

The Commons in the 21st century: Investigating the concept of the Commons as a framework for Economic Democracy

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Abstract

This thesis aims to situate the commons, traditionally associated with natural resources governed by the user community, in the contemporary political and economic context. It develops the concept of the commons beyond the confines of the social science approach to the commons as a managerial 'resource governance' mechanism, and emphasizes the social, relational and affective dimension of the commons. It develops the commons as a framework to articulate a politics of community that bears particular relevance to the contemporary political crisis of liberalism. This thesis aims to disclose the particular relevance and innovations that the commons offer in a time of profound transition. In particular, this thesis aims to highlight the centrality of the commons in light of the transformative impact of digital technologies on our political economy. In light of the social and economic transformations brought on by the onset of the Fourth Industrial Revolution, referring broadly to the developing current environment in which transformative technologies and the roll out the Internet of Things (IoT) infrastructures, robotics, and 'smart technologies' are having a profound impact on the way we live and work. This thesis demonstrates that in light of the digitization of the political economy and the impact of near zero marginal cost productivity, the economic logic of the market economy based on proprietary regimes and price signals is increasingly in tension with newly emerging commons-centric productive modalities and their respective social and economic logic. This thesis argues that the emergence of this digital 'information economy' produces a 'crisis of value', where digital platforms such as Facebook and Amazon are able to capture swathes of social value (that is not recognized and accounted for) through the mode of 'netarchical capitalism.' Consequently, this thesis seeks to develop a critique of the 'information' economy from a commons perspective and specifically, the hegemonic value regime of 'netarchical capital' that currently dominates it. In particular, this thesis demonstrates that commons-centric design principles, participatory governance mechanisms, and distributive approaches to ownership structures and value that are enshrined by the digital commons, can form a basis for developing alternatives to the netarchical mode, and more generally, develop ways to help articulate a political economy that comes to terms with the socioeconomic realities that define the digital age.

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1.0 Introduction

Who owns the air? Who owns the genetic structures of life? Who owns an idea? These are just some of the questions that motivate the concept of 'the commons' as a way of understanding the various constitutive elements of our shared social and natural environments, and in some cases even ourselves. To get a better idea of what is meant by a commons, it may be useful to consider some of the contexts within which they emerge and the forms they can take. Consider the pavements, and to some extent (though they are taken up by private vehicles) public streets across which one walks on a daily basis. Anyone is free to access the streets without requiring permission from another individual (for the most part). Rights of access are not directly monetized; that is to say, the right to control access is not generally sold or auctioned, though of course there can be exceptions to this.

Commons can also take far more intangible, immaterial form, as is the case with human knowledge and ideas. Newton's laws of thermodynamics, for instance, can be understood as a resource, a tool for understanding the world around us, and the access or right to use it is not reserved for any particular individual or institution. The advent of the internet has facilitated the creation of vast knowledge and 'cultural commons', which have become more widespread than ever before. Think of Wikipedia, the collaborative online encyclopedia that has outperformed traditional, vertically integrated, and centralized organization of human knowledge such as the Encyclopedia Britannica. The success of Wikipedia illustrates a possibility for a wide array of institutional configurations and socioeconomic innovations and possibilities, such as the development of distributive digitally connected social and economic networks. Such possibilities were simply undisclosed prior to the emergence of the internet as a key infrastructure of the global economy. Knowledge commons such as Wikipedia do not only constitute a 'resource' that provides access to information at an unprecedented level; it also corresponds to a different economic logic to the market economy. Indeed, the very idea of Wikipedia could not have been conceived

within the proprietary economic logic of the market economy. James Boyle highlights the importance of these cultural and knowledge commons and how the delicate and necessary balance between intellectual property and the public domain has become drastically unbalanced.¹ By examining a series of case studies, Boyle demonstrates how an intensification of patents and intellectual gene sequences, huge swathes of 20th century culture and pairs of musical notes are owned and patented, which often inhibit rather than promote human creativity and innovation.² For instance, he contends that if Jazz was being invented today it would technically be illegal; similarly the World Wide Web, essentially created as a global open source commons would have been parceled out into exclusive property rights and thus would have come under much more centralized control than it is today. What Boyles' comprehensive research illustrates is that the market is extending into ever more domains that were previously at least implicitly understood as commons or exempted from the commercial sphere. The struggle between the commons of the public domain and the market enclosure of these commons is symptomatic of the tension between the predominant logic of the market and the re-emerging socioeconomic logic of the commons.

The notion that the economic logic of the commons re-emerging, and not a new manifestation in the digital economy of the 21st century is a key element of the approach to the commons that this thesis takes. This thesis seeks to develop the commons as a framework to re-integrate and rehabilitate the market as an ethical and political category. In this vein, this thesis is orientated towards embedding questions of social scientific inquiry of the 'economy' into the philosophical and ethical considerations that inform this inquiry in the first place. In this sense, this thesis takes an interdisciplinary approach to *political economy*, which has only relatively recently been thinned out and reduced to the subject of economics.³ Political economy as the name suggests, and as the writings of the great 19th

¹ James Boyle, *The Public Domain: Enclosing the Commons of the Mind* (United States: Yale University Press, (2008)

² Ibid.

³ Andrew Hindmoor and Brad Taylor, *Rational Choice* (London: Palgrave, 2015)

century political economists from Karl Marx to Adam Smith demonstrate, is thoroughly engaged with the moral foundations of human exchange and economic activity. The thrust of the argument here is that no matter how abstract, anonymous and complex the market has ostensibly become, it is always thoroughly based in the social fabric that underlies much of the value creation that it depends on. As the title of this thesis suggests, I will develop the commons as a framework for democratizing the economy, particularly in the context of the digital economy that is taking shape in the 21st century. The normative principles, governance mechanisms and emerging social and cultural ethic of the digital commons world provide a particularly interesting opportunity to re-evaluate our understanding of the market at a time of potentially profound socioeconomic and political transitions. Throughout this thesis I will discuss the nature of these transitions and demonstrate the particular the economic logic and political innovations that the commons offer are particularly relevant to the crises that we are facing. A key element of the commons-centric rehabilitation of the social and moral foundations of the market is to develop a more affective and relational understanding of value, democratize economic activity and develop a less individualist and more communally centered politics, which I will develop in the first chapter.

In the second chapter, I will seek to provide a more relational understanding of the commons, and I will also outline the theoretical framework of the commons, discuss the various forms they can take, the features they share, and the ways in which they can offer a critique of certain key tenets of neoclassical counter-narratives, especially the normative bedrock provided by rational choice reflected in the 'tragedy of the commons.' In the third chapter, I will elaborate some of the key design features of commons governance, highlighting some of the key mechanisms that commons, particularly in the digital sphere, can make use of in order to organize themselves and facilitate efficient decision making processes. I will then briefly outline the paradigm shift our political economy is currently undergoing, and how 'netarchical capital' dominates in this digitized political

economy. Jeremy Rifkin⁴ and Paul Mason⁵ both illustrate this shift in their commons-orientated visions, that nevertheless remain far too reliant on technological solutions and an implicit accelerationist determinism that sees radical changes in productivity as being destined to supplanting the market economy with a cornucopia of the commons. While it is not in the scope of this thesis to offer a thorough critique of these approaches, I aim to illustrate the significance of the commons in the context of a changing political economy dominated by digital platforms. The third chapter will thus illustrate the timely contribution that digital commons can make in our contemporary political and economic landscape; in particular with regard to some of the more detrimental consequences associated with the current rise of 'platform capitalism'. I will critique the way in which the emergence of this digital political economy, often referred to as the 'fourth industrial revolution', is dominated by natural monopolies consisting of a small number of digital platforms that control human communication, social networking and increasingly key logistics, transport and healthcare infrastructures. I will develop the notion that these platforms generate streams of revenue by capturing 'netarchical capital', that is the capital generated from the development and centralized control of participatory platforms, where value is produced by the user community, i.e. the 'commoners', but the pecuniary value that is derived from these contributions is enclosed and privatized.

I will then identify some of the emerging digital networks and governance features and practices that at present merely constitute 'seed forms' of certain institutional formats that embody commons-centric design principles, and that make use of what is referred to as 'commons-based peer production' (CBP). CBP refers to the notion that laterally scaled P2P production is not just useful for sharing torrent files, but constitutes a potential new productive modality that signifies a radical departure from the classical market economy. CBP denotes a process by which horizontally organized networks can create, amend and

⁴ Jeremy Rifkin, *The Zero Marginal Cost Society* (Palgrave Macmillan, 2014).

⁵ Paul Mason, *Post-Capitalism: A Guide to Our Future* (United Kingdom: Penguin Books, 2016).

distribute resources within different organizational formats. Again, a good starting point to understanding the digital commons, and the associated mode of production that they help foster, is Yochai Benkler who writes that:

“At its core, peer production is a model of social production, emerging alongside contract and market-based, managerial firm based and state-based production. These forms of production are typified by two core characteristics. The first is decentralization. Authority to act resides with individual agents faced with opportunities for action, rather than in the hands of a central organizer, like the manager of a firm or a bureaucrat. The second is that they use social cues and motivations, rather than prices or commands, to motivate and coordinate the action of participating agents. As a descriptive matter, the phenomenon is a product of the emergence of digital networks and the rising importance of information and cultural production.”⁶

Furthermore, Michel Bauwens, co-founder of the P2P foundation defines P2P-production as “a form of human network-based organisation which rests upon the free participation of equipotent partners, engaged in the production of common resources, without recourse to monetary compensation as key motivating factor, and not organized according to hierarchical methods of command and control.”⁷

Having these recent developments and discussions in mind, the third chapter will further look at how commons-centric design principles and governance mechanisms have the potential to propagate a culture and economic logic that is radically different to the current market economy, while nevertheless functioning reciprocally within it. Design features that differentiate these commons-based

⁶ Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (United States: Yale University Press, 2006). p. 80.

⁷ Massimo De Angelis, David Harvey, *The Commons*. In M. Parker, G. Cheney, V. Fournier and C. Land (eds), *The Routledge Companion to Alternative Organizations* (Abington: Routledge, 2014), p. 280-294.

networks from traditional market entities include, but are not limited to, ways of conceiving and organizing property, measuring and accounting value, and heterarchical rather than hierarchical organization and task delegation. The chapter will thus aim to disclose the possibilities offered by these commons-orientated features and how they might contribute towards a democratization of the digital economy we are transitioning towards. By providing for the market while propagating commons-orientated practices, the realm of the digital commons illustrates the potential to mitigate some of the worst impacts of the netarchical platforms currently on the digital political economy, even if they are not able to provide a genuine counterbalance to them. Below, I will further outline the context of the socioeconomic transformation represented by the digital transformation of the economy.

The transitioning towards a digital economy is signified by a shift from finance as the locus of capital to human knowledge, information and Big Data, from Wall Street to Silicon Valley. It is in the context of this transition that the commons in the digital domain are particularly relevant. The digital commons and the laterally scaled modes of production they enable and embody are particularly relevant to what is often referred to as the 'Fourth Industrial Revolution', which I will discuss throughout the third chapter. Broadly speaking the Fourth Industrial Revolution is a term that encapsulates the revolutionary impact that the internet is having on economic and social life. As a result, economic value stems largely from the generation, assimilation and interpretation of information, an economy that revolves not around a consumer market as such but around data analytics and streams of Big Data, large scale automation, and a drastic reduction in marginal costs, courtesy of digital reproduction and sharing. This has a profound impact on large sectors of the economy and presents challenges to some of the core tenets underlying the market economy in some significant areas. These developments are outlined in the aforementioned visions of Paul Mason⁸ and Jeremy Rifkin⁹, as well

⁸ Paul Mason, (2016).

⁹ Jeremy Rifkin (2014).

as a number of prominent economists such as Klaus Schwab of the World Economic Forum, who describes the diverse range of impact that this socioeconomic transformation will have on governments, international security, the nature of work and employment and the individual itself.¹⁰ As mentioned above, a key challenge will be to resist increased monopoly power over huge areas of human social life (Google controls all communication and knowledge, Amazon all logistics, Facebook and Twitter control social media, etc), given that the formation of such 'natural monopolies' require regulatory frameworks at a global level.

While the regulation of these global companies will likely be a defining political, economic and indeed cultural battle that will play a huge role in the 21st century, this will not be the focus of this thesis. Instead, I will emphasize the particular ways in which the commons themselves offer potential solutions to some of the challenges that the fourth industrial revolution presents us with. By using tools for democratic economic governance and institutional organization and adapting the insights and models developed by Elinor Ostrom, it is conceivable that certain commons-orientated digital networks can arise and help create and sustain economic ecosystems that can foster alternatives to the monopolistic digital platforms that dominate the digital economy today.

Thus, it is important to situate the commons in the contemporary political context, which is to say in the political and economic crises we are facing. This is the principal aim of the first chapter. I have already alluded to the significance of establishing a discourse (and practice) around the commons in the context of the increased digitization of our political economy, but it is worth situating the commons also in the context of the economic and political crises that are coinciding and overlapping with the challenges of the fourth industrial revolution. Therefore, the central aim of my thesis is to highlight the particular timely relevance of the commons from a historical and political perspective. At the broadest level, I will

¹⁰ Klaus Schwab, *The Fourth Industrial Revolution* (Switzerland: World Economic Forum, 2016).

briefly outline the important way in which today's major socioeconomic and political challenges, are in fact in some way problems of the commons. Consider the problems of climate change, intellectual property, technological advances in biogenetics, and ethical problems concerning the ownership and use of data as well as intellectual copyright. What these areas have in common is that they primarily concern problems related to the governance of vast common 'resources', which have no clearly defined boundaries or easily traverse them by being easily shared, having multiple stakeholders, and not easily lending themselves to traditional public or private property regimes.

It is also worth mentioning briefly the relevance of the commons given the current crisis in which political liberalism seems to find itself. The rise in divisive identity politics and nationalist populism, exemplified by the 'economic nationalism' espoused by, US-President Donald Trump, his ex-advisor Steve Bannon, and across the Atlantic by the hard right Brexiteers within the Tory party who have broadly coalesced under the hard-Brexit coalition known as the 'European Research Group.' Here it is important to outline ways in which the commons offer a range of potential public policy and social innovations. For instance, I will outline in the following chapter how the 'commonification' of public goods offers a way of addressing the problem of public resources without relying wholly on the market or the state. Indeed, this will be a central theme throughout all chapters in this thesis; namely that the commons are to be seen as providing an institutional governance framework that goes beyond the policy toolkit offered by the conventional market/state or private/public paradigm, and thus provide a potential pathway towards a more participatory and democratic configuration of the political economy at large.

Furthermore, commons are also to be considered as agonistic spaces; they are based on cooperation but constant negotiation of conflicting interests between individual and communal utility shows that they are sites of contestation. The commons can thus help create public political spaces that are well organized and

apply well thought-out design principles, experience and traditions, norms and implicit as well as explicit sanctions for those who break rules. These are all important features if one is seeking to actively 'design' these spaces and to reinvigorate politics with a genuine ethical basis. Commons offer ways of organizing and creating solidarity around things that transcend any particular features of one's identity; that is to say commons connect people to meanings larger than themselves. Much attention has been given to the rise of polarizing narratives, divisive political discourses and increased subjectivism amplified by the echo chambers of social media platforms that mirror and reinforce the beliefs and world views of its users, often with less than credible sources. There is a potential that these tendencies can be mitigated by well designed 'political commons.'

Consider for instance Michael Sandel's global public debates. In 2017, the political philosopher from Harvard organized a debate around the issue of immigration, multiculturalism, and the role and significance of national borders with participants from all over the world who were able to share their views and perspectives in a global public forum.¹¹ Sandel essentially created a debating platform as a commons (albeit a temporary one), which unlike Twitter and Facebook, which ostensibly provide the same opportunity, does not monetize the very act of participation. While social media platforms have received a lot of criticism for the role they play in the polarization of political discourse, through intelligent design principles and commons-orientated democratic governance mechanisms, there is at least the potential to design global interactive communities that are not subject to the same ailments that currently plague the major platforms upon which so many of us rely.

Thus far it has become apparent that while commons take many different forms, they also share common features. Although I will go into more detailed conceptual

¹¹News, BBC, "The Global Philosopher: Should Borders Matter? BBC News," *YouTube* (YouTube, 2016) <<https://www.youtube.com/watch?v=yJgEnHbLN-I>> [accessed 11 April 2017]

clarification later in the thesis, it may be useful to distinguish the commons from other kinds of goods to get a better understanding of what is meant by a commons. Most commons can be distinguished from each other by asking two questions: first, is the commons material or immaterial? Second, is the commons produced or inherited? For instance, *inherited material* commons comprise such things as planetary life support systems such as the oceans, forests and genetic structures of life, including our own DNA. On the other hand, *produced immaterial* commons might include, for example, language, culture (for instance writings in the public domain) or even spiritual practices and teachings (as well as other vernacular customs and traditions). While these commons are always 'produced' in some sense, it is important to note that particularly with regard to our language and culture, we inherit and are embedded within them, as they form part of our own social being. *Inherited material* commons might include shared social spaces such as a public square, and more traditional public goods such as public libraries. *Immaterial produced* commons include things such as open software communities and knowledge commons such as Wikipedia. Commons share features with public goods and even market goods. A key feature they share is that they are generally horizontally organized; their organizational formats resemble a 'heterarchy' more than a hierarchy. While there exists a functional hierarchy, given that delegation of tasks is based on competence, decision-making processes are generally more participatory and distributive than in traditional hierarchy based market entities such as firms, or in government bureaucracies. Yochai Benkler, in his landmark book *The Wealth of Networks*, which anticipated the importance of network-based commons in the digital realm, writes that "the salient characteristics of commons, as opposed to property, is that no single person has exclusive control over the use and disposition of any particular resource in the commons. Instead, resources governed by commons may be used or disposed of by anyone among some (more or less well-defined number of persons, under rules that may range from 'anything goes' to quite crisply articulated formal rules that are effectively enforced."¹²

¹²Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom*

Elinor Ostrom was the first and is so far the only woman who was awarded the Nobel Prize in Economic Sciences. In her massive research into the commons she demonstrated how common property, in particular Common Pool Resources (CPR), can be managed by user organisations. Analysing more than 800 real life projects over three decades and all over the world, she identified 8 design principles for successful commoning and CPR management. “As a political scientist Elinor Ostrom's research methods differed from how most economists work. Usually they start with a hypothesis, an assumption of reality, which is then put to the test. Elinor Ostrom started with an actual reality instead.”¹³ By doing so, she clearly distinguished herself from previous Nobel Prize winners for economic science taking a predominantly neoclassical approach prior to the 2008 financial crisis. By thoroughly undermining the neoclassical narrative of the ‘Tragedy of the Commons’ her research challenges some of the key tenets of neoclassical economics that championed the efficiency of free markets and market-based solutions. What Ostrom’s Nobel Prize award more generally signifies, is a rediscovery of economic logics and ideas that were previously marginalized or undermined by the hegemonic discourse of neoclassical economics. The commons are a reservoir of such alternative logics and heterodox solutions that go beyond the market and the state, and are perhaps particularly significant in the time of our current crises, where market and state based solutions fall short.

The Ostrom Workshop, co-founded by Elinor Ostrom and her husband Vincent Ostrom and located at the Indiana Bloomington University and the International Association for the Study of the Commons (IASC), founded in 1984 as a research network on common property, are both key research bodies that have pioneered research into the commons from a social science perspective. Their approach primarily revolves around institutional analysis and is framed around discussion of effective ‘resource management’. Brett Frischmann, for instance, explains that

(United States: Yale University Press, 2006). p. 61

¹³ Cited on Nobel Prize website, quote taken from:

<https://ostromworkshop.indiana.edu/about/nobelprize.html> (accessed 06 September 2019)

"before proceeding, it is important to be clear about what I mean when I refer to commons; the concept is remarkably fluid and varies considerably in its usage across different disciplines."¹⁴ He goes on to specify the way in which commons are used in the context of institutional analysis. "Commons is an institutionalized community practice, a form of community management or governance. It applies to resources, and it involves a group or community of people, but the commons itself is not the resources, the community, a place, or a thing. Commons is the institutional arrangement of these elements."¹⁵ Furthermore, Commons in the cultural environment thus refers to the institutionalized community practice of sharing information, such as "to information commons, science commons, cultural commons, data commons and other types of intellectual resource commons."¹⁶ Many communities regularly share such resources and overcome concerns about free riding and other dilemmas. Frischmann is referring here at least in part to the idea of a 'tragedy of the commons'¹⁷ where, simply put, open access resources are depleted by over use and free riding behaviours of rationally self-interested individuals (as defined by particular theoretical tenets and behavioural assumptions of neoclassical economics).

The second chapter of this thesis in which I seek to contribute to the theoretical understanding and framework of the commons discourse, will aim to dispel this myth of a tragedy. It is important to distinguish the commons from 'open access' regimes and from public property. Ostrom noted that "there is a difference between property regimes that are open-access, where no one has the legal right to exclude anyone from using a resource, and common property, where members of a

¹⁴Brett M. Frischmann, "Two Enduring Lessons from Elinor Ostrom", *Journal of Institutional Economics*, 9.4 (2013), 387–406.

¹⁵Ibid.

¹⁶Ibid.

¹⁷in reference to Garret Hardin's well known essay "The Tragedy of the Commons", *Science*, 162.3859, 1968, pp. 1243-1248. doi:10.1126/science.162.3859.1243

clearly defined group have a bundle of legal rights including the right to exclude non-members from using that resource."¹⁸

The commons concern the public domain; that which is shared in common by all to a greater or lesser extent. One might then wonder, given that shared social spaces and traditional public goods such as streets can be meaningfully described as commons, in what way can commons be distinguished from public goods. Again, Ostrom provides a good starting point:

Common-pool resources share with what economists call 'public goods' the difficulty of developing physical or institutional means of excluding beneficiaries. Unless means are devised to keep non-authorised users from benefiting, a strong temptation to free ride on the efforts of others will lead to a suboptimal investment in improving the resource, monitoring use, and sanctioning rule-breaking behaviour. Second, the products of resource units from common-pool resources share with what economists call 'private goods' the attribute that one persons' consumption subtracts from the quantity available to others. Thus, common-pool resources are subject to the problems of congestion, overuse. Pollution and potential destruction unless harvesting or use limits are devised and enforced.¹⁹

I will leave terminological clarification to the second chapter, where I will outline the various forms that commons take and the different design principles they might embody. Ostrom, the Bloomington Workshop and the IASC have provided much conceptual clarification of the commons and remain the point of reference for investigations into the commons.

¹⁸ Elinor Ostrom and Charlotte Hess, "Ideas, Artifacts, and Facilities: Information as a Common-Pool Resource", *And Contemporary Problems*, 66.1 (2003), 115–45.

¹⁹ *Ibid.* p. 121

In the pursuit of a managerial approach to resource governance, and perhaps also pursuing the ideal of a 'value free' social science, Ostrom was reluctant to align herself with a particular political direction. Derek Wall is one of the recent commentators on Ostrom who tries to directly show the relevance of Ostrom to leftwing political projects, in particular with what he calls 'deep democracy', by which he means horizontally scaled structures facilitating a form of direct democracy in favour of rigid bureaucratic hierarchies.²⁰ Ostrom pioneered an approach of polycentric governance, and thus aligned herself with a decentralized state and perhaps a broadly republican account of democracy as collective self-organization. However, this simply means that Ostrom's approach to governance was targeted against top-down models from either the Left or the Right, and against the free market as well as state centrist dogmatism. Her narrative of the commons, and the discourse of the commons at large resonates with aspects of Murray Bookchin's 'libertarian municipality', the communitarian critics of political liberalism such as Charles Taylor, Alisdair MacIntyre²¹ and Michael Sandel²² and the contemporary political theorists of civic republicanism such as Phillip Pettit.²³ The commons, understood as dynamic social communities, generally concern themselves with eschewing hierarchies where possible, promoting collective self-reliance and autonomy. This resonates with the concern for individual autonomy and independence from both state and market forces, while resisting the rampant individualism of certain strands of libertarian thought. The commons, almost by definition (as their formation depends upon it) revolve around cultivating a sense of civic responsibility among citizens, which resonates with the current of civic republicanism. The emphasis on horizontal rather than vertical organizational formats, civic responsibility and hence widespread participation in decision-

²⁰Derek Wall, *Elinor Ostrom's Rules for Radicals: Cooperative Alternatives beyond Markets and States* (Pluto Press, 2017).

²¹Alisdair MacIntyre, *After Virtue* (United Kingdom: Bloomsbury Academic, 2006).

²²Michael Sandel, *Liberalism and the Limits of Justice*, 2 edition (Cambridge, UK ; New York: Cambridge University Press, 2010).

²³Philip Pettit, *On the People's Terms: A Republican Theory and Model of Democracy* (Cambridge University Press, 2012).

making processes are generally based on broadly egalitarian principles and social equity, while also resisting the top down state-based approaches favoured by the post-Keynesian Left.

While Ostrom inferred broad principles from her observation of various forms of self-governance, she did not offer a context-transcendent approach to governance of resources or successful self-organization. Instead she stressed the importance of particular local conditions that required idiosyncratic solutions. In this sense, Ostrom can be seen as a 'problem solver' in the American pragmatist tradition, rather than a political activist in Derek Wall's sense. The commons should be seen as a challenge to both the market and the state. Moreover, they always in some sense constitute an overtly political practice. Yet, they are not necessarily aligned with any one particular strand of political thought. Writers such as Derek Wall perhaps want to target neo-liberalism when they construe the commons as particularly relevant to leftwing political project(s). However, it should be noted that the political and economic ideology of neo-liberalism is increasingly coming under fire from a conservative standpoint, a point which I will briefly elaborate on when I situate the importance of the commons in the contemporary political crisis in the first chapter.

There are two main areas where the commons are at their most overtly political, both theoretically and practically. First, in resisting the different forms of enclosures, from digital activists preserving open software and digital knowledge commons, to the creation of seed banks and resisting enclosures of land by private companies or state actors. Secondly, the commons are increasingly being framed as a way of developing a form of ecological governance. This has been the particular emphasis of Derek Wall, who sees this form of governance with being incompatible with core aspects of liberal capitalism. Among the most extensive treatments of commons-centric ecological governance is David Bollier's and Burns

Weston's contribution in their book *Green Governance*.²⁴ In this book they develop new legislative policy frameworks in order to provide a basis for developing a commons-centric governance approach to tackling climate change, which they see as the most crucial area where conventional state policies and market based frameworks seem to fall short.²⁵ The myriad of ways in which commons-orientated frameworks can be applied to ecological governance exemplifies the way in which the commons can be seen as a useful alternative to the private/public or market/state dichotomies that define the majority of public policy discourses. Thus, while the conflict between the commons and the state/market paradigm are at times ideological, it is perhaps most fruitful to think of the commons as a paradigm that offers pragmatic institutional and policy frameworks beyond the market and state, precisely where both fail to adequately address the ecological, economic and political crises they are beset with. In the first chapter I will in part emphasize the role of the commons in the political crisis and in the third chapter I will outline the ways in which the digital commons already do play a significant role the transformative digitization of most developed economies around the world, where digital 'products' and human knowledge can be reproduced, exchanged and distributed virtually for free. In the latter, the classic market economy struggles to come to terms with the new socioeconomic reality that is being formed in the process. In other words, the nature of the socioeconomic changes and crises we are facing can be fruitfully framed in terms of a problem of the commons, in the sense that they concern those things which are to some extent inherently shared resources and thus are not easily subsumed in the traditional market economy or state based ownership.

For instance, with regard to climate change, the vast ecological commons such as the oceans and our atmosphere which cross national and even continental borders present certain limits to the state/market approach, and indeed many of these vast

²⁴ David Bollier and Burns H. Weston, *Green Governance: Ecological Survival, Human Rights, and the Law of the Commons* (New York, United States: Cambridge University Press, 2013).

²⁵Ibid.

ecological spaces are already to varying degrees governed by commons-centric governance principles, as I will outline in the first chapter. Similarly, when it comes to the digital commons, the questions of whether commons-centric governance principles such as net neutrality should be preserved, or how and to what extent should the internet be conceived of as a commons-network, and what this would mean for its governance, are questions that necessarily demand the political imagination to transcend the paradigm of the market economy.

As I mentioned above, the tension between the commons and the market/state is perhaps best reflected in the constant resistance of ‘commoners’, the term denoting here not just ordinary people, but citizens who follow the practice of communing and hence directly or indirectly resist various forms of enclosure across different sectors of the economy and domains of social life. In his book *Silent Theft*, David Bollier outlines various forms of enclosures, from the privatization of public airwaves, shared social spaces, outer space, state-funded research, and even genetic structures of life.²⁶ Bollier aims to show that it is not only the economic ecosystem within which the commons currently exist that inhibit their formal recognition, but also the deeply embedded cultural norms (in this book limited to North America), particularly with regard to the centrality of individualism, that form part of our mental infrastructures that shape *what* we see and the meanings we attribute to them. Using the example of an apple tree, Bollier contends that it is a peculiarly individualistic modern world view to focus on the apple, the product, its marketing, and its brand and disregard the wider contexts which make its existence possible in the first place – the roots, the branches, the ecosystem.²⁷ Thus, to a certain degree, we have unlearned our ability to ‘see’ the commons despite the fact that they form part of our social world and in some cases even form part of ourselves, because they are only ‘visible’ in the context of market transactions or state ownership.

²⁶David Bollier, *Silent Theft: The Private Plunder of Our Common Wealth: Our Runaway Market Culture and the Disappearing American Commons* (New York, United States: Routledge).

²⁷Ibid.

The commons then, constitute a third sector in addition to the market and the state, whose value is often rendered latent by the hegemony of the market/state paradigm. This is perhaps best illustrated by the aforementioned ecological commons, in which all economic activity is embedded as it is entirely dependent on it. The concept of ecosystem services developed by contemporary ecological economists, such as Robert Constanza, which seeks to recognize the value that these ecosystems provide by quantifying it in terms of pecuniary value, is an attempt to integrate the natural environment into the market economy.²⁸ Similarly, the carbon emission trading schemes that have been used to mitigate the effects of climate change are market instruments that seek to internalize the negative externalities produced by all kinds of economic activity. While these mechanisms may have some success, they are almost certainly insufficient to tackle the ecological crisis that we are currently facing. Even free market advocates such as Bill Gates, have argued that the market will not be able to solve climate change on its own.²⁹ Therefore, the commons are increasingly becoming an important paradigm in their own right, which will at times compliment, and at other times be antagonistic to the market and/or the state. In the third chapter, where I focus on the digital commons, I will discuss the ways in which peer-to-peer (P2P) sharing systems and commons-centric modes of production made possible by the internet promote a different socioeconomic logic to the market economy; a key question that arises here, is the extent to which the commons can become autonomous from the market/state.

From the discussion thus far, it follows that there are at least three ways in which the term commons is used. Firstly, it refers to particular objects or resources that present themselves as 'objects of commoning' and a particular set of institutional and governance frameworks that transcend both the market and the state, though

²⁸ Robert Constanza, "The Value of the World's Ecosystem Services and Natural Capital", *Nature*, 387 (1997).

