open source software/hardware. The commons advance a simple yet radical idea: great improvements in production could be achieved by reducing barriers to knowledge exchange. Collaboration and openness could result in a constantly improving collective repository of best ideas and practices; hence, the significance of the digital commons adding up to the rural and urban commons. Cosmolocalism, that is, the localised use of the digital commons, can help people reappropriate the means of production across the globe and secure their sustainability against capitalism and statism.

At the crossroads of traditional capitalism, cognitive capitalism and peer production

Bauwens and Kostakis's political economy of post-capitalism is predicated on a philosophy of history premised on a mix of Schumpeterian and Marxian insights. In *Network Society and Future Scenarios for a Collaborative Economy*, they adhere to a somewhat teleological account of history, determined by successive techno-economic shifts in the modes of production and exchange (2014, 2–14). They integrate their analysis of peer production into a neo-Schumpeterian narrative, developed in particular by Carlota Perez, in which economic crises, triggered by technological innovation, are an inherent characteristic of capitalism, forcing the latter to progress over time. Technological innovation drives capitalism's development into a spiral of upswings and downswings, lasting approximately 40–60 years, until the next one 'takes off' (Perez 2002, 15). Following Andrew Feenberg (2002), they do not conceive of technology as neutral, deterministic or univocal in its effects, but rather as a terrain of social struggle between alternative norms, values and social imaginaries (Bauwens et al. 2019, 33).

Kostakis and Bauwens (2014, 10–14; Bauwens 2014) hold that the global economy is now at the turning point of a novel technological revolution, with three different value models competing for dominance: traditional capitalism, neo-feudal cognitive capitalism and peer production. Like Benkler, they

identify two modes of peer production: 1) an extractive peer production with a for-profit orientation, developing on the model of neo-feudal cognitive capitalism; and 2) a generative peer production with a for-benefit orientation, emerging in the form of local and global commons.

Traditional proprietary capitalism is in decline, since it suffers from an irreversible contradiction: it aims at infinite growth on a finite planet, causing both economic and ecological crisis. Industrial capitalism evolves into a neo-feudal cognitive capitalism, in which strong intellectual property rights are in the process of being replaced by centralised networks of peer production, dominated by finance capital (Bauwens 2005; Benkler 2006; Castells 2000; 2009; 2010). Cognitive capitalism is considered a new type of capitalism in which the control of information has replaced traditional material production and distribution, becoming, therefore, the basic source of value (Bell 1973; Boutang 2012; Drucker 1968; Webster 2006). As such, cognitive capitalism splits into two modes: 1) netarchical capitalism; and 2) anarcho-capitalism (Kostakis and Bauwens 2014, 25–27).

Netarchical capitalism is another name for platform capitalism. It refers to front-end digital platforms centrally controlled by back-end server infrastructures, whose primary function is the extraction of value from peer production and crowdsourcing (Kostakis and Bauwens 2014, 23–29). One prevalent business model of netarchical capitalism is the monetisation of attention capital and Internet user data through advertising. Netarchical capitalism lives on the positive externalities produced by Internet users, transforming into a parasitic and rent-seeking capital (Bauwens et al. 2019, 37). Some of the most prominent companies of netarchical capitalism are Google, Facebook, Amazon, Airbnb and Uber. Jeff Howe defines crowdsourcing as follows:

> Simply defined, crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively) but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential labourers. (Howe 2006)

Crowdsourcing is part of outsourcing, that is, a business practice of one company hiring another company or individuals to perform tasks, handle operations or provide services previously done by the company's own employees. Digitisation has propelled outsourcing and the concomitant globalisation of neoliberalism from 1980 onwards. The Internet, software technology and telecommunication devices have allowed corporations to outsource production with the aim of becoming more competitive. Online platforms helped decrease their costs and increase productivity by buying cheap and temporary

labour from precarious freelancers or peer producers across the globe (Howe 2008).

The 2008 financial crisis exacerbated the low-wage crisis of the last decades and, combined with the expansion of neoliberalism and digitisation, gave rise to the platform capitalism of the so-called sharing and gig economy. Whereas the 'sharing economy' consists in the online renting or exchange of idle assets such as cars, bikes, rooms, and so on, the 'gig economy' refers to the buying and selling of freelance labour online. Both the gig and the sharing economy are crowdsourcing models, enabled by digital platforms (Bock et al. 2016; Codagnone et al. 2016a; 2016b; Sundararajan 2016).

Crowdsourcing is centralised inasmuch as companies control production and profit from freelancers and peer producers, and distributed inasmuch as freelancers and peer producers across the globe can earn a living. As mentioned earlier, prominent examples are digital platforms such as Amazon Mechanical Turk, Upwork and Freelancer where businesses and freelancers (designers, developers, copywriters, translators and so forth) connect and collaborate remotely. TaskRabbit is a 'skills' marketplace, which matches freelancers with local demand, allowing consumers to buy labour for everyday tasks, including cleaning, moving, delivery and handyman work. Kickstarter is a case of crowdfunding enabling people to go to the marketplace itself to fund their projects instead of depending on banks. What is interesting to consider here, according to Bulajewski (2012), is that Kickstarter charges '60 times the actual cost of providing a service by skimming a percentage off financial transactions'. Thus, Kickstarter is but a parasitic form of netarchical capitalism.

The second mode of cognitive capitalism is digital anarcho-capitalism, which echoes the Austrian school of economics (Schulak and Unterköfler 2011) in the sense that it approximates its theoretical models. 'While netarchical capitalism mainly exploits human cooperation, distributed capitalism is premised on the idea that everybody can trade and exchange; or, to put it bluntly, that "everyone can become an independent capitalist"' (Kostakis and Bauwens 2014, 31). Anarcho-capitalism differs from anarchism in that it is still based on property law and a minimum state, whereas the latter rejects property and state altogether.

In digital anarcho-capitalism, the Internet sustains the infrastructure for a decentralised peer network of for-profit entrepreneurs. The most profound example is the Bitcoin project, which relies on the distributed database – public ledger – of Blockchain which maintains a continuously growing list of records called blocks. Bitcoin is a digital currency based on the open source software of Blockchain, which enables decentralised peer-to-peer transactions without the need for intermediaries such as banks, states, and so on. It is deliberately scarce (21 million bitcoins), which makes it highly speculative and competitive. As a result, Bitcoin is prone to producing oligarchies and crises (Kostakis and Bauwens 2014, 32–33). In this sense, not only does it reproduce already existing inequalities by excluding the penniless, it also creates new ones.

Kostakis and Bauwens (2014, 27–28) claim that neo-feudal cognitive capitalism produces an increased contradiction between decentralised peer production and centralised profit accumulation. Technology enhances the production of a decentralised use value, which cannot fully translate into exchange value, thus undermining the very foundation of capitalism, that is, profit maximisation. Innovation becomes social, diffusing via peer-to-peer networks, and capital becomes an *a posteriori* parasitical intervention rather than the *a priori* condition of innovation (Kostakis and Bauwens 2014, 28–29).

> In capitalism, value is mostly related to things, that is, commodities, and is expressed in their exchange for one another based on a nominal representation of money. In the realm of P2P, value is attributed to contributions as a shared effort among peers, and is reflected in the shared significance of those contributions as recognised by those peers […] In a transition period, there is value competition: a dominant form of value operates under the capitalist logic, and a new social logic of value is emerging in seed forms. (Bauwens et al. 2019, 15)

Paradoxically, neo-feudal cognitive capitalism produces non-capitalist and post-capitalist forms of value creation. Users and communities utilise digital platforms to connect themselves for multiple purposes, as in the case of the revolutions of the Arab Spring and the various groups active in social media (Bauwens et al. 2019, 38). Bitcoin illustrates that digital currencies could provide a viable alternative to banks, financial institutions and state monetary policies. It remains to be seen whether and to what degree Bitcoin can scale up and decentralise the economy. Irrespective of that, Blockchain technologies have the potential to help communities reach consensus and self-organise, among other things.

Ultimately, neo-feudal cognitive capitalism creates a value crisis, reintroducing the Marxian argument that technological progress is antagonistic to profit rates. The response of neo-feudal cognitive capitalism is the enclosure as much as possible of the digital commons into the confines of surveillance capitalism. Yet Bauwens et al. (2019) stress that the basic underlying freedom of the Internet has not yet been brought fully under corporate control. The commons use the Internet as much as capital and governments do. The unsustainability of contemporary value flows can be counteracted by the innovative social relations of generative commons-based peer production. Bauwens et al.'s (2019, 4–5) core argument is that commons-based peer production contains both an immanent and transcendent aspect. It is immanent to the extent that commons-based peer production is essential to allowing capitalism to reproduce itself. It is transcendent to the degree that it can progress into an autonomous mode of production that can subsume both capitalism and the state.

> At this stage, commons-based peer production is a prefigurative prototype of what could become an entirely new mode of production and

> a new form of society. It is currently a prototype since it cannot as yet fully reproduce itself outside of mutual dependence with capitalism. This emerging modality of peer production is not only productive and innovative 'within capitalism,' but also in its capacity to solve some of the structural problems that have been generated by the capitalist mode of production. In other words, it represents a potential transcendence of capitalism. (Bauwens et al. 2019, 6)

3.5.2 Generative Peer Production

Bauwens, Kostakis and Pazaitis (2019, 3) adhere to Bollier's definition of the commons as shared resources self-managed by user communities according to the rules and norms of the community. Commons-based peer production is further inspired by the principles of free software. It is characterised by equipotentiality, holoptism and stigmergy (Bauwens et al. 2019, 12). Equipotentiality opens up equal opportunities for everyone to participate according to their skills. Participation is conditioned *a posteriori* by the process of production itself, where skills are verified and communally validated in real time. Holoptism contrasts with the panopticism that penetrates modern systems of power (Foucault 1977) in that it grants access to all information necessary irrespective of participants' position or power. Holoptism allows, thus, for stigmergic processes of mutual coordination wherein participants can match their contributions to the needs of the system (Bauwens 2005). Stigmergy is a form of self-organisation based on indirect coordination (Marsh and Onof 2007). As in the cases of Wikipedia and FOSS development, an action leaves a trace which stimulates another action, and so on. Hence, commons-based peer production favours mutual coordination over central control, self-management over hierarchy, access over ownership and transparency over privacy.

Commons-based peer production develops in two basic modes: local and global (digital) commons (Kostakis and Bauwens 2014, 45–58; Bauwens et al. 2019, 39–46). Some examples of local commons are community land trusts, degrowth and permaculture movements, Transition Towns, the Bologna project, the Quebec economy, interest-free banks, autonomous energy production, and plenty of other collective projects scrutinised by Ostrom (1990).

Global commons, on the other hand, develop on the basis of the Internet and FOSS. The architecture of the Internet has facilitated decentralised and quasi-autonomous communication between multiple computer users, while the applications of FOSS have disrupted capitalism by supporting hybrid modes of ownership, value distribution and governance.[8] Commons-based peer production is neither hierarchyless nor structureless.

> Further, CBPP projects do have systems of quality control that represent a kind of benevolent hierarchy or heterarchy. These 'maintainers' or 'editors' protect the integrity of the system as a whole and can refuse

> contributions that endanger the integrity of the system. However, and this is crucial, they do not coerce work. (Bauwens et al. 2019, 12)

For example, Wikipedia's governance is a mixture of democracy, aristocracy and monarchy. Democratic voting with regard to the content is accompanied by the aristocracy of the most reliable users and the monarchy of the founder/leader in cases where neither solely democracy nor aristocracy works.

Cosmolocalism: the Design Global–Manufacture Local model

Despite the ever-growing potential of the digital commons and the optimisation of local assets and infrastructures by local commons, Bauwens and Kostakis admit that both local and global commons are more like centripetal lifeboat strategies that cannot but conform in the long run to the mainstream of capitalism. To address this issue, they attempt to connect local with global commons on the model of Design Global–Manufacture Local (DG–ML), which has been enabled by the conjunction of modern ICTs with desktop manufacturing technologies (such as 3D printing and computer numerical machines) (Bauwens et al. 2019, 39–46; Kostakis and Bauwens 2014). Open coding connects to design and manufacturing via the Internet, free software and 3D printers. In a nutshell, the DG–ML model follows the logic that what is not scarce becomes global (for example, global commons of knowledge, design, software) and what is scarce (for example, hardware) is local. Global commons connect to local commons via Transition Towns, decentralised communities and FabLabs/maker-spaces based on FOSS and renewable energy systems distributed through microgrids on Blockchain and the Internet of Things. Blockchain technology has the potential to 'plug' into the DG–ML model on the principles of self-governance, decentralisation, transparency and equitable distribution of value (Pazaitis et al. 2017a). The DG–ML model also links to the degrowth movement which signals a radical political and economic reorganisation leading to reduced resource and energy use (Kallis et al. 2018).

