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Beyond neoliberalism: Digitization, freedom and the workplace

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abstract

In this article, I critically deconstruct three compelling arguments regarding the impact of digitization on the future of freedom and the workplace. It is argued, on the one hand, that digitization would decrease costs, increase productivity and 'lift all boats' toward the universal goals of freedom and prosperity for all. On the other hand, it is claimed that digitization produces precarious labour and technological unemployment, thus widening the already gaping inequalities. A third argument revolves around the emergence of a post-capitalist economic paradigm on the model of the Collaborative Commons, supported by the Internet and free/open source technology. It is argued that the Commons favours democratic self-governance over hierarchical management, access over ownership, transparency over privacy, distribution of value over profit maximization and sustainability over growth at all costs. I conclude that the Commons has, indeed, a potential in creating a freer and more sustainable economy. However, for the Commons to expand and prosper, a global institutional reform is *sine qua non*.

Introduction

It is no doubt that the future of freedom and the workplace depends largely on the digitization of economy, which already disrupts the traditional forms of labour, entrepreneurship and employment. The main question I thus seek to address in this article is the following: in which ways does the digitization of economy transform freedom in the workplace?

In the first section, I juxtapose the neoliberal and the neo/post-Marxist argument. It is argued, on the one hand, that the digitization of economy brings more freedom for both firms and individuals inasmuch as it decreases costs and

increases productivity, innovation, flexibility and labour autonomy. On the other hand, it is claimed that digitization results in a new form of *precariat* or *cybertariat* created by the exploitation of user sociality on online platforms and social media. I present, in particular, the discussion between Christian Fuchs and Adam Arvidsson over the concept of digital labour. I then turn to outlining Cornelius Castoriadis's project of individual and collective autonomy, which, I argue, echoes the current emergence of the post-capitalist economic paradigm of Commons-based peer production, supported by the Internet and free/open source software/hardware.

In the second section, I elaborate on the Commons argument, according to which the digitization of economy can support a post-capitalist paradigm that favours democratic self-management over hierarchical management, access over ownership, transparency over privacy, distribution of value over profit maximization and environmental sustainability over growth at all costs. I draw, in particular, on the work of Elinor Ostrom and Michel Bauwens and Vasilis Kostakis with regards to the development of local and global Commons.

I conclude that the Commons have, indeed, the potential to democratize economy and unleash more freedom for all. But the Commons alone cannot challenge capitalism. For this reason, I make the case that Bauwens and Kostakis's model of open cooperativism between Commons-based peer production, a partner state and ethical market entities has the potential to force capitalism to adjust to the Commons in the long run.

The contours of digitization: Neoliberalism vs neo/post-Marxism

There is an ongoing debate today over the impact of digitization on freedom and the workplace. I demonstrate in the following some of the pros and cons of digitization according to two contrasting lines of argument that schematically fall under the terms 'neoliberal' and 'neo/post-Marxist'. Whereas the neoliberal argument holds that digitization produces more negative freedom for all, that is, more choices and opportunities, since it increases productivity and autonomy by pushing down costs and prices, the neo/post-Marxist argument states that digitization produces labour precarity and unemployment, increases income inequalities and perpetuates labour alienation. Based on current research, I show that digitization has, indeed, decoupled productivity from employment and exacerbated income inequalities in the last decades. Next, I present the discussion between Christian Fuchs and Adam Arvidsson over the concept of digital labour. I then outline Cornelius Castoriadis's project of individual and collective economy, which, I argue, echoes the current emergence of a post-

capitalist Commons-based peer production, supported by the Internet and free/open source technology.

For and against digitization

In neoclassical economics, which form the economic bedrock of neoliberalism, technology is considered a means of production the development of which spurs innovation and productivity, thus offering more negative freedom, that is, more opportunities and choices for the individual to maximize her subjective utility. Technology is argued to be a multiplier that 'lifts all boats' toward the universal goal of prosperity for all. The invention of the Turing machine in 1936 and the subsequent creation of the computer have given rise to a second machine age, marked by three fundamental features: it is digital, exponential and combinatorial (Brynjolfsson and McAffe, 2014).

Digitization consists in the creation of a new kind of non-rival goods. Whereas rival goods like a tomato or a book are relatively scarce and cannot be used simultaneously by two consumers, non-rival goods like digital information, airwaves, language and knowledge – whenever not 'enclosed' – are relatively abundant and can be used simultaneously by two or more users. The difference between digital information and the non-rival goods of nature or culture is that the former is not 'used up', and it can be reproduced at near zero marginal cost, meaning that it is extremely cheap to copy a software, an mp3 song or a PDF file (Brynjolfsson and McAffe, 2014).