²⁹ Erik, Kobayashi-Solomon, "Capitalism vs Climate Change: Front Line Interview I," *Forbes* (Forbes Magazine, My, 21, 2019)
<<https://www.forbes.com/sites/erikkobayashisolomon/2019/05/21/capitalism-vs-climate-change-front-line-interview-i/>> [accessed 11 September 2019]

they may borrow elements from each. Secondly, commons can refer to the more immaterial resources such as shared social spaces that form part of our social life world. Both these ways of framing discussions around the commons crucially revolve around the notion of commons as 'resource', that is they are understood in terms of a *noun*; they are fixed entities with particular locations. However, a third way to understand the common is by emphasizing the social processes by which commons come into being and the social relationships that define them, known as 'commoning'. In this sense, commons are understood as a *verb*; they are primarily hosts of dynamic relational social processes and not sites of 'resource management.' Peter Linebaugh, one of the most prominent historians of the commons, summarizes it with the quip 'there is no commons without commoning.'³⁰ Simply put, the term commoning refers to the social process and interactions by which the commons come into being.

The school of thought promoted by the Ostrom Workshop at Indiana University Bloomington, the IASC and the social sciences more generally has framed the discussion of the commons around the term 'resource', and in economic scholarship around the classification of 'goods'. While commons always relate to some form of resource, there are several issues with this approach. The terms 'resource' and 'goods' retain the sense in which nature is a resource to be extracted and potentially traded. The problem here is not the notion that humans use nature as a resource, but rather that understanding the commons in terms of resources undermines their potential to introduce and extend a vocabulary that can help reframe our understanding of the value inherent in our 'environment', beyond the quantifiable and measurable outputs proposed by the social sciences in concepts such as 'natural capital' and 'eco system services'³¹ and their 'tradeability'.³²

³⁰ Peter Linebaugh, *Magna Carta Manifesto: Liberties and Commons for All*, (United States: University of California Press, 2008)

³¹ Robert Constanza, "The Value of the World's Ecosystem Services and Natural Capital", *Nature*, 387(1997).

While it may be indispensable that we refer to resources when discussing the commons, in this thesis, I emphasize ways in which commons should not be seen as a mere synonym for the term 'resource' or even resource management. This approach takes seriously the notion that the commons is an unfolding social process whose possibilities are always in the process of becoming disclosed. Given the various different contexts and forms in which one can meaningfully talk about the commons, the commons is a concept that eludes precise definition. This elusive nature of the commons may seem to carry the threat of rendering the concept lost in amorphous ambiguity. However, it is precisely because the commons are primarily defined as a social process (in the approach taken to them in this thesis) that they are always in the process of *becoming*, that they are a powerful tool to understand the different ways in which coordinated human action can bring about solutions to the wide array of ecological, social and economic challenges that we face today. Again, a key insight here is that Ostrom demonstrated that solutions to socioeconomic problems do not always have to be met by the state or the market, particularly where the repertoire of the binary market/state policy toolkit is evidently exhausted. In other words, developing an understanding of commons that sees commons not just as a space or entity that is the locus of some identifiable shared concern (although it is that), but as a 'relational field' that provides contexts of significance for mutual stakeholders that act in concert through the relationships in which they are embedded and engaged. Thus, 'objects of commoning' emerge through several intertwining processes and their meaning is thus constantly negotiated. In the following chapter, I will begin to develop this conception of the commons by showing the way in which the commons offer a politics of community that can engage with questions of human meaning and provide structured communality. I will emphasize that the political orientation and innovation offered here is particularly relevant to the political challenges that liberal societies are facing. I will therefore begin by situating the commons in the contemporary political landscape.

³² Ibid.

2.0 Chapter One

Setting the Stage: Situating the commons in the contemporary political and economic crisis

2.1. The commons as a paradigm of social, economic and political innovation

In Elinor Ostrom's Nobel Prize winning research on polycentric governance of the commons, she concludes that neither the state nor the market is sufficient in addressing the plurality of our socio-economic problems. They both neglect a diversity of ways to self-organize and self-manage.³³ Ostrom demonstrated that the strength of informal norms and structural communality often lead to institutionalized social governance norms and design principles, which generate, use and sustain common resources and products derived from them.³⁴ As I mentioned in the introduction, the commons, especially with regard to our understanding of property, can be seen as being beset by a number of increasingly prominent socio-economic problems, such as the management and distribution of our natural resources, regulating intellectual copyrights in the age of the internet, and preserving transparency of information, and in the future, even our own biogenetics. It seems that the way in which we address these issues at present is predominantly informed by the tenets of liberalism and neo-liberalism. The fact that the United Nations Environment Programme (UNEP) embraces a market-based framework instead of framework-based markets as key to implementing the Green Economy in its major contribution to the UN World Summit on Sustainable Development in June 2012 in Rio de Janeiro is indicative of this.³⁵ Market

³³Elinor Ostrom, *Governing the commons: The evolution of institutions for collective action* (Cambridge: Cambridge University Press, 1990).

³⁴ Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge, United Kingdom: Cambridge University Press, 1990).

³⁵ United Nations Official Document
<http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/66/288&Lang=E> [accessed 10

mechanisms and a quasi-commoditization of natural resources are meant to preserve nature by ascribing economic value to it. This seems to reflect a systemic epistemological confusion of value and price. In light of these developments and the necessity for a normative positioning, the commons are gaining increasing currency as an alternative paradigm that challenges the economic and political assumptions of (neo)-liberalism and provide alternative solutions for a cultural transformation toward sustainability and generational justice.

The concept of property was a concept central in the modern history of Western political thought. To name but a few, this is evidenced by Locke's famous treatise on government as well as the writings of Rousseau, Kant and Hegel's *Philosophy of Right* and Karl Marx's critique of it.^{36,37} In the tradition of Classical Liberalism, the central aim was to mitigate social conflict by emphasizing the autonomy of the individual and the importance of neutrality among competing and irreconcilable 'conceptions of the good'.³⁸ The institution of private property is the primary source and assurance of political and economic freedom as it allows individuals to be free from coercion and trade goods freely within a market system. Many proponents of the Left claim that there needs to be more state ownership and regulation to prevent corporate malfeasance. Many on the Right claim that the problems with corporate malfeasance are due to a lack of private property rights. They argue that government intervention has infringed upon individual sovereignty and so on. Both sides build their position on the premise of a market/state dichotomy, where the former serves as the propelling force for creativity (entrepreneurship), innovation and efficiency. The Left stands for intervention on behalf of social welfare and equity. The commons however, are situated beyond the market and the state, not either or, and therefore can be seen as an alternative way of self-organised governance free from the aforementioned

February 2019].

³⁶ Georg Wilhelm Friedrich Hegel and Thomas Malcolm Knox (ed), *Outlines of the Philosophy of Right* (Oxford University Press, 2008).

³⁷ Marx, Karl, Joseph J. O'Malley, Annette Jolin, and Karl Marx, *Critique of Hegels "Philosophy of Right"* (Cambridge: Cambridge University Press, 2009)

³⁸ Samuel Freeman, *The Cambridge Companion to Rawls* (Cambridge University Press, 2003).

binary stance between public ownership and faith in the efficiency of markets. Throughout this thesis, I will outline the various ways in which the modus operandi of the commons contradicts and challenges key tenets of neoclassical economics and the institutional framework of traditional market entities such as the firm.

This implies a need to rethink the institutional 'ecosystem' frameworks that provide public services from a commons-centric perspective. In many ways, this notion echoes the thought of contemporary political leaders such as Labour Party Leader Jeremy Corbyn, who has declared "public control should mean just that, not simply state control: so we should have passengers, rail workers and government too, co-operatively running the railways to ensure they are run in our interests and not for private profit."³⁹ A key component of a commons-centric political project which is reflected here is the democratization of the economy and the emphasis on a cultivation of values and identity that can form the basis of a commons-based civic political economy. One key institutional framework is the notion of a commons-public partnership (understood as a state-citizens partnership), as opposed to the currently predominant public-private partnership model. The former is not only more participatory in its governance, but places emphasis on the social production of knowledge, livelihoods and public services based on or oriented towards the needs of the users. An example of innovative policy from the UK can be found in Nottingham's municipally owned not-for-profit energy company Robin Hood Energy, which seeks to decentralize energy provision and distribution, while increasing the amount of renewable energy produced.⁴⁰ Jeremy Corbyn endorsed this form of cooperative not-for-profit structure, and it is conceivable that under a Labour government several companies

³⁹ Nigel Morris, "Labour leadership race: Rivals turn on Jeremy Corbyn in row over Clause IV", *The Independence*, 9th August 2015, <https://www.independent.co.uk/news/uk/politics/labour-leadership-rivals-turn-on-jeremy-corbyn-in-row-over-clause-iv-10447690.html> [accessed 10 February 2019]

⁴⁰ Robin Hood Energy, "The Company Bringing Power to the People" *The Economist*, 3 May 2018 <<https://www.economist.com/britain/2018/05/03/robin-hood-energy-the-company-bringing-power-to-the-people>> [accessed 11 April 2018].

that take similar forms would be rolled out across the country.⁴¹ In Corbyn's words, "energy transition will depend on the initiative and ingenuity of the many to localise the production and consumption of energy. We need public ownership and democratic control to make that happen and use the skills and knowledge of the workforce and communities across the country."⁴² While the commons stand outside the market and state, it is important to consider some of the ways in which a state that is more conducive to the commons might change its governmentality perspective on the way in which certain key infrastructures can be devised and organized.

The question then is, why should commons-centric institutions not benefit from a governmentality shift, from what Evgeny Morozov has dubbed 'solutionism' whereby governments see themselves as 'crisis managers' to problems that inevitably arise, towards a more commons-orientated approach that sees identifying and providing the conditions from within through which solutions can arise, as the principal task of regulation.⁴³ In other words, this instigates a commons-centric shift in a governing perspective that entails the transition from 'subordination' to 'delegation' or from a vertically integrated approach, towards a more laterally scaled approach. As a result of this transition, delegation based on competence still establishes certain forms of hierarchies with regards to specific tasks and relevant skill sets. In the second chapter, I will elaborate on some of the key principles and governance mechanism that generally lead to effective governance of the commons. For now, I merely aim to derive some of the key implications and commons-centric principles that have the potential to enrich

⁴¹ 'Labour Party Consultation Paper: Democratic-Public-Ownership-Consultation'. <<https://labour.org.uk/wp-content/uploads/2018/09/Democratic-public-ownership-consultation.pdf>> [accessed 3 June 2019]

⁴²Jeremy Corbyn Praises "brilliant" Nottingham Model as He Launches Energy Policy, Notts TV News The Heart of Nottingham News Coverage for Notts TV, 2016 <<https://nottstv.com/jeremy-corbyn-launch-new-energy-policy-nottingham/>> [accessed 11 April 2019].

⁴³Natasha Dow Schüll, "The folly of technological solutionism: An interview with Evgeny Morozov", *Public books*, 09. September 2013, p.4., <https://www.publicbooks.org/the-folly-of-technological-solutionism-an-interview-with-evgeny-morozov/> [accessed 11 April 2018].

political ideas and public policy frameworks by discussing a potential commons-based public policy, the 'commonification of public services.'⁴⁴The idea of commonification goes beyond the well-known left-wing critique of privatizing public goods and services because of its emphasis on democratization. The four normative directions identified by Tommaso Fattori, a leading activist in the Italian Water Commons movement, are summarized below:⁴⁵

- 1) Limit the creation of negative externalities that get displaced onto others (as corporations routinely do)⁴⁶
- 2) Declare certain resources to be inalienable and linked to communities as part of their identity⁴⁷
- 3) Assure more caring, conscientious and effective stewardship and oversight of resources than the alienated bureaucratic state is capable of providing;
- 4) Help commoners internalize a different set of stewardship values, ethics, social practices and long-term commitments than the market encourages.⁴⁸

Tommaso Fattori claims that "the field of Commons can be for the most part identified with a public but not-state arena, in which the actions of the individuals who collectively take care of, produce and share the Commons are decisive and fundamental."⁴⁹ Consequently, he argues that the practice of commoning between multiple stakeholders can introduce a greater reciprocity and balance between the commons and the market means for transforming the public sector and public

⁴⁴Tommaso Fattori, 'From the Water Commons Movement to the Commonification of the Public Realm', *South Atlantic Quarterly*, 112.2 (2013), 377-87 <<https://doi.org/10.1215/00382876-2020253>>.

⁴⁵Ibid.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Michael Bauwens, "The Public-Commons Partnership and the Commonification of that which is "Public" - a crucial intervention by Tommaso Fattori ", P2P Foundation, 2012, <<https://blog.p2pfoundation.net/the-public-commons-partnership-and-the-commonification-of-that-which-is-public/2012/08/14>> [accessed 11 April 2019].

services into co-produced and co-governed commons.⁵⁰ Indeed, there are many possible fruitful points of intersection between the traditional public domain and the emerging sphere of the commons to promote the democratization of the public sector. Democratisation here suggests a reintroduction of reciprocity into market exchanges and a move towards greater decentralization by implementing mechanisms for direct self-governance by the user-community and the relevant goods and services that serve social purposes (or promote participatory management within revived public sector). This means that a commons-orientated approach to public services do not merely seek to preserve the integrity of the public domain, but to find policies that correspond to a governmentality shift which sees citizens not primarily as consumers or even individuals, but as civic agents. Furthermore, as I outlined above, commons-public partnerships entail not only that that key resources are in public hands, but that public service workers are given an active and participatory role to instill mutual responsibility and recognition of multiple stakeholders in the productive process.

This means that several forms of 'Public Commons Partnership' or 'Commons Public Partnerships'⁵¹⁵² can be supported by the state itself, for instance through the introduction of tax exemptions and subsidies. Furthermore, states can realign their role, by allocating public, state-owned goods to common and shared usage by developing projects that aim to promote and cultivate greater ties and synergies between public institutions and various social commons. The larger shift at play here is to that the state gradually evolves into a civic state, which can be defined as "public authorities which create the right environment and support infrastructure so that citizens can peer produce value from which the whole of society benefits."⁵³ The public resources in question here range from healthcare services,

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Often also referred to as Public-Public Partnership given that commoners are citizens representing the public, but not the state and more and more often used in civil society discourse to coin an alternative notion to the Public Private Partnership models supported by the World Bank

⁵³ Michael Bauwens, "The Public-Commons Partnership and the Commonification of that which is "Public"- a crucial intervention by Tommaso Fattori , P2P Foundation, 2012

schools and universities, to energy, transport and logistics infrastructures. While many of these services may be ostensibly in public hands, they are governed by corporate logic. In contrast, Public-Commons Partnerships are characterized by several of Ostrom's design principles for successful resource governance; principles that she inferred from her decades long research on various commons based governance forms, which I will outline in the second chapter. Public Commons Partnerships are grounded on commons-centric governance mechanism such as the "participatory management and self-government, inclusion and collective enjoyment, no individual exclusive rights, prevalence of use value over exchange value, meeting of primary and diffused needs."⁵⁴

An integral component for the implementation of commonified public services is the development of partnerships between the state and autonomous commons-centric entities, such as 'solidarity multi-stakeholder cooperatives' (a form of cooperative that recognizes multiple stakeholders as members).⁵⁵ The advantage of a multi-stakeholder cooperative is that it facilitates genuine participatory and deliberative governance between workers, consumers, producers and members of the larger community –which has the potential to radically democratize ownership structures in the public sector.⁵⁶ This innovative provisioning has seen successes in social and health care, and has often stepped in where the state has failed to deliver or excluded segments of the population. Multi-stakeholder cooperatives, often in conjunction with the respective state or local authorities have pioneered new ways of self organizing and delivering public services in the Emilia-Romagna region in northern Italy, as well as in Quebec⁵⁷ and in the Netherlands and Germany with the neighbourhood care system Buurtzorg.⁵⁸

⁵⁴Ibid.

⁵⁵ Patrick Conaty, and Michael Lewis, *The Resilience Imperative: Cooperative Transitions to a Steady-State Economy*, (Gabriol Island, Canada: New Society Publishers, 2012).

⁵⁶Ibid.

⁵⁷John Restakis, "Public Policy for a Social Knowledge Economy, Commons Transition", *Commons Transition*, <<http://commonstransition.org/public-policy-for-a-social-knowledge-economy/>> [accessed 4 June 2019].

⁵⁸ See: <https://www.buurtzorg.com/> (accessed 22 September 2019)

There are several advantages to shifting from the dominance of public-private partnerships to more public-commons ones. While for instance the German dual vocational training program providing the backbone of Germany's economy shows that public-private partnerships have much merit, their current use in bypassing the German constitution to effectively privatize sections of the German road network is symptomatic of the problems created by the traditional state/market dichotomy.⁵⁹ Public Private Partnerships lack the genuine public oversight that the commons-orientated democratic model I outlined above offers. This is particularly relevant given that Public Private Partnerships can easily be used as instruments to implement de facto privatization, which often results in burdening future generations with greater debts.⁶⁰ Furthermore, the traditional social democratic welfare model is becoming increasingly inadequate due to its reliance on the redistribution of the fruits of exponential growth, while ageing populations in many developed economies such as Japan and Italy do not further undermine the feasibility of the old welfare state model. We can see the emergence of commons-oriented progressive political coalitions between social-populist (Podemos), municipalist (En Comu), and more traditional social-democratic traditions such as Corbyn's Labour, that together have the potential to develop into a political project of 'economic democracy', which in turn has the potential to be centered around commons-orientated transition programs.

Confronted with an ailing welfare state model due to a variety of internal and external pressures, governments are increasingly unable to provide the same level of basic security (health, pensions, social security), which is where public-commons governance frameworks offer the opportunity to foster solidarity and civic identities. In the third chapter, I will look at how this new social and economic logic is taking shape in the form of commons-orientated socioeconomic entities that are not just commons-orientated 'resources', but producing resources

⁵⁹Jan Bonhage, Jan, and Marc Roberts, "Germany - The Public-Private Partnership Law Review - Edition 5 - TLR," *The Law Reviews*, 2019 <<https://thelawreviews.co.uk/edition/the-public-private-partnership-law-review-edition-5/1189697/germany>> [accessed 1 July 2019]

⁶⁰Ibid.

themselves under a commons-centric economic logic. I will discuss the concept of commons-based peer production and look in more detail at some of these prototypical 'seed forms' of socioeconomic networks that are organizing productive activity under a radically different logic to traditional market entities; they constitute more democratic economic entities that enshrine commons-based governance principles and institutional frameworks.

2.2 The relevance of the commons in the contemporary political crisis

In the sections below, I will outline the ways in which Gramsci's diagnosis of the interregnum⁶¹ resonates with today's contemporary political landscape, the particular social and economic changes that we are facing today, and the particular role that the commons might be able to play in addressing those issues, particularly with regard to changes occurring in our political economy.

"The crisis consists precisely in the fact that the old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear."⁶² This quote, by Antonio Gramsci from his prison letters, has been increasingly cited in order to draw parallels between the diagnosis he made in 1930 and the increasing polarization of society along populist right and left movements, while centrist political parties are withering away. In Gramsci's time, the Great Depression of 1929 had mobilized the European far right, which had already established a key stronghold in Italy by 1922.⁶³ In his time, Gramsci was particularly concerned with developments within Communism, namely the growing tendency to reject democratic solutions in the fight against Italian fascism as well as the New

⁶¹ Antonio Gramsci and Quintin Hoare, *Selections from the prison notebooks of Antonio Gramsci* (International Publisher, 2014)

⁶² *Ibid.*, p. 276

⁶³ Nicola Headlam & Paul Hepburn, 'The Old is Dying and the New Cannot be Born, in this Interregnum a Great Variety of Morbid Symptoms Appear.' How Can Local Government Survive this Interregnum and Meet the Challenge of Devolution?', *Representation, Journal of Representative Democracy*, 51.4 (2015), 403-415, <<https://doi.org/10.1080/00344893.2016.1165509>>.

Economic Policy and rural collectivization in the Soviet Union. Gramsci went on to argue that "[i]f the ruling class has lost its consensus, i.e., is no longer "leading" but only "dominant," exercising coercive force alone, this means precisely that the great masses have become detached from their traditional ideologies, and no longer believe what they used to believe previously, etc."⁶⁴ Despite this apparent bleak outlook, Gramsci found cause for hope. He saw the possibility that, with the persistence of severe economic conditions, fascism would weaken through growing mass frustration. With the economic issues at the root of the crisis deflected in this process, he saw the potential for the expansion of communism.

In the 21st century, political liberalism, which had thus far been undoubtedly the hegemonic political belief system in the Western world, finds itself confronted with a series of ecological, social and economic challenges that seem to exceed the capabilities of its current repertoire of policies and political ideas. Since the financial crisis of 2008, from which most of the Western economies (in particular Europe) are yet to recover, we are witnessing symptoms that the ruling class has lost its consensus. This is illustrated by the increase in political and indeed moral outrage spurring increasingly radical ideologies at both ends of the political spectrum, especially with neo-nationalist right-wing parties gaining a foothold in Europe and the US. Below I will discuss the contemporary relevance of the commons further by outlining some key points of areas where commons-orientated ideas and practices may find resonance in the context of the contemporary political crisis.

Traditional centrist parties are rapidly losing ground even in the countries where they were most firmly established; for instance, in the traditional social democratic heartland of Scandinavia, Sweden and Denmark in particular have seen a severe decrease in public trust in the traditional mainstream social democratic parties.⁶⁵

⁶⁴ Ibid.

⁶⁵ James F. Downes, Edward Chan, 'Explaining the Electoral Debacle of Social Democratic Parties, LSE Blog post, EUROPP, 2018 <<https://blogs.lse.ac.uk/euoppblog/2018/06/21/explaining-the-electoral-debacle-of-social-democratic-parties-in-europe/>> [accessed 3 June 2019].

Neo-liberal globalization is increasingly the target of political dissatisfaction and protest. Following the end of World War II, nations began to develop an economic and political project that was based on deeply embedded economic globalization, giving birth to the Bretton Woods system with the World Bank (WB) and the International Monetary Fund (IMF) to facilitate macroeconomic policy making focused on long-term economic development and poverty reduction. The post Second World War system placed great emphasis on free trade with the establishment of the Global Agreement on Trade and Tariffs (GATT) and from 1995 onwards with the creation of the World Trade Organisation (WTO). While the GATT was largely in line with the domestic welfare state ideology of the pre-1980s, the WTO regime represented the result of a major neoliberal shift that manifested itself even further since the 2000s with the proliferation of bilateral and regional trade agreements such as the North American Free Trade Agreement (NAFTA) or the European Single Market. Western countries largely adopted a 'governmentality' of 'opening up' which resulted in increasing neoliberal policy making. In this model, the role of the state is to equip and prepare its citizens for global competition, to facilitate the free flow of capital through deregulation, and to keep state bureaucracy efficient and lean while maintaining a minimal welfare security net; this is what Tony Blair called 'modernization' and David Cameron referred to as the 'global race.' I will return to some of the theoretical underpinnings relevant to this period without going further into any political analysis, when I discuss rational choice and some other central tenets of neoclassical economics, in my critique of Garret Hardin's theory of the tragedy of the commons in the second chapter.

What is becoming increasingly apparent is that this project of economic globalization has reached its peak and is in decline.⁶⁶ Dani Rodrick has coined the term the 'globalization trilemma' which describes the paradox that economic globalization, democracy and national sovereignty are all *supposed to be*

⁶⁶ Branko Milanovic, *Global Inequality: A New Approach for the Age of Globalization* (Cambridge, Massachusetts: Harvard University Press, 2018).

constitutive elements of the liberal world order, but that *in fact* they represent trade-offs (and at best countries can have two out of three).⁶⁷ The trade-offs that certain groups are willing and able to make, lie at the core of the polarizing dynamics that define the current political climate, particularly in Western liberal democracies. For instance, one way in which one could frame the Brexit referendum is that 'leave' voters favour national sovereignty and see economic globalization as eroding established rules, norms and institutional practices and indeed in some cases their own lived identities, whereas 'remain' voters are willing to sacrifice some national sovereignty in order to reap the benefits of trade, integrated markets and freedom of movement.⁶⁸ In the case of the EU, it has become obvious that a monetary union without a fiscal union is not feasible, and the latter inevitably requires giving up some national sovereignty. It is also worth noting that the presumed mutual reciprocity between free trade globalization and democracy no longer holds. Numerous examples such as China, Singapore, among many others demonstrate that political authoritarianism and free market capitalism can be remarkably successful in economic terms. Consequently, the idea that in the West authoritarianism is inherently held at bay at least in part due to the dynamics of free market capitalism is a central assumption of the economic globalization project that is looking increasingly fragile. In the UK, a number of right-wing Brexiteers have openly argued in favour of a post-Brexit UK model that may be aptly dubbed as a 'Singapore on the edge of Europe'.⁶⁹ On the one hand, the vision of these right-wing Brexiteers, coalescing under the brand name of the European Research Group (ERG), refers primarily to intense deregulation, to further globalization and free trade agreements, even potentially including services such as healthcare (in other words a 'global race' on steroids). On the other hand, the same group of people also seem to be promoting a less liberal brand of conservatism that is more socially conservative, espouses parochial notions and

⁶⁷ Dani Rodrick, Lecture at Blavatnik School of Governance, Oxford 2. Mai, 2013, <https://www.bsg.ox.ac.uk/news/trilemma-globalisation>, [accessed 20 June 2019]

⁶⁸ Ibid.

⁶⁹ James Craske and Janis Loschmann, 'On Rationality', *Political Studies Review*, 16.4 (2018), 306–17 <<https://doi.org/10.1177/1478929918771455>>.

values of nationalism, and are seemingly not particularly averse to more authoritarian leadership.

The rise in polarized politics and resurgence of identitarian-nationalist ideas can in part be attributed to the fact that the real and perceived failures of economic globalization have led to growing social frustrations that erode the centrist liberal consensus that until recently had been unchallenged. This liberal consensus essentially resulted from a compromise between the leaders of the labour movement and the ruling political class. The compromise consisted of extending political rights and recognition to marginalized groups, and the establishment of a welfare state; the latter being paid for through an acceptance of the system of unsustainable industrial development and market based globalization. The election of Donald Trump in the US and the victory for Brexit in the UK demonstrates that this consensus has lost the ideological support of the masses to echo Gramsci's diagnosis. For instance, Trump's support base consists to a great extent of the declining middle and working classes who are justified in feeling that they have been left behind in the globalization race and the transformations of the economy that it entailed, primarily involving a shift from the Fordist industrial capitalism, to the finance capitalism that characterizes most developed economies today. Mainstream politicians on both the Left and Right tend to frame the problems related to the crisis of globalization in terms of distributive justice: those who have gained from global trade, new technologies, and the financialization of the economy have not adequately compensated those who have lost out. As I will argue in the third chapter, the digitization of the economy is likely going to lead to even starker inequalities between those who have the necessary skills to navigate the new economy, and those who are left behind in an increasingly precarious workforce.

There are a number of key cultural divisions and tensions, or perhaps even contradictions, that have long been present in society but are now coming to the fore as a result of the economic crisis, and that seemingly can no longer be

mitigated by the liberal political class. There is increasing social conflict and division between different life worlds and cultural milieus such as the rural versus the metropolitan and the graduate versus the non-graduate. Some sociologists are keen to point at values held by parents passing on good manners and cultivating curiosity, as being good predictors of political leanings and voting behaviour.⁷⁰ While the existence of these social and cultural divisions is nothing new, in the context of a 'collapsing consensus', what we are seeing is a society, particularly in the aftermath of the Brexit- vote/Trump era, engulfed in pernicious culture wars which seem to be going far beyond what can be played out and contained within an electoral process. Thus, given the combination of all these elements, we are already witnessing a similarity to a political dramaturgy described by Gramsci, in the sense that at the very least, political liberalism will have to radically reinvent itself in ways that are thus far undisclosed in order to survive the onslaught of alternative political programs such as the 'economic nationalism' espoused by Trump and his former advisor Steve Bannon, and the European far right such as Marine Le Pen's Front National. In the previous section I have already outlined ways in which the commons are a reservoir of political ideas and social innovations that can help formulate public policies and democratically orientated solutions which have the potential to address some of the underlying economic conditions at the heart of the contemporary crisis. In the next section, I will briefly discuss some of the ways in which the inherent civic nature of the commons may provide a useful normative basis to articulate a politics that engages with the crisis at the level of economic conditions, but also engages with the deeper divides I outlined above, by recognizing that the contemporary political crisis corresponds in large part to a larger 'crisis of meaning.'

⁷⁰ Pippa Norris and Ronald Inglehart, *Cultural Backlash: Trump, Brexit, and Authoritarian Populism*, (Cambridge University Press, 2019).

2.3 The civic nature of the commons

From the discussion above it follows that what is needed is a coalescing public discourse across these divisions and the development of a number of aforementioned commons-centric ideas and policies currently residing in the domain of the political avant-garde. While it is true that political and moral outrage can be potentially politically mobilizing, which in turn can lead to much needed social and political innovations, both sides of the political spectrum have failed to offer an affirmative political vision. This is reflected in both the Remain campaign in the Brexit referendum, perhaps pertinently dubbed 'Project Fear', and on the other side of the Atlantic, Hillary Clinton's 'progressive' program offered little more than a liberal wish list of 'cultural rights' and utterly failed to engage with the socioeconomic realities that the electorate were confronted with. In the immediate aftermath of the Brexit referendum and Trump's electoral success, questions about national identity, citizenship, and the values commonly shared by societies are coming into focus again; these are questions of civic identity and more broadly, larger questions of meaning. What does it mean to be a citizen? What are civic duties and responsibilities? What are the moral and political ends of social institutions? It has been fashionable to evade such profound questions in search for a 'value neutral' politics that seeks to merely arbitrate between competing interests of otherwise self interested individuals. In the second chapter, I will offer a more comprehensive critique of this model of human behavior that is implicit here, in order to dispel some of the underlying normative narratives that have played a key role in undermining commons-centric ideas. For the present purposes, I want to illustrate that given the deep cultural and political divides that characterize the contemporary political crisis, which revolves in large part around questions of national identity, and more broadly speaking, a search for belonging and rooted identities, there is a clear need for a civic strand of politics. It is within the context of the described political crisis and the crisis of meaning that the potential of the commons is situated.

It needs to be reiterated here, that the commons should not be understood as a noun, that is to say as a fixed entity such as a scarce or indeed non-rivalrous good or resource (a common), but as a social process of commoning, which can be conceived of as a process of cultivating a sense of identity and belonging by being embedded in tradition, social relations, vernacular law and customary practices and more generally as a sense of shared values and culture. It is worth noting here that any attempt at pinpointing commons into a specific definition undermines their inherent processual quality and emphasis on democratization. Broadly speaking, commons are able to foster a sense of belonging and local cultural identity without having to rely on nativist ideas to cultivate them. Thus, questions that are central to the political crisis of how to construct a sense of belonging and social identity, as well as what a shared sense of culture consists of, and what values are held in common, are also integral components of the commons, or at least they can be productive sites of contestations for such concepts to be articulated and formed.