The DG–ML model represents an on-demand distributed mode of production that differs from mass production in scale, location, operation and consumer–producer relationship. As such, it bears significant advantages: 1) it lowers production and transaction costs (no patent costs, no transportation and maintenance costs, no planned obsolescence); 2) it democratises production by unleashing new bottom-up forms of value creation, collaboration and techno-social innovation; 3) it blurs production and consumption, thus empowering *prosumers*; 4) it equitably distributes value to community members; 5) it has the potential to enhance gender balance and non-discriminatory practices via customisation and open access; and 6) it contributes to a sustainable and resilient society and economy (Kostakis et al. 2015, 126). The literature has documented thus far several case studies in the fields of agriculture, manufacturing and

biotechnology (Kostakis et al. 2015; 2016; Giotitsas and Ramos 2017; Papadimitropoulos 2017). However, these do not currently pose a threat to capitalism. The DG–ML model is still at a preliminary stage and is premised on hypotheses that need to be tested empirically before it crystallises into a sustainable economic model. Bauwens and Kostakis are aware that the DG–ML model alone cannot challenge capitalism.

The principles of open cooperativism

For this reason, they endeavour (Scholz 2016b, 163–166) to address the challenges of the cooperative movement. Cooperatives tend to self-enclose around local or national membership, thereby losing their broader political identity and gradually adopting competitive mentalities. They thus risk being outperformed and, finally, absorbed by the large corporations that dominate the global arena. Cooperatives also do not create, protect or produce commons, since they usually function under the copyright and patent system. Platform cooperativism improves on these deficiencies by linking to commons-based peer production and furthering international alliances both on the economic and political level. Fairmondo, for example, contributes to the commons by publishing its code on Github, while expanding its operating model in the UK.

Bauwens and Kostakis (Scholz 2016b, 164) recognise that this practice needs to radicalise and integrate into a generalised commons-orientated transition. They therefore embark on merging traditional and platform co-ops with the commons on the model of open cooperativism. Their goal is to infuse traditional and platform co-ops with the principles of commons-based peer production. To this end, they approach commons-based peer production as 'a new logic of collaboration between networks of people who freely organise around a common goal using shared resources, and market orientated entities that add value on top of or alongside them' (Scholz 2016b, 163). Open cooperatives internalise negative externalities; adopt multi-stakeholder governance models; contribute to the creation of material and immaterial commons; and are orientated towards a global socio-economic and political transformation, albeit locally based.

In contrast to the corporate strategy of planned obsolescence that renders resources artificially scarce, open cooperatives function under conditions of natural abundance where what can be shared is shared as commons. Market value is created from scarce resources, adding value on top of or alongside the abundance of the commons. Open cooperatives employ market strategies that recognise natural abundance and refuse to generate income and profits by extracting rents from artificially limited resources.

Abundance and scarcity combine communism and reciprocity respectively. Under conditions of abundance, peer production satisfies the communist principle: from each according to their ability, to each according to their need.

Under conditions of scarcity, peer production adopts the reciprocity principle: to each according to their contribution (Bauwens et al. 2019). Peer production often involves distributed tasks rather than fixed jobs. Compensation, thus, in the form of salaries may not always be the most adequate means of reward for those contributing to the commons. For this reason, open co-ops should practise open value accounting or contributory accounting in which incomes are distributed according to one's contribution. In the case of Sensorica, a co-op that produces scientific instruments, each contributor is assigned 'karma points' (Scholz 2016b, 165).

In addition to paid wage labour for members and contributors, value is also distributed via tokens of reputation that can be variously redeemed. Tokens may count for equity, decision-making power, property ownership or labour certificates (Rozas et al. 2018). 'Tokenisation' of reputation prevents the co-optation of commons value by a few well-placed contributors, as in the case of platform capitalism. It creates a fair immaterial value flow alongside wage labour rather than an unjust capitalist co-optation. Blockchain could be employed here to register reputation in a transparent way. One should, however, notice the dangers of economism and data fetishism – even robotism and automation – lurking behind the intent to translate everything into algorithms, numbers or tokens registered on Blockchain. A balance, therefore, should be kept between quantifiable and non-quantifiable variables.

In contrast to imperfect market price signals and overproduction, open cooperatives can enhance sustainability and reduce waste by adopting open supply chains and open book accounting, thereby achieving greater coordination between supply and demand, which can in turn sustain a circular economy wherein outputs of one production process are used as inputs for another. 'What market pricing is to capitalism and planning is to state-based production, mutual coordination is to peer production' (Bauwens et al. 2019, 5). Open knowledge and open design ensure further optimum participation through modularity and granularity.

Open co-ops adopt Copyfair licences that allow for the commercial use of the commons and ensure a level playing field for ethical enterprises willing to contribute to the commons (Bauwens et al. 2019). In contrast to Benkler's optimism about the prospects of commons-based licensing, Bauwens and Kostakis are vigilant against the actual co-optation of cyber-communism by platform capitalism. They argue that the more communist the sharing licence, the more capitalist the practice (Bauwens and Kostakis 2014). And this is, indeed, what the last two decades have seen occurring in FOSS production (Birkinbine 2018). Existing copyleft licences (GPL, Creative Commons) are not sufficient for the reproduction of the commons, since they do not require reciprocity (contributions in the form of money or know-how, resources, and so on). To reverse this, Bauwens and Kostakis suggest a Peer Production/Copyfair Licence (PPL), first designed and proposed by Kleiner (2010). Copyfair differs from copyleft licences in that it allows for the commercialisation of commons

knowledge in exchange for rent or analogous contributions. This way, the commons could secure their economic sustainability and autonomy vis-à-vis capitalist enterprises.

The ecosystem of open cooperativism

Let us imagine, therefore, two overlapping platforms: the commons platform and (platform) capitalism. The former is based on an abundance of resources whereas the latter counts on scarce resources and draws on the commons on condition that it uses Copyfair licences, thereby establishing an open cooperativism between the commons and a friendly capitalism. Bauwens and Kostakis's (Bauwens et al. 2019, 6) core argument is that firms that cooperate with the digital commons and, therefore, have access to a vast pool of knowledge, as in the case of IBM, obtain a competitive advantage over proprietary firms that rely solely on their private R&D. The hybrid of post-capitalist commons can beat capitalism on its own ground: that is, competition.

Let us take one step further and imagine the gradual consolidation of friendly capitalism with the commons, of scarcity with abundance. Corporations gradually merge with open cooperatives built on the commons. Open cooperatives expand from digital infrastructures to physical ones – phygital – and achieve a more efficient resource use through the creation of a genuine sharing economy based on co-ownership, transparency, distribution of value and co-governance. The ideal gift economy would then be a simple mathematical function of abundance and scarcity, democratically programmed to reproduce the sustainability of the commons. Planned grassroots socialism comes into play in the form of open cooperativism engineered by a mix of institutional and technological reforms. This new ecosystem of open cooperativism comprises three institutions/partners: 1) the productive community, 2) the entrepreneurial coalition and 3) the for-benefit association (Figure 3.1).

The productive community consists of all members, users and contributors of *glocal* commons who produce the shareable resource, either for payment or as volunteers. The commons-orientated entrepreneurial coalition consists of generative enterprises that add value to the scarce common resources. Generative enterprises contrast with extractive enterprises in that they do not seek to maximise profits without sufficiently reinvesting surplus in the maintenance of the productive communities (Figure 3.2). They integrate values such as sustainability, knowledge sharing, the mutualisation of infrastructure and a more inclusive distribution of value (Bauwens and Niaros 2017, 21). Profit is not central but peripheral to the social and environmental goals of the community. The best example of the difference between extractive and generative enterprises is industrial agriculture and permaculture. Whereas in the first case the soil becomes poorer and less healthy, in the latter the soil becomes richer and healthier. Some striking examples of extractive corporations are Facebook,

Productive community	Linux	Mozilla	GNU	Wikipedia	Wordpress
Entrepreneurial coalition	e.g. Linux Professional Institute, Canonical	e.g. Mozilla corporation	e.g. Red Hat, Endless, SUSE	e.g. Wikia company	e.g. Automatic company
For-benefit association	Linux Foundation	Mozilla Foundation	Free Software Foundation	Wikimedia Foundation	Wordpress Foundation

Figure 3.1: The three institutions that shape the model of open cooperativism (Bauwens et al. 2017, 13).

EXTRACTIVE OWNERSHIP	GENERATIVE OWNERSHIP
1. Financial Purpose: maximizing profits in the short term	**1. Living Purpose:** creating the conditions for life over the long term
2. Absentee Membership: ownership disconnected from the life of the enterprise	**2. Rooted Membership:** ownership in human hands
3. Governance by Markets: control by capital markets on autopilot	**3. Mission-Controlled Governance:** control by those dedicated to social mission
4. Casino Finance: capital as master	**4. Stakeholder Finance:** capital as friend
5. Commodity Networks: trading focused solely on price and profits	**5. Ethical Networks:** collective support for ecological and social norms

Figure 3.2: The differences between extractive and generative ownership (Bauwens et al. 2017, 13).

Uber and Airbnb, which do not share any profits with the co-creating communities they depend on for their value creation and sustenance (Bauwens et al. 2017, 13–14).

In the best of cases, generative enterprises identify with the productive community, which forms a meta-economic network rooted in the transition from community-orientated business to business-enhanced communities. Some prominent examples are the Catalonian Integral Cooperative or CIC (Catalonia Spain), the Mutual Aid Network (Madison, Wisconsin USA) and Enspiral (New Zealand) (Bauwens et al. 2017, 14–15).

The third institution that binds together productive communities and commons-orientated enterprises is the for-benefit association, which supports the infrastructure of commons-based peer production. In contrast to traditional non-governmental and non-profit organisations which operate under conditions of scarcity, for-benefit associations operate under conditions of abundance. Whereas the former identify a problem and provide a solution, the latter maintain an infrastructure of cooperation between productive communities and commons-orientated enterprises, protect the commons through licences, manage conflicts, fundraise, etc. (Bauwens et al. 2017, 15). For example the Wikimedia Foundation collects the funds to support the server space without which access to Wikipedia would become impossible.

The WikiHouse case

In the following, I illustrate the case of WikiHouse for the purpose of exemplifying the model of open cooperativism. WikiHouse is an open source project that allows anyone to design, share, fabricate and assemble their own house (Priavolou 2018, 75–76). The idea is simple: globally crowdsourced and freely downloadable designs are used to manufacture building components locally. WikiHouse enables users to download Creative Commons-licensed building plans from its online library and customise them to create jigsaw puzzle-like pieces out of plywood with a CNC router. The WikiHouse project is, thus, a distinct example of the DG–ML model: what is light (the design templates, blueprints, help manuals and support) is shared globally, while what is heavy (cutting the wood, assembling the house) takes place locally, with improvements on the design then fed back into the common-resource global pool.

WikiHouse takes levels of energy performance, quality, precision and user customisation that were previously prohibitively expensive, and dramatically lowers the factors of time, cost and difficulty. WikiHouse components can be digitally manufactured not just in large centralised factories, but by a distributed network of small businesses and maker-spaces using widely available tools and materials. This allows many companies to combine their innovations and create the most sustainable, low-cost building systems, based on interoperable standards and design principles.

The design principles of WikiHouse can be summarised as follows:[9]

1. Share global, manufacture local. Take something that works, copy, adapt, give credit and share.
2. Design for cheap, abundant, standardised, sustainable and, if possible, 'circular' materials. Release small, iterate and 'fork'.
3. Design to lower thresholds of time, cost, skill, energy and resources in manufacturing, assembly and use.
4. Maximise the safety, security, health and well-being (physical and mental) of users at all stages of a product's life.

5. Design software and hardware that is modular and inclusive, whereby elements can be independently altered, substituted, mended or improved.
6. Knowledge should always be free but professionals should be paid.
7. Democracy is a good design principle that superpowers citizens.
8. All companies can participate in the WikiHouse commons, but no one ever gets a monopoly or lock-in.

WikiHouse's early development was supported by an entrepreneurial coalition bringing together a structural engineering company (Momentum Engineering Ltd), an architectural studio (Architecture00), a multidisciplinary firm (Arup Associates Ltd) and a social housing company (Space Craft Systems Ltd) (Priavolou 2018, 76). WikiHouse is now being developed by a passionate R&D community of thousands of designers, engineers, inventors, coders and social entrepreneurs. In 2014 the WikiHouse foundation was established as a non-profit legal entity to maintain the commons infrastructure and open source licences, fundraise and coordinate cooperation between the productive community and the entrepreneurial coalition.

WikiHouse prototypes have been adopted by various communities across the globe (for example, Farmhouse, WikiStand and WikiTower) (Priavolou 2018, 76). The first WikiHouse in Latin America was built in 2015 to spark interest in innovation in the favelas of the city of Rio de Janeiro, while the WikiLab project in São Paulo aims to adapt the WikiHouse technology to mild climates. In Europe, it is worth noting the adaptation of the WikiHouse system by an ongoing programme in the city of Almere in the Netherlands, where 20 pilot prototypes are to be built by non-professionals. The project is financed by the city of Almere, the national government and the province of Flevoland.