Digitization is also exponential. According to Moore's law[1], computing capacity is doubling every two years, thereby improving the measurement capability of science. Measurability increases quantification and productivity to the point that it supposedly reduces costs and prices, and boosts competition and economic growth. Digitization is believed to advance innovation and produce an abundance of goods, thus improving the overall quality of life. Machines can replace human labour, liberate man from toil and drudgery, and unleash human creativity by bringing together discoverers, innovators, financiers, *prosumers* (Toffler, 1980) and *produsers* (Bruns, 2007). Finally, digitization is combinatorial. Different online platforms (Facebook, Google, Wikipedia, Youtube, etc.) can add up to each other creating an enormous pool of Big Data that may recombine also with molecular and quantum computing, where the ones and zeros of digital

1 Moore's law predicts that the number of transistors in a dense integrated circuit doubles about every two years. The law is named after Gordon Moore whose 1965 paper described a doubling every year in the number of components per integrated circuit and projected this rate of growth would continue for at least another decade.

information may be converted into the letters that make up the alphabet of the DNA code, thus integrating the technological transformation of nature into the future perspective of artificial intelligence.

However, the second machine age bears some supreme contradictions. Whereas in mainstream economics technological unemployment is considered temporal, given that technology creates more jobs than the ones replaced by machines, Eric Brynjolfsson and Andrew McAfee (2014) have recently showed that digitization results in the decoupling of productivity from employment by exacerbating unemployment in the late 1990s. Machines tend all the more to replace algorithmic jobs, that is, low skilled labour in services, software, media, manufacturing, finance, music, retailing, trade and so on. Digitization produces a skill biased technical change by decreasing the supply for low skilled labour, pushing lower the wages and increasing income inequality. In addition, talent biased technical change produces "winner takes all" markets, widening all the more income inequalities by squeezing furthermore median income (*ibid.*). According to the American Federation of Labour and Congress of Industrial Organizations, the CEO to worker pay ratio in the US rose from 46 to 331 between 1983 and 2013 (*ibid.*).

In the neoclassical economics of neoliberalism, unemployment and income inequalities are considered a structural indicator of meritocracy and an additional incentive for the overall improvement of economy. Yet, the work of Thomas Piketty (2014) *Capital in the 21st century* alludes to an inherent flaw of the capitalist market that favours a small minority on top. Piketty demonstrates that the return on capital is greater than economic growth, thus leading to ever-increasing inequality. This echoes a recent report of Oxfam, illustrating that the wealth of the richest 62 people in the globe has risen by 45% in the five years since 2010 while the wealth of the bottom half fell by 38% (Oxfam, 2016). Marx (1857/1858) argued first that capitalism suffers from a fatal structural contradiction: technological progress is antagonistic to profit rates. In other words, technology undermines capitalism itself inasmuch as it reduces the costs of production to the extent that low wages and unemployment threaten the very existence of capitalism. Hence, technology creates a disproportionate feedback between supply and demand, thereby challenging capitalism in the long run.

We find grains of truth in this claim today, as information technology creates a crisis of value, potentially undermining the very operating principles of capitalism. Digitization creates a free flow of information through free and open source software, 3D printers and peer-to-peer networks, threatening profitability through the production of an abundance of products such as ebooks, mp3 songs, and movies at near zero marginal cost. Jeremy Rifkin (2014) points out that the

crisis of value is likely to transform itself into a post-capitalist economy based on an Internet of Things infrastructure, connecting all sectors of production, including energy, manufacturing, finance, education, media, culture, and so on. In the same vein with Brynjolfsson and McAfee, Rifkin holds that advanced robotics, artificial intelligence, big data, analysis, advanced analytics and algorithms might lead to the automation of work, allowing humans to free themselves from the alienation of wage labour and pursue their own interests (2014: 121-133).

From a different point of view, Schumpeter (1994) argued that the periodical crises of capitalist production are part of a 'creative destruction' process inherent to capitalism, causing the system to progress over time and adjust to the indeterminate nature of innovation by correcting its malfunctions. Competition pushes capital to invent constantly new needs, commodities and markets. Capital is adaptable enough to move from unproductive sectors of economy to productive ones, commodifying even its own crises.

The crisis of 2008 forced both corporations and states to reduce their costs. The state expanded neoliberal policies, imposed already from 1980 onwards, by privatizing even more telecommunications, energy, public infrastructures, and reducing pensions, health insurance, unemployment benefits. Corporations were forced to lay off personnel, lower salaries and turn employees into independent contractors, temporary workers, self-employed, part-timers, freelancers and free agents. In 2011 independent workers in the USA comprised 30% of the workforce, and this figure is expected to rise in the future due to the digitization of labour (Counting the Independent Workforce Policy Policy Brief, 2011). Digitization enhanced neoliberalism in that it allowed corporations to outsource and crowdsource production across the globe. Downsizing, outsourcing and crowdsourcing (Howe, 2008) helped capitalism spread in time and place on a mission to become more competitive and increase productivity by reducing costs.

The crisis of 2008 resulted in the creation of a so-called 'sharing economy' through the development of peer-to-peer networks of *prosumers*. A series of companies (Airbnb, Elance, etc.) invested in the creation of online platforms that helped transform consumers into micro-entrepreneurs, trading, sharing, swapping and renting products and services, thus unlocking the untapped value of underutilized assets (cars, rooms, consumer goods, skills, capital, Wi-Fi, etc.). Online platforms are available to front-end users, but they are controlled by back-end centralized server infrastructures. People pay a fee for exchanging products and services online. That way, 'sharing economy' is actually a euphemism, a marketing buzzword for a platform capitalism that replaces the old middlemen with new ones.