The idea of 'civic virtue' being actively fostered by a commons is central here. A school of thought within political theory that resonates with this idea is civic republicanism. A key proponent of this school of thought, Michael Sandel, sees the idea of a civic and common good as central to the very foundation of American democracy. In his account, while the founding fathers may have seen individual liberty as the primary value to safeguard, the idea of promoting the 'public good' was almost deemed equally important.⁷¹ As I alluded to above, contemporary liberal thought evades public discussion around moral concerns, conceiving the state as a neutral arbiter between incompatible and competing interests of individual actors.⁷² From the point of view of a political civic commons, politics should not only be aimed merely at mitigating a value neutral conflict resolution

⁷¹ Michael Sandel, *Democracy's Discontent: America in Search of a Public Philosophy* (Harvard University Press, paperback edition 1998).

⁷² Thomas Nagel, 'Rawls on Justice', *The Philosophical Review*, 1973

<https://www.pdcnet.org/pdc/bvdb.nsf/purchase?openform&fp=phr&id=phr_1973_0082_0002_0220_0234> [accessed 10 February 2019].

among competing interests of otherwise autonomous and disinterested individuals, but at transcending these interests by developing a broadly shared conception of the public good on the basis of shared cultural values and ideational tenets.

This sense of civic identification is what is ideally reflected in practice by participants in a commons-based peer community, who are involved in a mutually reciprocal collaborative process in order to realize not only their own individual aims, but are embedded in sense-instilling value-driven projects that transcend their own immediate interests and considerations. It is important to note that the virtue of individual responsibility, often central and ideologically prioritized by conservatives and libertarians on the right is equally important *here*. The commons are inherently related to fostering resilience, self-reliance and autonomy from both state and corporate actors.

Alasdair MacIntyre, a key thinker of the communitarian school of thought, notes that “only in fantasy do we live whatever story we please. In life, as Aristotle and Engels noted, we are always under certain constraints. We enter upon a stage which we did not design and we find ourselves part of an action that was not of our making.”⁷³ MacIntyre’s insight here is that people’s lives reflect their subjective (though embedded in cultural and historical memory) distinctive narratives, which, interconnected and interrelated with others, are constrained by the stories and experiences of families, tribes, traditions, communities, social, political and cultural institutions, as well as historical circumstances.⁷⁴ These factors in turn form together to shape choices and possibilities by revealing some possibilities while foreclosing on others.⁷⁵ A key implication MacIntyre points out is that public policy not only ought to, but inherently brings with it, a certain normative conception of how to shape human behaviour and dispositions.⁷⁶ Similarly, Sandel

⁷³ Alasdair MacIntyre, *After Virtue* (United Kingdom: Bloomsbury Academic, 2006). P 248

⁷⁴ Ibid

⁷⁵ Ibid

⁷⁶ Ibid

discusses various historical instances in which the potential effects on human character were weighed considerably in the decision making processes regarding public policy. For instance, in the 18th century US senator George Mason opposed a Port Bill, which was designed to facilitate and promote the development of large-scale commercial cities, on the grounds that in his estimation, such development would undermine the moral virtue of residents.⁷⁷ Sandel contends that the moral character of these arguments were borne out of the principle that: “[t]he public life of a republic must serve a formative role, aimed at cultivating citizens of a certain kind.”⁷⁸ What Sandel is getting at here is that social institutions always have at least an important role in prioritizing certain conceptions of the good over others, and thus the notion of cultivating virtues and civic responsibilities in citizens (and public deliberation over what these are) is not a patronizing imposition, but an indispensable aspect of a sincere politics. More broadly, one can think of a number of public policy proposals ranging from public health to taxation of certain products, which reveal that the governmentality of the modern state is anything but value-neutral, and often with good reason. For instance, it is important to note that the same holds true for technical systems and infrastructures that structure our everyday life; technologies are always imbued with values and reflect normative principles encoded into their design.

Thus, what commons-centric ideas of civic responsibility can help articulate and proliferate, is the notion that institutions embody value, and thereby constitute a locus of social and political resistance to the proliferation of the liberal prophecy of political atheism, in other words resisting the doctrine of seeking to provide value-neutral outcomes, as reflected in the increasing reliance on technocratic and technological means of ‘delivering’ politics. Values are almost inherently enshrined in the technical ‘design principles’ of technologies, institutions and public policy frameworks. Technical systems and technologies and core infrastructural transport, logistics and even energy infrastructures have a wider social and

⁷⁷ Michael. Sandel, 1998.

⁷⁸ Michael Sandel, 1998, p. 125

political meaning than merely constituting evidence of material progress.⁷⁹ Thus, the political, economic and cultural contexts within which these are embedded play an important role in giving precedence to some normative tenets, while undermining others. The notion that technological systems and infrastructures do not merely provide value-neutral solutions to certain technical problems, is an important element of the way in which the commons discourse can reframe public policy discussions in terms of profound philosophical and political questions around which moral and political ends our technologies should serve.

The introduction of commons-orientated political innovations and solutions to public policy issues, are not without potential drawbacks. Political factions at the extreme ends of the political spectrum are using the process of commoning for political ends that are unpalatable across the majority of the political spectrum. Consider for instance, the social centers that have been established by the far right in Italy since the 1980's. The contemporary neo-fascist party CasaPound squatted buildings in Rome and established a social centre in them, calling for an 'association of social promotion'.⁸⁰ The Italian far right has been partially successful in stepping in where the state has failed, providing community ties and even healthcare provision. CasaPound strongly opposed evictions in Rome (of which there were around 25 a day in 2009), and called for a rent mortgage, by which rent payments would essentially be turned into mortgage payments, while also pooling together their own and community resources in order to provide housing for the homeless.⁸¹ CasaPound were making effective use of reclaiming public spaces, creating spaces for communities and involving participation, while also forming resistance against enclosure and commoditization, all of which reflect commons-orientated practices. Thus, commoning can be used as an effective political

⁷⁹ Yochai Benkler and Helen Nissenbaum, 'Commons-Based Peer Production and Virtue', *Journal of Political Philosophy*, 14.4 (2006), 394–419 <<https://doi.org/10.1111/j.1467-9760.2006.00235.x>>.

⁸⁰ José Pedro Zúquete, *The Identitarians: The Movement against Globalism and Islam in Europe* (University of Notre Dame Press, 2018).

⁸¹ Tobias Jones, 'The Fascist Movement That Has Brought Mussolini Back to the Mainstream', *The Guardian*, 22 February 2018, section News <<https://www.theguardian.com/news/2018/feb/22/casapound-italy-mussolini-fascism-mainstream>> [accessed 5 June 2019].

strategy, but the commons do not in and of themselves embody a particular political ideology. As Trent Schroyer puts it:

“The vernacular space is the sensibility and rootedness that emerges from shaping one’s own space within the commons associations of local-regional reciprocity. It is the way in which local life has been conducted throughout most of history and even today in a significant proportion of subsistence- and communitarian-oriented communities. It is also central to those places and spaces where people are struggling to achieve regeneration and social restorations against the forces of economic globalization.”⁸²

This is not to say that one is relative to the normative and ideational character of commons-based communities merely because different user communities establish their own norms, shared values and practices. Nor are commons indifferent to political ideology. They are rather co-created spaces that seek “to secure political or participatory space for forms of governance that enable exceptions to national-international forced development [...] and the totalities of the left and right ideology.”⁸³ The activism of CasaPound and calls to 'take back what's ours' at a larger scale, from Brexit to Trump to calls for Catalan and Scottish independence, and a well-documented decrease in public trust in the state and its institutions,⁸⁴ are all further symptoms of the fact that liberalism is confronted not only with a crisis of political economy, but an underlying crisis of meaning and belonging.

The growing disillusionment and frustration with liberal globalization is one of the underlying motivations for people to 'claim back what's ours' as reflected by the election of Donald Trump and the success of the Leave campaign in the EU referendum held in the UK. An antidote to the 'economic neo-nationalists' and the

⁸² Trent Schroyer, *Beyond Western Economics: Remembering Other Economic Cultures* (Routledge, 2009). p 69.

⁸³ Ibid.

⁸⁴ 'Trust in Government, Policy Effectiveness and the Governance Agenda', (OECD, 2013) <https://doi.org/10.1787/gov_glance-2013-6-en>.

inadequate liberal cosmopolitan ideal that is increasingly untenable may be found in the ability of the commons to widen participation at the economic and political level for a variety of reasons that will become increasingly apparent throughout the thesis.

In this chapter I have mentioned the ecological crisis we are facing as part of the crises that the current political and economic order is seemingly unable to confront effectively. While it is not in the scope of this thesis to provide a full overview of the relevance of the commons to this crisis, it is worth outlining the way in which the commons already form an important part of global ecological governance. Traditionally, the commons have been associated with the domain of natural resources, and the norms, customs and traditions have developed over time and constitute a form of localized protection and governance. The most well-known approach in this tradition is Elinor Ostrom's research on the governance of common pool resource institutions.⁸⁵ Over time, commons develop into communities and establish a domain of shared concern. Thus, the commons, far from being a mere scheme of resource governance, can be seen as expressing a domain of common concern. This field of shared contextual significance discloses certain spheres as commons for collective governance, which one might refer to as 'objects of commoning'.⁸⁶ For instance, the severity of the ecological crisis we are currently facing has become increasingly undeniable in the 21st century, which has arguably instigated a shift in our understanding of the planet's atmosphere and ecosystem from an implicit commons to an explicit commons. I will outline some of the key commons-based approaches to governing the vast global ecological biosphere below.

From the discussion thus far, a key principle of commons-based governance has already become apparent, namely that commons-centric modes of organization and governance become most relevant when the 'resource' in question is largely

⁸⁵Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, (Cambridge University Press, edition (1991-03-14) (1800)

⁸⁶Susan J. Buck, *The Global Commons: An Introduction*, (Island Press, 1998).

recognized to constitute a form of inherited wealth, that is to say, a commonwealth. One ought to be careful here not to naturalize the commons; the essential element of a commons is not that it is an 'object of commoning' out there in the external world existing as a commons. The quip, 'there is no commons without commoning', or to put it another way 'commons don't exist, they are created',⁸⁷ remains the essential element to understanding the commons from the point of view I am developing in this thesis.

I will now briefly outline some of the ways in which our approach to global ecological governance already embody commons-centric governance principles, which reflects the fact that commons-orientated approaches and ideas have informed our governing shared 'resources.' In many ways, the ecological commons exemplify the notion of a global commonwealth that at least from a commons perspective, is conceived of as collectively inherited. Furthermore, commons-oriented principles have been adopted by both the market and the state in at least a partial recognition that these vast eco-systems ought to be recognized as commons, and that commons-orientated governance offers solutions that avoid conflict and more often than not will reap the best rewards.

It is worth noting that as far as the ecological commons are concerned, several liberal thinkers of the early modern era formally enshrined the notion of the earth as inherited in their political and legal treatises. For instance, Hugo Grotius in his *Mare Liberum* argued that the seas must be free for navigating and fishing as the law of nature prohibits ownership of those things that appear to have been created by nature to be held in common.⁸⁸ Grotius argues that those things that have never been occupied cannot be translated into private property at all, since all property is based on occupation.⁸⁹ Thus, the *res nullius*, denoting 'nobody's property', or a thing which has no owner, for the vast oceans are not to be conceived of as 'private

⁸⁷ David Bollier and Silke Helfrich, *The Wealth of the Commons a World beyond Market and State* (Amherst, Mass: Levellers Press, 2012)

⁸⁸ Alex Struik (ed), and Hugo Grotius, *Mare Liberum*, 2012.

⁸⁹ Ibid.

property in waiting', but as a global commons. At the very least, this line of argument implies that where there is a 'res nullius', private property cannot be established without at least some formal recognition that this constitutes an enclosure of a shared commonwealth. The Alaskan Permanent Fund which pays residents dividends based on oil revenues and is managed by a publicly owned company.⁹⁰ Similarly, since the Antarctica Treaty of 1959, Antarctica can be interpreted as giving the primary 'user community', namely research scientists a principal role in governing this vast ecosystem.⁹¹ This is no small feat given that many countries have asserted territorial claims to the landmass of the continent.⁹² However, the success of two major research projects (International Polar Years and International Geophysical Years), relied on seamless international cooperation between scientists.⁹³ Here the commons are a useful tool to remove 'friction' in productive activity facilitate collaboration and promote innovation, which shows that they can often be as efficient in making use of 'resources' as free market alternatives.

Beyond the commons of Earth, outer space is also currently broadly recognized as a vast commons, albeit national territorial claims are likely to be made in the future. However, it should be noted that the 1967 Outer Space Treaty declares outer space, the moon and other celestial bodies to be the "province of all mankind", and furthermore, not "subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means reflect a 'terra nullius', more than an effective commons-management.⁹⁴ As I will discuss in the second chapter, where I critique the narrative posited by the tragedy of the commons, it is precisely when ecosystems or indeed smaller scale 'resources' are conceived of and treated as an uninhabited space, an ungoverned commons, that

⁹⁰ Wilderquist, Karl, 'The Alaska Model: A Citizen's Income in Practice', *OpenDemocracy* <<https://www.opendemocracy.net/en/opendemocracyuk/alaska-model-citizens-income-in-practice/>> [accessed 4 June 2019].

⁹¹ David Bollier and Burns H. Weston, *Green Governance: Ecological Survival, Human Rights, and the Law of the Commons* (New York, United States: Cambridge University Press, 2013).

⁹² Ibid.

⁹³ Ibid.

⁹⁴ Ibid., p. 60

large scale market appropriation occurs, often generating sub-optimal outcomes, unaccounted negative externalities and unintended detrimental side effects.

To conclude this section, commons-centric approaches to governance require, and are modeled on, participatory governance and therefore require individuals to become active stewards, co-producers and creators of the local commons they share. As I outlined above, the current crisis of liberalism reflects not only a crisis of political economy, but a crisis that of meaning and belonging. By recognizing citizens as stakeholders and as holders of civic responsibility, as well as stepping in where both the market and the state are failing, the reintroduction of civic strands of political thought can offer ways to address the deeper issues at the heart of the increasing disillusionment and dissatisfaction with economic globalization; an increasing sentiment that at least in part reflects a desire for belonging that the homogenizing globalized market economy and liberal cosmopolitanism not only fail to address, but at times actively propagate. The void that is left is currently being filled by articulations of identitarian politics, rather than by framing the debate around how to form identities around mutual stakeholders in particular places, social spaces or regions. What is missing is a shared sense of meaning and 'identity' that cultivates responsibility for the mutual co-creation of shared social spaces.

The commons offer a repertoire of social and economic innovation that has the capacity to address some of the challenges we are facing today, resulting from a myriad of political, economic and ecological crisis each of which can at least in part be seen as revolving around 'a problem of a commons'. In contrast to the narrative offered by Garrett Hardin's 1968 article on the tragedy of the commons,⁹⁵ which I will critique in the next chapter, the *modus operandi* of the commons can be seen as the solution to the problem, rather than an inevitable process that leads to such over-exploitation that market-oriented practices and states are required to rectify

⁹⁵Garret Hardin, "The Tragedy of the Commons", *Science*, 162.3859, 1968, pp. 1243-1248.
doi:10.1126/science.162.3859.1243

it. More specifically, commons offer tools for the democratization of the economy, which can help address the economic causes underlying the rise of economic nationalism. Commons can help foster local identity, community and more broadly may even yield the potential to bring into being a stronger civic national identity that is inclusive yet has firm axiological ground. The co-creation of commons of citizens and public policies designed to facilitate their formation, can help address some of the issues that lie at the heart of contemporary political and social crisis. Thus, commons can help articulate a politics that moves away from identity as a locus of political discourse (whether in the form of the cultural politics of the left or the nationalist identity politics of the right) towards a politics orientated on civic values deeply rooted normative principles. Such a politics, in conjunction with commons-centric self solutions based on self-organization and fostering independence from the market and state, could help transcend the left/right dichotomy, move beyond the increasingly exhausted policy toolkit of the market/state, and substantially deepen the reservoir of political imagination available to policy makers, the need for which is increasingly becoming apparent in light of the coinciding political, economic-technological and ecological challenges facing us in the 21st century.

In the next section, I will elaborate on the political conception of the commons developed in this chapter, particularly with regard to the way in which the commons can help articulate a politics of community, without subordinating the individual or regressing into nativist and parochial political natures. I will further elaborate on the way in which the politics of the commons demands and cultivates civic responsibility, putting it in tension with the mainstream liberal conception of politics. A key motivation underlying this discussion is to elucidate the philosophical nature of our contemporary 'crisis of meaning' and the way in which the commons articulate a conception of politics that is inherently related to human meaning and embedded in the moral foundations of our everyday lives and sociality.

2.4 The Commons as a Politics of Community

Earlier in the chapter, I discussed the important role that civic virtue plays in the political conception of the commons. A key element therein is the way in which the commons resist atomization and provide a critique of liberal individualism without having to resort to illiberal social conceptions or rigid social hierarchies. A commons-based politics of the community aims to deliver a more affirmative and positive politics, orientated towards a conception of the common good, facilitating capabilities and positive freedoms of its citizenry. This does not imply a turn to some form of Confucian collectivism, perhaps an appealing option given the success of less individualistic and ostensibly more communitarian East Asian countries such as Singapore and China. The politics of the commons does not mean that the primacy of individual freedom is necessarily subordinated, but that freedom as self realization and self expression is itself embedded in a social context where the individual is not the only reference point and 'source' of freedom. A good example of what is at stake may be found in the nature of contemporary (popular) political protest movements. The filmmaker and cultural critic Adam Curtis notes that although the UK protest against the Iraq War was remarkable in its scope and sheer numbers, it nevertheless failed to realize its potential due to an inherent individualism that undermined the movement from its inception. "Three million people marched through London. It was a really impressive march. And they had this slogan that I thought was very much of its time: "Not in my name."⁹⁶ That is the ultimate individual protest. So what then happened is they all went home feeling that they had all protested against the war and it was no longer their war, and then they did nothing else."⁹⁷ The point here is not to provide a damning assessment of a political protest (which Curtis himself admits was laudable in

⁹⁶ https://www.artspace.com/magazine/interviews_features/qa/adam-curtis-hypernormalisation-interview-54468

⁹⁷ Ibid.

many respects), but to rather bring into view the shadow and limitation of the very idea of self-expression and freedom of choice that form the cornerstone of liberalism. Of course, disclosing the negative social consequences of certain kinds of normative ideals does not mean that we should seek to undermine them as goals to strive for. It is worth remembering that most of our core values and social ideals stem precisely from our political preoccupation with the individual.

The point here is that if domains of human life such as political engagement can only be made intelligible in terms of subjective individual self-expression, then individuals can no longer transcend themselves in 'higher' social contexts of significance in which they are prepared to give a part of themselves. Again, there need not be a straightforward trade-off between individual liberty and social commitment here. It is for instance quite possible that when people were fully invested in their labour unions or churches, they did not experience these rather extensive commitments as inhibiting their individual liberty. Indeed, it might well be that they found they had greater capabilities, freedoms and creative control over their lives than they might otherwise have had. Jean Paul Sartre raised eyebrows in his time with his remark that "the French were never more free than under Nazi occupation."⁹⁸ I think this seemingly counterintuitive statement by Sartre gestures towards the notion that human freedom manifests itself most intimately in precisely those situations where we feel *compelled* to act, as our decisions are orientated towards a point of reference that extends beyond the self. Every gesture, every decision is a profound commitment.⁹⁹ More often than not, the experience of freedom unfolds by virtue of relation to another. To stick with Sartre's example, while the French might have become materially and practically less free under occupation, psychologically and experientially freedom manifested itself in a more convivial way. The potency of freedom lies in the meanings associated with our actions and the extent to which they are embedded in socio-

⁹⁸ David Detmer, *Sartre Explained: from Bad Faith to Authenticity* (Chicago: Open Court, 2009) p. 218

⁹⁹ Ibid.

political contexts of significance. To provide a warmer example than military occupation, consider the notion of 'choosing' to fall in love. There is an obvious sense in which we do not have any 'choice' in falling love. It is more akin to a realization, not a freedom of choice exercised in the present moment. In many ways we are compelled, and to a certain extent the scope of our freedom to choose is restricted, in the sense that we are in the grasp of something that we were previously 'free' from and that in many ways restricts our superficial conscious freedom to decide. In many ways our 'highest' acts of freedom are in fact experienced as necessity. While we make contingent free decisions, to join the resistance for instance, they nevertheless appear to us in the guise of compelling necessity.

Thus, freedom as a political idea is impoverished if it is purely conceived of as personal choice with regard to individual utility. If we take this psychological insight on freedom seriously, we should also question the extent to which liberalism prioritizes the autonomy of the subject, being separate and therefore alienated from the affective reservoir of cultural memory, social ties and communal dependency. In particular, we should be wary of the anonymous relations and social fragmentation that the individualism of contemporary liberal politics brings with it. Indeed, contemporary liberalism itself often frames freedom in terms of self realization, which is a moral end and implies some conception of the good. The very idea of self realization itself is tied to the notion of human flourishing, which shows that even a narrow liberal conception of freedom is at least implicitly committed to some degree to the cultivation of certain values and realization of moral ends.

A key element in the contemporary political crisis is the loss of paradigmatic contexts of significance, which among other phenomena such as political polarization, hollowing out of public discourse etc, are underlying symptoms of a general 'crisis of meaning.' Thus, our politics requires a 'thicker' conception

freedom to help articulate a politics that engages with questions of human meaning and to some degree provides purpose to human action. I will illustrate this point further with a parable found in Jonathan Lear's book *Radical hope*, which can help provide us with a better understanding of the psychic-spiritual value that the commons may have and the kind of psychological 'resources' and forms of resilience that a politics of the commons could help foster. Lear provides a philosophical anthropology of The Crow people, indigenous to the United States, who were staring into the abyss of the entire cultural destruction of their way of life, and little prospect of recreating it in any meaningful sense.¹⁰⁰ Recounting the story of the Crow, Lear develops an account of the repertoires of resilience drawn upon by his people at a time when they were threatened with eminent catastrophe. The result is an account of cultural devastation that nevertheless tries to ritualize rather than 'catastrophize' the loss of purpose and meaning.¹⁰¹ Although Lear does not use the term, this ritualization is an intimate expression of collective commoning.

The protagonist of Lear's account is Plenty Coups, leader of the Crow people. He is gifted with a political imagination that is not an escape, nor a rebellion against his situation, but is rather concerned with the art of ritualization.¹⁰² Plenty Coups understood that his tribe's need for a shared infrastructure of 'public objects' that provide frames of meaning that support their new lives in transition.¹⁰³ As I will briefly outline below, Lear's account provides insights for how to frame a politics that is confronted with fragility and profound risk, but Lear also gives us insight into what it means for human action to become groundless. For instance, in their previous nomadic existence, even seemingly mundane everyday activities such as cooking were at least in principle tied to a way of life.¹⁰⁴ For example, preparing a

¹⁰⁰ Lear, Jonathan, *Radical Hope: Ethics in the Face of Cultural Devastation* (Cambridge, MA: Harvard University Press, 2008)

¹⁰¹ Ibid

¹⁰² Ibid.

¹⁰³ Bonnie Honig, *Public Things: Democracy in Disrepair* (New York: Fordham University Press, 2017).

¹⁰⁴ Ibid.

meal might signify 'preparing for a hunt,' 'preparing for battle' or 'getting ready to move on' in the context of their nomadic way of life.¹⁰⁵ With a loss of context, came a loss of meaning. As Pretty Shield, a medicine woman of the Crow reports: "I am trying to have a life that I do not understand."¹⁰⁶ To put it in Aristotelian terms, with the destruction of the telos, there was no conception of the good life to provide a larger context for the significance of one's acts. Cooking became a means to survive, devoid of any psychic-spiritual or historical component to which it may have contributed. As Bonnie Honig poignantly asks:

But, what would it *mean* to hold land? It *had* meant the ability to roam freely, in nomadic fashion, in what, from the White man's perspective, was a large but vaguely defined space around the Little Big Horn. But it would come to mean something very different: confinement to two million acres, forced to parcel property out to individual owners rather than hold lands collectively, with some of these sold off to white farmers, and so on. In short, what it *meant* to hold land would change radically in ways that might alter the land's capacity to serve as a holding environment for the tribe. To hold land was once to be held by it. Is this still the case? Do these changes, too, amount to just a thinning out, to borrow Lear's term?¹⁰⁷

The crisis of meaning that the Crow are undergoing signifies an ontological shift from understanding meaning as residing in social '*relationality*' to a situation in which it is *alienated* from the lived relationships of human beings. In so far as human beings preserve their being through associations with others we might say in Spinozan fashion that value and meaning arise out of the employment of body and memory to form the realization of future projects by acting in concert with others.¹⁰⁸ In this thesis, I am in part developing the commons as a critique of

¹⁰⁵ Ibid.

¹⁰⁶ Ibid. p. 56

¹⁰⁷ Ibid p. 67

¹⁰⁸ I will elaborate on this perspective in section 3.5

the alienating force of the market at time when the commercial arena encompasses more domains of human life and thus becomes uprooted from the human social fabric that underpins it. I have also critiqued the alienating impact of individualism, and more precisely this chapter has been concerned with developing a political conception of the commons that is motivated by the question of what it would mean to recover a situation in which politics was to some degree understood as the art of articulating shared experiences of being part of something that is larger than ourselves. In other words, the politics of community espoused by the commons demand greater political ambition, though it should be noted that this does not imply that politics should see itself as *the* source of human meaning, but rather seeks to articulate a shared public language, history and cultural memory which is contested and wrought over in the political arena. Political life should comprise those questions that according to Kant essentially marked the human condition, namely what can we know, what ought we to do, and perhaps most importantly the question what may we hope for, given that politics is always orientated towards future (collective) possibilities.¹⁰⁹

As Hannah Arendt emphasized in the *Human Condition*, we require a public spirit and frames of meaning around which our public nature can coalesce in order to provide some grounding for human action.¹¹⁰ In other words, the political domain is the arena where human beings realize their capacity to 'care for the world' through affective labour and being held by that which they hold in common. Through this perspective, what we get are intangible 'objects of commoning' that have an almost inherently collective dimension, that engage with us imaginatively, and that provide the conditions to form relationships with a shared symbolic infrastructure that can be formed, maintained, and indeed contested; things such as memorials, sculptures and poems, essential for

¹⁰⁹ Jonathan Lear, 2008. p. 103

¹¹⁰ Arendt, Hannah, Danielle Allen, and Margaret Canovan, *The Human Condition* (Chicago: University of Chicago Press, 2018).

establishing and sustaining human relations over time.¹¹¹ These are affective objects of commoning that provide a focal point of shared symbolic significance around which to constellate. They provide socially embedded contexts to lend human action with meaning and purpose, even when the very conditions for such a profound communality have been significantly eroded in large-scale industrialized societies.

It is worth considering here that while the politics of community calls for political frameworks that can restore some paradigmatic contexts of meaning and these forms of meaning may find expression at a national level, they almost intrinsically have particular local contexts and they need not be entirely subordinated to overriding narratives. While the primacy of individual freedom is challenged and mediated in its most zealous articulation, the implication here is not that the individual is subordinated to the community; no teleological suspension of the individual. The individual remains the primary reference for political analysis in order to resist the temptation to articulate a politics that subsumes individual differences under nationally binding narratives and treacherous abstractions. The political risk looming here is an ambivalent and serious one, because while the need for collective narratives and social belonging is unambiguously present, we are also witnessing the shadows of socially binding forces cast over liberal progressive values that are not used to being challenged or even requiring a defense. While we may not be in a situation of cultural devastation, we seem to be in a similar predicament to the Crow in the sense that we are struggling to find meaning and purpose in the past that we have inherited. We have become disconnected from our own heritage and thus lost the ability to be proud of who we are. This is a key underlying condition of the crisis of meaning and the erosion of public morality and the correlated

¹¹¹ Ibid.

democratic and institutional norms, as well as the increased moral fatigue that saturates political life in many liberal societies.¹¹²

In this regard, a crucial insight from Lear's account of Plenty Coups is that humans are intrinsically cultural animals. We inhabit forms of life, ritualize 'habits of the heart' and have a need to see shared mental infrastructures (that also inform or inner private lives) reflected in a co-created culture. The individual is never wholly private; individual recognition requires a social mirror. In this sense, a politics that is concerned with questions of human and meaning and purpose is one that tries to articulate and indeed mobilize around the very things that we as human beings hold in common. Perhaps one particular shared human quality that is poignantly coming to the fore in a time of transition and crisis is our shared sense of vulnerability. This is not merely to diagnose vulnerability as an underlying condition of humans and the societies they inhabit, but to see whether we could not discover vulnerability itself as an unexpected political virtue. There seems to be an increasing awareness of a shared sense of vulnerability that we cannot quite name, and it might well be that this unnamed feeling is in part responsible for provoking the widespread intolerance and ideological dogmatism that galvanizes polarizing rival social and political forces. If we could find a way to name and integrate our shared sense of vulnerability, we may find a better way to live with it.¹¹³

The contemporary political theorist John Barry for instance is concerned with the political significance of seeing dependency and vulnerability as essential features of the human condition. In his words "both biological and ecological dimensions of human vulnerability and dependency are constitutive elements of what it means to be human."¹¹⁴ He notes that classical civic republicans had already realized that

¹¹² I outlined some of the ways in which contemporary crisis of liberal democracy is characterized by a hollowing out of public discourse which is a key factor in the increased political polarization that we are witnessing.

¹¹³ Jonathan Lear. 2008.