WikiHouse is a response to the failures of centralised systems and markets since the industrial revolution. It aims to address unsustainable, undemocratic and unaffordable housing by breaking our dependence on fossil fuels and debt, empowering smarter citizens and building resilient communities and healthy, sustainable, economically productive, liveable cities. The goal is to build digital tools to support a new social and economic infrastructure for democratic development by diffusing sustainable housing tools to every citizen and company on earth.

The partner state and the challenges to post-capitalism

The replication of the WikiHouse model across other sectors of the economy could enhance the future of open cooperativism. Kostakis and Bauwens (2014; Bauwens et al. 2019) hold that the model of open cooperativism should scale up from regional to national and transnational level to establish a hegemonic counter-power against and beyond predatory capitalism and neoliberalism. At the macro-level, the three institutions of productive communities,

entrepreneurial coalitions and for-benefit associations could apply to the evolution of civil society, market entities and the state respectively. They portray a post-democratic model of power distributed in a meritocratic, stigmergic and negotiated coordination that thrashes out differences and designs away 'unnecessary' conflict by allowing for the maximum human freedom compatible with the object of cooperation (Bauwens 2012). The for-benefit association, in particular, could be considered a snapshot of a future partner state, which could facilitate commons-orientated production. A number of 'partner cities' such as Barcelona, Ghent, Bologna and Napoli already support and guide various urban commons in the fields of mobility, shelter, food, energy and culture through public–common partnerships (Bauwens and Niaros 2017). The ultimate goal would be the transition from urban commons to the city as commons (Foster and Iaione 2016).

The role of the partner state is of paramount importance, since it could boost the transition from capitalism to the commons through a de-bureaucratisation and commonification of the public sector with the aim of sustaining an open cooperativism between the commons and ethical market entities willing to minimise negative social and environmental externalities. To this end, taxation of social/environmental entrepreneurship, ethical investing and productive labour should be minimised, whereas taxation of speculative, unproductive investments, unproductive rental income and negative social and environmental externalities should be increased (Bauwens 2014; Bauwens et al. 2016; Kostakis and Bauwens 2014, 66–67). In addition, education and publicly funded research and innovation could be aligned with the commons-orientated economic model (Kostakis and Bauwens 2014, 68).

The last decades have witnessed the dominance of a neoliberal narrative limiting the state to the role of regulator. When this is not the case, political discussion revolves around a liberal or social democratic narrative focusing on issues of fair competition, new labour regulation, lifelong learning and training, the green economy, work security, trade unions, minimum wages, and so on.

Bauwens and Kostakis, on the other hand, argue that it is necessary to move away both from a distributionist welfare state and a neoliberal state by establishing mini-states of commons-based peer production ecosystems steered by a commons-centric partner state that implements direct democratic procedures and practices (Bauwens and Kostakis 2017b). Likewise, leftist or post-Keynesian versions of the state focusing solely on taxation, public investment, public ownership and capital controls should be 'updated' according to the principles of the commons.

To sum up, Bauwens and Kostakis's model constitutes a strategy, which is both reformist and revolutionary, aiming to transform the current politico-economic system towards the creation of a commons-orientated ethical economy based on a democratic self-institutionalisation of society. It champions a post-capitalist model of open cooperation with a friendly capital willing to adjust in the long run to a commons-centric society.

Jacob Rigi (2014) has argued that by embracing a sort of 'corporate commons', as in the case of IBM investing in open source software, Bauwens and Kostakis reproduce capitalist exploitation inasmuch as they adhere to the capitalist categories of the market, commodity, surplus value, profit and capital. The commons exploit their contributors by renting their surplus value to capitalism. But this argument is not valid, given that profit is redistributed within the commons. Bauwens and Kostakis conceive of the commons as entrepreneurial projects operating in terms of the medieval guilds or the Enspiral project (Pazaitis et al. 2017b), which externally trade their goods in the marketplace, while acting internally as solidarity systems redistributing their income in new projects through a collaborative funding process.

Bauwens and Kostakis admit that capital flows towards peer production might distort the commons. However, friendly capital provides the means for undermining capitalism itself. Capital investment is a necessary condition for commons sustainability. One should also notice that Bauwens and Kostakis are introducing Copyfair with the aim not of selling but of renting commons knowledge. Instead of predatory capital free-riding on the commons, friendly capital would circulate within the commons with the aim of securing the reproduction of the latter. In any case, the transvestment of value (Kleiner 2010) from capitalism to the commons is unavoidable in any scenario involving a future transition to the commons, whether reformist, revolutionary or state-driven. Expropriated surplus value returns to the 'production source'.

Bauwens and Kostakis's model of open cooperativism echoes in a sense Cornelius Castoriadis's project of individual and collective autonomy. Like Bauwens and Kostakis, Castoriadis was arguing for the democratic self-institutionalisation of society via the establishment of regimes of direct democracy, implemented first and foremost at the level of production and expanding accordingly to all levels of society (Castoriadis 1988). But whereas Castoriadis was against any sort of state- or market-driven reformism, Bauwens and Kostakis aim to reform capitalism into a commons-orientated civil society through the establishment of a post-capitalist economy built around the commons, ethical market entities and a partner state. Bauwens and Kostakis's less radical stance makes sense, since capitalism and the state are not going to wither away any time soon – if at all. Occasional deals with capitalism and the state are unavoidable even in the most radical and revolutionary options for a commons transition. Bauwens and Kostakis's project could read as a technological 'update' of Habermas's model of deliberative democracy. Yet, contrary to the liberal premises of Habermas's theory, commons-based peer production is not a third institutional force merely adding up to state and market operation, but a quasi-autonomous socio-economic model aiming to gradually absorb both the state and the market in its operation.

Bauwens and Kostakis have succeeded in connecting local and global commons via digital platforms that bear the potential to promote self-governance, cooperation, innovation, sustainability and distribution of value. The virtue of their work is that they have introduced a model of self-institutionalisation

of civil society, comprising both state and market mechanisms along democratic, ethical and ecological lines. They advocate a global, decentralised and mutually coordinated open cooperativism facilitated by ICTs. They thus intend to beat capitalism on its own ground by competing in terms of self-management fostered by eco-technological and economic hacks, which seems, indeed, a plausible strategy. Bauwens and Kostakis employ a high-tech rationale to produce a concrete plan of transforming capitalism from within. Yet this is not enough. The commons are still in their infancy and face numerous barriers and contradictions owing to the global dominance of surveillance capitalism (Papadimitropoulos 2018b). It is reasonable to assume that the commons cannot compete with the behemoths of capitalism on various grounds: economic and political power, know-how, infrastructure, skills, etc. Bauwens and Kostakis's model needs a more vibrant political spin to propel a post-hegemonic strategy aimed at politically combatting capitalism and reaching a critical mass. It requires centrally coordinated macro-policies to apply the principles of the commons at a local, regional, national and international level in a mission to reverse the current tide of neoliberalism towards a commons-orientated transition. This could be achieved by a partner state embracing the principles of the commons more openly.

3.6 DECODE: A Multidisciplinary Framework for the Commons

It is worth mentioning here a groundbreaking research project that has contributed to the creation of a multidisciplinary framework for the commons from the perspective of open data. DECODE (Decentralised Citizen Owned Data Ecosystems) was funded by the European Union's Horizon 2020 research and innovation programme during the period 2017–19 to develop technology (applications of Blockchain and the Internet of Things) that puts people in control of their personal data and paves the way for the creation of a 'data commons'.[10] DECODE has introduced an alternative to surveillance capitalism by building privacy-enhancing and rights-preserving data infrastructures in Barcelona and Amsterdam with the aim of giving back data sovereignty to citizens and creating public value with data. One could read the DECODE project as an attempt to expand Ostrom's 'bundle of rights' on or to the digital landscape by designing a set of economic, eco-social, legal and technical tools to support new decentralised technologies, democratic e-governance and alternative business models, which treat data as a common good (Morell et al. 2017, 8).

Part of the DECODE project was to conduct research (literature review, digital ethnography, co-creation sessions, interviews) on the commons with the aim of checking the applicability of the commons principles (democratic governance, openness, transparency, sustainability) through a sample of one hundred cases located in the city of Barcelona (Morell et al. 2017, 16). The sample reflected the heterogeneity of the commons, taking into account cases involving different

types of actors (public administration, companies, cooperatives, communities without legal format), in diverse areas (cultural, tourism, mobility), with different goals (knowledge co-creation, community engagement, business) and economic models (profit and non-profit orientated). By mapping a vast number of cases, DECODE has offered one of the most systematic classifications of the commons, thereby:

1. expanding the geographical and empirical base of the literature;
2. providing insights into the design and performance of the commons from the perspective of their economic, social and environmental sustainability;
3. helping advance commons-based peer production on the models of platform and open cooperativism.

DECODE has articulated the commons principles along four dimensions: governance, economic model, knowledge/technology policy and sustainability (Table 3.1). The ways in which the commons principles combine with the above four dimensions create a variety of open commons-based business models classified into four families of digital content commons or data commons (Table 3.2) and five families of open data (Table 3.3). The term 'family' indicates the proximity and interrelation of different business models. A business model 'describes the distinctive and fundamental principles and mechanisms by which an organisation deploys a strategy to create, sell and use values (of use and exchange) in order to fulfil its primary goals' (Harracá 2017, 9). Open business models can be understood as those models that encourage sharing of knowledge under open licences, whether free or with some rights reserved (Tebbens 2017). Open data and the commons are not always identical. Open data and the commons have in common that anyone can access, use or share the data/content under certain licences. Open data are a subset of the commons most of the time. However, there are cases where not all open data is produced as a common (i.e. private firms), and some data can be common but not open to all (i.e. Good Data) (Morell et al. 2017, 52).

Table 3.1: Dimensions of commons principles (adapted from Morell et al. 2017, 16).

Dimensions	Principles
governance model	cooperative, foundation, openness in participation
economic model	non-profit, transparency
knowledge/technology policy	open content, open data, FOSS, decentralised
sustainability	inclusion, gender policy, green

Table 3.2: Open commons-based business models (adapted from Morell et al. 2017, 62).

	DIGITAL CONTENT COMMONS **design, information, music, videogames, publishing, audiovisual, photography**	FOSS	OPEN HARDWARE	PLATFORM COOPERATIVES
Mode of production	Commons-based peer production (e.g. Wikipedia) Centralised (individual or firm-hosted peer production)	Commons-based peer production Firm-hosted peer production (e.g. IBM)	Commons-based peer production (e.g. Open Source Ecology, Farm Hack, L'Atelier Paysan) Firm-hosted peer production	Commons-based peer production (e.g. Loconomics, Fairmondo)
Governance	Community governance (Wikipedia) Centralised (e.g. Flickr)	Community governance usually through a foundation (e.g. Firefox led by Mozilla Foundation, Debian led by Software in the Public Interest, Linux led by the Linux Foundation) Centralised (e.g. WordPress led by Automatic, Open Office led by Sun)	Community governance (e.g. Open Source Ecology, Farmhack) Centralised Multi-firm governance along the value chain (with lead firms)	Community governance
Licensing	Creative Commons or/and FOSS Restrictions on commercial use	Open licence Proprietary licence Dual licensing	Open licensing of at least the core design Restrictions on commercial use (NC clause, dual licensing, protected extensions)	Open licensing of at least one of the platform assets (software, databases and brand) No open licences

(Continued)

Table 3.2: (*Continued*)

	DIGITAL CONTENT COMMONS **design, information, music, videogames, publishing, audiovisual, photography**	FOSS	OPEN HARDWARE	PLATFORM COOPERATIVES
Revenue model	Charging for a physical copy of the content (e.g. a book or a record) Selling merchandise related to the content (e.g. a band's T-shirt) Charging for a related service (e.g. a live performance, a seminar, a webinar) Charging for licensing if the content is used for commercial purposes Charging advertisers or sponsors Membership, donations Pay-what-you-want Third-party funding (firms, state funding, grants, organisations)	Freemium (free to download and use) and Premium (selling an extended version of the software) Charging for a complementary service (e.g. training, technical assistance) Charging for licensing if the software is used for commercial purposes Dual licensing Advertising Donations Pay-what-you-want Crowdfunding Third-party funding (mainly software firms)	Selling the physical product Charging for a complementary service (e.g. training, technical assistance, expertise) Selling an accessory Dual licensing Donations Crowdfunding Third-party funding (state funding, grants, firms, organisations)	Freemium and Premium (charging for a version that offers more functionality to the user) Transaction fee Subscription Selling personal data Advertisement Sponsorship Third-party funding (firms, state funding, grants, organisations)

Table 3.3: Open data business models (adaptation from Morell et al. 2017, 68).