Digitization helped capitalism commodify furthermore both the public and private sphere via globalized communication networks (Castells, 2000) supposed to radically transform freedom in the workplace. The crisis of 2008 has been regarded as an opportunity for neoliberalism to expand on the basis that the lesser the state the greater the freedom for economic agents to maximize their utility. Mainstream economists read this transformation as a 'natural' transition toward a more autonomous, deregulated and flexible market, where both companies and independent contractors are considered self-interested utility maximizers, whose value reflects their bargaining power on the market. Both corporations and employees were now freer to work outside the conventional time and space framework. Independent contractors were now freer to work outside the restricting bureaucracy of the corporation management. Freelancers could now have a more creative, autonomous and flexible work, leading to a more balanced private life. Finally, digitization and social media could sustain a decentralization of power that would translate into an economic democracy and participatory culture (Bruns, 2008: 227-228; Jenkins, 2008: 275; Tapscott and Williams, 2006: 267), resulting in the highest possible freedom for both firms and individuals.

However, Douglas Rushkoff (2016) holds that we are today on the verge of a structural breakdown, as corporatism – enhanced by digital industrialism – runs out of places from which to extract value for growth. Financialization has led to a complete disconnect between capital and value. As a result, Schumpeter's creative destruction process may turn into a destructive destruction pushing corporatism toward hybrid business models that favour a more sustainable and social approach to enterprise (*ibid.*: 100). As Rushkoff remarks, '[t]he only lingering question is whether it's simply a cycle repeating itself or a unique and unprecedented challenge to our economic operating system' (*ibid.*: 98). This question is all the more important in the case of digital industrialism, which aims at putting humans out of the equation, creating the danger of causing a permanent consumer/demand shortage.

On digital labour

A number of authors have built on the marxian notion of the proletariat arguing that digitization has created a new diverse type of proletariat. Already in the 1980s Andre Gorz (1980: 69) argued that automation and computerization has 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 digitization. Ursula Huws (2003) speaks of a new class of information processing workers – the cybertariat. Guy Standing (2011) and Nick Dyer-Witherford (1999: 88, 96) claim that the poorly paid,

insecure and deskilled service workers constitute the new type of precariat. Manuel Castells (2000: 244) considers the low-paid service workers as a new 'white collar proletariat'.

There is also much debate on the notion of 'knowledge labour', which refers to the production of information and knowledge in the digital age (Florida, 2002: 8; Poulantzas, 1973: 106; Resnick and Wolff, 1987;)[2]. It is argued that knowledge labour is part of a new type of capitalism termed cognitive capitalism (Boutang, 2012). Christian Fuchs (2010: 187) states that all those diverse types of proletariat, including the student, the unemployed, houseworkers and retirees, correspond to Hardt and Negri's concept of the *multitude* (2004), which he interprets as an expanded notion of the class that goes beyond manual labour. In this sense, knowledge labour of the *multitude* can be considered an 'updated' or 'advanced' version of Marx's concept of the general intellect, that is, the 'universal labour of the human spirit' (Marx, 1981) or 'the power of knowledge, objectified' (Marx 1857/1858b: 706).

However, Fuchs (2014: 144), following scholars like Nicholas Garnham (1998/2004, 2000, 2004), Peter Golding (2000) and Frank Webster (1995), rightly argues that it is a mistake to speak of the genesis of a new post-industrial, knowledge, information or network society as Alain Touraine (1974), Daniel Bell (1974), Alvin Toffler (1980), Peter Drucker (1969/1992), Nico Stehr (1994) and Manuel Castells (1996, 2000) have done. Rather, the aforementioned diverse terms of labour refer basically to the evolution of the means of production with regard to the development of technoscience in the last centuries. In other words, the relations of production, that is, the division between capitalists and workers remains largely unaltered.

However attractive the prospect of transforming workers into micro-entrepreneurs or flexible freelance workers, platform capitalism – in most cases – puts the worker at a disadvantage, as it transforms labour into an auction, thus creating a disproportionate feedback of supply and demand. On the one side, it favours the 'haves' over the 'havenots' – as every auction does – while, on the other, it obliges the exploited amateurs to push professional prices down by selling their services cheaper. As a result, platform capitalism further widens the already gaping inequalities, thus constraining freedom for lower incomes. In addition, it offers low pay for hard work and no security, no health insurance, no pension, no unemployment insurance, no paid vacation, or paid sick days.

2 For a more detailed analysis of the diversity of the new type of proletariat see Fuchs (2010, 2014).

By virtue of digitization, neoliberalism has colonized the public and private sphere to such an extent that it has integrated communication and information technologies into a global cyber-market. This way it blurs the boundaries between 'virtual' and 'real', 'work' and 'play', 'production' and 'consumption', 'private' and 'public'. Dallas Smythe (1977; 1981: 22-51) speaks of the 'audience commodity'[3], which portrays the media audience as a commodity sold to advertisers. Especially today, the social media on the Internet commodify user sociality by converting it into data used for targeted advertisement. This way, 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).