¹¹⁴ Ibid. p. 55

citizens are dependent on the natural environment, in the sense that the contingent features of the natural environment frame the possibilities for political action.¹¹⁵ Following the republican tradition, Barry conceives of a citizen as a particular individual that is embedded within specific social and environmental contexts, but is nevertheless wholly dependent on the environment and shares this dependency with others.¹¹⁶ Several classical republican thinkers such as Machiavelli portrayed politics as an attempt to achieve the aim of “building an enduring and safe home for human lives in a world ruled by contingency and filled with potentially hostile agents.”¹¹⁷ Despite proposing a conquest of nature, this perspective recognizes that fragility and human vulnerability are intrinsic not only to our nature but also to the nature of politics. It thus recognizes sustainability as an important public good for which it is worth making sacrifices, including civic obligations towards future generations. In some ways vulnerability and dependency could be said to open the door to a tangible universal ethic, a universal that is *felt* by all of us. At the very least, integrating vulnerability, fragility and dependency into our political orientation and to name it in public discourse implies a profound shift in governmentality, where previously they were seen as things to ‘prevent’ or ‘hide from.’ Vulnerability and fragility might be even seen as political virtues in the sense that they help reorient politics to what is common to us. In this sense, they may help mobilize our state apparatuses not only to *prevent* our vulnerability from contingent catastrophe, but to articulate a political vision that comes to terms with the *inevitability* of our shared vulnerability, and in doing so breaks out of our current mode of messianic defense *against* hostile forces, and instead identifies the conditions under which we may *transition* with and around them.¹¹⁸

¹¹⁵ John Barry, *The Politics of Actually Existing Unsustainability: Human Flourishing in a Climate-Changed, Carbon Constrained World* (New York: Oxford University Press, USA, 2012)

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ We might consider for instance the quest to become a multiplanetary species as an untenable messianic vision of simply avoiding and transcending our vulnerability. Similarly, we ought to avoid nihilistic or spiteful contempt, turning against ourselves as the vicious species that has committed unforgivable atrocities against Gaia. As Jonathan Lear’s account of Plenty Coups help us see, both modes are ill-conceived. We might be able to live better with our shared uncanny sense of vulnerability, if we are able to frame them in terms of political hope, which avoids the mistake of

Thus far I have developed the notion that the commons-orientated politics centered on human affect and meaning can provide some ways that may socially re-embed an atomized society and provide and become more deeply engaged with the psychological and spiritual needs humans have. In this vein a politics of affect helps us reconnect with ourselves and others on the basis of shared human qualities. In the section below, I will further elaborate on the psychological resources, political virtues and civic responsibility that a politics of community is centered around. However, I will do so with a more practical aim in mind, namely to elucidate the relationship between the commons and liberalism and to emphasize the particular relevance of a commons-centric politics given the contemporary political constellation and particular social issues that are arising. A significant motivation in this discussion is to reveal some of the ways in which the politics of the commons resists rival social and political forces from appropriating the commons by filling the void left by contemporary liberal failures; the very failures which are being exploited by nativist political projects. In this sense the commons-orientated critique of liberalism helps articulate a conception of community that resists the claims made upon it by rival political projects whose political vision is thoroughly incompatible with the progressive orientation of the commons-centered politics I have been developing. In this vein, I will conceptualize the commons as a framework that offers both a critique of certain excesses of liberalism, and a potential enrichment of its political imagination in order to preserve what is of most value from the liberal legacy that we have inherited.

2.4.1 The commons and the reform of liberalism

The critique of liberalism that I have been advancing in this chapter does not primarily stem from a purely theoretical disagreement with key tenets of political liberalism. Rather, it stems from the increased sociological observations of concrete

fatalistically teleological while not becoming nostalgically attached to the present, which is always already the past.

detrimental psycho-social effects that seem to be correlated to the atomistic tendencies of modern liberal democracies. Ever since Robert Putnam's landmark publication *Bowling Alone: The loss and revival of American Community*¹¹⁹, more attention has been paid to the deterioration of certain social institutions and virtues, including family life and marriage, higher divorce rates, and more recently, the emerging pandemic of loneliness sweeping contemporary liberal societies, has gained a particularly poignant social awareness.¹²⁰¹²¹¹²²

These social and psychological concerns that are shared across the political spectrum reflect the need for a politics that at least has the ambition to engage with some of the fundamental questions of human life. This could provide an opportunity for social and political innovative frameworks such as the commons to broaden the political imaginary and disclose political possibilities that were previously foreclosed upon. A recent poignant illustration of this was provided by an unlikely candidate, Tucker Carlson, a well known political pundit of Fox News who used his airtime to deliver a scathing soliloquy on the impact of neoliberal economic policy on American suburbs and family life, claiming that the current economic system had led many Americans to relinquish the American dream and turn their back on traditional social values.¹²³ On both the Right and the Left, a search for new ideas and greater political imagination is becoming increasingly apparent; policies such as Universal Basic Income, family orientated workplaces and use of complimentary currencies among a host of other ideas traditionally confined to the margins of our political imaginary, are gaining increased prominence in light of growing political awareness that we are confronted with an

¹¹⁹ Robert Putnam, *"Bowling Alone::The Collapse and Revival of American Community* (:Simon & Schuster, 2000)

¹²⁰ Jennifer Gaffney, 'Another Origin of Totalitarianism: Arendt on the Loneliness of Liberal Citizens', *Journal of the British Society for Phenomenology*, 47.1 (2016), 1–17
<<https://doi.org/10.1080/00071773.2015.1097405>>.

¹²¹ Rod, Dreher, 'The Loneliness of Liberalism', *The American Conservative*, 2018 [accessed 5 March 2020]<<https://www.theamericanconservative.com/dreher/loneliness-of-liberalism/>>.

¹²² Jennifer Gaffney, *Political Loneliness Modern Liberal Subjects in Hiding* (Rowman & Littlefield).

¹²³ Thomas Edsall, , "What Does Tucker Carlson Know That the Republican Party Doesn't?," *The New York Times* (The New York Times, 2019)
<<https://www.nytimes.com/2019/02/06/opinion/tucker-carlson-republicans-democrats.html>>
[accessed 5 March 2020]

array of socioeconomic challenges that cannot be solved in the conventional paradigm of neoliberal economics in conjunction with liberal democracy. Indeed, as I previously outlined, we are increasingly witnessing the rise of authoritarian capitalism gaining credibility in the West. Some scholars have even gone on to suggest that we are entering the era of ‘surveillance capitalism.’¹²⁴¹²⁵

The political crisis is compounded by the fact that underlying structures and social institutions that have been taken for granted and that form the bedrock of our political order are increasingly becoming untenable. Welfare rights and a universal welfare state, once the cornerstone of Left wing politics, are becoming unsustainable in an era of prolonged stagnant growth, ageing populations and the crisis of globalization. Furthermore, the creation of the welfare state has centralized bureaucratic powers and has often come at the expense of local care provisioning systems and taken away local resources and political autonomy, at a time when those are precisely the things that are needed in order to foster more resilience and self sufficiency from the increasingly fragile global supply chains (or large technological infrastructures such as the Internet of Things).¹²⁶ Free market solutions that are more commonly associated with right wing conservatism and libertarianism do not fare much better. Far from producing beneficial communal consequences, the invisible hand of unregulated free-market capitalism undermines the social unit of the family. For instance, few corporations provide enough leave to parents of newborn children and local communities particularly in the US are becoming fragmented as manufacturing jobs become scarce and are geographically scattered such that maintaining a vibrant tight knit social community becomes increasingly unviable.¹²⁷ Furthermore, the profound value shift that occurred following the transformation of economy and society under

¹²⁴Jocelyn Wills, *Tug of War. Surveillance Capitalism, Military Contracting, and the Rise of the Security State* (Montréal: McGill-Queens University Press, 2017)

¹²⁵ Thomas, Allmer, *Towards a Critical Theory of Surveillance in Informational Capitalism* (Peter Lang Publishers, 2012).

¹²⁶ I will discuss the centrality of the IoT in the emerging political economy, and some of the key implications of this infrastructure in the third chapter.

¹²⁷ Amitai Etzioni, *The Monochrome Society* (Princeton, NJ: Princeton University Press, 2003)

Reagan/Thatcher led to market values incorporating social relationships in the commercial arena where they had previously been governed at least to a greater extent by a sense of social reciprocity and civic obligation.

As I discussed previously in this chapter, the commons offer ways to develop and promote policies that would emphasize social responsibility, civic engagement and stem the tide of social fragmentation. The key element to developing more commons-centric social policies revolve around the question of how the politically dominant rights-based discourse of liberalism can be reinvented in order to not only protect interests and freedoms with reference to individuals themselves, but in order to cultivate civic virtue, social responsibilities and the social institutions, conditions and practices that nourish and sustain them. There is often a legitimate liberal worry here that political ideals and normative frames such as social cohesion, stability, loyalty and obligation could easily become rhetorical tools of authoritarian impulses. While commons naturally arise in all kinds of social circumstances, the political conception of the commons that I have developed in this chapter and the remainder of the thesis, is based broadly on the tenets of republican and communitarian thought, the centrality of human affect, and to some degree takes inspiration from virtue ethics. Throughout this thesis, I am primarily developing the commons as a framework for providing the political and to some extent institutional conditions through which economic democracy could arise.

This is significant regarding the political values that are enshrined by the commons because I am focusing on the digital commons that are sites of resistance against monopolistic digital capitalism. By arising in contexts of socioeconomic struggle, they will have to develop a certain overtly political and broadly progressive character. If they are to be genuine actors in a global or even national economy, they will have to be defined by inclusivity, openness and generally liberal social

values in order to be the dynamic innovative vehicles of change that they aspire to be. Above all, their internal governance will need to be laterally scaled and resemble heterarchy, which intrinsically resists the formation of overly rigid hierarchies and gives voice to those that may otherwise be silenced. In Malmö and Berlin to name two of the emerging epicenters of tech start ups and digitally enabled innovation, the alternative values, forms of life and business ethos that this primarily younger generation of entrepreneurs embody are beginning to have an influence on the consumer market, the demographics of the city and to some extent the city landscape as a whole, often to the chagrin of the more conservatively minded population. If we purely look at commons as a means of effective resource governance, we are likely to be confined to the domain of urban and rural commons, where patriarchal hierarchies and nativist appropriations are most likely, as in the case of the Italian urban commons described in section 2.3. There are of course many commons that are rooted in social traditions, customs and vernacular law that fly in the face of progressive social values. However, these are in some sense private commons, and may well be content with remaining ‘walled in’ communities. They have an inherently internal political character, but they are not political in the sense that they are not seeking to act onto the world; they are a world in themselves. The digital commons that are the focus of this thesis are intrinsically different because they are arising in the context of socioeconomic struggle. These commons, along with most other forms of overtly political commons tend to inherently resist formation of vertically integrated hierarchies. They are digitally and to some extent internationally connected communities. They see themselves as greater vehicles for social change and therefore need to develop a thoroughly inclusive and laterally scaled anti systemic character.

If we frame the commons as a way of thinking about the conditions of a democratic economy, that is not merely nested in the local pasture in the Alps, but has cultivated its own awareness as a social and political movement that embodies

an anti-systemic cultural and social ethic, then it is unlikely to be able to do this on the basis of an overly rigid social or nationalist conservatism. The digital commons and other forms of social commons that form part of the politics of community I have developed are intrinsically internationally orientated communities (though primarily rooted in their local identities) and need therefore to be characterized by a degree of openness. They rely upon global connectivity to some degree if they are to gain some autonomy from the global corporate sector and the neoclassical market regime that is dominant. However, this is not say that the commons do not need material homes and establishes local, regional and national entities. As I will outline further below, it would be a mistake for the commons movement to align itself simply with the liberal cosmopolitanism that is receding in the wake of the contemporary political crisis.

Furthermore, despite the criticism of liberalism that I have developed in this chapter, the key progressive values of Western liberalism and the civil liberties and rights that are commonly associated within liberal societies ought to serve as a liberal orientation for the commons. In this sense the political conception of the commons I am developing in this thesis is Western-centric in a manner of which one need not be ashamed or shy. The important implication of this is not only that the progressive social values form a point of orientation for the commons, but that they resist the temptation of seeking to implement alternative social models that have a more communal and collective orientation, but that lack the liberal foundation of their society, leading them to be more authoritarian and socially restrictive, even when they are ostensibly open democratic societies. Indeed, as I discussed in section 2.3, the orientation towards Singaporean models for instance are often linked to political projects that are thoroughly neoliberal and potentially authoritarian in character. The commons are of course geared towards a fundamental re-orientation of the nature of politics and aims at a transformative impact on social and economic relations. In this sense it also constitutes a critique of central tenets of liberalism. The misconception I am avoiding here is that the

politics of the commons is not orientated towards some alternative social model, at least in so far as this understood to mean to develop a political model that transcends a liberal orientation. In this sense, it is imperative that counter-hegemonic streams of political and social thought do not fall prey to the mistake of acquiring a corrosive anti-Western character, undermining the Enlightenment values that provide the moral and political foundations of liberal societies. Thus, the commons can be seen as providing an immanent critique of liberal politics while seeking to retain the liberal character of society and government.¹²⁸

It is an open question whether the political reform that the social and political innovations offered by the commons will leave liberalism sufficiently recognizable to its most ideological supporters. The criticisms leveled at liberalism in this chapter can be seen as a way to resist the excessive and over-zealous expressions of key liberal tenets such as individualism, efficiency, and political atheism with regard to the public good, in order to save liberalism from itself in an increasingly hostile and fragile socio-economic and political environment. This is particularly important at a time when polarizing political forces are increasingly abandoning the values of liberal enlightenment in favour of ethno-nationalist and other forms of pernicious identity politics that can only serve to atomize and individualize liberal societies further. Perhaps we are living in an age of transition where liberalism is already beyond itself. My aim in this thesis is not to speculate about a potential post-liberal or post-capitalist future. My aim has been to demonstrate that the commons offer a politics of transition, affect and communality precisely at a time when the conventional paradigm of neoliberal political economy and political liberalism are waning.¹²⁹

¹²⁸ This of course does not mean that the commons cannot draw from a variety of other perspectives and traditions in order to develop their critique of liberalism.

¹²⁹ They also embody the human foundations and morality of economic life, and entail an economic logic that is grounded in this ethical foundation. It is likely that we are going to become more dependent on the economic logic of commons and the social innovations they entail as the socioeconomic and above all the ecological crises escalate.

Thus, the key to the political project of the commons is to identify valued forms of community and to devise policies designed to protect and promote them. As I will further outline below, the social values of belonging, communal relations and symbolic contexts of meaning that are central to the politics of community are often tied to the political virtues of patriotism and compatriotism that are being championed and misappropriated by the nationalist right. This does not mean that concepts of patriotism ought to be eschewed by the liberal elite and academics for its parochial connotations, as they often mistakenly do. This is the way in which the progressive politics of community espoused by the commons can reintegrate, rehabilitate and reinvigorate important political concepts such as patriotism into our political discourse.

This rehabilitation of political virtue and civic responsibility may also mean endorsing public policies and ideas of public virtue that may irk conventional liberal attitudes that have framed freedom of choice as the unimpeachable political virtue in other areas. As I discussed previously, we should consider carefully whether individual freedom should really be defined purely in terms of choice and mere absence of interference. I have also pointed out that while enabling and providing the conditions for individual self realization is perhaps the central aim of liberal societies, self realization itself cannot be entirely divorced from some conception of a political or moral end that the state is subtly orientated towards. More generally, what I have been advocating is that liberty need not be the only political virtue worth considering, and a number of other political values need to be developed in our civil societies and citizenry. These can only be realized through active cultivation of civic responsibility and political agency, toward which there seems to be a profound liberal hesitation.

Consider for instance the controversial policy of national service. Until recently, Germany for instance still had a form of mandatory service for adult males,

whereby one could choose to do a 'civic' or 'social' year of community service in lieu of military training. While there may have been good arguments to reform or even abandon this form of mandatory service, it was striking that the policy was abandoned without much public debate or scrutiny. Moreover, the criticisms that were directed at any form of institutionalizing this form of civic obligation revolved around the notion that individual freedom of choice must not be interfered with. It is of course obvious why this consideration would be paramount, and indeed the commons share a suspicion of statist and corporatist approaches alike. However, it is also clear that in order to confront the enormous challenges we are facing, we will need to harness large-scale state power with a commonsian caveat that part of this state power is used to mobilize citizen-led agency and decision making through the kind of democratic governance principles that characterize the commons.¹³⁰ This in turn requires the cultivation of a public spiritedness and collective care practices. It also requires a capable and engaged citizenry that is able to engage in complex forms of collaboration and self-organization, which may help foster care provisioning systems where the state apparatus is failing, and fosters a citizenry that in times of crisis is not wholly dependent on the state but has collective resources of resilience to draw from.

Providing young people the opportunity to be engaged in a civic year, providing them with valuable life and professional experience, orientation and potentially helping migrants integrate while providing health and care services with essential staff and strengthening ties between individuals and their communities are all provisions of a public policy that delivers a variety of social benefits. Surely, these apparent benefits would resonate in the ears of a Noam Chomsky as much as they would in Tucker Carlson. Why then, would we be afraid to realize these ends in the name individual freedom, without even having to consider the opportunity cost of maximizing narrowly construed freedom of choice at every instance. The

¹³⁰ I will outline these more thoroughly in the next chapter.

extent to which it is worth re-conceptualization our concept of freedom from one rooted in *choice* to one that is seen as compatible and mutually reciprocal with *necessity* is reiterated here, particularly with regard to the ideological and normative justification of public policies. It might well be prudent to modernize the idea of a 'service year' by divorcing it from military service and making it universal. The point here is not primarily to endorse a particular public policy, but rather to demonstrate that the narrow conception of individual freedom often times ends up in political decision marked by complacency, political fear, and a lack of reciprocity between freedom and social responsibility. Thus, if progressive liberal values are to be enshrined in the commons, then the advocates and proponents of these values might well have to step into waters that they were previously hesitant to get into. For instance, when German conservative politician Annegret Kramp-Karrenbauer, by many considered to be Angela Merkel's chosen heir, proposed the re-introduction of a universal 'service' year that would include refugees and asylum seekers, the policy was widely dismissed as 'populist', except by the far right AFD party.¹³¹ The lesson here is that there is a political price to be paid if political notions that have a high degree of emotional resonance such as patriotism, the importance of citizenship and national borders are left as uncontested political terrain. It is therefore necessary to address and integrate these issues even if engaging with them entails certain political risks.

Thus, the extent to which patriotism is or ought to be considered a political virtue is central here. Alisdair MacIntyre defines patriotism as a "peculiar action generating regard for particular person institutions or groups, a regard founded upon a particular historical relationship of association between the person exhibiting the regard and the relevant person, institution or group."¹³² This form of patriotism need not catch us in a binary of either supporting or feeling disregard

¹³¹Josie Le, Blond "Germany Mulls Year of National Service for Young People and Migrants," *The Guardian* (Guardian News and Media, 2018)
<<https://www.theguardian.com/world/2018/aug/26/germanys-cdu-floats-return-of-one-year-compulsory-national-service>> [accessed 4 March 2020]

¹³² Alasdair MacIntyre, *Is Patriotism a Virtue* (Place of publication not identified: University Press of Kansas, 1984) p. 6

for one's country, and crucially is not so much tied to government but to the particular society that one belongs to. This does nevertheless entail being partial in one's support and appraisal of achievements and merit as well as obligations to particular groups. However, this does not mean that I am offering here a conception of patriotism that implies blind support and unconditional prioritization of one's country. It is not only founded on achievements but also involves a critical engagement with its shortcomings, and understands itself as a way of forming associations and relations with others on the basis of mutual recognition of particular identities, rather than on the basis of an abstract cosmopolitan conception of global citizenship.

The notion of a 'global citizenship' is becoming increasingly untenable.¹³³ It has become painfully obvious that the notion of an 'international community' is becoming, or always has been, an empty signifier. It seems increasingly clear that the political choice that we face is between international solidarity and cooperation on the one hand, and a retreat to protectionist and more isolationist nation states on the other. The latter is a political vision that is not only characterized by exclusionary nativist political forces, but also untenable given the global nature of the crises we are facing. A politics of the commons should of course be directed towards the former political project, but this needs to be done on the basis of seeing the commons as providing the conditions for robust identities to emerge at the local, regional and national level. A politics that is centered on civic responsibility and political virtue can help nourish these identities on the basis of a democratizing and inclusionary impulse.¹³⁴ Indeed, as a framework for economic

¹³³ Being very much a product of liberal cosmopolitanism, a millennial 'third culture kid' who grew up overseas and went to an international school, this statement does not come intuitively to me. However, in an age of receding globalization, it is clear that progressive politics needs to come to terms with the inherent limitation of a cosmopolitan orientation. It will need to engage with the call to national belonging, identity and de-globalization, and seek to frame the debate on the basis of progressive values.

¹³⁴ The formation of these local and national identities will need to be done on the basis of the political framework of economic and participatory governance of the commons as developed in this thesis, including the commons-centric public policies such as the formation of citizens assemblies, subsidiary decentralized federalisms, 'commonification' of public services, implementing policies

democracy, the commons can help develop an understanding of democracy that sees democracy as an underlying social structure, and not merely confined to the domain of political representation. This consolidates the progressive, democratic and participatory political orientation of a commons-centric politics of community. Furthermore, by engaging with questions of human meaning and purpose, a commons-centric politics of the community can help foster a shared sense of public morality.

The political virtue of patriotism for instance cultivates an attitude of gratitude, the psychological significance and emotional valence of gratitude is of course emphasized by many religious and spiritual schools of thought. Patriotism in this sense is a political virtue that can be regarded as a potentially important component of a politics of community in so far as it constitutes one of the psychological resources we ought to nourish and foster. Indeed, a sense of patriotism may even be a condition of being able to cultivate the kind of civic and moral attitudes that a politics of community requires and aspires to. Alisdair MacIntyre beautifully illustrates the centrality of patriotism to moral life:

I understand the story of my life in such a way that it is part of the history of my family or of this farm or of this university or of this countryside; and I understand the story of the lives of other individuals around me as embedded in the same larger stories, so that I and they share a common stake in the outcome of that story and in what sort of story it both is and is to be: tragic, heroic, comic. A central contention of the morality of patriotism is that I will obliterate and lose a central dimension of the moral life if I do not understand the enacted narrative of my own individual life as embedded in the history of my country. For if I do not understand it

requiring civic commitment from citizens while enhancing citizen capabilities to build communities of resilience and autonomy.

I will not understand what I owe to others or what others owe to me, for what crimes of my nation I am bound to make reparation, for what benefits to my nation I am bound to feel gratitude.¹³⁵

The patriotism MacIntyre is describing here is not the kind of patriotism that implies an unconditional 'love of country' but a love that is the condition on which to know and feel a sense of selfhood that is historically and socially embedded. Self knowledge, knowing who you are, for what you stand and where you are from is not merely a series of 'choices' but constitute profound and to some extent necessary commitments. To reiterate the notion of 'embedded freedom' I outlined above, this is not to say that one does not engage with these commitments on a contingent and individually 'free' basis, but a freedom that is nevertheless thoroughly rooted in a situational context. It is not only that a politics of community provides situations in which one has political and social commitments which are 'compelling' and that provide meaning for human action, but that they also form the basis upon which we understand ourselves better, and perhaps even understand our universal shared vulnerability and human needs better. It may well be that by becoming more embedded in our particular social selves, the appeal of exclusionary and reactionary political forces and social narratives will wane, as the human psycho-spiritual void left by decades of a politics of the self is filled (at least to a greater degree than before). If we wish to articulate and develop a more affirmative and positive political vision that our current political crisis cries out for, we also need to develop the grounds to cultivate a certain form of political pleasure, or even love.

To illustrate this point further, we may think of a commons-centric politics and the political freedom entailed within it as analogous to a game, particularly games that require complex forms of social collaboration in order to achieve some common

¹³⁵ Ibid. p. 4

end.¹³⁶ These games work because they offer ways of engaging us in problem solving that are experienced as pleasurable and meaningful commitments, which require one's sense of self to be relationally entangled with others. For such a game to function smoothly, especially if we are playing this game at a societal level, social trust or what economists call social capital is an essential ingredient. The form of social collaboration that is related to political pleasure nevertheless implies a certain abandonment of self to the collective mind and wisdom of the group. It is important to note though that individual differences are not seen as an impediment but indeed constitute a valuable social resource conducive to problem solving. Indeed, as this chapter has sought to demonstrate, in many ways the very essence of the commons is to provide structures, institution, political frameworks and normative principles that develop intelligent, complex and laterally scaled (participatory and inclusive) forms of human collaboration. We are living in a time when politics is increasingly unpleasant, and there is an increased lack of trust in public institutions and government. To put it simply, we seem to despise politicians and government, but we nevertheless still cherish democracy. Surely this suggests that crucial elements of what we consider democracy to be are not fully realized, or at least that we wish to articulate a 'thicker' conception of democracy as a political ideal that is worth striving for. In this vein, the politics of the commons offer ways in which political engagement can be a profoundly democratic experience, and indeed provide the conditions through which democracy itself may become a politically pleasurable experience. Through this process, politics may become a convivial, rather than a cynical domain of human life.

Our contemporary political challenges consist not so much in the lack of political imagination and creative solutions to our political problems, but that we lack well devised structures which encourage participation and nourish collective agency.

¹³⁶ Consider for instance the popular board game 'pandemic' in which players must collaborate together in order to prevent the spread of a virus, whose rate of infection accelerates with each round that the game is played.

As I discussed in section 2.1 the commons signify a shift in govern-mentality from a managerial 'solutionist' framework that is reactive to problems, to a govern-mentality that is orientated towards providing structures which provide context-specific solutions by drawing on localized experiences and knowledge. Furthermore, the commons can provide the basis of cultivating a civic responsibility that enables and enhances the mutual recognition of citizens. In this sense, it is the expressed political hope of the commons that without homogenizing political identity, the things that we most cherish and value can once again to some degree be held in common.

3.0 Chapter Two

A contribution to the theoretical understanding of the commons

3.1 Introduction

In this chapter, I will aim to clarify some of the terminological confusion that arises around the commons, and provide a typology for the different types of commons that can emerge. I will elaborate on some of the different types of commons already mentioned, such as the natural and digital commons, while also developing the shift from understanding the commons as a resource, to understanding the commons as the locus of social relations. The concept of the commons emerges from a seemingly simple question: who owns the world we've '*inherited*'? We can further break this question down: Who owns the air? Who owns

the forests? Who owns the rivers, skies, and minerals that we all rely on? What about the electromagnetic spectrum which underlies virtually all of our communication infrastructures? Or consider the genetic structures of life, including our own DNA? As I noted previously, many political philosophers, including some of the classical liberals such as John Locke, conceived of the earth initially as 'inherited', and they went to great lengths to legitimize the subsequent right to enclose land and other natural resources from the 'inherited' common.

However, what turns something held in common into a commons is that the latter represent a social relation in the form of a system of collective governance and rules that operate beyond both, the logic of the market as well as that of the institutional arrangements of the state, thus representing an independent organization, management and distribution of a shared resource. It encompasses all the formations of nature and society that we 'inherit' jointly and freely, and hold in trust for future generations, be they rivalrous and exclusive or non rivalrous and relatively abundant.

When on April 12, 1955, the inventor of the Polio Vaccine Jonas Salk was asked by Edward R. Murrow who owned the patent to the polio vaccine, his reply was a simple one: "Well, the people, I would say. There is no patent. Could you patent the sun?"¹³⁷ Salk could have added that the people had contributed through donations to the research costs. But independent of that, his response was not simply a reflection of a subjective moral conviction. To a certain degree, it was rooted in a tradition of thought that can be traced back to the founding of the American Constitution or even further back in time, to the Magna Carta and the Charter of the Forest.¹³⁸ For instance, the founding father and author of the United

¹³⁷CBS Television interview, *See It Now* (12 April 1955), <https://www.youtube.com/watch?v=erHXKP386Nk> . [accessed 10/02/2019]

¹³⁸In 1217, all of the rules that were contained in the 1215 version of Magna Carta and related to the forest were put into a separate charter – the Charter of the Forest. In 1225, some minor adjustments were made, and the charter was issued in its definitive form. Dated 1225, quoted from National Archives where the original text can also be accessed: <https://www.nationalarchives.gov.uk/education/resources/magna-carta/charter-forest-1225-westminster/>, [accessed 10/02/2019]

States Declaration of Independence, Thomas Jefferson, writes: "If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea."¹³⁹ The underlying notion was that monetary valuation and private property were inherently inadequate for a number of resources, both material and immaterial, for the simple reason that if you share money or water you have less, while if you share ideas and knowledge, you have more. Thus, valuing the latter in terms of the former will decrease the incentive to share, cooperate and innovate and the volume of ideas and resources that are the basis for future growth and ideas in circulation shrinks.

To overcome the (mis)understanding of commons as goods in economic and social theory and practice and in the teaching of the economist's profession would be an important contribution to appropriating the commons as a pathway to deal with social and ecological crisis. In the next section I will therefore briefly position the commons within the economic theory concerned with the classification of goods.

3.2 Are commons goods?

James Buchanan and JP Samuelson are perhaps the two most influential economists when it comes to the classification of goods in mainstream economic theory. By their logic, resources can be classified as a certain type of good belonging to a category by identifying its intrinsic properties and modes of use.¹⁴⁰ From this classification, one can then derive the appropriate management solutions (if it is private leave it to the market; if it is public to the government). While Buchanan may not have been an advocate of managing goods as a commons, he did recognize that this strict public/private dichotomy would not always result in optimal outcomes. In Buchanan's terms, what the economic theory of his time

¹³⁹Thomas Jefferson in a letter to Isaac McPherson on August 13, 1813. See: http://press-pubs.uchicago.edu/founders/documents/a1_8_8s12.html, [accessed 10/02/2019]

¹⁴⁰ James M. Buchanan, 'An Economic Theory of Clubs', *Economica*, 32.125 (1965), 1-14
<<https://doi.org/10.2307/2552442>>.

lacked was "a theory of co-operative membership, a theory that will include as a variable to be determined the extension of ownership-consumption rights over differing number of persons."¹⁴¹ This problem could be reduced to "the size of the most desirable cost and consumption sharing arrangement."¹⁴²

Buchanan argues that rivalry is not characterized by indivisibility, but rather by what Ostrom later called 'subtractability' (reduction through rivalness). It is not a case of either all or nothing, but more or less. If two people consume a rivalrous good such as an apple, they may each simply consume less of that apple. In Buchanan's words: "[g]iven any quantity of a final good, as defined in terms of the physical units of some standard quality, the utility that the individual receives from this quantity will be related functionally to the number of others with whom he shares."¹⁴³ In Buchanan's view, this requires economic theory to break out of the 'straitjacket' of private ownership, though it is not clear what he advocates instead.¹⁴⁴ If a good is characterized by divisibility, that is if more than one person wishes to consume or use it, the allocation would have to follow a distributive logic.

Therefore, economic goods seem to be defined by varying degrees of excludability, rather than a dichotomy of private excludability and public non-excludability. Neoclassical economic logic is incompatible with a distributive conception of ownership characterized by modes of use-rights, provisions for access, and proprietary obligations. This means that the provision of access and distribution of a resource often depend on assigning separating rights to exclude. The extent to which those rights over a certain good extend is by no means fixed by the good being inherently private or public. As Buchanan notes: "the necessary marginal conditions allow us to classify all goods only after the solution (to their

¹⁴¹Ibid.

¹⁴²Ibid.

¹⁴³Ibid.

¹⁴⁴Ibid.

management) is attained."¹⁴⁵ That is to say, the degree of excludability of a good is not related to inherent characteristics it possesses, but rather the way in which it is conceived and the characteristics it is *given* as a result. Do we see fresh water as exclusively rival, or defined by subtractability and divisibility? The alleged non rivalry of public services such as roads, lighthouses or dykes can become excludable and private. Private owners might even tax 'free riders' of the services their acquired goods provide. In Tennessee, for instance, the privatized local fire brigade watched a customer's house burn down because the homeowner did not pay his subscription.¹⁴⁶ The CEO argued that they could not afford for people to lose their incentive to pay their subscription. As Buchanan writes: "if the structure of property rights is variable, there would seem to be few goods the services of which are non-excludable."¹⁴⁷

While commons will share certain features and characteristics that are essential to their being commons and that distinguish them from other forms of governance approaches, commons should not be seen as a 'type of good' that can be inferred merely from certain properties and attributes. Commons emerge from the myriad of relationships between individuals and communities and their shared social and natural environments, including non-human animals. I will elaborate on this nature of relational aspect of the commons in section 3.5. The creation of goods often alienates individuals from the spaces where their lives and vested interests as members of a society or a community overlap. It is precisely by capturing this sense of 'relationality' and multi-stakeholdership that problems of use, creation and allocation of resources can be solved without imposing external acquisitive management mechanisms. Below, I will outline some of the key differences in the socioeconomic logic of the commons and the dominant neoliberal market. This will provide a basis on which to understand the democratizing potential of the

¹⁴⁵Ibid.