	Government open data	Private standalone open data	Non-commercial centralised open data production	Multi-stakeholder data pooling	Commons-based data crowdsourcing
Mode of production	State-produced or collected by the state from third parties	Intra-firm data production and/or crowdsourcing	Expertise applied to open and/or crowdsourced data (e.g. Wikileaks)	Pooling expertise	Community crowdsourcing Open data obtained from third parties
Governance	Centralised	Centralised (the firm provides the baseline dataset) Decentralised	Centralised (individual or entity)	Shared (with a leading entity)	Collective governance usually coordinated by a foundation (e.g. OpenStreetMap Foundation)
Licensing	Permissive	Permissive, open and proprietary licences combined	Open licensing allowing commercial use	Open licensing allowing commercial use	Open licensing allowing commercial use
Revenue model	State funding	Data-related services Gaining knowledge, experience Creating business opportunities	Donations Notoriety	Contributions from stakeholders Data-related services Gaining knowledge and experience Public funding	Freemium and Premium Selling related products or services Donations Public funding

The tables shown here demonstrate that the commons experience a variety of business models, with some cases fully adhering to the commons principles, and others combining commons-based peer production with firm-hosted peer production, community governance with centralised governance, open licences with proprietary licences, and so on. Different types of commons – from digitally supported natural commons and platform cooperatives to open data and the digital commons – have particularities, thus bearing some intrinsic possibilities with regard to the business models that can be developed to ensure their sustainability. Different business models apply to different types of commons. To mention some examples:

- In general, digital commons and/or digitally supported commons have created new logics of value creation and business model possibilities that are not present in the natural-resources-based commons such as gardens or summer meadows. Digital commons cannot sell their content, but they can leverage it to create revenue or they can sell advertising space and sponsorship.
- Crowdsourcing and donations, as sources of revenue, may be more successful when a project is supported by a broader community as in the case of Wikipedia and Mozilla Firefox.
- Unlike FOSS, open hardware commons can sell hardware. But open hardware commons face non-negligible marginal costs included in the production and distribution of physical goods. The materiality of hardware does not allow for the freemium and premium strategy that FOSS has recourse to. Some firms can, instead, produce a product with a free licence and another product with a proprietary licence. In terms of the mode of production and governance, commons-based peer production is often only possible at the design stage. The complexity of the manufacturing, delivery and quality-control phases may require managerial coordination by firms.
- Subscriptions and transaction fees are the most common ways of obtaining revenue for platform cooperatives due to their crucial role in coordinating diverse activities such as the selling of products and the renting of different professional services (for example, Stocksy, Fairmondo, Loconomics).
- When a platform is under an open licence it can easily be replicated, which poses a threat to the community, since its value-creation tool can be co-opted by other communities or profit-orientated firms. On the flipside, when the common produced is platform-based and material, licensing can be less of restriction with regard to potential revenue models (Morell et al. 2017, 51).

Overall, the above tables help systematise the main features that define the compatibility of open business models with the commons and identify further the right choices regarding the sustainability of the common in question. They help envisage a model of open cooperativism that deploys a number of business

models and incorporates a multitude of communities and organisations in a mission to further expand commons-based peer production. Yet the sustainability of the commons relies on other factors apart from the business model such as democratic governance, social and gender inclusion and the environmental impact of the commons. Access to finance, legal regulation and competitive dynamics with capitalist firms can also profoundly affect the sustainability of a common. Whence, the need for a holistic, multidisciplinary framework that integrates commons sustainability into a post-hegemonic political strategy capable of encompassing the various dimensions of the commons under commons governance.

3.7 Productive Publics

Arvidsson and Peitersen draw on Benkler's conceptualisation of the digital commons as a decentralised mode of social production to develop in tune with Bauwens and Kostakis a post-capitalist theory of value. Similarly to Bauwens and Kostakis, they hold that the suicidal contradictions of capitalism, countervailed by the commons, can pave the way for the creation of an ethical economy immanent in the technological evolution of the factors (means and relations) of production, as Marx would have it (Arvidsson and Peitersen 2013, viii). They suggest that the necessary precondition for the realisation of an ethical economy is the construction of a new public sphere articulated on the productive publics built around the commons.

> Productive publics, a fundamental building block of the ethical economy, are voluntary associations of strangers, who are united by their devotion to a common project or pursuit, like open source software, urban agriculture or Ducati motorcycles. In recent years such productive publics have become an important source of value creation, both inside and outside corporate organisations. (Arvidsson and Peitersen 2013, 49)

Arvidsson and Peitersen depart from Gabriel Tarde's concept of 'publics' to distinguish between publics and communities. Whereas the term 'community' signifies a social structure consisting of dense webs of interpersonal interaction and a durable attachment to a shared identity, the term 'public' refers to an association of strangers, united by an affective attachment to a common thing or representation, be it a brand, an artist or an idea (Arvidsson and Peitersen 2013, 66–71; Arvidsson 2013, 374). Publics are temporary and transitory forms of association and, therefore, weaker and less enduring than communities. They are self-organised entities governed by a particular discourse centred around a common set of values. Publics sustain communalities without communities. They are held together by what Cornelius Castoriadis and Charles

Taylor call a social imaginary, that is, a general affective representation corresponding to a symbolic signification, be it socialism, capitalism, Christianity, a brand, a group, and so on.

The term 'publics' resembles the term 'multitude' introduced by Hardt and Negri (2004) to denote the spontaneous coalescence of dispersed subjectivities, collectivities and movements around the creation of common wealth. Arvidsson and Peitersen use both terms interchangeably to refer to the socialisation of production from the 1970s onwards, marking the era of post-Fordism. Information and communication technologies have permitted the displacement of large factories and vertically integrated corporations by networks of small producers scattered across the globe, and the subsequent diffusion of social capital, blurring productive and non-productive activities both inside and outside the corporation (Arvidsson and Peitersen 2013, 29, 49).

Inside the corporation, social media and mobile devices have supported the creation of inter- or intra-firm networks of productive publics that facilitate knowledge sharing and collective innovation processes among employees. The key to gaining competitive advantage has shifted from merely increasing productivity to facilitating the flow of knowledge within organisations. Accordingly, a brand is not only a symbol of a product, but also a common ethos, uniting employees, consumers, managers and investors around a common purpose. Companies such as Apple, Google and IBM depend on socialised innovation communities for their business models. The strategic source of profits and competitive advantage moves from material production per se to the capacity for brand innovation and flexibility (Arvidsson and Peitersen 2013, 31–32).

At the intersection of corporations and civil society, the rise of productive publics is driven by the delinking of identity from rigid structures and hierarchies, as evidenced in the so-called participatory culture: consumer tribes or 'brand communities'; fan culture, mods, hippies, hipsters, artists and bohemians introducing street fashion and new artistic styles; prosumer practices and a DIY movement leading on the hackers of the open source movement; the expansion and intensification of political activism and new social movements; an emerging social entrepreneurship and global solidarity movement; new forms of spirituality and body practices such as yoga, jogging, macrobiotic foods and a host of alternative lifestyles. In short, the rise of social production is a reactivation of civil society, sparked by networked media along with higher rates of education that generates a multitude of expressions, competencies and knowledge skills (Arvidsson and Peitersen 2013, 72).

The ontological relativism of postmodernism combined with the outsourcing of capitalist production across the globe has resulted in the individualisation of 'produsage' and the fragmentation of ethical horizons, both hailed by neoliberalism as hallmarks of freedom, pointing in the direction of more autonomous markets, in which everybody could become an entrepreneur. Digitisation has

transformed traditional capitalism into cognitive capitalism, where information and knowledge have become the primary resources of value. Financialisation, finally, is supposed to democratise investment and, therefore, boost productivity and inclusive growth.

However, like Bauwens and Kostakis, Arvidsson and Peitersen argue that productive publics create a diverse order of worth, a multitude of values, which cannot be monetised as such, thus causing a crisis of value for both capitalism and the commons. Corporations attempt to accommodate this diverse order of worth by turning ethics, sustainability and social responsibility into marketing opportunities, while investing in user-led innovation projects that directly include consumer creativity in the corporate value chain. Yet finance lacks a common standard to measure this diverse order of worth.

Arvidsson and Peitersen interpret this lack as an irrationality featuring both in Marxist and neoclassical economics, since neither the labour theory of value nor the subsumption of value under price can account for an objective measure of value. A surplus of value permeating both capitalism and the commons constantly escapes monetisation. The value crisis is not only economic, but ethical and political. Following Habermas, Arvidsson and Peitersen (2013, 5–6) describe a legitimisation crisis, which reduces economics, ethics and politics into a more or less corrupt bargaining between particular interests or the naked exercise of raw power.

3.7.1 Revisioning Value in Terms of the General Sentiment

Let us take a step back and consider first what is value. In economics, there are two basic answers: the Marxist/classical and the neoclassical. Classical economists such as Ricardo, Marx and Smith defined value in terms of the time spent in the production of one unit. A car is more expensive than a chair, because of the larger amount of time invested in its production. On the other hand, neoclassical economics subsumes value under price on the grounds that any attempt to assign an objective measure to value is metaphysical (Arvidsson and Peitersen 2013, 10–12). Market prices by definition reflect all the information necessary, transforming uncertainty into calculable risk.

Arvidsson and Peitersen consider both approaches outdated. The classical theory is today obsolete for two basic reasons: first, labour costs are a small share of total production costs (for example, machinery, logistics, patents, intangibles) and, second, the production of intangible assets, that is, brand innovation and flexibility, does not exhibit a linear relation to the amount of time invested in production per unit. Non-linearity translates into the autonomisation of finance compared to real production (Arvidsson and Peitersen 2013, 37–38). The becoming complex of labour is evident even within Marxist thought, where the so-called 'transformation problem' remains unresolved,

namely how socially abstract labour, that is, the average labour time needed to produce a commodity, corresponds to empirically observable prices. The neoclassical definition of value is also misleading, since the calculative frames of finance, employed to project the future performance of brands, products, corporations and states, are to some extent speculative and corrupt.

Arvidsson and Peitersen combine key concepts from various thinkers to introduce a new value regime inherent in productive publics. To begin with, the evolution of collective intelligence corresponds to what Marx called the 'general intellect', that is, publicly available knowledge and skills, which surpass the factory's borders, undermining the very existence of capitalism by rendering traditional labour obsolete (Arvidsson and Peitersen 2013, 35). Hardt and Negri argue that this is the case now in cognitive/information capitalism. They claim that the labour theory of value does not hold today. They reintroduce the transformation problem by the back door of Spinoza's *Ethics*, to argue that value is the 'power to act', that is, the power to utilise all the resources available to the multitude for its own ends. Hardt and Negri (2000, 29) incorporate into their analysis the Foucaultian notion of biopolitics, according to which power expands from the factory into *psyche*, the body and the entirety of social relations. Biopolitics combine with Deleuze and Guattari's poststructuralist notion of biopower to stress the social reproduction of bodies, values, relations and affects beyond the factory setting (Hardt and Negri 2000, 28).

Hardt and Negri build on the concept of 'immaterial labour' introduced by Maurizio Lazzarato and Paolo Virno to argue that value is immeasurable. Immaterial labour breaks down into two basic components: 1) the production and manipulation of affects, requiring (virtual or actual) human contact, labour in the bodily mode; and 2) the automation and commoditisation of cognitive knowledge by ICTs (Hardt and Negri 2000, 293). In short, immaterial labour consists in an affective/cognitive dimension expanding from material labour employed in the factory setting into society as a whole. As such, immaterial labour cannot be measured in time units, since it introduces a creative/subjective/qualitative dimension capitalised *par excellence* by finance.

Tiziana Terranova (2004) draws on the tradition of Italian 'autonomist' Marxism to coin the term 'free labour', which represents the most extreme development of the capitalist 'subsumption of life', along with being the most promising candidate for the negation of the capitalist order overall. To address the inadequacy of the labour theory of value to account for the capitalist 'subsumption of life', a number of Marxist and post-Marxist observers call for the cyber-communism of a value-free system of production and distribution, imagining a 'circulation of commons' of non-proprietary resources that are freely and openly available for appropriation (Dyer-Witheford 2006; Bauwens 2005). Bauwens and Kostakis's work could be considered an exemplary version of the circulation of the commons alongside post-capitalist production.

Arvidsson (2009) holds that the value crisis of contemporary capitalism does not entail the 'end of value' and the miraculous transition to cyber-communism,

but, more likely, it opens up the possibility of alternative standards of value, since immaterial and free labour circulate in productive publics. Arvidsson and Peitersen consider the term 'labour' outdated, given the non-linearity between productivity measured in time units and prosumer practices in productive publics. They do not suggest that labour has 'disappeared' or 'no longer counts', but that it insignificantly relates to quanta of time, since most profit is generated in finance.