Fuchs (2014) advocates that the use value produced in the social networking and the search engines transforms into a surplus value for the social media corporations, thereby sustaining a new form of exploitation. Not only does digitization result in unemployment and precarious labour, it also renders *produsers* part of the working class, thereby transforming society into a cyber-factory. Moreover, the ideology of distinction described by Bourdieu (1984) in terms of class, gender, sex and money crystallizes in consumer choices, which circulate into the target groups of marketing and advertisement, reproducing by large social and economic inequalities.

Arvidsson and Colleoni (2012: 136), on the other hand, argue that the Marxian labour theory of value that Fuchs adopts no longer holds in contemporary economy, which has considerably evolved from the factory setting in which value equals labour time. The value created in the social media, for example, is insignificantly related to labour time, since most profit derives from the finance sector.

Both Arvidsson and Fuchs build on Hardt and Negri's (2004) notion of the *multitude*. Whereas Fuchs (2014) interprets the *multitude* as an expansion of the class, super-exploited by today's surveillance capitalism, Arvidsson and Peitersen (2013) considers the *multitude* composed of a multiplicity of actors who create a number of common resources monetized in the form of intangible or immaterial assets, like in the case of social media or the 'sharing' economy. To better understand the controversy, it is essential to delve deeper into Hardt and Negri's argument. And to do so, we need first to briefly revisit Marx's labour theory of value.

3 See also Charitsis (2016).

Revisiting Marx's labour theory of value

Marx argues in *Capital* (1867) that a commodity has two factors: use value and exchange value. Use value refers to its usefulness/consumption, which is a function of its physical properties, whereas exchange value is the equivalence of all commodities expressed in money, which represents labour power measured in time units. Money is labour congealed time. Thus, exchange value is determined by the socially necessary labour time, that is, the average labour time needed for reproducing a commodity.

However, labour power is itself a commodity and a rather peculiar one, since its use value (labour) produces more value than that embodied in its own production. In contrast to the production of bread whose use value simply vanishes when digested, the use value of labour power produces more (surplus) value appropriated by the capitalist in the form of profit. This is of outmost importance in Marx's labour theory of value, since surplus value constitutes the rate of capitalist exploitation, that is, the surplus labour time the capitalist withholds from the worker above and beyond the necessary labour time for the reproduction of labour power itself. In Marx, labour is the only source of value, which determines both profit and prices. Profit transforms into interest for money lenders, rent for the owners of real and virtual space and taxes for the state.

Marx's labour theory of value is central to his explanation of capitalism, since it allows for an apparently precise and measurable definition of exploitation. His main argument was that over time the capital to labour ratio rises due to technical change. Competition forces capitalists to replace labour with machinery. Wages fall, exploitation widens, the rate of profit fall, capitalism withers away and socialism follows suit.

However, Marx's labour theory of value has been criticized as empirically passé and conceptually incoherent both within and outside Marxism[4]. A major component of this criticism is the so-called 'transformation problem'[5], which refers to the inability of Marx to mathematically transform direct labour inputs/values into prices and, therefore, reconcile a constant rate of surplus value across industries with an average rate of (falling) profit. Given capitalist

4 For more see Keen (2001: 294-328; 1993: 107-121).

5 The so-called 'transformation problem' in Marx has generated an extended critique both within and outside Marxism. For a Marxist critique see Gintis and Bowles (1981). For a social-democratic critique see Steedman (1977). For a contemporary reformulation of Marx's labour theory of value see Wright (2014). For more see Elson (1979: 115-180) and Steedman (1981).

competition and the widely varied ratios of capital to labour inputs, capitalists can move from capital-intensive industries to labour-intensive ones in search of a higher rate of profit. Marx's response is that it is precisely this movement that preserves an average rate of (falling) profit. The only long term equilibrium of capitalism is the one of a fatal disequilibrium. But if surplus value could instead be generated from any input to production, not just labour, as Sraffa's (1960) critique shows, then an increase in the capital to labour ratio would have no necessary implications for the rate of profit to fall: it could fall, rise, or stay the same. Therefore, Marx's labour theory of value does not necessarily result in the downfall of capitalism.

Hardt and Negri's critique differs in that they locate the rejection of Marx's labour theory of value in his own work and especially in the 'Fragment on machines' in the *Grundrisse* and in the unpublished Part Seven of *Capital I*, where Marx prophesized that the development of capitalism would undermine the labour theory of value. Science and technology, as products of the 'general intellect', will dominate production, and capitalism will subsume not only the production process, but social reproduction itself. Society as a whole will become an extended factory.

Hardt and Negri argue that this is the case right now in cognitive/information capitalism. They, therefore, 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 utilize all the resources available to the multitude for its own ends. The term 'multitude' signifies all the potential actors of the 'social factory' (Hardt and Negri, 2004). Hardt and Negri (2000: 29) incorporate into their analysis the Foucaultian notion of biopolitics, according to which power, as neoliberal governmentality, expands from the factory setting into *psyche*, the body and the entirety of social relations. They also use Deleuze and Guattari's post-structuralist development of biopower to refer to the social reproduction of bodies, values, relations, affects, and so on (2000: 28).