¹⁴⁶'Opinion | Why Firemen Let That House Burn Down', *The New York Times*, 6 October 2010, section Opinion <<https://www.nytimes.com/2010/10/07/opinion/07thu4.html>> [accessed 10 February 2019].

¹⁴⁷James M. Buchanan, 'An Economic Theory of Clubs', *Economica*, 32.125 (1965), 1–14 <<https://doi.org/10.2307/2552442>>

commons in light of their increased importance in our political economy, which I will elaborate on in detail in the third chapter.

3.3 Shifting from the logic of private property and monopoly towards the logic of distributive production

One important way in which to transcend Ostrom's resource governance approach to the commons is to develop a richer conception of the commons that goes beyond understanding the commons primarily as a *resource* (managed collectively) that retains extractionist and transactionist connotations, and risks omitting some of the key convivial elements and dynamics that characterize the dynamics of the commons. One of the ways in which the commons can inform our understanding of property is that the concept does not have to refer to clearly demarcated control and rights of exclusion, but rather that 'ownership' is concerned with 'use-rights' that can be extended to a community of stakeholders. This is particularly relevant given that the advent of the internet is reshaping our conception, rendering the notion that private property is defined by *rights to exclude* less intelligible and increasingly anachronistic. In a world of ever-increasing commodities and services produced at near-zero marginal cost, pecuniary value and the traditional consumer market economy based on mass production and industrial capitalism will likely play a proportionally somewhat smaller role in the political economy of the future.¹⁴⁸

Another area is the energy transition from fossil fuel to renewable energy based production. The latter is by design *prima facie* more conducive for a decentralised, small and medium size scale economy that fits well with the social practice of commoning and networked distributive production. The commitment of several countries, notably Germany and China, exemplifies this. Germany is able to produce around 25% of its energy from renewable energies while recently having

¹⁴⁸Jeremy Rifkin, *The Zero Marginal Cost Society* (Palgrave Macmillan, 2014).

committed to phase out all coal plants by 2038, which account for about a quarter of the country's CO₂ emissions.¹⁴⁹ While most of the technology is still patented and money earned (or seen in the logic of a commons based economy: production costs increased) through licencing, it is the distributive mechanism that enables such fast growth. A large share of the new renewable energy producing facilities are in the hands of small startups, energy cooperatives and individual households who feed the surplus renewable energy they produce into the main grid and break the monopoly of the four main enterprises that generate and disseminate energy.¹⁵⁰ Once the fixed costs are paid for, the infrastructure investment required to make a building or community energy self-sufficient is transferred between collaborative participants in a shared, laterally organized economy.¹⁵¹ These co-producers are often initially incentivized to share these resources through government-backed green feed-in tariffs (guaranteeing a long term fixed price for the energy they supply).¹⁵² This model is also interesting for community councils to invest and save on energy bills for public facilities later on. It is clear though, that again, the energy transition evolves in an interregnum and that the power of monopoly will not easily fade away.

In such arrangements we see a fundamental tension between the logic of private property and the logic of distributive production systems that rely on open access and peer-to-peer collaboration to work. Often the former is imposed on the latter. The internet is perhaps the largest and most efficient infrastructure that enables the co-producing of commons. It is one of the largest extensions of the public domain in human history. The principles of lateral power relations, open access and

¹⁴⁹Markus Wacket, "Germany to Phase out Coal by 2038" in Move Away from Fossil Fuels, *Reuters* (Thomson Reuters, 2019) <<https://www.reuters.com/article/us-germany-energy-coal/germany-to-phase-out-coal-by-2038-in-move-away-from-fossil-fuels-idUSKCN1PK04L>> [accessed 16 May 2019]

¹⁵⁰Rifkin, Jeremy, *Third Industrial Revolution* (United States: Palgrave Macmillan, 2011).

¹⁵¹ Chankook Park and Taeseok Yong, "Comparative Review and Discussion on P2P Electricity Trading", *Energy Procedia*, International Scientific Conference "Environmental and Climate Technologies", CONECT 2017, 10-12 May 2017, Riga, Latvia, 128 (2017), 3-9 <<https://doi.org/10.1016/j.egypro.2017.09.003>>.

¹⁵² Ibid.

reciprocal peer-to-peer information-sharing that underlie the efficacy of this commons (and the many benefits it has brought) are incompatible with the logic of private property and the exclusion inherent in it. In this sense, the extension of private property in an age of digital commons seems rather anachronistic, especially since the intensification of copyright law contradictorily coincided with the emergence of the technological revolution heralded by the internet. In other words, the conditions required for commons to function efficiently are distorted through interventions that provide conditions for the market to function efficiently.

3.4 Types of commons

As can be seen from the above discussion, defining what constitutes a commons is rather complex, not least because one core element of a commons is that it is not a *thing* but a dynamic relationship and negotiation process, and therefore its meaning is always unfolding in a process of becoming. The aforementioned slogan 'there is no commons without commoning' illustrates this idea very well. Commons emerge through humans acting in concert, developing shared values, norms and traditions in the process. Thus, commons are not 'objects' or 'things' or even an instruction manual for how to use these things, but rather need to be understood in terms of the myriad of affective relations that bring them into being and maintain them. A commons does not refer to a specific entity or set of entities, or indeed particular resources, but rather describes any 'resource', be it creative, infrastructural, immaterial or material. As I will outline in the following section, the commons may even pertain to psychological resources that we hold in common and that underlie the sociality and communality of the commons - of coming together. Given this vast diversity among the commons, it is worth differentiating between some of the main forms or strands of commons that exist. Traditionally, commons are associated with natural resources such as forests, fisheries, or groundwater resources. However, as I have stated, in today's world

digital commons such as Wikipedia, which can often be aptly described as knowledge commons, are gaining increasing importance. The socioeconomic logic that enabled them to arise is gaining credibility.

Given the rising relevance and importance of digital commons, a second school of thought, revolving around the 'immaterial', 'social' or 'cultural' commons has gained a lot of traction in recent years. These include the knowledge and cultural commons as Lewis Hyde describes in *Common as Air*,¹⁵³ the digital commons and peer-to-peer production which have gained much more scholarly attention since Yochai Benkler's *Wealth of Social Networks*,¹⁵⁴ as well as the bio-political commons as examined by Michael Hardt and Antonio Negri in *Commonwealth*.¹⁵⁵ While the political perspectives that inform these analyses differ, they all assume an analytic distinction between the 'immaterial' commons and the 'material' commons. Below, I will make use of this distinction to outline four main categories within which most commons are hosted. However, it should be noted that each of these 'categories' share certain facets and features with each other and in that sense to be understood as mutually reciprocal forms, rather than separate categories. The first two categories refer to commons that are material commons while the latter two refer to immaterial commons.

Social and Public Commons: These commons are *created* by humans and *material* in their nature. They usually are intended to serve public purposes, facilitate social life and may to some degree include traditional public property such as sidewalks and public spaces, as well as public infrastructures such as roads, highways etc.,. These are often referred to as public goods. While public property owned by the government shares some features with the commons, it is only when the user community has some way of directly participating in the governance of the

¹⁵³Lewis Hyde, *Common as Air: Revolution, Art, and Ownership* (Cornwall, United Kingdom: MPG Books, 2011).

¹⁵⁴Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (United States: Yale University Press, 2006).

¹⁵⁵Michael Hardt and Antonio Negri, *Commonwealth*, 2011th edn (United States: Harvard University Press, 2011).

relevant 'resource' by determining use rights, rules and regulations and sanctioning mechanisms for and by the community of users, that such public goods become commons.

The social commons emphasize the relational and affective dimensions of shared social spaces that allow immaterial forms of relating and community to be established. The different forms of social relations embedded within commons constitute a process of social commoning, and thus a social commons (in an ongoing process) is formed without necessarily an 'object of commoning' having been defined. Social commons refer more generally to shared social spaces, which often have deep symbolic significance, allowing social gathering and preserving cultural memory. To reiterate the centrality of affect that the conception of the commons I am developing in this thesis, the commons are *social*, not only because they facilitate interaction and resource governance, but because they cultivate psychological resources that enable coming and becoming together. While many shared social spaces can and should be protected from government control and privatization through commons-orientated governance frameworks, it is important to point out that commons can at least partially emerge out of use-rights being claimed and practiced despite formal structures that at first appear to be contradictory and inhibiting. The commons-public partnerships that I described in the first chapter, and to some extent even public-private- partnerships (PPP), show that features of commons-orientated approaches *can* be practiced and realized within structural environments that are in theory antagonistic to it. This is particularly relevant as the World Bank has just launched a 'Municipal Public Private Partnership framework'¹⁵⁶, a tool developed specifically for local governments to help them understand and implement PPPs. This is not without risk, particularly if the capacity to negotiate complex contracts is not sufficiently available for local decision makers. If local governments manage to organize

¹⁵⁶World Bank Group, "Municipal Public Private Partnership Framework", on *Public Private Partnership Legal Resource Center (PPPLRC)*, September 2019, <https://ppp.worldbank.org/public-private-partnership/municipal-and-subnational/municipal-public-private-partnership-framework>, [accessed 26 September 2019].

participatory approaches and define their priorities for contract negotiations based on user consultation for PPP-projects in the context of public service delivery, they can mitigate the risk and enlarge the concept of PPPs to Commons Public Private Partnerships (PCPP) combining the interests of user communities (citizens), the local government (classical public sector) and the private companies.

'Natural' commons: These commons are *material* and *inherited* (from a commons perspective), or at least they are not created by humans. The commons of nature are living or form part of life themselves. They are indispensable to human life. They include land, air, the electromagnetic spectrum, energy, water and the global atmosphere. They also include commons of our internal nature, such as the genetic structures of life, and may also be referred to as 'bio commons.' While most commons are to some extent almost inherently shared spaces or 'resources', it is perhaps the 'natural' commons that best reflect the notion that commons typically represent some form of commonwealth where responsibilities are necessarily distributed and shared. As the governance structures to vast ecological commons such as space, the arctic or the oceans reveal, it is difficult not to have at least implicit recognition of these environments as commons. An interesting implication worth noting is that the fruits of human labour resulting from the appropriation and modification of nature, particularly when one is talking about the genetic structures of life, are themselves derived from forms of inherited wealth. Furthermore, to some degree the 'freedom to roam' laws¹⁵⁷ that have a particularly strong tradition in Scandinavian countries,¹⁵⁸ extend use and access rights without having to formally be a commons or even in public ownership.

¹⁵⁷The freedom to roam refers to the general public's right to access certain public or privately owned land, lakes, and rivers for recreation and exercise. It is sometimes called the right of public access to the wilderness or the "right to roam", see also <https://www.gov.uk/right-of-way-open-access-land/use-your-right-to-roam> on how it is regulated in the United Kingdom

¹⁵⁸<https://visitsweden.com/freedomtoroam/>

Knowledge Commons: These commons are largely immaterial (though being often digitally based, dependent on material infrastructures), but are still products of 'homo faber' (man as a maker), in some sense or another. They depend on explicit and directed human coordinated action to come into being. Wikipedia is the archetypal example here. Thus, they are commons which are *immaterial* and *created*, with the crucial addition that they are created to be held in common. Open software design and creative or cultural content that is in the public domain exemplifies these forms of commons well.

Commons of the Mind: These types of commons are perhaps the most elusive with regard to their definition, though it is precisely for this reason that they disclose the extent to which the commons underlie our social life-world and the way we engage with this world as social beings. These commons do not exist independent of humans and their actions, like the natural commons, but unlike the social and knowledge commons, they exist to a large degree without human labour. Similar to the 'natural' commons, they can be understood as having an intrinsic affinity with being conceptualized as a commons, because they are virtually shared by definition. They are a part of ourselves and necessary for the co-construction of the social life-world which we inhabit; language is a good example. While human knowledge and cultural output can be organized in formats that follow commons-centric design or more conventional market-based schemes, we all hold certain values in common and we all have access to, and make use of, certain ideas. For instance, we all make use of language to communicate and thus as social beings are deeply embedded within a shared commons of the mind.

The notion that the commons do not *exist*, but are rather *created*, is an important element for understanding the commons, as they come into being through social agency and the interaction of human beings with each other and their environments. Hence, it is important not to naturalize the commons. Yet, it is equally important to note that that understanding the commons as a concept

reveals the extent to which we are already embedded within various different shared environments. These range from the shared faculty of language and reason we use to communicate with each other, to the localized environments we inhabit and the more global environments we are nested within, such as some of the ‘global commons’ discussed previously. A street or a forest can literally be fenced off and access directly controlled. In contrast, with immaterial produced commons such as open software and knowledge commons, it is much harder to enclose them once they have come into being. Yet their private and monetized equivalents exist and can dominate commons-based alternatives. With the commons of the mind, enclosures are virtually impossible to impose.

Consider the aforementioned example of language as a commons of the mind. While certain phrases and words can be patented and monetized, as many companies have done for advertising purposes, it is difficult to conceive of a ‘privatized language.’ Nor is it easy to privatize a person’s voice. As the songwriter David Rovics points out in his song *The Commons*: “You may own the airwaves, but you’ll never own my voice.”¹⁵⁹ Of course, the *recorded* voice can be privatized and enclosed. What is beginning to become apparent here is that, while we are all situated within certain commons of the mind and some of the very capabilities that make us human, the extent to which they enhance or diminish human agency and conviviality depends on the environments within which they emerge. It is worth noting in this regard, that technological infrastructures, social institutions including legal frameworks, and broader normative and cultural ideas all shape the way in which concepts as seemingly commonplace as language and speech function and the ends they serve.

Ivan Illich was a key thinker who was keenly aware of this. In his essay ‘Silence is a Commons,’¹⁶⁰ he points to another striking example of a commons of the mind, in

¹⁵⁹Bill Bigelow and Tim Swinehart, *A People’s Curriculum for the Earth: Teaching Climate Change and the Environmental Crisis* (London, United Kingdom: Rethinking Schools, 2014). p. 24

¹⁶⁰Ivan Illich, *Silence is a commons*, Address at the Asahi Symposium Science and Man - The computer-managed Society, Tokyo, Japan (21 March 21 1982), as published in *The Co-Evolution*

which he clearly shows how silence can be seen as a commons, and the forms of enclosure that threaten the conviviality and the social values it brings. In the passage below Illich describes the effects of introducing a loudspeaker to a community that hitherto had not experienced witnessing the impacts of such technology:

Few people there had ever heard of such a thing. Up to that day, all men and women had spoken with more or less equally powerful voices. Henceforth this would change. Henceforth the access to the microphone would determine whose voice shall be magnified. Silence now ceased to be in the commons; it became a resource for which loudspeakers compete. Language itself was transformed thereby from a local commons into a national resource for communication. As enclosure by the lords increased national productivity by denying the individual peasant to keep a few sheep, so the encroachment of the loudspeaker has destroyed that silence which so far had given each man and woman his or her proper and equal voice. Unless you have access to a loudspeaker, you now are silenced.¹⁶¹

The commons of the mind are relevant to broader domains of human experiences, providing not only the protective enclaves for the preservation of language, vernacular customs and traditions, but serving as protection from forms of enclosure that pertain to psycho-spiritual aspects of human life. Illich saw forms of enclosures of this kind in the “professionalization of the 'spiritual service' during which pastoral services began to take over from the realm of the vernacular.”¹⁶² As Schroyer writes:

Quarterly (Winter 1983)<<http://www.preservenet.com/theory/Illich/Silence.html>> [accessed 5 June 2017].

¹⁶¹Ibid.

¹⁶²Ibid.

Illich shows that the fundamental ideologies of the industrial age are derived from the monastic reforms from the 9th to the 13th century, where the personal pastoral services of the professional priests were more and more asserted to be essential for salvation.¹⁶³

Furthermore, according to Schroyer, "the Catholic Church proceeded to monopolize, regiment and institutionalize the realm of the spiritual – a dynamic that has been replicated in all sorts of professions, disciplines and institutions in the 19th and 20th centuries (and continuing today, of course)."¹⁶⁴ The state soon began to see the advantages of colonizing vernacular life. Thus "Spain became the first European state to develop a formal grammar – or a taught mother tongue."¹⁶⁵ In the late 15th century, Illich is describing here the way in which a commons of the mind such as language is shaped by the institutional frameworks which govern it, and the impact this has on the 'user community', its speakers and the realms of possibilities that are opened up, disclosed or foreclosed on.¹⁶⁶ Illich further illustrates that:

Dependence on formal teaching of the mother tongue is the paradigm for all other dependencies created in an age of commodity-defined existence. The general framework implied here is that every attempt to substitute a universal commodity for a vernacular activity 'has led, not to equality, but to a hierarchical modernization of poverty'... Step by step the war against subsistence has defined as commodities what was essential for living communities, and in each case has resulted in new hierarchies and new forms of domination.¹⁶⁷

¹⁶³Trent Schroyer, *Beyond Western Economics: Remembering Other Economic Cultures* (Routledge, 2009), p. 45.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid.

¹⁶⁶Ivan Illich, "Vernacular Values", *Philosophica*, 26 (1980), pp. 47-102.

¹⁶⁷Ibid.

However, it is important to note that Illich was not motivated by a reactionary stance since he did not “oppose growth oriented societies to others in which traditional subsistence is structured by immemorial cultural transmissions of patterns.” Accordingly, “such a choice does not exist. Aspirations of this kind would be sentimental and destructive.”¹⁶⁸

A key theme of this thesis that is illustrated here is the way in which the commons can pluralize our conception of value and to see the latent value of the commons that is not only material, but also psychological and perhaps even spiritual. This is an important element of the way in which a commons-centric perspective radically challenges neoclassical economic logic, especially with regard to our ethical conception of the economy and the corresponding economic practices. As I will argue in the third chapter, this is particularly relevant to the emerging commons in the digital age. The commons show that exchange is not *merely* economic. There are two ways one could look at this. Either the commons disclose to us that ‘economic exchange’ is in many ways a false equation, or to put it another way, the commons help us realize that the term ‘economic’ has become impoverished in the restrictive neoclassical conception of the term and the neoliberal economic transformation of our political economy. In much the same way that Ivan Illich helps us ‘see’ the intangible value of the commons, the recognition of the commons more generally discloses the diverse forms of value that cannot be valorized by price, while simultaneously being invaluable to the formal economy where value is realized. Thus, the commons demand that the *priceless* value they ‘produce’ or manifest is recognized by means other than price, or is at the very least remunerated. As I will elaborate upon in the next section, this requires seeing the commons as a framework through which we can understand value in a fundamentally more relational way and to some extent transcend the subject/object dichotomy that underlies the epistemological confusion of value and price, which in turn characterizes the neoclassical value regime.

¹⁶⁸Ibid.

In this regard, it is important to note that each of the four types of commons are not separate categories but inherently mutually reciprocal. Each of the commons described above provides the condition for the recognition, development and flourishing of the other. To a certain extent, the possibility of one commons is the condition for the possibility of all commons. This means that the four main ‘types’ of commons described above are not to be considered as different types of commons that we *encounter*, but perhaps more aptly be considered as living ‘affective sites’ that are relationally engaged with us. If we take seriously the framing of the commons as providing the conditions through which we can cultivate psychological resources of resilience, meaning and providing contexts of significance within which to embed human action, then it becomes clear that even ostensibly public commons made of brick and mortar have a significance that transcends their materiality; they have a life of their own that plays out in our inner selves as well and give rise to various forms of care practices, stewardship and civic responsibility. For instance, learning to ‘see’ the ‘natural commons’ not merely as resources requires an ontological shift in our awareness through which we learn to ‘see’ our psychological resources that are common to us, such as the hidden value of silence, as intrinsic elements of our nature and the nature we inhabit. Whether we see timber or forest, a dam or a river, depends not only on recognizing the commons materially, but also requires an experiential understanding that is symbiotically related to our individual and collective phenomenological appreciation of the environment(s) we inhabit.

Thus, the value, affects and meanings of the commons are not *signified* to us by virtue of certain properties that they hold and through which we may *name* the world, but *arise* in us by virtue of *inhabiting* the commons and the shared public world they have the potential to provide. In other words, insofar as the commons provide contexts of significance for human action, these do not arise through a projection of value and significance onto the commons, but rather they emerge out of lived relationships and mutual engagement. In this sense, the commons

constitute the condition by which we can rehabilitate the notion of a shared sense of a public meaning and imagination, which are a central element of the political conception and the political possibility of the commons that I have been developing. Thus, understanding the way in which the commons are not separate from each other, but relationally entangled with us, helps us develop a fundamentally relational perspective of ourselves, our relations to others and to our shared social and natural environment. The underlying ethical attitudes and considerations of the commons have a basis in what might be called the 'affective subjectivity' of commoning. The relational, affective and to some extent intersubjective aspects of commoning have ethical implications at the political level, emphasizing the need for a stronger politics of community and civic duty, but also at the economic level. In the section below, I will elaborate on the way in which the emphasis on the relational and affective aspects of production can help to re-conceptualize the nature of 'production' and 'value' as a form of commoning, and the way in which this perspective discloses the underlying philosophical and ethical attitudes that underlie a commons-centric conception of the economy.

3.5 Towards a relational understanding of value

A key element of the commons is that they show that exchange is much more pluralistic and diverse than is obvious at first glance, our first glance being invariably through the neoclassical lens. Below I will briefly outline some of different modes of exchange that have played a part to different degrees in various forms of socioeconomic organization throughout human history. This will help set the stage to begin to understand the way in which the commons can articulate an ontological shift in our understanding of value, or more generally, to further elaborate on how the commons can be seen as a way of 're-lationalizing' our understanding of the 'economic' domain. The starting point here will include a broadly phenomenological account of commoning, and at a more abstract level, of what it means to be a part of the 'economy.' In doing so the commons are shown to be a normative framework for understanding the economy that resists an overly

scientific description based on the assumption that the economy consists of a mechanistic surveyable nexus of cause and effect.

A useful starting point to investigate the different modes of exchange that constitute different forms of commoning is the anthropologist Kojin Karatani, who provides some valuable insights into the evolution of the modes of exchange in economic systems in his world historical survey documented in his book *The Structure of World History*.¹⁶⁹ In his estimation, a considerable amount of economic history can be seen through the lens of shifting regimes of distribution that indicate and bring forth a new socioeconomic organizational logic.¹⁷⁰ In short, Karatani argues that early nomadic groups mainly practiced Resource Pooling; more complex tribal societies mainly practice the Gift Economy; and pre-capitalist class formations are based on Authority Ranking (relevant to authoritarian political regimes).¹⁷¹ These logics of exchange often overlap, although one is usually found to be dominant. The advent of capitalism led to the hegemonic position of market pricing as a mode of distribution. Karatani identifies four central modes of exchange, though it has to be noted that these do not exist independently in any time period, but constantly interact. They are as follows:

Mode A: reciprocity of the gift, based on the 'community';

1. Mode B: ruling and protection, based on the 'state';
2. Mode C: commodity exchange, mediated by the 'market';
3. A hypothetical Mode D: 'associationalism' with a planetary commons transcending the other three.¹⁷²

¹⁶⁹ Karatani, Kojin, *The Structure of World History: From Modes of Production to Modes of Exchange*. (Duke Press, 2015)

¹⁷⁰ Ibid

¹⁷¹ "Capital System" - P2P Foundation Wiki <https://wiki.p2pfoundation.net/Capital_System> [accessed 4 June 2019].

¹⁷² Ibid

While certain types of structures will struggle to emerge and remain part of the socioeconomic 'avant-garde', their very future potentials are under this account defined by the way their own internal dynamics play out.¹⁷³ Consider for instance the power struggle between the state and capital in the 20th century, the subsequent regulation of free market capitalism after the New Deal, and most recently with the rise of neoliberal capitalism, whose political project is geared towards achieving a subordination of the state to capital. Karatani contends that historical transitions are brought about through the complex interplay between these various competing modalities.¹⁷⁴

For instance, there was an early transition from the pooling of resources practised by nomadic groups to reciprocity-based gifting practised by more complex tribal systems. Subsequently, there was the shift from reciprocity-based gifting towards more centralized state systems based on rigid class structures, which would take over both protecting and paternal roles as well as being extractive and exploitative. This would eventually give rise to the emergence of centralized kingdoms, which would then evolve into empires and most recently into technocratic states that began to develop after the modern conception of the nation-state began to be articulated following the 1648 Westphalian treaty.¹⁷⁵ The market economy in its modern conception began through the formation of the Italian city-states and the later mercantilist European kingdoms and empires.¹⁷⁶ This paved the way for the emergence of the modern economy, at first wholly dependent and based on the state, but eventually came to subordinate the state. This process culminated in the emergence of the globally integrated market economy we are familiar with today.¹⁷⁷ It is however important to note that the nature and ethical foundation of the market despite facilitating modern capitalist modes of production to varying degrees, changed considerably through its long history from the early modern

¹⁷³¹⁷³ Ibid

¹⁷⁴ Ibid

¹⁷⁵ Ibid.

¹⁷⁶ Ibid

¹⁷⁷ Ibid

period to the present day. The final hypothetical transition that Karatani posits is mode D, 'associationism', which resembles commons-orientated pooling as in mode A but integrated at a global level of coordination.¹⁷⁸

Karatani's typology of different logics of exchange are a useful framework to understand the extent to which different economic logics are expressed and to some extent even characterize our current global economy, despite the fact that the logic of exchange expressed by 'gift' 'reciprocity' and 'associationism' are deemed unfeasible and largely unrecognized by mainstream neoclassical logic. As noted above, one should understand Karatani's modes of exchange are not distinct categories but are inherent features of the way in which humans conduct themselves at various stages and levels of economic integration. Consider the simple every day processes and forms of human collaboration that go on in a factory. When a worker gets asked to pass a wrench, they are unlikely to negotiate a price or draw up a contract, the wrench is simply handed over as part of an implicit norm of mutual aid. As David Graeber notes "if we really want to understand the moral foundations of economic life and by extension of human life, we should start with the very small things: the everyday details of social existence, the way we treat our friends, enemies, and children - often so small (passing the salt, bumming a cigarette) that we ordinarily never stop to think about them at all."¹⁷⁹ According to Graeber, human exchange and collaboration involves the three following normative principles: communism, exchange, and hierarchy.¹⁸⁰ By communism, Graeber does not mean a collectivist property regime, but rather a 'baseline communism' underlying human interaction on the basis of 'from each according to their abilities, to each according to their need.'¹⁸¹ As with the factory example above, Graeber contends that a lot human action and economic activity directly or implicitly relies on this principle. Even Jeff Bezos would presumably light your cigarette if he had a lighter ready at hand and you politely asked him. In

¹⁷⁸ Ibid

¹⁷⁹ Graeber, David, *Debt: the First 5,000 Years* (Brooklyn, NY: Melville House, 2014) p 89

¹⁸⁰ Ibid

¹⁸¹ Ibid

so far as we conventionally understand exchange as a social contract between two parties agreeing to a voluntary exchange, we should note that this social contract is not solely based on market mechanisms of price alone.

Indeed, Graeber¹⁸², Karatani¹⁸³, Karl Polanyi¹⁸⁴ and other economic anthropologists and historians have shown in their surveys of economic history that the market was considered primarily an ethical category, and notions of trust, honour, reciprocity (that was not based on immediate monetary equivalence) were integral components of markets. While competition was an important element, this was not the primary end of the market; they were primarily seen as means to provide social cohesion and stability. David Graeber, writing on the political economy of medieval era even provocatively suggests that “the market is simply one manifestation of this more general principle of mutual aid, of the matching of abilities (supply) and needs (demand) - or to translate it into my earlier terms, it is not only founded on, but is itself an extension of the kind of baseline communism on which any society must ultimately rest.”¹⁸⁵ The argument Graeber is advancing here is not that the market economy is intrinsically communistic, but that throughout the history of economic thought and practice, market relations were based as much on gift economies, long-standing obligations, religious ethics, and implicit moral norms and customs which embedded the economic into the social. Furthermore, what we can take from Graeber here is that even though capitalist market relations are hegemonic and dominate social life, the underlying moral and social substrate that underlie and shape these relations are far more flexible and diverse than they appear. Given the extent to which state power is mobilized in the interest of capital, it is unlikely that we are going to see a radical transformation of the market beyond contemporary recognition anytime soon.

¹⁸² David Graeber. 2014.

¹⁸³ Kojin Karatani. 2015.

¹⁸⁴ Kari Levitt, *From the Great Transformation to the Great Financialization: On Karl Polanyi and Other Essays* (London: Zed Books, 2013).

¹⁸⁵ David Graeber. 2014. Graeber is here paraphrasing the argument the Islamic scholar Tusi (1201-1274 AD)

However, given that neoclassical economic logic is failing to address the ecological, political and economic crises we are facing, and given that the digital economy is giving rise to a viable different economic logic to the one proposed by neoclassical economics, it is also becoming increasingly apparent that the human foundation of the economy and various forms of commoning remain an increasing element of the productive matrix.

As I will show in the third chapter at length, we are currently in an age of economic transition in which our conventional understanding of property and value are being challenged, and different economic logics are being experimented with, particularly by digital commoners who are cultivating and proliferating different social and cultural attitudes. While always dependent on the capitalist market, they are introducing social values and norms as well as economic practices that are allowing them to develop more autonomous relations to the market. By this I mean that they are able to provide for the market while maintaining their own ethical commitments and ways of doing things in their own socio-economic ecosystems. While their livelihoods remain dependent on the capitalist market, they are democratizing, pluralizing and reshaping certain domains of the economy on the basis of social and ethical commitments that in many ways rehabilitate the moral foundation of the market that in fact it had been based on for much of human history. It is also worth reiterating that ours is an age not only of *transition* but also of *fragility*. Given the myriad of crises we are confronted with, above all the severity of the ecological crisis, it is likely that we may become more dependent on the human basis of the economy. It is indeed perhaps a moral imperative to cultivate and strengthen forms of local resilience, autonomy, productive capacity and ways of organizing the distribution of resources that rely on forms of commoning and social networks, at a time when dependence on global supply chains and state power alone constitute what economists would call a grave moral hazard.