To further demonstrate their theory, Arvidsson and Peitersen (2013) combine Aristotle's 'ethics' with Hannah Arendt's concept of 'action'. Arendt (1958) distinguishes between labour, work and action. Labour is the human activity motivated by necessity, whereas work is action driven by self-expression and will. Action, finally, is the construction of a common world together. Therefore, participation in productive publics should be understood as a combination of work and action. Whereas the value of labour is set according to the fixed external parameters of time or productivity, the value of work and action is set according to the reputation of the participants in a particular public. 'Reputation is an inter-subjective measure of excellence, the criteria of which are themselves inter-subjectively elaborated: they depend on the "orders of worth" that are contained in the ethos of a particular public' (Arvidsson and Peitersen 2013, 88). For Aristotle, on whose thought Arendt builds, action relates to virtue, that is, the ability to adapt and live well with others. It is not enough, therefore, for a craftsman to perform excellent work, but she needs also to exhibit the virtuous character of the social individual, always seeking moderation between two extremes of action (Arvidsson and Peitersen 2013, 90). Ethics is not primarily about choosing 'good' or 'bad' in terms of a Kantian universal moral standard. Rather it is about finding ways for free men to construct a viable community (*polis*).

Accordingly, Arvidsson and Peitersen (2013, 91) conceive of reputation in productive publics as combining both the excellent skills of the participants and their virtue to act in ways that reproduce the vitality of the public. For example, in FOSS development, software developers are judged not only by their ability to write 'beautiful code', but also to solve conflicts, socialise new members and contribute to the reproduction of the public in general. Similarly, participation in productive publics is not conditioned exclusively by self-interest, but by the desire to create meaningful ties with others. With Aristotle in mind, Arvidsson and Peitersen use the term 'philia' to refer to the socially recognised self-realisation of the participants in productive publics. Reputation, thus, builds upon an ethical capital that can be redeemed in a variety of ways (Arvidsson and Peitersen 2013, 106). But still there is a lack of a common standard to measure reputations circulating in different publics and compare them against each other.

Arvidsson and Peitersen draw on Negri (1999) to argue that the universal measure of value in the new reputation economy of productive publics could be the affect circulating through social media and monetised by finance. Social

media introduce an objectification of 'networked' subjectivity by measuring public affect and providing reputation metrics through data-mining techniques such as network and sentiment analysis. Finance produces value by transforming affect into a convention based on an interpretation that reduces complexity. Value is the affective investment of the public (employees, prosumers, investors, activists, citizens) in the intersubjective creation of 'truth, beauty and utility', as embedded in the economy. Thus, affect could become the new general equivalent of value in the form of the 'general sentiment', which consists in aggregations of subjective affective investments that derive from a multitude of different actors. 'A new standard like the general sentiment would further contribute to connecting such diverse publics into a "networked multitude," able to set its own values and, as a consequence, make the process more rational' (Arvidsson and Peitersen 2013, 127–128).

3.7.2 The Politics of Productive Publics

Arvidsson and Peitersen do not expect the prices of assets simply to reflect the general sentiment. The relation of pricing decisions and the general sentiment depends on the political design of the technological infrastructures that are to sustain the productive publics. The general sentiment is merely a bottom-up sensor of civil society's ethical pluralism that presumably contains the seeds of a new rationality, culminating in a new ideal speech-act situation, as Habermas would have it. Following Habermas, Arvidsson and Peitersen demonstrate a technologically updated affective transformation of the public sphere, which aims to bring together politics, civil society and capitalism under a more rational, ethical and democratic negotiation of value.

Arvidsson, Bauwens and Peitersen (2008, 17–18) envision three different scenarios for the future development of the ethical economy, which could be considered either separately or in tandem. The first scenario comes in two versions. The first is pretty much the perpetuation of the present state of affairs, where the ethical economy represents a niche within a predominantly capitalist economy. The second version corresponds to a form of 'information feudalism', where corporations use all legal and technical means to reinforce their rights to immaterial production and data usage. In this version, the ethical economy is used as a source of free or cheap labour, as in the case of platform capitalism.

In the second scenario, the ethical economy would have become sustainable perhaps through a basic income scheme, extended public funding, friendly capital or through the proliferation of collaborative practices. But still, the ethical economy would be subordinate to a dominant capitalist economy.

In the third scenario, the ethical economy becomes the dominant system. Ethical-market formats such as social entrepreneurship, platform cooperativism and global–local cyber-collectives have moved to centre stage and capitalism shrinks to the production of mostly scarce material goods. This scenario

presupposes that the ethical economy has obtained a competitive advantage over capitalism, having transformed into a more sustainable socio-economic model compared with for-profit enterprises.

This transition, however, requires the establishment of an institutional infrastructure that could support a more ethical, rational and democratic way of reconnecting the economy to society. To this end, Arvidsson and Peitersen (2013, 125–131) introduce the politics of standards whereby the widespread capacity to construct technological interfaces would be anchored in the transparent representation of the dynamic and universal expression of the 'networked' multitude of publics who contribute to the formation of the general sentiment. They take a stand for an open and neutral Internet to be defended by traditional parliamentary politics that can secure the kinds of legal frameworks necessary to facilitate the construction of the new public sphere. Like Bauwens and Kostakis, they call for the adoption of open protocols, open supply chains and open book accounting. Yet Arvidsson and Peitersen acknowledge the fact that the neutrality of the Internet is currently under threat from political and commercial forces that are planning to impose biased standards in favour of their commercial interests. Besides, social media platforms such as Facebook and Twitter have little interest in providing open access to data on their traffic. Furthermore, current plans for the next generation of the Internet of Things tend to privilege closed standards. To prevent this, Arvidsson and Peitersen advocate for traditional political lobbying and activism to safeguard network neutrality and regulate social media companies. Their ultimate goal would be a global New Deal around sustainability and social responsibility.

3.7.3 Critique of Productive Publics

This reformist approach is not enough, however, to support the commons. Civil society is by and large colonised by the system, as Habermas would have it, or mesmerised by the rational mastery of capitalism, in the words of Castoriadis. The romantic reconciliation of affect with the Enlightenment commitment to rationality and measurement bears little resemblance to the current status of the commons, which are largely co-opted by capitalism. Platform capitalism revolves around a group of corporations that control information and have gained disproportionate market power, with the economy as a whole experiencing a gaping inequality in the last decades, exacerbated during the post-crisis period by state policies such as fiscal retrenchment and quantitative easing (Stiglitz 2016). And while it is perfectly reasonable to level the playing field by distributing value among economic actors, Arvidsson and Peitersen cannot rely on a vague mix of lobbying, activism, grassroots spontaneity and corporate social responsibility. By blindly integrating the commons into the hybrid of productive publics, the latter encompassing 'corporate communities' with civil society initiatives, not only do Arvidsson and Peitersen neglect the

immense power asymmetries and income inequalities prevalent in capitalism, they also hide the exploitation inherent in both waged and unwaged offline and online activity. By advocating the financialisation of affect through the use of social media, they expand economism across the social factory. Rather than rendering affect the primary sensor of society, they render quantification the primary indicator of affect, thereby perpetuating the alienation of humankind via the calculative logic of capitalism. Put simply, they reproduce the neoclassical dictum that value equals numbers.

Arvidsson and Peitersen bypass the fact that we are already experiencing a state of 'information feudalism', where firms and corporations make billions out of monetising users' personal data and online activity. As mentioned earlier, Fuchs holds that the use value produced in social networking and search engines transforms into a surplus value for the social media corporations, sustaining new forms of exploitation in the contemporary information economy. Exploitation expands from social media companies to capitalism as a whole, since digital labour comprises waged and unwaged labour, spanning across the globe (Fuchs 2014). From slave mineral workers working at gunpoint in Africa and workers at Foxconn working long hours and unpaid overtime, to assemblers in Silicon Valley who are exposed to toxic substances and software engineers at Google who are highly stressed and overworked, proletarians evolve into cybertarians, precariats, underpaid workers and prosumers, subordinated to the few highly paid executives and freelancers benefiting from skills-biased technological change. The contemporary proletarianisation of the global workforce is encapsulated in Dyer-Witheford's (2015) concept of the global cyber-proletariat.

Rigi and Prey (2015) engage in the discussion to criticise both Arvidsson and Fuchs. Following Marx, they argue that information, knowledge and affect, when not exchanged with capital (as in the case of software, services, teaching, nursing, etc.), do not produce exchange value, since they can be reproduced at near-zero cost. Therefore, information, knowledge and affect have only use value, which can be commoditised in the form of monopoly rent as in the case of personal data extracted by corporations from social media and search engines. When Fuchs states that Internet users produce surplus value exploited by corporations, this is due to a misunderstanding of Marx. The same holds true for Arvidsson who claims that labour time is irrelevant in the case of social media, since most of their value derives from the production of affective relations – the so-called philia – commoditised in the form of rent and finance capital. But profit in the form of rent, Rigi and Prey argue, is a transformation of surplus value from other sectors of the economy and, therefore, labour time. Marx's labour theory of value is indispensable for understanding digital labour, given that surplus value transforms into profit, rent and interest. Therefore, the immaterial labour of the multitude upon which both Fuchs and Arvidsson build their arguments cannot but produce measurable common wealth either in the form of direct exchange value or rent extraction.

Rigi and Prey, however, do not clearly see that the Marxian concept of labour as commodity underestimates the basic contradiction of capitalism, that is, the division between directors and executants. Bowles and Gintis (1980) and Castoriadis (1988, 242–258) have shown that labour is a field of class struggle structured by the social relations of capitalist production. Neither labour power nor prices can be determined by an 'objective' economic law. Capitalism is not a strictly rational economic system, since there can be no rigorous economic science. The determination of capital and labour costs is a complex function of numerous indeterminate variables such as ideology, speculation, technical change, consumer choice, politics, and so on. Capitalism is the realm of continuous bargaining and power games between buyers, sellers, companies and governments. Thus, the development of the capitalist economy is pretty much unaffected by production costs, market equilibria or perfect information, since price signals reflect uneven supply and demand. In other words, power, as the force to make people do or not do what they otherwise would not do or do, is the primary determinant of value produced by labour and exploited by capital. The political, thus, comes into play in terms of class struggle, conflict, antagonism and power structures.

Capitalism is an evolving system whose main factor of transformation is class struggle. While Arvidsson and Peitersen recognise the potential of the commons to subvert the capitalist order, they hesitate to do so. Affection, grassroots democracy, transparency and self-realisation remain empty shells if not accompanied by the abolition of the distinction between directors and executants and the establishment of the self-instituting power of the people exercised beyond the bureaucratic hierarchies of corporations and states. If the main issue at stake is the elimination of the repressive reality of capitalism, the reduction of necessary working time to a minimum and the maximisation of 'free' time, the eroticisation of society and the body and the shaping of society and humans by Eros, and the emergence of affective social relations, then politics should rather integrate economic value into the social imaginary of peer-to-peer relations. To this end, concrete policies need to build on best collaborative practices to subsume the economy under democratic self-management.

3.8 Digital Distributism

Douglas Rushkoff's work could be read both as a critique and an optimisation of Arvidsson and Peitersen's productive publics, as he provides a more nuanced illustration of the interlinking between technology and economy. He concurs with Bauwens and Kostakis's thesis that corporatism is caught up in a growth trap inasmuch as it aims at infinite growth on a finite planet. Rushkoff reiterates the claim that we are today on the verge of a structural breakdown, as corporatism – backed by digital industrialism – runs out of places from which to extract value for growth. This last statement reasserts Harvey's (2010, 30) observation

that 3% growth in perpetuity is running into serious environmental, market, spatial and profitability constraints. At the same time, financialisation has led to a significant disconnect between capital and real value. As a result, Schumpeter's creative destruction process may turn into a *destructive* destruction, pushing corporatism towards hybrid business models that favour a more sustainable and social approach to enterprise (Rushkoff 2016, 100). Rushkoff (2016, 98) wonders whether this is a cycle repeating itself or a unique and unprecedented challenge to our economic operating system. This consideration is all the more important in the case of digital industrialism, which aims at putting humans out of the equation, with the danger of a permanent consumer shortage.

Industrialism dates back to the end of feudalism and the birth of capitalism, which was financed by the aristocracy to usurp the power of the bourgeoisie (Rushkoff 2016, 18–22). By 'bourgeoisie' Rushkoff refers to the middle class of merchants, craftsmen and the petty bourgeois of small peasant proprietors, who sprang up in the medieval burgesses. Industrialism's primary intent was to subvert the rise of the middle class, the guilds and their peer-to-peer market system through the introduction of mass production, which disempowers craftsmen by disconnecting them from their skills and value creation. Capitalism is the product of the revolution of the rich against the rising middle class.

3.8.1 Digital Industrialism and Artificial Intelligence

Digital industrialism is to some extent the continuing proletarianisation of large segments of society by new technological means. The digital marketplace works on a power-law dynamic, creating a winner-takes-all disparity. The rule is that roughly 80% of sales come from 20% of products. When a bricks-and-mortar CD store plays a particular song that also takes the form of an online recommendation on a website, this recommendation leads to increased sales, which reproduces a feedback loop of the same or similar songs. People tend to choose what other people have chosen first, and this consumer behaviour is then amplified by machines at the expense of all other choices. This is not merely a distortion promoted by the biggest distribution platforms, from Amazon and iTunes to Spotify and Netflix, as Rushkoff (2016, 28–30) suggests, but is a masterfully orchestrated manipulation of taste by the marketing departments of corporations, aiming to reproduce the likes of the 'mainstream' commercial platforms, which in turn sell 'mainstream' consumers to advertising agencies. It is the self-perpetuating spiral of mass culture serving the interests of a liberal oligarchy, masked by the illusion of pluralism and freedom of choice. By this I do not intend to diminish the rapid expansion of creativity during the last decades, supported by the Internet. I merely want to stress its unfair distribution by mass media. The Internet follows suit by training people to accept the two or three choices at the top of popularity lists. The 80/20 ratio applies to every creative industry, from books, music and movies to smartphone apps.