Hardt and Negri build further on the concept of 'immaterial labour' introduced by Lazzarato (1996) 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; (2) the automation and commoditization of cognitive knowledge by information and communication technologies (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 expressed, among others, in finance capital.

Hardt and Negri reject only the quantitative aspects of Marx's theory and keep the qualitative elements of exploitation, alienation, etc. Exploitation expands nowadays from the exchange value produced in the factory setting to the use value created across society by the multitude in the form of common wealth (natural resources, knowledge, information, language, culture, affects, and so on). Exploitation has become today the expropriation of the Commons. Therefore, Hardt and Negri (1994: 15) expand Marx's distinction between formal and real subsumption into one between capital and society.

Capitalism and the Commons, however, feed off each other constantly. Just as capitalism expropriates resources from the Commons, the Commons make use of fixed capital (machinery, software, etc.) for their own needs. Therefore, in consonance with Marx, Hardt and Negri (2014) argue that the production of common wealth can potentially replace capitalism with communism by virtue of information and communication technologies.

Following Hardt and Negri, Arvidsson and Peitersen (2013) demonstrates an ethical economy of productive publics, which consists in collaborative networks of peer-to-peer producers supported by information and communication technologies that can sustain an economic democracy in which the universal measure of value is the general sentiment. He claims that value has evolved nowadays from an equation of labour time into an affective investment of a vast diversity of actors, including financiers, brands, employers, prosumers, freelancers and communities. Value theorized in terms of an affective investment departs from a simple labour task, leading to a motivation or the goodwill of the employee, a sophisticated innovation, a brand loyalty built on reputation, a self-fulfilling prophecy of the market regarding assets, companies and trends (Keynes, 1936), a political choice, etc. (Arvidsson and Peitersen, 2013: 140-142). In short, value is the affective investment of the public in the intersubjective creation of 'truth, beauty and utility', whether the latter comes from a company, an individual, an institution or communities.

Jakob Rigi (2015) engages in the discussion to criticize Arvidsson, Fuchs and Hardt and Negri[6]. Following Marx, Rigi argues that information, knowledge and affect, when not exchanged with capital (like in the case of services, teaching,

6 There is an extensive and diverse critique in the literature of Hardt and Negri's work. I am citing here just a few references with regards especially to Marx's labour theory of value: Rigi (2015: 173-188), Caffentzis (2005); Toms (2008), a special issue on immaterial and affective labour in *ephemera* (Dowling et al., 2007).

nursing, etc.), do not produce exchange value, since they can be reproduced at near zero cost. Let's note here that, for Marx (1981: 522), only reproducible commodities have exchange value. Therefore, information, knowledge and affect have only use value that can be commoditized in the form of monopoly rent as in the case of personal data extracted by corporations in 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 the social media, since most of their value derives from the production of affective relations – the so-called philia – commoditized in the form of rent and finance capital. But profit in the form of rent, Rigi argues, is a transformation of surplus value from other sectors of 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.

Introducing Castoriadis

Interestingly, Rigi (2015: 403) himself admits that it is exactly peer production of common wealth on the Internet that goes beyond both Marxian and neoclassical economics by reconfiguring value and labour in the 21st century. Commons-based peer production refers to shared resources self-managed by user communities according to collectively established rules or norms (Bollier and Helfrich, 2015; Ostrom, 1990; Benkler, 2006). Commons-based peer production, online and offline, is highly reminiscent of Cornelius Castoriadis's work. His project of individual and collective autonomy offers a potential theoretical framework for Commons-based peer production, predicated on a substantial critique of both Marxian economics and capitalism.

Castoriadis (1998: 106; 1987: 9-68) claims that Marx was sedated by the economism of capitalism in placing the economy at the center of politics, thereby adopting capitalism's model of homo oeconomicus. Marx failed to see, at least to a full extent, that the crisis of capitalism resides in the contradiction of production itself and not just in the ones surrounding production such as 'the anarchy of the market', 'overproduction' or the 'falling rate of profit'. Castoriadis (1986: 190) holds that the basic contradiction between capitalists and the proletariat resides on a more fundamental flaw of capitalism lying within the field of production *per se*, in which workers are obliged to participate insofar as they do not interfere with the planning process itself. Therefore, the basic

contradiction of capitalism is the division between directors and executants, expanding from economy into society as a whole.

And it is exactly this contradiction that Marx's labour theory of value underestimates by considering labour as a commodity. Castoriadis (1988: 242-258) argues instead that labour is a field of power relations structured by the social relations of capitalist production. Therefore, neither labour power nor prices can be determined by an 'objective' 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 a number of indeterminate variables such as power relations, bargaining, speculation, technical change, consumer choice-taste, future expectations, and so on. Thus, an element of subjectivity intervenes in the capitalist economy, which is pretty much irrelevant to production costs or the rationality of the marginal utility or market equilibrium or perfect information, and has to do with rates and price signals set to some extent arbitrarily.