What has become apparent from the discussion thus far is that the nature of production is more collaborative and that the logic of exchange is far more multifaceted than conventional economic wisdom would have us believe. A key question that is central to this perspective is what kind of collaborative activity is production? If we want to understand production as a form of commoning, we have to understand the conception of value it entails. Let us begin with Marx's labour theory of value (LTV), which was a key concept for the workers' movement, and indeed in the political economy of his time. Adam Smith and David Ricardo among many others were broadly in agreement with the LTV arguing that market price gravitates around its real value based on the amount of human labour needed to acquire or make it.¹⁸⁶ Marx added the crucial caveat that it is not merely the number of labour hours needed; it is the social relationships involved, in the aggregate, needed to create something.¹⁸⁷ Thus, the expropriation of value from social relationships is a key element in Marx's concept of alienation. It is worth noting here that the target of Marx's argument is the political nature Ricardo and Smith's narratives, not merely the mechanics of economics. While Marx is of course interested in developing a detailed analysis of the mechanics of capital, he is also interested in tearing apart the reductionist and ideological narrative of the naturalness of the free market that Ricardo and in particular Smith espouse, and that still forms the normative bedrock of much of contemporary economic thought. Marx along with Polanyi and more recently Graeber, Karatani and others demonstrate that the modern 'free market' is inextricably linked to state power and has an inherently political nature.

A key aspect of this political nature is that it advances certain conceptions of human nature and narratives underpinning economic activity, such as Garret Hardin's tragedy of the commons myth, that miss essential elements of human nature and integral components of economic activity.¹⁸⁸ A key implication here is

¹⁸⁶ Peter C. Dooley, *The Labour Theory of Value* (New York, NY: Routledge, 2005)

¹⁸⁷ Ibid

¹⁸⁸ I will elaborate on Garret Hardin's tragedy of the commons myth in section 3.8

that the market should be at the core of the political and not be conceived of as a naturalized construct divorced from the political arena. Questions of what we value, how and who ought to determine value are central questions of human life that should be at the heart of politics. As I will elaborate upon below, it is precisely in resisting the alienation from elements of ourselves and from diverse forms of social meanings that the commons and the subjectivity of commoning cultivate diverse forms of social mobilization and political imagination.

Marx used a peculiar term when he talked about the ways in which capital alienates us from ourselves: *Gattungswesen*, or species being.¹⁸⁹ In thinking about value, there are two ways in which to frame the concept. There is value as *having value* on the one hand, and *being value* on the other. It is difficult to align them because most of our frameworks for understanding the nature of production are rooted in the language and frameworks of *having value*, rendering essential elements that underlie productive processes latent. However, labour understood as a bio-political, living process is primarily related to *being value*. In trying to transcend, or at least render this internalized dichotomy visible, one has to raise central questions which are implicit in Marx's term. Where is production inherent in being? How do being and value emerge? What is the significance of producing in association with others to our inner lives? Marx saw that in capitalism the true input that is extracted to generate output is the life of the wage worker. There is no valuation but life. Capitalism extracts this and transforms it into the mechanistic framework of wages and prices, demand and supply. In contrast, a commons conception of value would be related to the degree (and the feeling) to which an individual's aliveness is enhanced, the aliveness of the community and, vice-versa, the degree to which a community gives meaning to its co-constituents. To the degree that 'aliveness' cannot be reliably analyzed in quantifiable terms, there is the need to develop a vocabulary to describe, emphasize and integrate the experiential component of productive activity into our economic vocabulary. Felt

¹⁸⁹ Stephen Mulhall "Species- Being, Teleology and Individuality Part I: Marx on Species- Being," *Angelaki*, 3 (1998), 9-27

aliveness, the convivial nature of social relations of production, etc are the degree through which the self is realized through realizing the other, often through shared rituals, customs and vernacular traditions that form the psychological resources to resist alienation. It is worth reiterating here that neoliberal globalization has destroyed many of the community ties that provided the conditions for such social embedding to form. If we take seriously the extent to which lived processes underlie value itself, then what we are talking about might be described as a 'convivial turn' in our understanding of economic value, which is as much intangible and relational as it is quantifiable and material. What is at stake here is a shift in our restrictive understanding of production as 'making things' to fostering conditions of emergence and enabling becoming. Labour does not just mean production, it means engaging in projects that create meaning. Human beings become, in the process of coming and associating together. This is a central idea regarding the relational perspective on value I am developing, which I will elaborate upon below.

In contrast, neoclassical economics has its own reductionist and in our present times intuitively compelling idea of what interests motivates and shape human action. We are "rational, self-interested" economic actors, a conception of the rational agent which has influenced public policy and governmentality in a variety of areas. As I will elaborate in section 3.8, the key tenets of rational choice theory are central to most narratives that critique the commons. What I want to emphasize here is the degree to which abstractions of economic activity, where utility maximization and self-interest are taken to be representations of human behavior, fail to capture some of the crucial elements of the practices, norms and values that take place in the lived experience of these all too human 'economic agents.' Indeed, in the rationalistic universe of neoclassical economics, the very idea of the commons is in many ways *unthinkable* because the subjectivity that is created in the commons through commoning relies upon a fundamentally different relationship; a form of relationship that translates into different conduct, norms and lifestyles

that embody a different cultural and social ethic to the one that neoclassical economics is based on.

In the section below, my aim is to further elucidate the ontological shift that signifies the subjectivity of commoning, a shift that is principally reflected in the re-conceptualization of 'economic agents' as 'convivial bodies', from conceiving of production as individual producers or entities 'making things' to production as commoning, understood as a thoroughly affective and intersubjective process. To some extent the ontological shift I am describing here underlies the nature of the socioeconomic changes and transitions I will be discussing in the third chapter. I have thus far emphasized the social and relational basis of the economy, in order to bring the human basis of the economy that resides in the commons to the fore. It is now my aim to provide a better philosophical understanding of the subjectivity of commoning and the underlying ethical attitude that informs then. I will begin by outlining the way in which the relational and affective elements of the economy that the commons bring to the fore are exemplified by a specific process of commoning, in which human culture is integrated and related to a specific ecological landscape.

3.5.1 Seeing the Forest: The Affective Subjectivity of Commoning

Neera Singh illustrates the formation of an 'affective subjectivity' through a case study of villagers in Odisha, India, who devised ways of collective self-organization without market incentives or state support. Singh's key question was how people become 'environmental subjects' – that is, people who are willing to apply their human talents, imagination and commitments in order to become stewards of some element of nature?¹⁹⁰ In many ways Singh's account is a philosophical anthropology that describes a certain commons-centric phenomenology of value. In her account, villagers developed a form of 'environmentality' where collective commoning was able to reinvigorate state-owned

¹⁹⁰ Ibid

forests.¹⁹¹ What is significant here is that the villagers engaged in a form of 'affective labour' and internalized a productive logic that revolves around reciprocity, empathy and affect. A central component of the subjectivity that was formed is the notion of stewardship and stakeholdership, both of which are key elements of a commons-based economic logic. The centrality of affective labour shifts the focus of labour from that which is produced (as is central in the Marxist and classical liberal conceptions) to the kinds of affects and influences produced by our own actions and those of other people, that in turn shape the kind of 'self' we construct for ourselves.

Throughout this thesis I have been developing the affective and relational dimension of the commons as an overlooked aspect in the way the commons have been construed, not only in the way in which they have been traditionally conceived, but also the way in which they are crucial to understanding the innovative potential of the commons regarding our political orientation and our conception of the market. The particular perspective I want to develop here is a broadly Spinozan one, in order to emphasize that the affective re-orientation that the commons propose includes the affective capacities of all bodies, human and nonhuman, to become entangled in relations of affect and accountability. Singh describes this process in the following way: "the boundaries between the 'self' and the environment are porous...human subjectivity is shaped by a human being's engagement with its total environment, not just its social environment."¹⁹² Thus, a core ontological insight about commoning can be drawn: a subjectivity of commoning emerges from embodied action and mutual entanglement in relationships of significance. Thus, a commons-centric re-conceptualization begins with the notion that value resides within interconnected relationships with the human and non human world, which are mutually reciprocal and from within different contexts of significance and relationships can emerge. No single entity is

¹⁹¹ Ibid

¹⁹² Ibid p 3.

a locus of value. It is derived neither from the properties of an object nor from the meanings projected on them by subjects. Value is experiential; the moment we attribute it, we cease to experience it. Following Spinoza we might say then that value is productive of human beings, not just the result of a project of creation of meaning as subjects but emergent from the striving of all sentient beings that are preserving their life-worlds through mutual association.¹⁹³

It is worth noting that the relational perspective being described here relies on shifting the discussion of the commons from the domain of social sciences and 'resource management' to the conception of the commons I have been developing in this thesis as communities that arise out of distinct social processes that mutually create contexts of meaning for human action in a shared socio-environmental spaces. The former firmly inhabits the domain of *having value*, whereas the latter relates to a conception that transcends the notion of the commons as certain forms of goods, and perhaps even gives rise to the vocabulary of *being value*. The idea of *place* emerges as central to the commons here; while it is important to emphasize the way in which the commons constitute a resource governance scheme that goes beyond the market and the state, it is equally important to see that the commons are not merely *resources* but also sites of contestation, collaboration and convivial engagement that allows individuals to inhabit domains through which they become embedded within social contexts and collective motivations that transcend themselves.

Thus, a relational understanding of value, perhaps deceptively obviously, begins with a relational understanding of ourselves, including our conception of freedom as residing not only in choice, but in the capacity to form meaningful relationships. A commons-centric engagement with value has to be based on a principle of freedom that is also more relational in the sense that it is not merely rooted in the capacity of subjects to exercise choice, but related to the degree that freedom is able

¹⁹³ Gilles Deleuze and Félix Guattari, and Brian (overs.) Massumi, *A Thousand Plateaus. Capitalism and Schizophrenia* (London - New York: Continuum, 2002)

to manifest itself for its own sake in the varying communities, both human and non-human, that make up our shared life world. The conception of freedom at stake here is perhaps analogous to the way in which freedom is exercised as a form of play in a board game, in which the exercise of freedom is for its own sake, not the realization of some other end. From a commons-world view, this principle may even be broadly construed as underlying social and to some extent physical reality. It is a principle that manifests itself on more complex emergent levels of reality as life, intelligence and culture become disclosed and unfolded in more complex webs of mutual dependence, caring, commitment and understanding. Given the centrality of value and the insistence on the plurality of value informed by varying conceptions and ethical attitudes towards it, it follows that an overarching political freedom that can be discerned here lies in the ability for communities to create and determine value itself, and to create and determine those forms of mutual support and entailment, caring, and sustenance required for self realization. The biologist and philosopher Andreas Weber summarizes this relational perspective from a scientific viewpoint powerfully when he writes: “the world is not populated by singular, autonomous, sovereign beings. It comprises a constantly oscillating network of dynamic interactions in which one thing changes through the change of another. The relationship counts, not the substance.”¹⁹⁴ The ontological shift from the primacy of substance to the primacy of relationship expressed here illustrates the way in which the commons can help re-articulate our conception of value and emphasize the need to protect value sovereignty, the right to be free from having a value regime imposed on your community as a key element of economic democracy.

As I will elaborate in section 4.5 in the third chapter, the philosophical underpinnings and principles developed here, in particular the principle value sovereignty find their expression to some degree in the economic practices and socioeconomic innovations developed by hybrid market-commons ‘seed forms’

¹⁹⁴ Andreass Weber. *Matter and Desire: An Erotic Ecology* (Chelsea Green Publishing 2017. P 22

that are emerging in the digital economy. These commons-centric 'seed forms' espouse an economic logic that is founded on a different ontological understanding of the market, even if they are traditional market enterprises in some respects and will depend on the market to reap value. They nevertheless have a crucial role to play in the cultural and political reconfiguration of the market as a whole. In commons orientated network communities like Sensorica for instance, there are no fixed roles and no contractual obligations; individuals are free to contribute to different projects of their choosing and free to leave. Although pay is based on the metrics of the existing labour market, the metrics of valuation are self determined by the community; in other words, they have value sovereignty. The orientation to the world that the process of commoning is centered a web of interconnected interpersonal connections and interdependencies. Actions are not simply matters of direct cause-and-effect between the most proximate, visible actors; they stem from a pulsating web of culture and myriad relationships through which new meanings and relationships emerge.

Thus, a crucial element in understanding this shift in our understanding of the political economy is to recognize that the affective and relational conception of the commons is not only about embedding labour in contexts of social significance, but also about the capacity of human freedom, particularly insofar as we understand it as being related to (and not divorced from) the association with others. A particular element of freedom is to resist alienation. Before I briefly elaborate on this perspective, it is worth clarifying some of the key terminology. As has become apparent, the commons are a condition for cultivating a more affective subjectivity in our relations of production. In this regard, it is worth elucidating on what is meant by the terms affect and subjectivity in the context. Subjectivity can be broadly understood as ways of perceiving, understanding, and relating to the

world or to put it another way “one’s sense of what it means and feels like to exist within a specific place, time, or set of relationships.”¹⁹⁵

Following Spinoza, the term affect can be understood as relating to a relational force that flows between bodies that enhances or diminishes their power of acting.¹⁹⁶¹⁹⁷ Neera Singh provides the following description of affect:

To affect and be affected is to be open to the world and to the possibility of being transformed through this engagement with the material world. Affect is a pre-cognitive and transpersonal intensity that flows through and defines bodies – where bodies are not limited to human bodies. Initially nameless and potentially ‘unruly’, relational affects often consolidate and manifest as emotions and emotion episodes are themselves specific affective dynamics, temporarily stabilized by patterns of reflection and narration.¹⁹⁸

The view of the human being articulated here is one that goes against and beyond the autonomous liberal subject owing much of its standing to Kantian metaphysics (and perhaps Newtonian mechanics) of a subject that is antecedent to his or her social conditions and defined by enduring immutable characteristics. The main way in which the affective turn differs to this standardized conception is that it transcends the common dichotomy between emotion and reason, seeing the two as mutually reciprocal in an embodied being, whose sense of self goes beyond the rationalistic conception of an autonomous subject. This does not imply merely replacing Descartes’ cogito into ‘I feel, therefore ‘I am.’¹⁹⁹ Rather, we have start with the recognition that we are thinking-feeling embodied beings and that far

¹⁹⁵ Margaret C. Morales and Leila M. Harris, “Using Subjectivity and Emotion to Reconsider Participatory Natural Resource Management,” *World Development*, 64 (2014), 703–12. p 706

¹⁹⁶ Gilles Deleuze and Felix Guattari. 2002.

¹⁹⁷ Brian Masumi. *The Politics of Affect*. (Polity Press, 2002).

¹⁹⁸ Neera Singh. *Becoming a commoner: The commons as sites of co-becoming*. (Ephemera, 2017).

¹⁹⁹ Ibid.

from being stand-alone actors in the world we are embedded in a relational web of affective meanings on which our conviviality depends. If there has to be an affective-relational proposition, it would be more accurate to say 'I relate, therefore I become.' This notion has a long-standing tradition in indigenous thought, and is illustrated by an indigenous Guatemalan saying 'I am the land that thinks.'²⁰⁰ It is worth noting that this perspective implies a more relational, affective and indeed biocentric epistemological re-orientation. However, my aim here is not to develop a philosophical anthropology as this is outside the scope of the current investigation, but rather to further develop the way in which the subjectivity that is cultivated by commoning helps provide human action with meaning and develop the psychological resources of resilience and communality that the commons aim to foster.

What is being emphasized here in relation to the commons is that the various forms of enclosure and appropriation are not just forms of physical enclosure and 'primitive accumulation of wealth' by corporate power, but that they undermine freedom and limit possibilities of forming embedded relationships and cultivate a shared subjectivity of stewardship. In this sense the enclosure of the commons inhibit the ability to strive for meaning with others. Spinoza's concept of the *conatus* might be useful here; Spinoza's term refers to the idea that all bodies (not subjects) share in common the capacity to *strive*, which is to continue to exist and enhance the scope of their existence through association with others.²⁰¹ This striving in relation with others, including non-human bodies shares a degree of affinity with the relational affective perspective of value, that sees value not solely in the process of 'making things', but rather sees value as residing in the processes that underlie them. Rather than the striving for utility maximization that neoclassical economic thought revolves around, we get a conception of 'common production' that fundamentally consists of striving for associations in order to

²⁰⁰ "Defending the Land That Thinks," *Rabble.ca*, 2014 <<https://rabble.ca/blogs/bloggers/views-expressed/2014/02/defending-land-thinks>> [accessed 7 May 2020]

²⁰¹ Ibid.

enliven our lived relations of production by enhancing our capacity to act in concert with others.²⁰² Thus, the subjectivity of commoning is principally based on a subjectivity of production that helps us explore how striving in association with others through embodied practices can help us begin to inhabit value (being value) rather than acquiring and exchanging it (having value). An important implication here is that the monoculture of the market and homogenization of subjectivities that it brings with it do not only prohibit access to 'resources' and colonize forms of life, but they fundamentally restrict human freedom to relate and strive with others, including the non-human world.

The form of alienation that the commons resist consists of a loss of what is most generic and held in common, not a loss of what is most unique and personal; it is not a loss *to* the individual but a draining of the very psychological resources and affects that the individual embodies. Recall that the commons in some ways provide a way to articulate and experience a sense of freedom that goes beyond the restrictive notion of choice. Thus, the commons are more than just a way of delivering communal autonomy and resilience, they are in a fundamental way directed towards freeing human striving, through which we form convivial relationships with others and our environment. The commons to some extent provide the conditions by which we may be able to free ourselves from the striving centered on utility maximization and efficiency. The commons may thus allow alternate ways of being and subjectivities outside of the dominant market logic to emerge. The commons thus have the potential to form the basis around which various streams of anti-systemic forms of life and subjectivities of production can emerge and coalesce around. Thus, commons are sites of contest, from the knowledge commons such as public research databases and the innovations derived from public research at large, to the digital commons engaged in various forms of socioeconomic struggles. These struggles over the forces and relations that shape subjectivities of production are as much a struggle over human freedom

²⁰² Ibid.

and affective meaning as it is a struggle over resources. To quote the French philosopher Georges Simondon, “the conditions of our subjectivity, language, knowledge, and habits are neither individual nor part of any collective, but are the conditions of individual identity and collective belonging, remaining irreducible to each.”²⁰³

Singh’s philosophical anthropology and the perspectives considered above disclose to us how people’s sense of self and subjectivity are intertwined with their biophysical environment, and the diverse forms of human cooperation that emerge in response to changes in this environment. Acts of commoning change how we perceive ourselves, our relationships to others, and our connection to the environment, or as Singh writes “affective labour transforms local subjectivities.”²⁰⁴ The relational perspective on value being developed in this thesis refers to a fundamental change in our understanding of the ‘economic agent’ as being a fixed rule based processing machine, to a more dynamic and contingent understanding of the human being as constantly unfolding and ‘opened out’ through a diverse set of care practices and affective ties.²⁰⁵ Particularly with regard to the human being as ‘producer’, what is highlighted here is that ‘labour’ cannot really be relegated to the purely pecuniary domain. Furthermore, the social, private and the economic are all constitutive of each other, creating value for each other, much of which is latent or taken for granted, particularly where affective labour is concerned. For instance, how much of care and reproductive labour, which provide the basis of ‘economic activity’, have recognition in the formal economy? The point here is that understanding labour as a form of commoning reintegrates the marginalized spheres of value creation into our understanding of what the economy entails, but crucially without being left solely to the claim of pecuniary value.

²⁰³ Ibid p. 113

²⁰⁴ Ibid p. 2

²⁰⁵ Ibid

It might well be that pricing plays a part in the re-orientation of our political economy as we develop a more holistic understanding of labour and production, and realize the increasing necessity to do so as more and more value is failing to be valorized by the neoclassical economic structures. However, it might also well be that the affective sphere is considered inalienable, that it is recognized to have a quality that is not adequately captured by price mechanisms and therefore is exempted from being integrated into the mechanics of price relations. To paraphrase Kant, these are things which admit of no equivalent and are thus raised above all price by virtue of their intrinsic and unique dignity.²⁰⁶ A key element here is the way in which our re-orientation towards the affective dimension of production is a condition to recover the inalienable as an ethical category that forms a constitutive element of our political economy. The nature of this ethical category and the things it comprises ought to be a crucial component of our political deliberation over the nature of our economy. The commons play a central role in the challenges that our political economy is facing, from valuing ecology beyond the typical system-services approach and tackling climate change beyond the toolkit of the market, to breaking out of the assumption that goods are excludable and non-rivalrous (particularly with regard to intellectual property, our data streams, and other key digital 'resources'). All these vast challenges require us to articulate a conception of value that is informed by what we collectively value, and that can help mobilize and direct resources towards those political and moral ends that we deem worthy. The moral force of the commons resides in the fact that they are tangible to all of us, from the air we breathe, to the art and culture that we share. To paraphrase the core of a commons-centric ethic in a sentence, the ethic of the commons resides in the ability to recognize and protect the domains of human life that give rise to affective ties and significant relationships, as those are the

²⁰⁶ The original quote from Kant is as follows: "In the kingdom of ends everything has a either a price or a dignity. What has a price can be replaced by something else as its equivalent; what on the other hand is above all price and therefore admits of no equivalent has a dignity." Immanuel Kant and Mary Gregor, *Groundwork of the Metaphysics of Morals* (Cambridge University Press. 2016) p. 43

areas of human life which are held in common, that is to say, by which we are held.

In the following section, I will look at some of the more practical ways in which the commons are organized, the internal governance mechanisms and norms under which they operate, and the way in which they embody a democratizing and participatory impulse in their institutional design and make up.

3.6 Design Principles of the Commons

In her pioneering research, Ostrom has documented how different communities around the world have sustainably managed their own commons (many for over a thousand years) without negative externalities arising or the depletion of resources. These commons include entities such as fisheries, waterways, grazing land, forests and so on. Ostrom discovered a plurality of ways for communities to self-organize the use and distribution of shared resources by establishing structural communality and deeply ingrained social norms. She extracted eight generalized design principles for the governance of a commons, which I will outline below:²⁰⁷

1. Define clear boundaries for sharing.

This is perhaps the most important principle for successfully managing and maintaining the commons because, without boundaries, disputes can arise. There is a need to set boundaries defining the rights of individuals or groups to extract resources from a shared resource. This can in principle be extended to serve local, regional, and global access resources. The multilateral Internet Governance Forum (IGF), which commits itself to 'network neutrality' among other key principles that are necessary to maintain the lateral, collaborative and social nature of the internet, exemplifies this to some extent. The types of boundaries defined include such demarcations as who uses what and when, how resources are planned, and how sharing with other communities occurs.

²⁰⁷Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge, United Kingdom: Cambridge University Press, 1990).

2. Rules governing use are matched to local needs and conditions.

Rules that restrict time, place, technology or the quantity of available resource units must be matched to local conditions and provide rules requiring labour, material and/or money.

3. Collective participation in rule-making.

Individuals affected by rules have the choice and opportunity to participate in modifying and maintaining the rules.

4. Each level of community association must retain sovereignty.

Communities must be autonomous to allow for members to make their own decisions and to design the commons in a way that benefits them. The state may have to act as a steward and provide resources not immediately locally available, but it is equally clear that the state will have to commit itself to recognizing the right of communities to self-organize. As we will later see, this is known as the 'vernacular law'.

5. Members must develop and participate in a system of accountability.

Members who are affected by the commons must be accountable to one another to make sure that their practices are in line with those other members. Often, this means that assigned auditors will be accountable to appropriators of a given resource.

6. Graduated sanctions for rule violators.

People who violate rules must receive sanctions that vary depending on the offense and the frequency of the offenders' violations. Punishments can range from the nominal to the more extreme. Ostrom notes that "in these robust institutions, monitoring and sanctioning are undertaken not by external authorities but by the participants themselves. The initial sanctions used in these systems are also

surprisingly low.”²⁰⁸ Therefore, the “costs of monitoring are low in many long-enduring CPRs [common pool resources] as a result of the rules in use. Sanctions rarely come into play as commoners rarely break rules (shame and/or social costs are as or more powerful incentives than monetary rewards/punishments).”²⁰⁹ However, Ostrom emphasizes that the key incentives that drive people to follow the rule system are trust, character, and relationships.²¹⁰

7. Dispute resolution must be accessible at low-cost.

Low-cost and relatively transparent channels for communication have to be in place as it allows everyone who shares the commons the opportunity to bring disputes to light and solve them.

8. Nested and interconnected layers of responsibility allow for scalable and complex governance of the commons.

This design principle is applicable primarily to large collections of interconnected social groups that act as large-scale societies governing the commons in scalable, layered relationships. In Ostrom's words: “All of the more complex, enduring CPRs meet this last design principle.... Establishing rules at one level, without rules at the other levels, will produce an incomplete system that may not endure over the long run.”²¹¹ Nesting means that those affected can participate in the decision-making that affects them. For instance, a large river that travels through a number of communities needs representation from all the communities through which it flows. Though this question is immensely complex, it is important to recognize that communities should not be viewed as tribal groups. As Ostrom writes:

Through the integration of producers and consumers, many civil society organizations could evolve into local/regional councils and

²⁰⁸Ibid.

²⁰⁹Ibid.

²¹⁰Ibid.

²¹¹Ibid.

commons trusts, or perhaps form partnerships with them. The increased participation and political choices offered to citizens through these new accountability structures would transform economic, social and political decision-making at all levels of commons (local, state, interstate, regional, and global).²¹²

I previously looked at the way that the term 'resource' for a commons can have misleading implications for the way we conceive of what a commons is or can be. Commons are more dynamically described as constituting the web of social relationships and norms that produce a resource governance scheme over time as shared customs and norms begin to develop and shape a community. Even if we keep the aforementioned reservations of conceiving of commons as resources, it is worth examining in greater detail what the term 'governance' might mean, particularly when looked at from a commons perspective.

3.7 Governing the commons

The term 'governance' typically evokes ideas of resolving social conflicts, mitigating competing interests, and the enforcement of punishments through legislative bodies. The state holds a monopoly of legitimate force in order to protect private property and the freedom of the citizenry. It is interesting to note, that when we think of policy and politics, we often think of the *noun* government rather than the *verb* govern which evokes connotations of a dynamic social process. While the principal authority for conflict resolution is traditionally reserved for a relatively centralized government, from a commons perspective authority is generally distributed among the key stakeholders relevant to particular decisions. This means that power, authority and responsibility are allocated based on where competencies are best delegated and are thus diffused among identifiable people; in other words, there are horizontal hierarchies based on competence. This *modus operandi* is meanwhile largely recognized and not only applied in the startup scene but

²¹²Ibid.

also in larger for profit companies as a way to maximize creativity and performance levels and to accommodate the subculture and life worlds of younger employees.

Some commons may be largely directed by governing committees or coordinating staff, and thus have less direct participation. The boards of open-access scholarly journals, most time banks²¹³ and a wide array of other open software projects, all make use of these more horizontal forms of internal organization. Yet even commons with some form of central management are generally mindful of the need to consult with those affected by decisions.

However, broadly speaking (and even in the cases mentioned above), commons-orientated forms of governance are very different to the form of vertically integrated and often centralized decision-makers associated with the private firm or the nation-state. By recognizing individuals as active peers engaged in a collective, a form of mutual trust and responsibility can emerge. As I briefly mentioned in the first chapter, the alienation that people increasingly feel from their governments is one of the key ingredients that fuel the politics of outrage, providing the identitarian nationalist right with increasing political momentum. Peer governance, shared motivations, and visions that commoners wish to enact must have sufficient structure in law (whether positive law or consensual rule and norms), formal organization, and finance to be protected and nurtured.

It is important to note that many of Ostrom's design principles or generic patterns that can be inferred are not to be taken as prescriptive formulas or central tenets describing the nature of commons-centric governance. The very idea of commoning recognizes that the greater the complexity of any given system, the less likely it is that one can predict the outcomes of any given

²¹³Time banking is a reciprocity-based work trading system in which hours are the currency. It is a form of community currency, which enables a person with one skill set to trade hours of work with someone with another skill set, without any money changing hands. See quote and more information here: <https://www.investopedia.com/terms/t/time-banking.asp>

intervention in advance. In other words, the more decentralized a governance network is, the more able it is to respond with flexibility to anomalies and to find context-specific solutions. One might say then that commons governance is inherently federal in its design. It is not within the scope of this thesis to examine ways in which to transcend the problematic relationship between commons and the state. However, I demonstrate that commons-based governance distinguishes itself from most conventional government systems. Moreover, I explain how structures that embody commons-based peer-production (upon which I will elaborate in the third chapter) offer at the very least ways in which federalization and decentralized governance can be implemented to go beyond the possibilities of conventional forms of governing that are more closely tied to the concept of *government* rather than *governing*.

These patterns of governance resemble procedural guidelines that can help establish a flexible blueprint for developing a commons. As has become apparent, the relational approach to the commons that emphasize throughout this thesis sees the lived relationships and life processes as the locus of the commons. Christopher Alexander conveys this idea for the field of architecture and building design when he writes: "it is possible to generate buildings or communities that have life. Living structure in buildings can only be generated, it cannot be created by force."²¹⁴ He further emphasizes that "it can only come from a generative process of society so that the building – its conception, plan, design, detailed layout, structural design, and material detail are unfolded, step by step over time."²¹⁵ It is these living processes that have their own self-regulatory principles, forming the core of a commons. Commoning is the exploratory process by which people identify their needs and devise situation-specific systems of provisioning and governance. Thus, commons-orientated governance is the part of this living process by which

²¹⁴Christopher Alexander, *The Nature of Order: An Essay on the Art of Building and the Nature of the Universe*, Center for Environmental Structure, 2002, p. 177

²¹⁵*Ibid.*

commoners make decisions, set boundaries, enforce rules, and deal with conflicts.

To quote Ivan Illich:

People called commons those parts of the environment for which customary law exacted specific forms of community respect. People called commons that part of the environment which lay beyond their own thresholds and outside of their own possessions, to which, however, they had recognized claims of usage, not to produce commodities but to provide for the subsistence of their households. The customary law which humanized the environment by establishing the commons was usually unwritten. It was unwritten law not only because people did not care to write it down, but because what it protected was a reality much too complex to fit into paragraphs.²¹⁶

However, this does not imply that the commons are a magic wand that dispels all conflicts between individual and collective utility, nor does it do away the more sinister elements of hierarchies merely because they are 'horizontal'. The commons are sites of conflict as much as of cooperation (though over time geared towards the latter). This is perhaps even a necessary feature if governance is seen as concerning itself not only with economic issues related to resource governance, but also with questions central to human life, the nature of labour, value and the search for meaning and purpose, both within the individual and as an embedded part within his or her socio-ecological community.

²¹⁶Ivan Illich, *Silence is a Commons* <<http://www.preservenet.com/theory/Illich/Silence.html>> [accessed 1 June 2019]

3.8 The myth of the tragedy

As we have learned from the above, the commons can be seen as a more dynamic, relational mode of managing resources and production processes. However, property expressed by exchange value, characterized by market alienability and rights of transferability as well as bureaucratic state regulation, is often incompatible with commons-based governance of resources by the communities who use them (though in certain cases states can and have acted as trustees to protect and preserve certain commons, for instance in large scale environmental conservation efforts). Much of what inhibits the commons from playing a larger role in public policy contexts and indeed in the theoretical framing of the contemporary political and economic crises, are a series of learned, deeply embedded normative assumptions about ourselves, our motivations and the nature of our social and natural environment. These normative assumptions are expressed by economists and other social scientists in their attempt to create a narrative account of human behaviour and interaction. One of the most famous theories that came out of this pursuit was rational choice theory, which lies at the heart of what remains the most widely-known critique of the commons.