Digital industrialism is crowdsourced to prosumers who produce an economy of likes by surfing the Internet, pushing buttons, and creating reviews, comments and the like. Big data turns the Internet into an advertising real estate. Big data fuels the customisation of demand by advertisers and marketers, who count on analytics to successfully predict buying intentions. The Internet and social media serve as agencies of attention and reputation. But only celebrities and superstars can handsomely redeem their accumulated reputational currency through social branding. Everyone else is a mere appendage of big data production, benefiting from the services provided by search engines and social media in exchange for giving up their privacy. Not only does digital industrialism replicate the core division of industrial capitalism between directors and executants, it further colonises time and space by turning human data into a commodity reproduced by users themselves. As a result, people are reduced to a manageable mainstream set of trends, categories and numbers, unwittingly contributing to the dehumanisation of artificial intelligence.

Artificial intelligence is a branch of computer science that produces technological advances in machine learning, pattern recognition, image classification, speech recognition, problem solving and knowledge engineering, with a vast range of applications in the fields of robotics, Internet searching, online advertising, e-commerce, fraud detection, medical diagnosis and implants, financial advice, tax preparation, customer service and genomic sequencing, among other things (Brynjolfsson and McAfee 2014, xii, xiii, 91). Digital industrialism's next stage is full automation engineered by the merging of big data with artificial intelligence on the Internet of Things infrastructure. The neocolonisation of big data is accompanied by the education of artificial intelligence by the crowd itself through machine learning. Corporations use crowdsourcing to constantly feed the algorithms with self-perpetuating learning patterns. Precarious freelance workers across the globe unknowingly contribute to their substitution by machines. Rushkoff (2016, 51) argues that most of the technologies we are currently employing replace far more jobs than they create. The reason is that jobs not yet subject to automation – that is, jobs requiring human maintenance, affection and creativity such as art, education, healthcare and social services – are not supported by venture capital, since they are considered costly and unscalable.

3.8.2 Technological Unemployment

Based on economic theory and two hundred years of historical evidence, mainstream economics holds that technological unemployment is only temporary and not a serious problem, since it creates in aggregate more jobs that those it destroys (Brynjolfsson and McAfee 2014, 173–175). Technological advances increase labour productivity, profits, wages and demand for labour, especially for workers whose labour complements technology. Technology also reduces

the costs of production and, by extension, the prices of products and services, thus increasing the purchasing power of workers (Brynjolfsson and McAfee 2014, 143).

Whether or not this will be the case in the near future depends on what economists call 'elasticity of demand', that is, the percentage increase in demand for each percentage decline in price. For example, halving the price of artificial light did not double the demand for electricity, resulting in a fall in the total revenues for the lighting industry. Also, the increase of productivity in agriculture and manufacturing via technological innovation led to lower prices and improved quality, but did not increase employment and the demand for agricultural and manufacturing products. The general rule of the economy is that elasticity equals exactly 1%: an increase of 1% in productivity will be matched by an identical increase in demand. Occasional inelasticity is offset by the freeing up of money to be spent elsewhere in the economy so that overall employment is maintained.

Eric Brynjolfsson and Andrew McAfee (2014, 131–146) have shown that automation results in the decoupling of productivity from employment, thus exacerbating unemployment in the late 1990s. Algorithmic machines tend all the more to replace routine jobs in services, software, media, manufacturing, finance, music, retailing, trade, and so on. Skills-biased technological change, that is, the increasing demand for IT skills, decreases the demand for low-skilled labour, pushing wages lower, thus increasing the gap between highly and less educated workers. Physical capital (machinery) substitutes for labour, thus increasing the gap between the profits of capital-owners and the share of income going to labour.

Talent-biased technological change produces 'winner-takes-all' markets for the 0.1% of CEOs and superstars, widening income inequalities all the more (Brynjolfsson and McAfee 2014, 134–162). The CEO-to-worker pay ratio in the US rose from 46:1 to 331:1 between 1983 and 2013, while median income has stagnated for the last four decades and the minimum wage is lower than it was sixty years ago (Stiglitz 2013). The question then is which history's data should we take into account: the two centuries ending in the late 1990s showing that technological unemployment is temporary, or the twenty years since then?

Skills-biased technological change cannot explain either why highly skilled workers have moved into lower-skilled jobs nor why even highly skilled workers are not paid well (Stiglitz 2016, 9). Thomas Piketty's *Capital in the 21st Century* alludes to an inherent flaw of capitalism that favours a small minority at the top. He demonstrates that the return on capital is greater than economic growth, thus leading to ever-increasing inequality. Wealth grows faster than income. This is confirmed by a recent report by Oxfam, illustrating that the wealth of the richest 62 people on the planet rose by 45% in the five years between 2010 and 2015, while the wealth of the bottom half fell by 38% (Oxfam 2015). Stiglitz (2016, 12–13) suggests that the explanation for economic inequality is more

nuanced due to the complex dynamics of financialisation, demographics, globalisation, technological change and urbanisation.

From a neoclassical economics viewpoint, unemployment and income inequalities are considered a structural indicator of meritocracy and an additional incentive for the overall improvement of the economy. But so far the experiment of neoliberalism has failed. Low interest rates and quantitative easing have poured more money into the economy in the last decade, but this is not trickling down into the real economy through investment or loans to small and middle-sized businesses that could create employment and increase wages. Money instead circulates in the form of rent at the top of the finance sector via share buybacks, stocks, commodities, private equity and derivatives, inflating asset bubbles while deflating the economy at the bottom (Stiglitz 2013).

3.8.3 Digitisation, Finance and the Start-up Economy

Digitisation was supposed to democratise finance (Rushkoff 2016, 169–183). The Internet would spread financial information and make markets more transparent and resilient, empowering individual investors to cut out the middlemen (the banker and the broker) and keep more autonomy and cash for themselves. Yet studies show that increased access to trading tools and market data often creates the illusion of market competency and encourages poor decision making (Rushkoff 2016, 177). Do-it-yourself traders simply cannot compete with market specialists and analysts, who have, among other things, access to inside information. The game is to some extent rigged. The digitised marketplace does not rely so much nowadays on brokers or specialists, but on high-frequency trading executed by highly sophisticated algorithms, often employing several price manipulation schemes such as 'pump and dump', 'front-running', 'wash trading', 'spoofing', and so on. Investing has turned into a game between algorithms exploiting trading protocols. While long-term investors intend to grow money by assessing the true value of companies, algorithms seek to profit from volatility. The mix of rational and speculative high-tech investing creates a non-linear, chaotic system that often propels unpredictable anomalies called 'bubbles', like the one of 2008. Ruskoff (2016, 184) rightly argues that instead of integrating the marketplace, digitisation generates derivative systems that create synthetic growth through recycling sheer churn.

Finance's synthetic growth integrates the hypergrowth logic of the start-up economy, expanding winner-takes-all markets, where early-stage technology investors are the rare big winners who offset the dozen or more losers (Rushkoff 2016, 184–195). The goal is a multi-million dollar exit through acquisition or IPO, which can then be reproduced ad infinitum. Start-ups ignite a vicious cycle where previous years' assets are converted into stockpiles of dead assets. Rather than engineering a new technology, they are actually reallocating

capital. Digital entrepreneurs end up becoming the next generation of venture capitalists. Companies that have grown too wealthy and unwieldy follow suit by turning to the acquisition of start-ups. Thus, value has been converted into an enormous amount of waste in the casino capitalism of short-termism. The seeming democratisation of investment through crowdfunding parasitic platforms such as Kickstarter simply exacerbates winner-takes-all extremes. Pouring more money into the bottom of the pyramid does not result in more successful start-ups. It simply adds to the value extracted by those on top of the pyramid (Rushkoff 2016, 196–202). One could argue in a Schumpeterian fashion that innovation is a process of trial and error benefiting the few lucky and competent ones. But still, the social darwinism of innovation feeds on a loop of inequality, short-termism and waste.

3.8.4 Installing Digital Distributism

Rushkoff stresses that technology is not a bug in the system. Capitalism is not succumbing to automation. The latter simply adds to the initial programming of capitalism by early bankers to make more money through debt-based, interest-bearing, bank-issued central currency, which evolves nowadays into fiat money biased towards perpetual growth. Digitisation is an algorithmic multiplier embedded within the gigantic ledger of finance. Profit begs for more, bubbles burst and the boom–bust operating system reboots the next creative destruction.

Rushkoff (2016, 77–81) warns that the next time will not be a cyclical downturn, with corporations attempting to compensate for the disruptive impact of digital technology. This is not another creative destruction but a structural breakdown, as corporatism – backed by digitisation – runs out of places from which to extract value for growth. Big data capitalism is not going to save the day, since marketing and advertising accounts for less than 5% of gross domestic product (GDP). 'Eventually, social branding has to run out of fodder. As more and more markets lose all revenue potential except what they can make as social media marketing platforms, who is left to buy all this marketing and consumer data?' (Rushkoff 2016, 37). Rushkoff's (2016, 105) core argument is that the equivalence between growth and progress is not only artificial but unsustainable in a contracting marketplace and on a planet with limited resources. He projects that automation is likely to produce a consumer shortage that may force corporations to recode their operating systems and learn to scale down by adopting hybrid business models such as open sharing and collaboration models, 'inclusive capitalism', the 'benefit corporation', the 'flexible purpose corporation' and the 'low-profit limited liability company' (2016, 106–121). Rushkoff considers the not-for-profit model as the fittest for the future of an enterprise in a digital landscape.

The Mozilla Foundation is the best example of a digital not-for-profit company (Rushkoff 2016, 127–128). The success of the company is based on its widely used open source technologies supporting the Firefox web browser in a field dominated by platform monopolies such as Microsoft and Google. Mozilla is made up of two entities: Mozilla Foundation, a non-profit, and Mozilla Corporation. Mozilla Foundation oversees the corporation, which is responsible for Mozilla's software development, marketing and distribution. The corporation also collects the revenue generated by Firefox, but it has no publicly traded stock, no dividends and no shareholders. All profits are redirected back to the Foundation's social mission to promote the development of public access to and adoption of the open source Mozilla web browsing and Internet application software. By distributing profits within the non-profit instead of delivering them to shareholders as capital gains, Mozilla is able to maintain its network of volunteers and 500–1,000 paid employees. Capital is, thus, in the service of its employees and customers, not vice versa.

The ultimate goal of capitalism's structural adjustments towards more sustainable and socially responsible business models would be the prioritisation of value creation and money circulation by distributing currency to more people and enterprises. Blockchain, local and cooperative currencies, credit and time banks are all formats that could facilitate recycling rather than hoarding (Rushkoff 2016, 124–167). Investors would then turn to bounded investing such as union pension funds, affordable housing investment funds, communities, interest groups and a mutually supportive range of businesses, where money ends up circulating rather than being sucked up by a company foreign to the ecosystem. Bounded investment is less dependent on growth than it is on sustainability.

Rushkoff identifies direct public offering (DPO) as the most promising financial structure that allows small and medium-sized businesses to raise investment capital from any number of accredited or unaccredited investors as long as they align with the social mission of the business. Unlike an IPO, a DPO takes effect on the state level, meaning that it is not subject to an expensive and arduous vetting process; and unlike crowdfunding, a DPO offers equity and dividends instead of a payout on exit. A DPO provides the legal framework through which a business can raise money from investors, suppliers, employees and consumers, constituting a multi-stakeholder cooperative serving the goals of the community instead of capital.

The coalescence of traditional cooperatives with platform cooperatives under the digital commons would be both a response to predatory capitalism and an attempt to tackle the sustainability crisis and technological unemployment. The objective would be to transform work from waged slavery to self-realisation, self-investment and co-ownership of the means of production (Rushkoff 2016, 212). Resistance to digital industrialism may look like reclaiming communism, but it merely points to the reclamation of the commons on the model of digital

distributism, which utilises technology to create self-sustaining, highly reciprocal, peer-to-peer, worker-owned and community-defined marketplaces. As Rushkoff puts it:

> Digital industrialism sought to extract value from the system using new, digital means: digital distributism seeks to use those technologies to distribute new capabilities to small businesses and real communities. Digital industrialism accepts growth as a condition of nature; digital distributism strives towards a dynamic steady state. Where digital industrialism pushes corporations even further from value creation, a more distributed approach to digital business embraces and enriches broader constituencies of stakeholders. Where an industrial approach to networking yields the platform monopolies of Uber and Amazon, a distributed one yields worker-owned cooperatives at a level of complexity and security unimaginable before digital technology. Where the digital industrialist's financial strategy is to extract money through increasingly abstracted derivatives, a more distributist vision would promote the circulation of money through low-friction, peer-driven currencies. Where digital industrialism seeks to use technology to expand markets forever, digital distributism seeks to recycle the same money again and again by investing and spending it in the bounded communities of the real world. Where digital industrialism asks the economy to grow infinitely for its own sake, digital distributism aspires to sustainable prosperity. (2016, 226)

By 'digital distributism' Rushkoff (2016, 231) refers neither to any sort of social democratic wealth distribution through state mechanisms nor a libertarian decentralisation, where alternative power centres spring up on the periphery. Rather it signals a diffusion of power across the network in such a way that value, energy and resources become available to anyone in communal terms. But, as with Rifkin, Rushkoff's optimism is not supported by the facts. Platform capitalism is dominant in the digital plateau and pregnant with the worst nightmares of surveillance capitalism. Most importantly, what Rushkoff is missing in his anarcho-communist crescendo is the significant role the state could assume in the creation of a commons-orientated sociopolitical transition. Central policies are the *sine qua non* for any radical politics to counter neoliberalism.