Capitalism is an evolving system whose main factor of transformation is class struggle. This is evident today that we are arguably witnessing a 'value crisis' caused by the emergence of Commons-based peer production. Therefore, any attempt to provide immutable economic equilibria – either Marxist or neoclassical – is simply ideological. This is not to say that regularities are absent or the labour theory of value is obsolete. Rather, for Castoriadis, regularities and the labour theory of value are treated as political practices. The same holds true also for automation, which is basically a social and political problem.

In contrast to both Marxism and neoliberalism, Castoriadis (1988: 92-130) develops a post-foundational theory of democracy built around his project of individual and collective autonomy. He defines autonomy as the collective self-management of society, established on the basis of direct democracy that contrasts the hierarchical bureaucracy of both a communist party and a capitalist enterprise, as it postulates the equality of all participating in the creation of the law governing the market and the relevant self-institutionalization of society.

Castoriadis's (1993: 317-318) conceptualization of direct democracy opposes both a representative and procedural democracy originating in the work of Kant and evolving in all variants of contemporary social democratic theories like the ones developed by, for example, Jürgen Habermas or John Rawls. Freedom is neither an autonomy derived from a moral imperative formulated in the law of the state nor a negative freedom rooted in the unobstructed exercise of some basic liberal rights, but the equality of all to participate in the creation of the law governing society. Freedom is the precondition of the individual and collective autonomy,

for it permits the participation of all citizens in the formation of the rules governing the private and the public sphere.

The basic principles of Castoriadis's project of individual and collective autonomy are as follows (1988: 130-131; Papadimitropoulos, 2016, 2017a):

1. The abolition of the distinction between directors and executants by means of a direct democracy exercised first and foremost at the level of production of each enterprise and expanding into society as a whole in the form of councils composed of revocable delegates.
2. The abolition of the hierarchy of the capitalist division of labour through the horizontal and mutual coordination of work between experts, technicians and workers.
3. The availability of information necessary to the workers provided in a transparent manner, sufficient quantity and compact form.
4. The humanisation of technology necessary to transform the current robotisation of work into a meaningful form of creation that expresses the aspirations and interests of each worker.
5. The reduction of the working day.
6. The abolition of the hierarchy of salaries, wages and incomes.
7. The real sovereignty of the consumer.
8. Ecological sustainability.
9. The central plan supported by a computer providing all the data necessary for proposals to be submitted, and decisions taken in terms of a majority vote.

In contrast to the neoliberal mantra claiming that central planning is inevitable due to the practical inability of controlling dispersed information, Castoriadis (1998: 121) argued that computers can support an overall planning of economy by breaking down essential information into a manageable set of variables. Computers can store and update all data necessary for decisions concerning management, investment, consumption, production, and so on. This is feasible today, considering the capacity of states and corporations to control big data through sophisticated machine learning and software mechanisms.

Nonetheless, Castoriadis's project of individual and collective autonomy has been often criticized as impractical given the immense complexity of contemporary societies (Fehér, 1989: 401-402). Castoriadis (1998: 144), yet, was one of the first thinkers to foresee the potential of technology, that is, the very existence of

computers, to facilitate rather than impede a socialist project. Most importantly, Castoriadis's foresight on technology reflects today the vision of a post-capitalist ethical economy developing in the mode of Commons-based peer production, supported by the Internet and free and open source software/hardware.

I do not claim, however, that Castoriadis's project of individual and collective autonomy is the political manifesto of Commons-based peer production. Hence I do not use his work to support the Commons in general. Rather my argument is that some basic elements of Castoriadis's project (i.e. self-management, transparency, on-demand economy, mutual coordination, sustainability) penetrate the core of Commons-based peer production, which is further theorized in multiple variants today (Papadimitropoulos, 2017b). It is not the place here to develop the precise relation of Castoriadis's work to the Commons, since this has been done at length elsewhere (Papadimitropoulos, 2016). My intent is rather to detect the substantial affinity existing between Castoriadis's work and the core of the Commons regardless of its different political framings.

The Commons argument

The Commons argument echoes the work of a number of thinkers, including Marx, Castoriadis, Hardt and Negri, and many more (Papadimitropoulos, 2017b). I draw here in particular on the work of Elinor Ostrom, as well as Michel Bauwens and Vasilis Kostakis to demonstrate two instances of Commons-based peer production that develop today in the form of local and global Commons. I build especially on Bauwens and Kostakis's argument that local Commons need to connect to global Commons on the model of an open cooperativism between the Commons, a partner state and ethical market entities. I make the case that, for the Commons to expand and prosper, a global institutional reform is *sine qua non*.

Commons-based peer production

Yochai Benkler (2006) coined the term Commons-based peer production to describe a new form of social production based on the Internet and free and open source software. Michel Bauwens (2005) describes peer production as a third mode of production that differs from both for-profit or state production in that it produces value through the free cooperation of users who have access to distributed 'fixed' capital or common property regimes.