The 'tragedy of the commons', was a term popularized by Garret Hardin's widely cited and highly influential article in *Science*, in which he describes a social dilemma resulting from the depletion of shared resources by individuals, as it is assumed that they act both independent of each other, and rationally (defined as maximizing one's self interest).²¹⁷ Hardin cites the example of a pasture, where each shepherd rationally calculates that it is in his own interest to let one more unit of cattle graze on the land to maximize his own output; since the cost of overgrazing will be borne by everyone, it is rational for him to put one more unit of cattle onto the pasture even though this will lead to overgrazing.²¹⁸ Consequently, he concludes that it is through market mechanisms and private

²¹⁷Garret Hardin, *The Tragedy of the Commons*. *Science*, vol. 162, No.3859,1968, pp 1243-48.

²¹⁸Ibid.

property that people are motivated to protect their grazing lands and prevent the depletion of resources which sustain all their living standards.²¹⁹

However, what Hardin was describing was not so much a tragedy for the commons but rather what John Locke described in his famous notion of nature as 'res nullius'.²²⁰ As has been discussed previously, a commons is regulated by Ostrom's governing principles and informal norms, relations, traditions; the 'vernacular law.' Hardin's argument seems to draw heavily on the normative justification for enclosure offered by Locke, and that in our present day has allowed for the rather unregulated appropriation of land through centralized capital. In Lockes' words "as much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property. He by labor does as it were enclose it from common."²²¹ If Locke had in mind a form of private property to serve individual use, then the modern realization of this standardized narrative rests in the assumption that homo economicus is *the* conception of human nature. This logic is paralleled by the suggestion that the subsequent capitalist enclosure of the commons is being legitimized under the guise of the 'tragic' alternative that would otherwise take place. However, there is a wide range of examples that provide evidence for the fact that market forces are equally capable of creating a tragedy of the commons. One of many notorious examples is Texaco's deliberate and reckless pollution in Ecuador, which saw an estimated 16 billion gallons of oily, highly toxic waste water dumped into Amazon waterways over a 30-year period.²²²

It should be noted that the doctrine of market failure is itself a pro-market doctrine, as is the doctrine of 'true-price economics', which seeks to 're-include' externalities in economic calculations. Solutions to problems of collective action are sought

²¹⁹Ibid

²²⁰John Locke, *Second Treatise of Government, Chapter V. Of Property*, (Barnes & Noble Publishing, 2004). p. 20

²²¹Ibid.

²²²Antoni Pigrau, "The Texaco-Chevron Case in Ecuador: Law and Justice in the Age of Globalization", *Revista Catalana de Dret Ambiental, RCDA, Vol.5, Núm.1 (2014) (2014)* <<https://doi.org/10.17345/1437>>.

through establishing a regime of property rights, and attributing pecuniary value to facilitate mechanisms of commodity exchange. Thus even carbon dioxide emissions can become a market commodity. One way in which the tragedy of the market, which results from the narrative of the tragedy of the commons, manifests itself today is in the growing financial enclosure of public, natural and social commons. The notion of 'land grabbing' is particularly relevant with regard to Hardin's example of the overgrazed pasture. In recent years, we have witnessed an explosion of financial derivatives, traded across the globe between large financial corporations in order to generate huge profits. Land is becoming a particularly lucrative asset, from which financial derivatives can be created and traded. Here, profit is divorced from ownership, meaning that the right to trade the ownership of land, rather than the land itself, can be traded as a financial asset. This has sparked widespread land acquisition by private financial corporations who have no real interest in making productive or sustainable use of that land. By acquiring land (and its productive potential), firms can hedge their financial risks or diversify their investments. In some cases, land acquisition may even enable investors to manipulate market prices (through controlling the means of production, stock and productivity) to maximize the profits of their speculative investments. The rate of return on investment in land is no longer limited to its productive capacity, because through speculation the possession of land itself and future returns can be traded for profits well above the market price of the actual commodity in question. The World Bank estimates that of the 'land grabbing deals' entailing 46 million hectares, only 21% had started using the acquired land by actual farming.²²³ This trading and speculation was partially responsible for the food price crisis in 2008, when artificially inflated prices for food led to the starvation of millions across developing countries.²²⁴ Thus, land was being transformed from a natural resource into a financial asset.

²²³Klaus Deininger, Derek Byerlee, *Rising Global Interest in Farmland: Can it Yield Sustainable and Equitable Benefits?* The World Bank, 2010.

²²⁴*Ibid.*

The failure of the commons as Hardin describes them cannot be reduced to rational self-interest, as Ostrom's expansive research illustrates. In her research on how to govern the commons, she demonstrates that failures are largely due to the fact that control has been handed over to national or international governing bodies, which inhibit the espousing of otherwise viable local solutions to the commons problem.²²⁵ The awareness of the commons problem long precedes both Ostrom and Hardin, however, as historically the organization of society by organizing and cultivating 'common land' was the norm. In the late 17th century it has been estimated that at least one quarter of the total area of England and Wales was common land.²²⁶ In the next century, through more than a thousand pieces of legislation which may be broadly categorized as 'enclosure acts', the politically dominant landowners appropriated more than 6 million acres of land.²²⁷ These 'common lands' were productive, sustainably used, and sustained through a series of self-regulatory mechanisms. For instance, in 1688 in Otmoor, Oxfordshire, the surrounding moor was used as grazing land for all the townspeople, and yet there was no sign of over-exploitation; in fact, all townspeople agreed not to put sheep on the moor during a given time period every calendar year. The historian Bernard Reaney describes the community as having had "all the elements of a peasant subsistence economy."²²⁸ As Lewis Hydes notes: "The commons were not open; they were stinted. If, for example, you were a seventeenth century English common farmer, you might have the right to cut rushes on the common, but only between Christmas and Candlemas (February 2nd)."²²⁹ It is clear that to sustain a commons, rules for collective cooperation are necessary, which is quite different from market or government regulation.

²²⁵Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, (Cambridge University Press, 1990)

²²⁶Peter Linebaugh, "Enclosures from the Bottom Up", *Radical History Review*, vol. 108, 2010. pp. 11-27.

²²⁷*Ibid.*

²²⁸Bernard Reaney, "Class Struggle in Nineteenth century Oxfordshire. The social and communal background to the Otmoor disturbances of 1830-1835", *History workshop pamphlets* no 3, 1970

²²⁹Cited in: David Bollier, Burn, H. Weston, *Green Governance: Ecological Survival, Human Rights, and the Law of the Commons*, (Cambridge University Press, 2013), p. 139

As will be outlined below, the imposition of regulation from the top down or through the market as Hardin advocates, dissolves the social norms that were integral to the management of a commons, as members begin to internalize a radically different value system and consequently adopt a more distanced relation to their environment and others. This will only serve to increase inequalities (as has historically been the case), and subsequent privatization will only pose an even greater threat to the sustainability of resources. In any case, what has become apparent at this point is that the failure of the commons cannot be attributed to the failure of people to self-govern the resources they use, but to rather understand the normative bedrock on which the logic of Hardin's critique rests: it is primarily grounded in utilitarianism and rational choice theory. Hardin's theory claims that individuals' decisions are based on utility maximization. It constructs a model of human behaviour as *homo economicus*, who is defined as "a person guided exclusively by economic considerations of expedience."²³⁰ While a variety of wider interpretations have been offered, if it is to maintain any predictive or explanatory power, rational choice theory will have to hold onto its fundamental assumption that the advancement of material and economic self-interest is the primary driver of human action. The motivation or preference is left entirely arbitrary and the explanation of a social phenomenon cannot be subjected to complete economic reduction. The fact that this internal rationalization based on self-interest does not reflect the cognitive complexity of individuals seems to be reflected by a number of behavioural experiments.

Richard David Precht, for instance, describes an experiment where 20-month-old children readily help adults who drop a pen and are seemingly unable to pick it up again.²³¹ The experiment was conducted under three different conditions. In the first scenario, the adult did not respond at all, in the second the adult thanked and

²³⁰Gebhard Kirchaessner, *Homo Oeconomicus: The Economic Model of Behavior and its Application in Economics and other Sciences*, Berlin, Springer Science +Business, 2008.

²³¹Richard David Precht, *Die Kunst kein Egoist zu sein*, (München, Goldmann Verlag, 2012).

praised the child, and in the third, the adult rewarded the child with a toy.²³² Interestingly, the result was that while in the first two scenarios, the children consistently helped pick up the pen, in the third group, most of the children would refuse to help the next time unless they were rewarded.²³³ This experiment demonstrates that the externality of incentives, which rational choice theory suggests will yield higher efficiency due to our inherent self-interest (and thus an enclosure of the commons is necessary to yield productivity), actually estranges us from some of the more intuitive, social inclinations. The claim here is not that the commons are more conducive to a more intrinsic conception of human nature, but rather that different features of human nature can to some extent become more or less emphasized, depending on the social institutions, norms and practices within which we find ourselves embedded. In this case, the choice to offer an incentive system can shape human behaviour and revoke previously latent motivations, considerations or attitudes. This often leads to unintended detrimental outcomes because the complexity of human motivation transcends what the model of rational choice theory can anticipate.

In a further experiment, children were told a story of pirates and sunken treasures and were then asked to draw pictures of this story. Next, the children were given a gummy bear for each completed picture. A significant number of the children responded by effectively producing sloppy images en masse to accumulate as many gummy bears as possible, while others devoted as much time and imagination to their pictures as before.²³⁴ However, the latter group soon lost interest in their own work, seeing how little reward they were able to get from their efforts. When the children were told that no more gummy bears were to be given out as a reward, both groups lost interest in their work, which as the article concludes changed the children from being a highly motivated group to "a mob in

²³²Ibid.

²³³Ibid.

²³⁴Friederike Habermann, *Der Homo Oeconomicus und das Andere. Hegemonie, Identität und Emanzipation*, (Baden-Baden, 2008).

a foul mood."²³⁵ It is also interesting to note that in an experiment first conducted in Haifa, Israel, (though it has since been repeated in several schools across the globe) a monetary penalty was introduced for parents who were late in picking up their children from school. The result was that even more parents were late than before, as they were ready to pay the fine.²³⁶

Human motivations grounded in social qualities and responsibility, when they are converted into quantitative penalties or rewards, often tend to dissolve our social and civic responsibilities rather than consolidate them. Before the incentive was imposed in the Haifa example, the considerations in the decision-making process were characterized by the assumption that other human beings constitute "trustworthy reciprocators who will bear their share of the costs of overcoming a dilemma" as Ostrom notes.²³⁷ After the incentive was introduced, individuals adopted a strategy to achieve a situation where one's personal gains could not be maximized, given other people's self-interested responses to the same problem, in the full awareness that one's net gains would directly correlate to the net losses of others.

In several economics textbooks, students are asked the following question: Predict behaviour in the following strategic situations, using the concept of Nash Equilibrium. Two players, Alan and Beverly, can share £100 if they can agree on how to divide them. The rules of the game are: First Alan proposes a division of the £100. Beverly then accepts or rejects Alan's proposal. If Beverly accepts, each gets the proposed share. If Beverly rejects, each player gets zero. According to standard economic theory, individuals will take any offer in which they are offered

²³⁵Ibid.

²³⁶Aldo Rustichini, Uri Gneezy, "A Fine is a Price", *Journal of Legal Studies*, 2000(29)1:17

²³⁷Elinor Ostrom, *Beyond Markets and States: Polycentric Governance of Complex Economic Systems*, Nobel Prize lecture, 2009, available at http://www.nobelprize.org/nobel_prizes/economis/laureates/2009/ostrom-lecture.html.

£1 or more as this transaction would leave both parties better off than they were before.²³⁸

In both the tragedy of the commons and this textbook question, the common assumption is that material gain has priority over social equity and other axiological, value-based considerations in human decision-making. The notion that the way in which our actions are perceived by others, how one should live one's life, and the question of whether we would wish for our actions to be replicated by the rest of society, are all important psychological considerations influencing human decision-making. When actual behavioural experiments were conducted (with genuine monetary rewards) to test the hypothesis of game theory, it was found that around 30% of people did not accept any proposal under 50-50 equal divide, and over 50% required at least 40%.²³⁹²⁴⁰ It seems that the tragedy of the commons is deduced from a presupposed, economic, and static view of human rationality, rather than from the unique and contingent conditions under which this form of behaviour was observed. Social research may detect conditions of existence, but it is unsatisfactory when it reifies them by taking them as the features of an a-temporal reality. The possibility of action, social restructuring, and diverse social relations will not be disclosed by that approach. Rational choice theory emerges within this tradition.

The tragedy of the commons is born out of the dilemma presented by this form of game theory. Yet it seems that the latter does not reflect human interaction unless the subjects are made to operate within specific parameters. Humans identify themselves in part through their social relations and are thus first and foremost

²³⁸Sara Connolly, Alistar Munro, *Economics of the public sector*, chapter 7.1 & 7.2 (London, Prentice Hall, 1999)

²³⁹Ibid.

²⁴⁰Game theory is the branch of mathematics concerned with the analysis of strategies for dealing with competitive situations where the outcome of a participant's choice of action depends critically on the actions of other participants. Game theory has been applied to contexts in war, business, and biology.

members of society, rather than individuals who are autonomous such that they are in some way antecedent to their social condition. Humans do not have such an isolated sense of experience as homo economicus seems to presuppose. As Juergen Habermas suggests, human communicative rationality lies in the "intuitively mastered rules for reaching an understanding and conducting argumentation."²⁴¹ We are not mutually indifferent by nature, but rather our behaviour is conditioned in part by social cues we take from others. In other words, human rationality is to a large degree the product of human communication. This implicit knowledge can be transformed into an explicit knowledge on how we are to conduct ourselves, because we can rationally evaluate the normative validity of the justifications people give for their political and moral dispositions.²⁴² The point here is that individuals recognize the potential of communicative action in creating synergies, overcoming discord, and reaping the benefits of reciprocation.

We should note here that rational choice underpins a liberal conception of individualism, which has evolved and cemented itself from Hobbes to Rawls as the hegemonic and seemingly self-evident understanding of the self. The tragedy of the commons is representative of this ideology. It is derived from the same logic that Rawls posits as the underlying ontological condition of liberalism, and which again is also a central tenet of rational choice theory, namely the circumstances of justice in which people "are disinterested in the interests of others."²⁴³ It celebrates the autonomous individual and the anonymous society, and is oblivious to the seemingly intuitive point that individuals are, to a large extent, embedded in their social relations.²⁴⁴ Their identity is in part composed of the social roles one

²⁴¹Juergen Habermas, *The Theory of Communicative Action, Vol. 1: Reason and the Rationalization of Society*. Translated by T.McCarthy. (Boston, MA: Beacon Press, 1984)

²⁴²Soibam Birajit, Meeyamgi Kholao, "Sprout of Consciousness", *ARECOM (Advanced Research Consortium, Manipur)*, (2014) p. 12.

²⁴³Wayne Proudfoot, "Rawls on the Individual and the Social", *The Journal of Religious Ethics*, 2.2 (1974), 107-28.

²⁴⁴Jules L Coleman, "Markets, Methods, Morals and the Law" *Alabama Law Review*, 66, 169 (2014)

inevitably adopts and the expectations defining these roles. The dangers of conceptualizing human behaviour within the framework of rational individualism is that the circumstances that led to the apathy of the children previously engaged in creative work, or the instrumentality expressed by the parents who were late in picking up their children from school, become the very fabric of our social world and behaviour. In other words, by appropriating the inherent elements of this tragedy of the commons discourse and formulating it as our common sense, we design our social institutions, especially those that structure our living conditions and produce patterned social relations. As a result, the tragedy of the commons becomes a self-fulfilling prophecy.

While the tragedy of the commons may be considered a narrative construction, this same narrative may transform into reality if its norms, values, beliefs and behavioural assumptions continue to proliferate in society. The fact that in the UK, under the economic transformation that took place under Margaret Thatcher and continued under the 'New Left' government of Tony Blair, much of the public sector, in particular health and education, were 'rationalized' through the introduction of numerical targets which measure efficiency, is reflective of this.²⁴⁵ To give one example, school curricula which have previously been developed in accordance with normative constraints, are now imposed by a 'bureaucracy of experts'.²⁴⁶ To enhance individual freedom and quality, many schools were now given greater creative control over achieving nominal targets of efficiency, mainly university acceptance and grade results.²⁴⁷ One study showed that in the UK, many schools' curricula have become less broad as students were solely taught answers to exam questions.²⁴⁸ Furthermore, a widening of social inequalities was observed as those schools that achieved the nominal targets were deemed superior

²⁴⁵Adam Curtis, (Director), *The Trap: What happened to our dream of Freedom?* (Motion Picture). London, BBC, 2007

²⁴⁶Ibid.

²⁴⁷Ibid.

²⁴⁸Ibid.

and received higher ratings and reputation. Therefore housing prices in the surrounding areas became inflated, while private schools generally increased tuition fees the better they performed nominally.²⁴⁹ Similarly, a hospital in Birmingham which was given the target of reducing waiting lists asked patients about their holiday plans and deliberately scheduled patient's operations during their holidays.²⁵⁰ In another context, patients were seen without being treated to cut waiting lists further in an effort to reach government-set targets.²⁵¹

The rational objectification in human decision-making assumed by rational choice theory is not an inherent aspect of those decision-making processes, but rather one that is conducive to realising certain ends. The human agent in rational choice theory is *homo economicus*. The tragedy of the commons can only occur if humans have to some degree internalized this conception of human behaviour, through a societal discourse which proliferates the norms, values, dispositions and behavioural patterns associated with *homo economicus*. The process through which this may occur is through the imposition of relatively artificial, external incentives which evoke changes in human attitudes and behaviour; as Precht puts it, "the origin of egoism by capitalist selection."²⁵² In sum, the hypothesis inherent to the tragedy of the commons either simply not hold, or rests on a view of human behaviour and motivation observed under the very circumstances which are conditioning this behaviour.

²⁴⁹Ibid.

²⁵⁰Ibid.

²⁵¹Ibid.

²⁵²Richard David Precht, *Die Kunst kein Egoist zu sein*, (München, Goldmann Verlag, 2010)

4. Chapter Three

Brave Smart World: The significance of the Commons in the Information Economy

4.1 Introduction: The Fourth Industrial Revolution in a nutshell

In this chapter, I will focus on the significant role that the digital commons have in the context of a paradigm shift in the economy caused by the transformation of economic production due to the technological developments. This in turn implies a significant evolution of digital technologies which are beginning to have an impact comparable to that of the Industrial Revolution of the 19th century. I will contend that such a shift results from the digitization of economic activity and from new modes of production arising from the advent of the internet as a revolutionary communications infrastructure, which has transformed the way knowledge and information can be gathered, interpreted, organized, and most importantly, distributed. Several thinkers, amongst them Jeremy Rifkin²⁵³, Paul Mason²⁵⁴ and Klaus Schwab²⁵⁵, talk of a Fourth Industrial Revolution, referring broadly to the developing current environment in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI) are changing the way we live and work. They argue that the new economy is emerging as a result of this transformation and will give rise to a new socioeconomic logic and paradigm. The key notion that I will highlight in this chapter is that in the newly emerging economic paradigm, information, human knowledge and attention will become the main locus of value; hence I will refer to

²⁵³Jeremy Rifkin, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, (United Kingdom: Palgrave Macmillan, 2014).

²⁵⁴Paul Mason, *Post-Capitalism: A Guide to Our Future* (United Kingdom: Penguin Books, 2016).

²⁵⁵Klaus Schwab, *The Fourth Industrial Revolution* (Switzerland: World Economic Forum, 2016).

it as 'information economy' as the philosopher Luciano Floridi does.²⁵⁶ The Fourth Industrial Revolution signifies a new chapter in human development, enabled by the extraordinary technological developments referred to above, which enable not only a revolutionary communications infrastructure but an ever increasing connection of all kinds of physical and digital infrastructures.²⁵⁷

Thus, following the First Industrial Revolution in the 18th and 19th century, the Second Industrial Revolution driven by electricity and mass production and creating new consumer markets, the Third Industrial Revolution, revolved around the development of computer and information technology (IT), which began in the 1950's and with the development of the Internet instigated a radical digitization of production. This trend is currently transitioning into the Fourth Industrial Revolution in which the digital revolution is facilitating the new infrastructures in logistics, energy, transport and communication, which are attaining a scope and pervasiveness that indicate a significant evolution from the digital computer revolution.

These technological advances that characterize the emerging Fourth Industrial Revolution are merging the physical, digital and biological worlds. As I will point out in this chapter, it should be noted that one ought to be cautious with confusing the emergence of the IoT infrastructure, zero marginal cost productivity²⁵⁸ and the digitization of production, with the fanciful futurologist claims that we are merging the virtual and biological to such an extent that we are becoming trans-humanist cyborgs or merging into the singularity as Silicon Valley ideologues such

²⁵⁶ Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014).

²⁵⁷ Ibid.

²⁵⁸ Zero marginal cost describes a situation where an additional unit can be produced without any increase in the [total cost](#) of production. Producing another unit of a good can have zero marginal costs when that good is non-rivalrous, meaning that it is possible for one person to consume the good without diminishing the ability of others to simultaneously consume it (for instance making a digital copy of a song or sharing a piece of software code).

as Ray Kurzweil would have us believe.²⁵⁹ The same goes for certain technoutopian accelerationist visions that predict the end of wage labour and the emergence of a 'post-scarce' economy courtesy of automation and minor industrial revolutions in renewable energy and information technologies. The left wing thinker Aaron Bastani for example, describes in his recent publication revealingly titled *Fully Automated Luxury Communism*²⁶⁰ a post scarcity economy with provision of a universal basic income.

In this chapter, I will focus on the significance of the commons in the context of the aforementioned socioeconomic transformations, in particular with regard to the 'information economy', in which human knowledge and social life become the locus of value in an economy which primarily revolves not around commodities or financial services, but around 'big data' and data analytics. I will briefly outline the various ways in which the information economy represents such a transformation, in particular with regard to the way in which the market economy is increasingly becoming 'disrupted', to use a buzzword of our time, by the emerging potential of zero marginal cost productivity. I will further outline how this disruption will affect nearly all sectors of the economy and will have a major impact on the way in which the economy is going to be increasingly digitally organized.²⁶¹ Arising from the zero marginal cost paradox, is the phenomenon of 'netarchical capital', the process by which value is extracted through the development and control of participatory platforms that are able to capture the value created by the user community without the need to own intellectual property rights.²⁶² Tim Berners Lee, who is often credited as the inventor of the World Wide Web, sums up the dynamic of netarchical capitalism in the following way:

Facebook, LinkedIn, Friendster and others typically provide value
by capturing information as you enter it: your birthday, your e-mail

²⁵⁹Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York, United States: Penguin Group, 2005).

²⁶⁰Aaron Bastani, *Fully Automated Luxury Communism* (United Kingdom: Verso, 2019).

²⁶¹Jeremy Rifkin, *The Zero Marginal Cost Society*, (United Kingdom: Palgrave Macmillan, 2014).

²⁶²definition provided here: https://wiki.p2pfoundation.net/Netarchical_Capitalism

address, your likes, and links indicating who is friends with whom and who is in which photograph. The sites assemble these bits of data into brilliant databases and reuse the information to provide value-added services – but only within their sites. Once you enter your data into one of these services, you cannot easily use them on another site. Each site is a silo, walled off from the others. Yes, your site's pages are on the Web, but your data are not... So the more you enter, the more you become locked in. Your social-networking sites become a central platform – a closed silo of content, and one that does not give you full control over your information in it.²⁶³

This new form of value capture by netarchical capital poses a number of problems. It gives rise to 'natural monopolies', which undermine economic efficiency and has detrimental outcomes for society at large, particularly when such netarchical digital platforms control key infrastructure integral to social life, such as energy, transport, logistics, and vast channels of human communication. Furthermore, this leads to the destruction of whole sectors (think of retail on the high streets disappearing). In the sphere of digital production, the production of largely 'immaterial' goods facilitates a mode of production that challenges the model of the classical market economy that is still largely grounded on the socio-economic realities of industrial capitalism and mass production of consumer commodities. These goods, for instance, include software, design, or indeed an electronic copy of a song or book, especially when this process is organized and distributed in digital peer-to-peer collaborative commons. Once the labour has been put in to produce it, it can be reproduced and shared almost indefinitely without requiring much labour every time. This means that companies are requiring less input of labour but at the same time are reducing the overall pool of profit for entire sectors of the economy, creating a crisis of capital accumulation caused by falling rates of

²⁶³Tim-Berners-Lee, "Long Live the Web: A Call for Continued Open Standards and Neutrality", *Scientific American*, 12(2010). <<https://www.scientificamerican.com/article/long-live-the-web/>> [accessed 26 September 2019].

profit.²⁶⁴ A key theme of this chapter is brought to light here, namely that the emerging framework and dynamic of a digitized information economy presents capital with the challenge of monetizing an exponential increase in use value which can be shared and reproduced easily and at little cost.²⁶⁵

Thus, in this chapter I will outline the way in which the decentralized governance mechanisms, informal norms of collaboration, and the social and economic logic of the commons elaborated in previous chapters lie at the heart of the socioeconomic transformation of the information economy, while simultaneously standing in contradiction to the predominant economic infrastructures, legislative and normative frameworks of the market that they are integrated within. In other words, a further aspect of the Gramscian idea of the 'interregnum' (see chapter one, section 2.2) is revealed, in which a new economic and social logic is developing within the old one. While subordinated to the digital platform monopolies that dominate the economy, there is nevertheless a potential for the commons to create their own economic networks and establish reciprocal relations with the market on an independent basis. In this regard, I will outline the key tenets of 'commons-based peer production' (CBP) as one of the key productive modalities emerging within the digital economy. The socioeconomic logic entailed in laterally scaled peer-to-peer networks that produce, use and distribute 'digital goods' that are shareable and reproducible at very low marginal cost, is one which is propagating a social and cultural ethic, as well as a productive and innovative potential which will require a commons-centric reconfiguration of the proprietary frameworks and the pure price signals that characterize the classical market economy. Consequently, I will argue that this contradiction between the digital commons and the market is leading the economy into a 'value crisis', that is to say, a situation in which it becomes ever more difficult to account for where value is

²⁶⁴ Jeremy Rifkin, *The Zero Marginal Cost Society* (United Kingdom: Palgrave Macmillan, 2014).

²⁶⁵ Use value of a product or service as opposed to its labour value (as part of cost) or exchange value (price)

created and to adequately reward this. This looming crisis creates a need to discover new ways of understanding value and a similar need to develop new value practices, which can also make the best use of commons-orientated peer production while being able to create value for and within the market.²⁶⁶ Of this emerging ecosystem of digital commons-centric networks I can offer only a brief outline, given that practical examples that embody a commons-centric economic logic are at the time of writing mere ‘seed forms’ of this new logic.

I show some of the limits of the market economy in its current modality, in light of the emerging economic paradigm, and the challenges brought about by the information economy. My contention is that commons-centric design principles and patterns will need to be reflected in public policy, ownership structures, and value practices, among many other elements of our social and economic life. I am not outlining the contradictions and challenges of the information economy to contribute to extended debates around post-capitalism. My aim is rather to show that the theoretical and practical framework of the commons can offer ways to successfully adapt our conceptual frameworks and their reflection in the *modus operandi* of our economic system. What will become apparent is that the liberal market economy in its current form can only sustain itself through a mode of ‘netarchical-cognitive capitalism’. This is a capitalism dominated by digital-platform monopolies that unlike in the mode of cognitive capitalism, which relies on extensive digital patents and intellectual copyright, extract value directly from the hierarchically structured networks that they own, even when they ostensibly constitute open-sharing platforms on which the user community can freely create

²⁶⁶ Value practice refers broadly to the way in which a socioeconomic entity defines, accounts, tracks and measures value, and more broadly speaking how it defines value within its own community. A related concept is that of value sovereignty, the notion that non-market entities (in particular commons) should be able to self regulate their relationships with the market, in other words value sovereignty means that mechanisms are in place that preserve key components of the commons in question as inalienable from being subsumed exclusively under market logic

and share content. This netarchical mode of capitalism will lead to a wide range of detrimental consequences for our social, economic and political life. These constitute bipartisan concerns that impact the entire political spectrum, from the right-wing libertarians and the centrists liberal, to the social democrats and the radical socialists.

4.2 The socioeconomic shift towards the information economy

The concept of the 'information economy' has firmly entered the minds of public policy makers across the world. In Europe for instance, the European Commission set up the Internet of Things European Research Cluster to develop a model for a European knowledge-based economy and society.²⁶⁷ In the eyes of its supporters, this new model is seen as the stepping stone for synchronising the EU's efforts to meet the challenges posed by the new digital economy, while maintaining the inclusive character of the European Social Model (ESM).²⁶⁸ According to the Lisbon strategy, the EU's objective for the first decade of the twenty first century is to become "the most dynamic and competitive knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and social cohesion, and respect for the environment."²⁶⁹ Although knowledge and its dissemination has for centuries been the key driver of economic development, today, knowledge-based firms gain competitive advantages through their ability to use, process,

²⁶⁷ "IERC-European Research Cluster on the Internet of Things," *IERC-European Research Cluster on the Internet of Things*, <<http://www.internet-of-things-research.eu/>> [accessed 20 March 2019]

²⁶⁸ Ulrike Felt and Brian Wynne (rapporteurs) et al, "Taking European Knowledge Society Seriously: Report of the Expert Group on Science and Governance to the Science, Economy and Society Directorate, Directorate-General for Research", European Commission, 2007, <https://www.semanticscholar.org/paper/TAKING-EUROPEAN-KNOWLEDGE-SOCIETY-SERIOUSLY-Report-Felt-Wynne/16213a17a5286b50ddafcd68ecf2268600cd5d5f> [accessed 15 August 2018].

²⁶⁹ 'Lisbon European Council 23-24.03.2000: Conclusions of the Presidency', p. 6 <http://www.europarl.europa.eu/summits/lis1_en.htm> [accessed 15 August 2019].

analyse and share powerful information and communication technologies at an unprecedented scale and speed. In the post-war economies of most Western countries, the seeds for the information economy, sown as freely exchangeable information, began to form an increasingly important element underlying economic activity, albeit concentrated within specialized domains, particularly within science, computing and engineering.²⁷⁰ The technological infrastructure and software that was developed in this period, including early algorithmic and network protocols, as well as digital media concepts, laid the foundations for information science, entrepreneurial innovation and sources of economic growth in the years to come.²⁷¹

The Internet of Things European Research Cluster has helped facilitate a transition of the economy into the era of ubiquitous computing and has helped the way in which the IoT infrastructure can be used to create a globally connected network. The internet is already such a network, but the IoT represents the first major evolution of the internet since its inception. Through this evolution, we begin to see that everything will be connected, from people to machines, eco-systems, logistic and transport networks, to consumption and spending patterns, and virtually all other aspects of social life that will finally be linked via sensors, software and algorithmic protocols to the IoT infrastructure. This can have both, positive and negative impacts. On the one hand, installing sensors in cities and rural communities to measure pollution levels and carbon emissions can for instance help warn residents and prompt governments and councils to act more quickly than they otherwise would. On the other hand, it creates a number of concerns regarding privacy of information and rising inequalities between those who can take advantage of their new smart environments, hence becoming the knowledge workers of the new economy, and those who are left behind.