Rushkoff's analysis sheds ample light on the current digital landscape. It offers an illuminating view of the technological battleground of class struggle while offering substantive weaponry for the commons to subvert the neoliberal hegemony. Digital distributism can significantly support the commons, if integrated into a holistic, post-hegemonic, commons-orientated strategy seeking to decentralise power via horizontally and vertically coordinated mechanisms.

3.9 Envisioning Real Utopias

Erik Olin Wright's work reads as a sociological and political contribution to the commons, freeing up institutional space for strategic action towards a commons-orientated transition. It represents one of the most recent attempts to formulate an emancipatory social science aimed at the socialist transformation of society. The normative principle of this transformation is a radical democratic egalitarian approach to justice, according to which all people should have equal access to the necessary material and social means to live flourishing lives (social justice); and the necessary means to participate in collective decisions affecting their lives as members of a community (political justice) (Wright 2009, 7–8). Freedom is the power to make decisions over one's life, and democracy is the power of integrating freedom in collective decision making. Wright (2009, 73) defines power as the capacity of actors to generate effects in the world. He holds that freedom presupposes equality as the capacity of all people to participate in collective decision making. Wright's egalitarian understanding of freedom is both 'negative' and 'positive', since the liberal ideal of freedom as non-interference combines with the capacity of all people to participate in democratic processes (Wright 2009, 12).

3.9.1 Critique of Marxism

Evidently, Wright's work bears some striking similarities with Castoriadis's project of individual and collective autonomy (Papadimitropoulos 2018c). He, too, has developed a systematic critique of both Marxism and capitalism, arguing that Marx proposed a highly deterministic theory of the demise of capitalism and a relatively voluntaristic theory of the construction of its alternative (Wright 2009, 64). Like Castoriadis, he identifies a number of essential problems with traditional Marxism.

Marx's crisis theory is predicated on the following premises: 1) labour is the source of value and, therefore, profit; 2) competition forces capitalists to replace labour with machinery; and 3) the rate of profit falls. But Marx's law of the falling tendency of the rate of profit seems inadequate, since crises within capitalism do not appear to have an inherent tendency to become ever more intense over time. Capitalism learns to adapt and reform. The labour theory of value, on which Marx's theory of crisis intensification is based, seems no longer sustainable, at least in its full extent. 'While the idea of labour as the source of value may be a useful device for illustrating the idea of the exploitation of labour, there is no persuasive reason for believing that labour and labour alone causally generates value' (Wright 2009, 66). Thus, for the moment there is no good reason to suggest that the internal contradictions of capitalism make it unsustainable in the long run.

Class structures have become more complex over time, rather than progressing into a homogenising proletarianisation (Wright 1985; 2005; 2009, 65–67). We are rather witnessing today the inter-mobility and fragmentation of the working class: the rise of labour aristocracy and freelancers; the opposition between unionised and non-unionised workers; the conflicting interests of different wage categories; the contradictory positions of workers who are exploited by their employer, but may also be running a small business, potentially exploiting other workers. Workers now possess the skills of both capitalists and managers. The collective capacity of the working class to challenge capitalism seems not only to decline within mature capitalist societies, but to replicate the division of directors and executants among the workforce (Wright 2009, 67). Ruptural strategies of social transformation, even if they were capable of overthrowing the capitalist state, do not seem likely to provide a social-political setting for sustaining democratic experimentalism. Like Castoriadis, Wright (2009, 69) holds that the empirical cases of ruptures with capitalism (for example, the Eastern Bloc regimes) have resulted in authoritarian state-bureaucratic regimes rather than true democracies.

3.9.2 A Socialist Transformation Strategy

Wright (2009, 26–34) points out that the relations of domination within capitalist workplaces constitute pervasive restrictions on individual autonomy and self-direction, thus blocking the full realisation and exercise of human potentials. Exploitation, alienation of labour, large economic inequalities, the uncontrolled social externalities of technological change and profit-maximising competition perpetuate eliminable forms of human suffering, thus impeding the universalisation of the conditions for expansive human flourishing.

Wright (2009, 37–43) locates six sources of inefficiency in capitalism: 1) the underproduction of public goods; 2) the underpricing of natural resources; 3) negative externalities; 4) monitoring and enforcing market contracts; 5) pathologies of intellectual property rights; and 6) the costs of inequality. He condemns consumerism on both moral and environmental grounds, arguing that capitalist commodification threatens human values such as child care, product safety, the arts, community, religion and spirituality (2009, 47–57). Lastly, corporate influence limits democracy and fuels militarism and imperialism.

In contrast to both capitalism and traditional Marxism, Wright develops a socialist transformation strategy. He initially distinguishes between three forms of power: economic power exercised over economic resources, state power identified with rule making and rule enforcing over territory, and social power consisting in voluntary collective action. He then attaches these three powers to capitalism, statism and socialism respectively (2009, 73–74). He further makes a distinction between 'power' and 'ownership'. The former is the capacity to direct the means of production, and the latter is the right over property and surplus. Capitalism, statism and socialism differ in terms of the

ownership of the means of production and the type of power exercised over economic activities (Wright 2009, 76). But they can combine according to multiple settings of ownership and power.

In contrast to traditional statist versions of socialism, Wright's (2009, 80) socialist transformation strategy is grounded on the distinction between state and social power, state and social ownership, and the possibility of partnerships between the market and socially owned and controlled enterprises. Capitalism, statism and socialism should be then considered as coordinating variables of socialist transformation, geared towards three principal directions: 1) social empowerment over the way the state affects economic activity; 2) social empowerment over the way capitalism shapes economic activity; and 3) social empowerment directly over economic activity (Wright 2009, 82). In short, socialism points to the empowerment of civil society over the state and the market. To this end, Wright (2009, 86–92) illustrates seven pathways:

1. Statist socialism: in contrast to central planning, statist socialism would be orientated towards deepening the democratic quality of the state, aiming to open a genuine pathway to social empowerment.
2. Social democracy: in contrast to state regulation favouring capital, social democracy would regulate capital in ways that enhance social power.
3. Associational democracy: in contrast to associations being heavily manipulated by elites and the state, associational democracy would promote open and deliberative decision-making processes, highly representative of civil society interests. In associational democracy, labour unions, business associations, organisations or civic groups would directly engage in various aspects of political decision making and governance.
4. Social capitalism: in addition to associations of workers or unions exerting power over corporations through co-determination of funds, bargaining over pay and working conditions, and so on, the union movement could create venture capital funds, controlled by labour (as in Canada), to provide equity to start-up firms that satisfy particular social criteria. Consumer-orientated pressure on corporations would be an additional form of civil society empowerment over economic power. Fair trade and equal exchange movements aiming to connect consumers and producers by building alternative global economic networks could also disrupt the economic power of multinational corporations.
5. Social economy: voluntary associations, NGOs, co-ops, community-based organisations, all subsidised through donations, charities, grants and taxes, would directly organise economic activity (for example, Wikipedia, the Quebec economy). An unconditional basic income provided by the state through taxation could furthermore enhance social economy.
6. Cooperative market economy: instead of worker-owned cooperative firms operating in isolation and thus forced to bend to capitalist competitive pressure over time, worker-owned cooperative firms would be incorporated into a cooperative market economy that could provide finance,

training, problem-solving services and all kinds of mutual support (for example, the Mondragon cooperative and the Mozilla Foundation).

7. Participatory socialism: the combination of statist socialism (1) and the social economy (5) with the mission of jointly organising the production of various goods and services. The state becomes more pervasive by getting directly involved in the organisation and production of economic activity. Social power expands from its participation in representative democracy into the productive activity itself.

Wright puts forward a pluralistic and heterogeneous socialist transformation rooted in a centrally coordinated decentralisation of power. But contrary to Castoriadis who was against any type of state- or market-driven reformism, Wright's socialist transformation strategy is premised on the radical democratisation of both the state and economy by civil society. Four of the seven pathways to socialism involve the state. Yet for socialism to be fully realised, Wright holds that state and economic power have to be subordinated to social power on the model of economic democracy (Wright 2009, 92).

3.9.3 Social Empowerment over the State

Social empowerment over the state would include a combination of pathways (1), (2), (3) and (7). In contrast to Castoriadis, Wright (2009, 108–109) claims that a radical egalitarian democracy does not require direct democracy to replace representative democracy, but the deepening of democracy in all three varieties of democratic governance (direct, representative and associational). He introduces participatory forms of direct democracy that could create countervailing power against the privileged groups and elites lobbying for state power. The design principles of this power are the following: bottom-up participation, pragmatic orientation, deliberation, and state-centred decentralisation to local units of action such as neighbourhood councils, local school councils, workplace councils, and so on. Participatory democracy differs from spontaneous activist efforts or projects led by non-governmental organisations or social movement groups, since it aims to change the central procedures of state power rather than occasionally influencing them. Wright cites as an example of participatory democracy the municipal participatory budgeting applied in the case of Porto Alegre in Brazil.

To enhance the democratic quality of representative democracy, Wright introduces proposals for egalitarian public financing of politics, and randomly selected citizen assemblies. He also claims that political institutions can be designed in such a way as to enable secondary associations – labour unions, business associations, organisations or civic groups – to play a positive role in deepening democracy. Centralised administrations are good at imposing uniform rules over homogeneous contexts, but when addressing heterogeneous economic and social conditions, centralised command and control processes

are much less effective (Wright 2009, 127). One-size-fits-all regulations are rarely satisfactory, for example, in the context of environment and workplace safety, given that ecologies and workplaces are diverse and complex. Associations could solve this problem and complement public regulatory efforts by gathering local information, monitoring behaviour and promoting cooperation among private actors. Instead of associations providing external pressure by lobbying politicians and agencies for specific rules, they would be included systematically in the central tasks of governance: policy formation, coordination of economic activities, monitoring, administering and enforcing regulations.

The possibilities of an expanded and deepened associative democracy are not limited to the role of encompassing associations in neo-corporatist, peak-level, public policy formation. Associative democracy can also function at the local and regional level to solve problems, and design and implement detailed rules and standards of various sorts. Associations must be relatively encompassing, representing a substantial proportion of the relevant social category; second, the association leadership must be accountable to its membership through meaningful internal democratic processes; and third, the associations must have significant powers to sanction members. Wright (2009, 127–133) cites the example of Quebec in Canada, which is an exemplary showcase of deepening the associational dimension of democracy in the domains of skill formation within regional labour markets, habitat conservation for endangered species, child and elderly care, cooperative housing, education, energy production, and many more.

3.9.4 Social Empowerment over the Economy

Social empowerment over the economy would develop in the direction of market socialism, combining pathways (4), (5), (6) and (7) (Wright 2009, 135–189). Wright employs the term 'social economy' to specify economic activities that spring from civil society. Two prominent examples are Wikipedia and the Quebec social economy. Starting from the Quebec experience, Wright suggests four institutional designs to advance social empowerment: 1) state subsidies targeted at the social economy, 2) the development of social economy investment funds, 3) governance through associational democracy and 4) participatory democratic forms of organisation. By 'social capitalism' he refers to a wide range of institutional mechanisms and social processes that directly impinge on the exercise of capitalist power. Some examples he mentions are labour solidarity funds and share-levy wage earner funds, both pushing capitalism towards a structural hybrid within which social power has greater weight. Finally, a cooperative market economy consists of an association of worker-owned firms such as Mondragon in Spain and the Mozilla Foundation.

A number of scholars have built on the work of Wright to introduce concrete proposals for democratising finance. Hockett (2019, 516–522) calls for the creation of a National Investment Council (NIC) that would provide funding

for national development projects in the sectors of clean energy and transport infrastructure. This could be done partly by aggregating funds and partly by issuing and purchasing bonds. The NIC would be coupled with Federal Reserve reforms that would aim to induce public participation in finance by affording every citizen, firm and unit of government a deposit-cum-transaction account.