The Internet and the invention of open source code by Richard Stallman (2002) in 1983 has allowed for the autonomy of distributed networks not controlled by hubs, that is, centralized choke-points. Open code disrupts the capitalist principle

of exclusive private property, since it allows for an open source software or hardware to be accessed, run, modified and distributed freely under the General Public License (GPL). What the General Public or 'copyleft' License allows for is the freedom to access, run, modify and distribute the program on the same terms. In other words, the GPL ensures that a free/open-source software or hardware cannot be exclusively privatized.

Rifkin (2014: 175) rightly points out that the 'copyleft' license echoes the work of Elinor Ostrom who was awarded the Nobel Prize in Economics in 2009 for examining numerous cases of natural Commons such as forests, fisheries, oil fields, grazing lands, and irrigation systems. The General Public License could be considered a digital version of the self-management of the natural Commons inasmuch as it incorporates many of Ostrom's design principles, such as the conditions of inclusion, the rights governing access, withdrawal, enhancement and stewardship of the resources.

Kostakis and Bauwens (2014) build on the work of Benkler to demonstrate that there are two main types of Commons according to their content: material (land, air, water, means of production, hardware) and immaterial (language, knowledge, culture, digital informational resources, free/open source software). Depending on the content, the Commons can be regulated or unregulated. For instance, information – when not 'enclosed' by intellectual property rights – is a common good.

Commons-based peer production in all its types can be characterized by the features of equipotentiality, holoptism and stigmergy (Kostakis and Bauwens 2014). Equipotentiality opens up equal opportunities for everyone to participate according to his/her skills. Participation is conditioned a posteriori by the process of production itself, where skills are verified and communally validated in real time. Holoptism contrasts panopticism that penetrates the modern systems of power (Foucault, 1977) in that it allows participants free access to all information necessary for the accomplishment of the project in question. Access is permitted not in terms of privacy, but in terms of the overall contribution of the participants to the aims, metrics and documentation of the project as a whole. Holoptism allows thus for stigmergic processes of mutual coordination where the participants can match their contributions to the needs of the system (Bauwens, 2005).

Rifkin (2014) describes an Internet of Things through which different actors can communicate in a way that anyone is able to take on greater or lesser responsibility according to their differing degrees of motivation, expertise, etc. Blockchain technology already supports platform cooperativism on the Internet

and mobile applications through which several groups (taxi drivers, photographers, farmers, designers, programmers, teachers, researchers, innovators, investors, web developers, etc.) join forces on a mission to work together in a self-managed, decentralized, and autonomous manner (Scholz, 2016a, 2016b). The creation of such horizontal, flexible cross-connections leads to the recombination and creation of knowledge and often results in increased innovation and resilience.

In contrast to traditional and platform capitalism (Facebook, Google, Uber, AirBnB, etc.), the Commons favour decentralization over central control, democratic self-management over hierarchical management, access over ownership and transparency over privacy. According to Ostrom (1994), the Commons are neither public nor private, but a sort of collective governance based on three interlinked components: (1) a well-defined resource; (2) a community of users creating value on the premises of the resource; (3) and certain rules regarding the sharing of the use value and the monitoring of the resource by imposing sanctions on free-riders, that is, those who benefit from one resource without contributing.

Local and global commons

Commons-based peer production splits today into local and global Commons (Kostakis and Bauwens, 2014: 45-58). Local Commons refer to peer-to-peer projects developed by resilient communities. Some striking examples are community land trusts offering affordable housing, degrowth and permaculture movements (e.g. the Cloughjordan Ecovillage), transition towns, the Bologna regulation for Urban Commons, car sharing, health and social care services, interest-free banks, autonomous/renewable energy production, etc. (Bollier and Helfrich, 2015). Global Commons, instead, refer to digital projects based mostly on free/open source software and hardware. Some examples are Wikipedia, Wikispeed, Open Source Ecology, LibreOffice, Linux, Goteo, FarmHack, Arduino, Loomio, Fairmondo, etc. (2015). Recent research has documented hundreds of cases currently in progress (De Filippi and Tréguer, 2015a, 2015b; De Filippi, 2015a, 2015b; De Filippi and Troxler, 2016)[7].

Bauwens and Kostakis (2014) rightly argue that, despite the empowerment of the local governance and the optimization of local assets and infrastructures, local Commons seem more like centripetal lifeboat strategies that cannot but conform in the long run to the mainstream of capitalism. For this reason, local Commons

7 For more see http://directory.p2pvalue.eu/.

need to connect with global Commons on a mission to bring together various value chains into a diverse peer production.

It is claimed that Blockchain technology could furthermore foster the Commons development inasmuch as it could offer decentralized and transparent self-management of eco-systemic networks, operating through mutual coordination on a global scale, based on open design, open manufacturing, open distribution, open book accounting, open supply chains, open finance, etc. (Swan, 2015; Tapscott and Tapscott, 2016). Yet it is an issue as to what degree Blockchain technology can avoid being co-opted by big banks, corporations and governments (Ortega, 2016). It is also critical for Blockchain whether it can filter out 'bad actors' and corruption.