The first effect would be to end financial exclusion and marginalisation for poor and non-white people. The second would be the more effective control of inflation and deflation. Instead of banks using federal funds to speculate on commodity and other markets, thereby routing funds away from individuals and businesses and inflating commodity prices such as foodstuffs and fuel, a 'QE for the people' would channel money in more socially beneficial directions. A Fed-administered digital dollar backed by Blockchain and accessed via smartphones would further afford greater financial inclusion. Another tool for preserving optimal credit allocation and price stability would be a price stabilisation mechanism that would limit volatility through Fed price modulation (shorting and purchasing activity) with regard to more systematically significant prices than just interest rates, such as labour costs, commodity prices, fuel prices and others.

Block (2019) puts forward a synthesis between socialist theory and radical financial reform. Historically, classical Marxists argued that financial reforms were unlikely to alter the system as long as private property prevailed. They were reluctant to engage in deficit financing or other unorthodox policies. They, therefore, adopted quite orthodox positions on issues of finance such as the return to the gold standard. Radical reformers, on the other hand, imagined the reallocation of credit in the economy through redistribution mechanisms such as 'social credit', time banks or stamped money. Block argues that financial mechanisms can today align these two traditions. Classical Marxists need to acknowledge the relative autonomy of financial superstructure:

> The logic of extracting surplus value at the point of production does not dictate a particular form for a society's financial system. There is great diversity in the structure of financial institutions in different developed market societies, with some heavily relying on public sector financial entities and others demonstrating considerable regulatory effectiveness in keeping destabilising speculative finance in check. In short, state policies have been and continue to be critical in determining what a nation's financial industry looks like. All of this suggests that reform initiatives in this sphere could be successful. (Block 2019, 539)

A major obstacle to socialist reform has been the fear of capital flight and capital strike in the event of the implementation of policies that would threaten the interests of property holders. Capitalist reaction triggers an economic downturn that stirs up public disaffection and anti-leftist populism. Wright has coined the term 'transition trough' to describe periods of extreme public

discontent towards democratic socialist reforms. To address this potentiality, Block expands Hockett's franchise model to a set of structural reforms that would weaken the power of capital to resist a broader programme of socialist transition. To begin with, the state could apply the public utility model by granting monopoly rights to firms and banks and further controlling the amount of profit they earn. This would discourage financial speculation, since trading could not exceed the government-set ceiling. A more radical option would be for the government to create in-house franchisees or non-profit institutions equipped with the ability to create money. Regulatory measures would be adopted to prevent unscrupulous trading and predatory lending.

More radical reforms involve creating a national investment bank linked to a set of non-profit, decentralised financial institutions such as credit unions, public banks, community banks and non-profit investment banks to provide credit for underfunded activities such as infrastructure, clean energy, affordable housing and small and medium-size businesses (Block 2019, 535–537). The creation of a non-profit innovation stock market would further open up investment opportunities to the broad public and help high-tech start-ups, cooperatives and B corporations to raise capital for expansion. (Certified B Corporations are businesses that meet the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose.) This way, decentralisation, diversity and competition would weaken large commercial banks and corporations while setting up a more dynamic and sustainable economy:

> This weakening would happen through an incremental shift of consumer savings from for-profit to nonprofit entities. Currently, something close to 90 percent of consumer bank deposits are with large commercial banks, but with the reinvigoration of credit unions and nonprofit banks, we could expect a large-scale shift of these deposits toward more locally institutions as consumers recognize the benefits of reinvesting in their communities. At the same time, savers would have attractive alternatives to putting their retirement funds in mutual funds and common stocks. They would be able to shift to a variety of bonds issued by nonprofit investment banks or the public investment bank, and they could acquire mutual funds invested in the innovation stock market […] With less control over consumer deposits and retirement savings, giant institutions would have to shrink and make do with reduced flows of profits. This, in turn, would reduce the resources to invest in campaign contributions and right-wing think tanks. It would become harder for them to push back against regulators and harder for them to stop the advance of their nonprofit competitors. (Block 2019, 547–548)

Lenore Palladino (2019, 573–591) proposes that the 'parallel credit system' be coupled with a 'parallel equity system'. Palladino attempts to address wealth

inequality by claiming not only access to credit but also to equity for all citizens. Since business cycles and macroeconomic risk are likely to trap individuals in a cycle of unaffordable debt repayments, he proposes the creation of a Public Investment Platform that would directly connect individuals to lending or investing opportunities. It would serve as a crowdfunding platform for small companies offering debt or equity securities at little or no cost to the public. It would provide a 'public option' for wealth creation that would compete directly with the private sector and reduce the concentrated power of the 'shadow banking system', which consists of hedge funds and private equity funds involved in risky activities. The Public Investment Platform would be joined by a 'public investment account' that would give a small sum of capital to all citizens in accordance with family net wealth, which would be used as a wealth-building fund.

Michael McCarthy (2019, 611–633) completes the puzzle of reforms by instigating the creation of sovereign wealth funds and inclusive ownership funds. The former would be established by governments through a combination of mechanisms such as levies (taxes and fees on consumption, payroll and capital), leveraged purchases (borrowing at low interest rates to invest at higher rates), ring-fencing existing assets (by transferring existing assets into it) and new money creation. The latter would be adopted by companies with the aim of allocating shares to their workers and increasing their decision-making power in daily management. Workers would also receive dividends, part of which could be channelled to a public fund to pay for welfare benefits and public services.

This whole set of proposals combines Wright's (2009, 191–240) 'symbiotic' and 'interstitial' transitional paths towards socialism. In contrast to a 'ruptural' path of the kind that the former Eastern Bloc experienced, a symbiotic path in the form of a parallel credit system avoids a direct confrontation with capitalist class power, while an interstitial one in the form of a parallel equity system makes relatively small transformations that generate a qualitative shift in class dynamics. While the symbiotic path occupies empty spaces in the dominant financial system, the interstitial path paves the way for a more transversable break with the dominant financial order. The ultimate goal would be the gradual transformation of the private sector into a public one.

This transition would probably not be an easy one. Capital flight and capital strike would lead to the forgoing of new investments, layoffs, the weakening of demand, deflation and economic recession (Block 2019, 547–551). Governments would not be able to offset capital flight by increasing borrowing due to the hostility of international banks and global organisations. Governments would be forced instead to impose capital controls and raise interest rates, aiming to prevent capital outflows. A currency crisis would follow, with the tight monetary policy slowing down economic activity.

However, the proposed reforms might be able to withstand the currency pressure. The central countervailing measure for this would be the expansion

of the non-profit sector to offset the capital boycott (Block 2019, 547–551). The combination of capital controls and increased international borrowing by large non-profit banks might be sufficient to avoid a currency crisis and stabilise the economy. Governments would then have gained the political legitimacy necessary to deepen the financial reforms and extend democracy into economic decision making. Wealth and income redistribution, the strengthening of labour rights, the combatting of racial and gender inequality, improved environmental regulations and increased democratic participation in governance could all be supplementary to financial reforms. Finally, education is a critical factor in the provision of adequate economic and technological literacy to the people.

3.9.5 Critique of the Reformist Approach

Overall, the problem with this reformist approach is that it deals with the periphery of the capitalist system, thus leaving untouched the core of capitalist production. To abolish the capitalist system from within, it is essential to alter the mode of capitalist production on the model of commons-based peer production. Credit and equity reforms need to comply with the self-management of the economy and society as a whole. This does not equate to a state-centred leftist approach aiming to nationalise the banks and the means of production. It rather points to a holistic, post-hegemonic strategy that seeks to connect the democratisation of finance with a decentralised, commons-orientated transition.

Wright seems more apprehensive of the radically transformative role of civil society. He conceives of the state, capitalism and civil society as coordinating variables of his socialist transformation, since society as a whole is a hybrid structure comprised of potentially interchangeable overarching powers: economic, state and social. While it is analytically useful to distinguish capitalism, statism and socialism according to the power dominant each time, none of them constitute purely independent powers. The same applies to all units of analysis within each power, be it a firm, a government, a labour union, an association or a cooperative, where complex configurations of capitalist, statist and socialist elements combine. Thus, Wright notes: 'This has critical implications for our understanding of the problem of transformation: emancipatory transformation should not be viewed mainly as a binary shift from one system to another, but rather as a shift in the configuration of the power relations that constitute a hybrid' (2009, 226).

Wright's core argument is that the realisation of a radical egalitarian democracy presupposes the social empowerment of civil society over the state and the economy. He thus brings to the fore the self-instituting power of the people as the main tool of socialist transformation. He incorporates the self-instituting power of the people into a flexible strategic pluralism based on multiple pathways of social empowerment, embodied in a variety of structural transformations.

Wright (2009, 93–95) anticipates a number of potential critiques of his transformation strategy. An initial point of criticism is that models of participatory democracy are non-functional, since people are too apathetic, ignorant or busy to participate. Secondly, a multitude of associations, networks and communities does not guarantee the creation of the social power necessary to effectively control the state and the economy. On the contrary, this could lead to conflicts of interest or, conversely, as conservative critics of socialism have argued, to the tyranny of the majority. Thirdly, according to the critique posed by the revolutionary socialists, a socialist transformation is not feasible in a society dominated by capitalism, as it will sooner or later confront the problem of competition with the capitalist economy, and the dependence of the social economy on capitalism for financial resources.

To address these criticisms, Wright (2009, 93–95) argues that moving along the pathway of social empowerment is not a guarantee of success, but a more favourable terrain of struggle. He conceives the predictions of the revolutionary socialists as pessimistic, since they exaggerate the power of capital and they underestimate the social spaces available for social innovation. Wright (2009, 114) reminds us that when there are opportunities for people to get involved in decision making that directly affects their lives, they do participate in substantial numbers. However, self-institutionalisation could reproduce a reversed bureaucracy if based on rigid procedures that would obstruct or discourage people from participating, resulting in a parody of democracy. People are more likely to support an economic democracy on the models of platform and open cooperativism that can offer them a living along the lines of autonomy, co-ownership and self-realisation. A challenge remains further to calibrate the balance between centralisation and decentralisation in favour of the autonomy of both individuals and the commons. Wright provides one of the most holistic perspectives towards this goal. It is, however, more effective to fit Wright's pluralism into a more coherent post-hegemonic strategy that aims to bring the different facets of the commons under a commons governance.

3.10 The Lack of the Political II

The reformist approach to the commons purports to advance the self-instituting power of the commons from a third institutional axis of civil society coexistent with capitalism and the state into a counter-hegemonic power orientated against neoliberalism. It succeeds in bridging the gap between local and digital commons and transforming the common into a major force of social change. But still there is a significant lack of the political to counter the superpowers of states and corporations.

Bollier recalibrates the liberal state towards the support of the commons rather than the capitalist market. He introduces a green governance model aiming to tackle climate change and protect the natural commons.

Rifkin introduces the collaborative commons as an alternative business model supported by the Internet of Things infrastructure, designed to remain open, decentralised and distributed, thus bringing together local commons and social movements with the digital commons, Internet start-ups and prosumers. Rifkin, however, produces a social democratic version of the commons that cannot but bear the contradictions of capitalism and the state, thereby putting a halt to the self-instituting power of the people.

Scholz attempts to take a more radical stance by elaborating on the model of platform cooperativism, applying algorithmic design to democratic self-management, co-ownership and equitable distribution of value. Yet he seems to oscillate between a radical and a liberal approach.

Bauwens and Kostakis take a more radical stance by connecting cooperatives with the digital commons on the principles of commons-based peer production, instantiated in their sub-model of Design Global–Manufacture Local. Open cooperativism seeks to create a post-capitalist alliance of ethical market entities, a partner state and the commons, with the aim of challenging neoliberal capitalism. This vision falters upon the lack of centrally coordinated macro-policies to apply the principles of the commons at a local, regional, national and international level. This obstacle could be overcome by a partner state embracing the principles of the commons more openly. Arvidsson and Peitersen follow the post-capitalist vision of Bauwens and Kostakis, but they deviate in that they are attuned to a technologically 'updated' Habermasian transformation of the public sphere rather than a more radical approach to the commons that would steer the self-instituting power of the people against neoliberalism.

Rushkoff's model of digital distributism is more in line with the post-capitalist vision of Bauwens and Kostakis in that he envisages a hybrid economy that could force capitalism in the long run to adjust to the commons. The problem with Rushkoff's anarcho-communism is that, by excluding the state, he significantly debilitates a commons-orientated transition.

Wright provides probably the most holistic political alternative for the commons by integrating the self-instituting power of the people into a strategic pluralism based on multiple pathways of social empowerment, embodied in a variety of structural transformations. It can function as an institutional multiformat for the various reformist approaches of the commons exemplified by Rifkin, Scholz, Bauwens and Kostakis, Arvidsson and Peitersen and Rushkoff. Yet it would perhaps be more effective for the commons to fit Wright's strategic pluralism into a more cohesive post-hegemonic perspective that envisions a cross-regional, commons-orientated transition rather than scattered reformats. To this end, a multidisciplinary approach needs to combine politics, finance, law, economics, sustainability science and education under commons governance.