The Commons could be furthermore enhanced by a partner state, which would aim at the gradual accumulation of the capital within the circulation of the Commons. The transition from capitalism to the Commons could be realized through a de-bureaucratization and commonification of the public sector on the model of open cooperativism between the Commons and ethical market entities (friendly capital, NGOs, cooperatives, start-ups) willing to minimize negative social and environmental externalities. To this end, taxation of social/environmental entrepreneurship, ethical investing and productive labour should be minimized, whereas taxation of speculative unproductive investments, unproductive rental income and negative social and environmental externalities should be increased (Kostakis and Bauwens, 2014: 66-67; Bauwens, et al., 2016; Bauwens, 2014b). What's more, education and publicly funded research and innovation could be aligned with the Commons-oriented economic model (2014: 68).

Bauwens and Kostakis (2014) introduce a Peer Production Licence (PPL), designed and proposed by Kleiner (2010), which would establish the open cooperativism model on the principle that ethical market entities that would like to use the Commons without contributing should pay a license fee. Peer Production License (PPL) differs from General Public License and Creative Commons License in that it allows the commercialization of one's work rather than a more agile copyright protection. This way, a stream of income would be directed from ethical market entities to the Commons, securing the autonomy of the latter (2014: 63-67). In addition, a variety of proposals for the democratic finance of the Commons have been demonstrated in detail by Pat Conary and David Bollier: social and ethical lending by credit unions and public banks, crowdfunding of the Commons (Goteo), complementary currencies, etc. (Conaty and Bollier, 2015). Finally, a universal basic income has *mutatis mutandis* the

potential to reverse the social and economic inequalities toward a more just society.

Commons-based peer production could also be enormously furthered by post-Keynesian policies introduced today by a number of thinkers such as Yanis Varoufakis (2011) and Mariana Mazzucato (2013). However, these policies reflect mostly a state-driven approach to economy, which is necessary but not sufficient. They should rather be oriented towards the global empowerment of individuals and collectivities through the decentralization and commonification of the state, as indicated, among others, by Castoriadis and Bauwens and Kostakis.

By this I do not identify Castoriadis's project with Commons-based peer production in general. Castoriadis's work better finds support in the anti-capitalist version of the Commons, as developed by a number of thinkers today such as Hardt and Negri, Caffentzis, De Angelis, and more. Castoriadis was against any state or market-driven reformism in the fear of autonomy being co-opted by capitalism. Castoriadis argued also for the abolition of wages, salaries and incomes, whereas some versions of Commons-based peer production aim merely at a distribution of value. Castoriadis was critical of activism or volunteerism, which is by large the case today in Commons-based peer production. Finally, Castoriadis argued for the subsumption of economy to democracy.

And it is, indeed, essential to disengage from the economism penetrating neoliberalism, Marxism and post-Keynesianism. If we want to eliminate the repressive reality of capitalism Marx, Reich, Foucault, Deleuze, Marcuse, Castoriadis and many more described, to reduce the necessary working time to a minimum and maximize 'free' time, to eroticize society and the body and shape society and humans by Eros and the emergence of affectional social relations (Fuchs, 2014: 39), then we should rather integrate economic value into the democratic imaginary of peer-to-peer relations. Therefore, the definition, assessment and distribution of value would be collectively decided by the self-evaluation of the groups in question (De Filippi, 2015b). The emergence of peer-to-peer production could then be a hope for the future of a more happy and just society where freedom meets equality and *vice versa*.

Conclusion

In this article I examined three compelling arguments concerning the impact of the digitization on freedom and the workplace. On the one hand, it is argued that the digitization of economy can decrease costs, increase productivity and create

more freedom for both firms and individuals. Digitization can help firms reduce their costs by downsizing, outsourcing and crowdsourcing. Individuals can now break with the bureaucratic structures of corporations and become themselves freelancers and entrepreneurs.

Current research, however, has shown that digitization produces a decoupling of productivity from employment in the late 1990s. Adding up to the neoliberal policies adopted from 1980s onwards, digitization has increased unemployment and income inequalities. This seems to reconfirm anew the Marxian argument, according to which technological development widens the already gaping inequalities. For Marx, technology is antagonistic to profit rates dooming capitalism to failure in the long run. Yet, history has shown thus far that capitalism adapts to the technological challenges recapitalizing its own crises over time. The crisis of 2008 is an eminent example that gave rise to a so-called sharing economy, which supposedly transforms consumers into micro-entrepreneurs, trading, sharing, swapping and renting products and services online. However, the 'sharing' economy eventually produces a new type of precarious worker with low pay and no security.

In contrast to the so-called sharing economy, digitization has contributed to the creation of a post capitalist paradigm termed Collaborative Commons, which favours democratic self-management over hierarchical management, access over ownership, transparency over privacy, and environmental sustainability over growth at all costs. Online platforms, 3D printing and the Blockchain have the potential to support peer production, which already develops in agriculture, housing, manufacture, open source software and education. The Internet of Things can *mutatis mutandis* sustain an infrastructure that can unleash more freedom in relation to differing degrees of knowledge, motivation and expertise. But for the Commons to expand and prosper, a corresponding institutional support is *sine qua non*.

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