²⁷⁰ Klaus Schwab, *The Fourth Industrial Revolution* (Switzerland: World Economic Forum, 2016).

²⁷¹ Ibid.

A key component of the information economy is the emergence of a new economic sector known as the 'gig' or 'sharing economy', the latter often also referred to as 'collaborative economy', which in some ways can be seen as the nearest realization to a free market, where supply and demand are met by individuals freely auctioning their skills and assets with incredibly low transaction costs and easy coordination on the internet, and a meritocratic reputation system based on customer reviews and ratings. The EU has articulated a relatively comprehensive definition of the sharing / collaborative economy as follows

Business models where activities are facilitated by online platforms that create an open marketplace for the temporary use of goods or services often provided by private individuals. The collaborative economy involves three categories of actors: (i) service providers who share assets, resources, time and / or skills - these can be private individuals offering services on an occasional basis ('peers') or service providers acting in their professional capacity ('professional services') (ii) users of these; and (iii) intermediaries that connect - via an online platform - providers with users and that facilitate transactions between them ('collaborative platforms'). Collaborative economy transactions generally do not involve a change of ownership and can be carried out for profit or not-for-profit.²⁷²

Many of these skills and services are of course coordinated and controlled by centralized platforms; sites such as Uber and Airbnb utilize the strategy of netarchical capital to yield rent by controlling huge swathes of market transactions through providing the service of connecting demand and supply. As I will outline

²⁷² European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions; A European Agenda for the Collaborative Economy, 3 (2016). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A356%3AFIN> [accessed 15 August 2019].

below, this raises two main challenges to the market economy. *Firstly*, it raises the immediate concern that the economy in the digital age will be dominated by an oligopoly of tech platforms that will control vast channels of data generated from human communication and increasingly key infrastructures and service provisioning systems, from transport and logistics, to healthcare, and potentially even energy supply. *Secondly*, it raises the question of how to account and recognize the use value that is created by social cooperation in the ‘collaborative commons’ (the term used by Rifkin)²⁷³ without being formally recognized in the economy. As I outlined above, and as I demonstrate throughout this chapter, the contradiction between the commons-centric logic that is engrained in much of the value production in the digital information economy and the existing proprietary market economy is simply too great to be resolved in the status quo where the digital commons are latent and completely subordinated to the proprietary value regime of the market economy.

The size of the sharing economy is rapidly growing. Japan recently announced that it would integrate it into its GDP figure, including revenues and expenditures related to companies like Airbnb. Japan’s Cabinet Office estimates this new sector to be worth around 80 billion to 100 billion yen (\$751 million to \$939 million).²⁷⁴ Share economy giants like Airbnb or Uber have their advantages. They create a lot of economic revenue, provide competition, maximise the use of existing infrastructure such as housing or transport facilities and reduce the individual costs and emissions of travelers. At the same time companies like Airbnb are prime examples of netarchical platforms that create vast monopolies and rent-seeking behaviour, while also often having detrimental impacts on their local urban environments. In some major cities like New York, Airbnb has essentially created large scale hotel chains without being regulated as such. In Berlin, for example, the

²⁷³Jeremy Rifkin, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, (Palgrave Macmillan, 2014).

²⁷⁴Mariko Hirano, “Japan to Count Sharing Economy in Official GDP”, *Nikkei Asian Review*, 23 August (2019). <<https://asia.nikkei.com/Spotlight/Sharing-Economy/Japan-to-count-sharing-economy-in-official-GDP>> [accessed 27 August 2019].

city council successfully regulated Airbnb by restricting short term rent to mitigate the impact of rising housing costs and the decrease of available housing.²⁷⁵

Furthermore, it would be a mistake to think of sharing economy giants such as Uber as mere extensions of the service economy in the digital age. Uber's value lies not merely in providing a cheap and convenient means of transport; it also collects vast amounts of information from its customers and is able to generate metadata from the movements and decisions of millions of its customers, which in turn provide valuable predictive insights into human behavioural patterns and establish useful customer profiles for marketing purposes. Uber's plan to extend into the healthcare industry and other service sectors is a clear indication that data harvesting and data analytics is key to their business model. This is where traditional critiques of the sharing economy simply fall short, when they focus either on the lack of labour unions or as the left wing Economist Martin Wolf does, dismiss Uber as a cheaper but sub-standard product (due to the lack of safety checks and professional training required by traditional taxi companies and their drivers) which consumers choose at their own peril. In the digital economy value is generally created in a vast service industry provided by 'apps'. Hence, simple 'tasks' that seem commonplace, like adding friends or pressing the like button on Facebook is producing potential value. And when you hire an Uber you are not just contributing value with your credit card payment but also with the data that you generously provide. In other words, in the information economy, the product is you. Furthermore, as I will outline below, *you* are also the resource, the source of value in this economy; Ueber and Airbnb are not the principal value creators, at least not in the sense of the brick and mortar market economy, as they are not the ones who are the real holders and creators of value. As I will demonstrate throughout this chapter, the underlying dynamic at play in this mode of value

²⁷⁵ „Sorgt Airbnb für steigende Mieten?“, Handelsblatt, 06. August 2019, <https://orange.handelsblatt.com/artikel/63302> [accessed 23 August 2019].

creation in the information economy is that the 'market' has to expand by increasingly monetizing what we previously already did for free.

The problem is aggravated if we combine this information with the previously established concern that the vast amounts of this information, the 'digital gold' of the 'app-economy', resides in the hands of a small 'platform oligopoly.' Jeremy Rifkin poignantly asks:

What does it mean when the collective knowledge of human history is controlled by the Google search engine? Or when Facebook becomes the sole overseer of a virtual public square, connecting the lives of over a billion people? Or when Twitter becomes the exclusive gossip line for the human race? Or when eBay becomes the only ringmaster for the global auction market? Or when Amazon becomes the go-to virtual marketplace for nearly everyone's purchases online? There is nothing comparable to these monopolies in the history of the brick-and-mortar world of commerce.²⁷⁶

It is curious indeed that Airbnb is in effect the largest real estate company in the world, without actually owning any real estate and without having had to accumulate the capital to establish its position. Uber controls a fleet of vehicles without having to own any of them. Facebook relies on content creation by the user community. Netarchical platforms, particularly those that are directly involved in the 'sharing process', have established a unique position whereby they are not creating goods or services for the market, but rather individuals provide the goods and services from which they don't produce for the market, they *are* the market. Trebor Scholz clearly characterizes the dynamic at play:

They are running off your car, your apartment, your labor, your emotions, and importantly, your time. They are logistics companies

²⁷⁶Jeremy Rifkin, *The Zero Marginal Cost Society*, (Palgrave Macmillan, 2014). p. 204

that require participants to pay up to the middleman. We are turned into assets; this is the financialization of the everyday 3.0.²⁷⁷

The underlying pattern is that lots of use value is created or provided by user communities on platforms without any compensation. Consider Amazon as another example. Part of the reason Amazon became so successful is because the reviews created by customers of products and the five stars rating system is an attractive, reliable and easy way to gauge the quality of different products and compare similar brands. The system was not perfect, but one is more likely to trust reviews posted by fellow customers than a salesperson who you know has a vested interest in selling you the product.

4.3 The near zero marginal cost phenomenon and the crisis of value

4.3.1 Value production in the social factory of everyday life

A central question that arises from the discussion in the last section concerns the nature of value and the ways we have to change our understanding of it in light of the new socio-economic transitions discussed above. As producers and consumers become more mutually reciprocal and productive spaces increasingly take the form of digital ‘collaborative commons’ (even when they are essentially enclosed by the netarchical corporate sector), and value is being produced in the ‘social factory’²⁷⁸ of everyday life, the questions of *where* value is created and *how* to adequately recognize this value come to the fore. Throughout this chapter, I will illustrate ways in which the productive modality and value regime of the digital commons, as well as the social and cultural ethics they embody, can help frame and understand how we identify value in light of an economy characterized by

²⁷⁷Trebor Scholz, ‘An Introduction to Platform Cooperativism’ (Rosa Luxemburg Stiftung (New York Office), 2016). http://www.rosalux-nyc.org/wp-content/files_mf/scholz_platformcoop_5.9.2016.pdf

²⁷⁸Michael Hardt and Antonio Negri, *Commonwealth*, 2011th edn (United States: Harvard University Press, 2011).

digital production and reproduction at near zero marginal cost and the collection and processing of information. For our present purposes, I will illustrate the scale of the impact of the zero marginal cost paradox and the emerging hegemony of digital platforms on the wider economy. More broadly, I will argue for a greater political and philosophical imagination regarding our understanding of the market in light of the socioeconomic transformation that the Fourth Industrial Revolution entails.

The scale and speed of the impact of the information economy on the liberal market economy is highlighted by the fact that it coincides with the political and economic crisis that I outlined in the first chapter. The 2008 financial crisis led to a depression phase that lasted longer than the crash in 1929-33 and across Europe in particular, economic stagnation has established itself as a long-term prospect.²⁷⁹ The fact that the digital transformation of the economy is likely to bring with it a new wave of large scale automation (without necessarily creating vast new markets) only aggravates the problem. A 2013 study of the Oxford Martin School made waves with its suggestion that nearly 47% of all jobs in the United States were susceptible to automation.²⁸⁰ It should be noted that the study investigated the technological feasibility of jobs being replaced, not the immediate likelihood of it being implemented. Nevertheless, even half of that figure presents a significant economic impact, and while the advent of automation has led several commentators to be tempted by teleological theorists, and techno-utopian transhumanist engineers such as Eric Drexler, Hans Moravec or Ray Kurzweil²⁸¹, there are also their Silicon Valley compatriots, founders and CEOs such as Sergey Brin (Google), Tim Cook (Apple) and Mark Zuckerberg (Facebook), and climbers such as Travis Kalanick of Uber and Joe Gebbia of Airbnb. They all agree that

²⁷⁹ Paul Mason, *Post-Capitalism: A Guide to Our Future* (United Kingdom: Penguin Books, 2016).

²⁸⁰ Carl Frey, "The Future of Employment: How Susceptible Are Jobs to Computerisation?" (Oxford Martin School, 2013)
<https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf>
[accessed 15 June 2015].

²⁸¹ Richard Saage, New man in utopian and transhumanist perspective, *European Journal of Futures Research* 1: 14 (2013). <https://doi.org/10.1007/s40309-013-0014-5>

automation will have a significant impact on the labour market and the economy at large. They are the venture capitalists who distribute their billions.

A particularly influential book on the subject of automation is *Race against the Machine* by Erik Brynjolfsson and Andrew McAfee, which focuses on the impacts of large-scale automation across different sectors of the economy. In brief, they argue that as products become ever more abundant and cheaper with increasingly less human wage labour required to do so, there will be fewer consumers available to buy products and hence the market economy will be severely impacted.²⁸² Their assessment of the economic shift has led tech leaders, particularly in Silicon Valley, to re-examine the way they see future of the information economy unfolding, in particular with regard to the future of purchasing power and the nature of employment.²⁸³ Furthermore, the dynamics of 'creative destruction',²⁸⁴ to borrow Joseph Schumpeter's term, of whole sectors of the economy that are already struggling to adapt to the digital economy, is already becoming apparent when one looks at the decline of the retail industry in face of skyrocketing online sales.²⁸⁵ The Fourth Industrial Revolution and the full onset of near zero marginal cost productivity is likely going to have much large scale impact on traditional market entities.²⁸⁶ This dynamic in conjunction with the immense job loss incurred by technological disruptions laid out by Brynjolfsson and McAfee among many others, have led to widespread support for initiatives such as a Universal Basic Income (UBI), from academics and entrepreneurs to Silicon Valley futurists and business leaders.²⁸⁷²⁸⁸ The call for a basic income is a recognition of the fact that a significant portion of value created in the market economy is largely unaccounted for. For instance, market economies depend on ecological commons in order to

²⁸²Erik Brynjolfsson and Andrew McAfee, *Race against the Machine*, (Digital Frontier Press, 2011).

²⁸³ Ibid

²⁸⁴ Schumpeter, Joseph, *Capitalism, Socialism and Democracy* (Place of publication not identified: Routledge, 2013) p 76.

²⁸⁵ Rifkin, Jeremy, *The Zero Marginal Cost Society* (Palgrave Macmillan, 2014).

²⁸⁶ Ibid.

²⁸⁷ Ibid.

²⁸⁸ Guy Standing, *Basic Income: and How We Can Make It Happen* (UK: Pelican, an imprint of Penguin Books, 2017).

exist, and only recently have economists sought to integrate ecosystems into the framework of market exchange by attributing pecuniary value to different 'ecosystem services.'²⁸⁹ In a similar vein, feminist authors such as Silvia Federici²⁹⁰ and Nancy Folbre²⁹¹ have stressed that social reproduction that occurs through families and care work underlies all economic activity or is a pre-requisite for it, but does not feature in the formal accounting of the economy, as Paulo Virno notes.²⁹² Where care work is embedded in the market economy in the form of wage labour, it is often found at the very bottom of the value chain. A central problem for the commons consists of the fact that the labour of commoners,²⁹³ required to sustain the commons they work in, and provide a support system for commercial activity in the market economy, does not provide an adequate livelihood for them. This is reflected at a broader level in the way in which the affective labour of domestic and care work is itself a form of a social commons that exists largely outside of the formal economy, while being intrinsic to it.

The care sector is particularly significant given that major economies in Europe, China and Japan are experiencing profound demographic changes that I will outline further below. Besides, there is no zero marginal cost productivity here; care remains an intrinsically time intensive human facility. While automation and artificial intelligence can replace human labour, they are less able to replace human care without a significant loss of the intrinsically social and relational component of care and reproductive work. The question of value is once again brought to the fore here. Where is value created, how is it accounted for, who is able to bring it into the commercial sphere, and what asymmetrical outcomes are entailed in this dynamic? The UBI, if it is implemented in a way that provides individuals with

²⁸⁹David Pearce, "Auditing the Earth: The Value of the World's Ecosystem Services and Natural Capital", in *Environment: Science and Policy for Sustainable Development*, 1998, 40(2), pp.23-28.

²⁹⁰ Silvia Federici, *Caliban and the Witch: Women, The Body and Primitive Accumulation* (Autonomedia, 2004).

²⁹¹Nancy Folbre. "Who cares? Feminist critique of the care economy". *Rosa Luxemburg Stiftung*, (2014). https://www.rosalux.de/fileadmin/rls_uploads/pdfs/sonst_publicationen/folbre_whocares.pdf

²⁹²Paulo Virno, *A Grammar of the Multitude* (New York: Semiotext(e), 2004).

²⁹³ Commoner here refers to a person who is actively engaged in co-producing a commons.

genuine autonomy (and not as an implicit subsidy for employers to cut wages), can be seen as constituting a commons-centric policy to realize a more equitable form of value recognition. Thus, the UBI is a potential instrument to recognize forms of value creation that are not recognized, in other words to make latent value visible. This is an important element of the critique of netarchical capitalism from a commons-perspective that I am developing in this chapter, namely that we are going to have to develop a more pluralistic conception of value and develop different ways of recognizing and accounting for it, if we are to find equitable ways of recognizing the increasingly diverse and intangible forms of value creation, many of which are not necessarily ideally suited to being integrated into the value regime of the market economy based on pecuniary value. For instance, I will also outline some of the reasons why simply paying people for their contributions on netarchical platforms like Facebook is not an adequate solution in section 4.3.5 of this chapter. In sections 4.5 I will briefly outline some of the alternative value practices emerging within commons-orientated networks as part of the socioeconomic shift entailed by the rise of the information economy.

If we combine the fact that netarchical capitalism relies on an increase of free labour, while coinciding with a shift away from wage labour (due to automation, an increased precariat in the 'gig' economy and increased freelance knowledge workers as well as automation and drastic reduction in marginal cost having wide ranging impacts across different sectors of the economy), it becomes apparent that the information economy will have a profound impact on the nature of work and the labour market. The labour market has already become increasingly flexible over the past decades, and through the online gig economy, an increasing amount of workers are not employed through regular jobs, but instead jump from one project to the next. The gig economy is steadily moving from the margins of the economy into the mainstream. In 2015 Forbes calculated that in the US around 3.2 million people are regulars in this 'on-demand economy', and estimated that this

figure is expected to reach 7.6 million by 2020.²⁹⁴ A more recent report published by Upwork, a global freelancing platform, suggests that an estimated 47% of Generation Z (those born after 1997) are often employed as freelancers.²⁹⁵ In the next five years 61 million more members of Generation Z will be entering the American labour market and are likely going to expand the scope of the gig economy.²⁹⁶ In the US, it is estimated that nearly a third of the labour force are already non-traditionally employed.²⁹⁷ For highly skilled knowledge workers who are in demand and are able to navigate the working environment of an app-based economy, this presents a great opportunity to gain greater creative control over their lives and work according to their own schedules. On the other hand, this exodus from traditional wage labour is littered with an array of social and political problems. What happens to healthcare and pension provisions? What regulatory frameworks can be implemented to ensure that gig economy platforms like Uber and Airbnb conform to the same vetting processes, as well as health and safety standards, as was required for the same or similar services provided by the traditional market economy? Perhaps the most pertinent questions, particularly with regard to illustrating the need for commons-centric entities to emerge, is how to address the precarious nature and/or the lack of labour protections that have become endemic to the sharing economy.

The tech giants that dominate the sharing economy such as Uber and Deliveroo, and netarchical giants such as Amazon, have become notorious for their lacklustre approach to working conditions. This was, for instance, highlighted by several strike actions such as the strike on Amazon prime day (a recurring annual special deal day when increased customer engagement is expected) across five

²⁹⁴Elaine Pofeldt, "Intuit: On-Demand Workers Will More Than Double By 2020," *Forbes*, 13 August (2015) <<https://www.forbes.com/sites/elainepofeldt/2015/08/13/intuit-on-demand-workers-will-more-than-double-by-2020/#527680a8c460>> [accessed 21 September 2017]

²⁹⁵Macy Bayern, "Growth of the Gig Economy: 46% of Gen Z Workers Are Freelancers," *TechRepublic* (29 August, 2018) <<https://www.techrepublic.com/article/growth-of-the-gig-economy-46-of-gen-z-workers-are-freelancers/>> [accessed 14 May 2019]

²⁹⁶ Ibid.

²⁹⁷Trebor Scholz, 'An Introduction to Platform Cooperativism' (Rosa Luxemburg Stiftung (New York Office), 2016). http://www.rosalux-nyc.org/wp-content/files_mf/scholz_platformcoop_5.9.2016.pdf

countries.^{298,299} This reflects a gap between the development of a new economic sector and the lagging political leadership and legislative frameworks that have yet to come to terms with this new socio-economic reality.³⁰⁰ The legal scholar Frank Pasquale describes the difference between the old economic logic and the new sharing economy with a suitable analogy when he writes that: “whereas traditional employment was like marriages, with both parties committed to some longer-term mutual project, the digitized workforce seeks a series of hookups.”³⁰¹ It is likely that labour protections and greater regulations will come into place to mitigate some of the greatest disparities that are currently arising. But this will likely not be any easier than finding ways to implement antitrust laws to curb the monopoly power that the platform oligopoly currently holds. Trebor Scholz summarizes the inherent power dynamic in the sharing economy succinctly when he writes: “It’s Elia Kazan’s *On the Waterfront* on speed; digital day labourers are getting up every morning only to join an auction for their own gigs.”³⁰²

Solutions to such dilemmas do not yet exist. However, they need to go beyond traditional solutions of labour unions and worker’s rights. Regulatory frameworks and new structures will need to be devised in order to address the challenges of the digital era that the market economy is confronted with. Shaking up regulatory frameworks and the underlying logic of past legislations is extremely difficult and presents a key challenge for the commons to establish their role in the make-up of the information economy.

²⁹⁸ Adam Lusher, “Deliveroo, Uber and Amazon Accused by MPs of Exploiting Workers with ‘Unintelligible’ Contracts,” *The Independent, Digital News and Media*, (2017).

<<https://www.independent.co.uk/news/uk/politics/deliveroo-uber-amazon-gig-economy-workers-exploitation-contracts-mps-accuse-exploitative-a7668971.html>> [accessed 22 October 2017]

²⁹⁹ Jack Shenker, “Strike 2.0: How Gig Economy Workers Are Using Tech to Fight Back”, *The Guardian*, News and Media, (2019) <<https://www.theguardian.com/books/2019/aug/31/the-new-resistance-how-gig-economy-workers-are-fighting-back>> [accessed 10 September 2019]

³⁰⁰ Alvaro Rodriguez, ‘The Guarantee of Fair and Just Working Conditions in the New Collaborative Economy Models in Europe’, *Labor Law Journal*, 70.3 (2019), 171–90.

³⁰¹ Trebor Scholz, *Overworked and Underpaid: How Workers Are Disrupting the Digital Economy* (Cambridge, United Kingdom: Polity Press, 2017).

³⁰² Trebor Scholz, ‘An Introduction to Platform Cooperativism’ (Rosa Luxemburg Stiftung (New York Office), 2016). http://www.rosalux-nyc.org/wp-content/files_mf/scholz_platformcoop_5.9.2016.pdf

4.3.2 The Fourth Industrial Revolution and the Internet of Things

In recent years, the rise of the 'information economy' and the socio-economic changes it is likely to instigate, from networked automation and drastic changes to professional working environments and the growing importance of knowledge workers, to the way that capital is extracted and economic activity organized, has spawned a host of thinkers and political commentators. As mentioned in the previous section, Jeremy Rifkin is one of the most prominent of these thinkers. In his book *The Zero Marginal Cost Society : The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism* he outlines how the internet has made possible what he calls new forms of 'collaborative commons'.³⁰³ These include car sharing and couch surfing (where people can offer a place for travellers to stay). These peer-to-peer sharing platforms have begun to disrupt the classical market economy in nearly all domains of the economy, which were previously dominated by market exchanges between consumers and buyers, maintaining the requisite tension between supply and demand. The socio-economic innovation in these 'collaborative commons' is that they demonstrate that efficient coordination of demand and supply does not necessarily require monetized exchanges.

As Rifkin and many others have pointed out, the internet as a communications infrastructure is leading to a central paradox emerging within capitalism, which has to do with the phenomenon of (near) zero marginal cost productivity.³⁰⁴ The zero marginal cost paradox has been examined in a paper published by the US economist Lawrence Summers, a senior US treasury department official who was also a former president of Harvard. Summers with his co-author J Bradford DeLong, in a paper that evaluated different economic policies in response to the rise of the information economy back in 2001, argue that "if information goods are to be distributed at their marginal cost of production – zero – they cannot be

³⁰³ Jeremy Rifkin, *The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*, (Palgrave Macmillan, 2014).

³⁰⁴ Ibid

created and produced by entrepreneurial firms that use revenues obtained from sales to consumers to cover their fixed set-up costs. If information goods are to be created and produced, companies must be able to anticipate selling their products at a profit to someone."³⁰⁵ In order to retain substantial economies of scale, they argue that "temporary monopoly powers are the reward needed to spur private enterprise to engage in such innovation."³⁰⁶ The question is, how 'temporary' these natural monopolies are and whether governments will be able to curtail their power even if they wanted to. Most economists agree that the condition for economic efficiency is that price equals marginal cost, and this is guaranteed to never be the case with monopolies.³⁰⁷ On the other hand, if prices are at near-zero marginal cost, then many industries will either disappear or have to reinvent themselves to survive in the information economy.

In Rifkin's vision, the distinction between consumers and producers collapses into a new form of social and economic agent: the 'prosumer.'³⁰⁸ In the digital economy, particularly in the sharing economy whether in the social commons such as couchsurfing (before it went for profit) or in the corporate sector like Airbnb, people are both consumers (travellers) and hosts (producers or service providers). The prosumer creates value in the 'economy' not by creating the means of fulfilling human ends and enclosing them through private ownership, but by mobilizing and providing access to their resources, within a network of reciprocators committed to the mutual provision of a given end.³⁰⁹ These social collaborative commons are an emerging economic system that is beginning develop as peer to peer provisioning infrastructures, whether they are dealing with housing and loan funds, energy supply or even the education system. The growing sector of renewable energy potentially represents an even more dramatic shift in the socio-economic landscape. With the decentralised distributive technology to produce

³⁰⁵Jeremy Rifkin, "Capitalism is making way for the age of free", *The Guardian (online)* 31 March(2014), <https://www.theguardian.com/commentisfree/2014/mar/31/capitalism-age-of-free-internet-of-things-economic-shift> [accessed 10 September 2019]

³⁰⁶Ibid.

³⁰⁷Ibid.

³⁰⁸Ibid.

³⁰⁹ Ibid.

renewable energy, the prosumer could emerge as a transformative agent in the sense that renewable energy can be collected and shared by the very people who produce it on site, thereby bypassing the traditional energy market monopolies.³¹⁰ Rifkin has outlined the blueprint for a potential renewable energy transition, which he sees as constituting a potential minor industrial revolution and argues that internet-based smart grids are the way to distribute energy between households, firms and even governments. Rifkin outlines his ambitious vision as follows:

The five pillars of the Third Industrial Revolution are (1) shifting to renewable energy; (2) transforming the building stock of every continent into micro-power plants to collect renewable energies on site (3) deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies; (4) using internet technology to transform the power grid of every continent into an energy-sharing inter-grid that acts just like the internet (when millions of buildings are generating a small amount of energy locally, on site) they can sell surplus back to the grid and share electricity with their continental neighbours.³¹¹

Here, Rifkin appears to be somewhat overoptimistic regarding the technological promises that favour the emergence of a commons-centric economic paradigm. The above mentioned technologies entail a more distributive and decentralized logic as opposed to their fossil fuel predecessors that have very high marginal costs due to the costs of extracting them. To derive energy from coal and fossil fuels requires economic entities with vast amounts of capital to build the necessary infrastructure and create large sized economies of scale. It is true that renewable energy could just easily be provided by tech giants such as Google or other big enterprises.

³¹⁰Ibid.

³¹¹Ibid., p. 37

The development of new communication infrastructures is a vital element in the evolution of human history. This is particularly true when a given communication infrastructure is also able to transform logistics (transport) and energy infrastructures. These are conditions for a major socio-economic transformation. The emergence of the internet as a global communications infrastructure has not only dramatically condensed space and time for most of humanity by radically enhancing global connectivity and communication streams. It is also beginning to transform the very environments we inhabit as it becomes ever more connected to our natural and social environments, extracting information and facilitating interactions between electronic devices and humans, and between electronic devices themselves.

It is worth elaborating on the significance of the evolution of communication infrastructures as ways of integrating transmission of human knowledge and recording of history at ever more complex and globalized levels. The centrality of (recording) knowledge to human civilization has always been apparent. The development of Information Communication Technologies (ICT's) enabled an unprecedented level of the recording, transmission and accumulation of human knowledge, which in turn led to an exponential growth in our ability to learn from past lessons.³¹² What is significant about the digital information age in the contemporary context is that human welfare and economic development are increasingly dependent upon (and not just related to) systems of distributing, interpreting and managing enormous flows of information. Social interactions on Facebook produce sets of information which in turn can be interpreted and analysed and eventually monetized. It is interesting to note here that the reliance on creating economic value from the information produced by our own social interactions leads to an economic dynamic in which the increasing volume of interactions, relationships and activities that were previously *outside* the market,

³¹²Luciano Floridi, *The Fourth Revolution* (United Kingdom: Oxford University Press, 2014).

are going to be increasingly integrated into it. In the G7³¹³ it is estimated that around 70 percent of GDP is dependent on intangible 'immaterial goods' (which are information-based) rather than on the material goods we conventionally associate with industrial consumer capitalism, produced from agriculture and manufacturing.³¹⁴ These are economies that revolve around information-based assets and services (think communications, finance, insurance, entertainment). In other words, the most developed economies of the world are transforming into information societies and economies, where information is the digital gold, the resource upon which most value creation is predicated.

This brings my discussion back to the key infrastructure underlying this transformation, the IoT. It basically refers to the interconnection via the internet of computing devices that are embedded in everyday objects, enabling them to send and receive data. The onset of the Fourth Industrial Revolution can be recognized if one considers the impact that the internet already has had on education, communication, business, science, and government, the internet is one of the most powerful technologies developed in human history. For instance, a website such as Youtube, which millions of users use on a routine basis and which seems already commonplace today, can be seen as doing for spoken word what the invention of the printing press did for written word. The speed at which information delivered through spoken word can travel was revolutionized by the development of a global communication platform such as Youtube. Furthermore, as I will outline in section 4.3.5 of this chapter, the fact that a lot of human attention (and with that energy and creativity) is captured and directed by the algorithms which regulate Youtube (and other similar communication platforms), makes these sites an integral part of social and economic life. In other words, the key 'resource' that digital platforms like Youtube and Facebook are competing over is human attention, and this has significant implications for the way in which our technological environments and digital interfaces are designed and interact with

³¹³The Group of 7 (G7) was set up in 1975 as an informal forum bringing together the leaders of the world's currently leading industrial nations.

³¹⁴Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014).

us. This has wide ranging implications including perhaps most significantly on the nature of political life as demonstrated in the role that the analytics company Cambridge Analytica played in the 2016 US presidential election and the UK Brexit referendum.

A key development that underlies the transformation of the Internet into IoT is the exponential increase in the number of things or objects that are connected to the internet, even though this development evolves in a world of digital divides and asymmetries. As sensors and algorithms collect more and more data and are able to make us more efficient and optimize our decisions, inequalities will ensue. It is one thing to navigate via Wazeapp (a traffic navigation app) in order to get from one place to another faster than you would otherwise do. However, when everyone is using such an App, algorithms will start to compete with each other; they will not only make use of user data, but also create synthetic 'fake' data to disturb other algorithms.³¹⁵ Driving across cities has just become a zero sum game. While algorithms may eliminate inefficiencies that we all face, they also will increase individual gains that bear corresponding individual losses. The personal technologies of the algorithm-centred App economy may make us more efficient, but of course the 'us' here is in fact a 'me.' Thus, a clear and present danger, at least from a commons perspective, is that these technologies not only create greater inequalities between citizens, or perhaps 'smart consumer' is a more apt term, but also has an individualizing and atomizing impact on us or to put it another way, "we have conflated the selfie with a portrait of humanity."³¹⁶ Not all global regions, countries, cities and individuals and communities within these cities will be able to benefit equally from the powers that the algorithms lend us. I have already discussed the widening skills disparity that characterizes the onset of the information economy. As the technological infrastructures of the IoT become more

³¹⁵ Alexandros Washborn, "Are Smart Cities Doomed to Promote Inequality?," *ArchDaily* (ArchDaily, 2017) <<https://www.archdaily.com/880506/are-smart-cities-doomed-to-promote-inequality>> [accessed 12 April 2018]

³¹⁶ Ibid.

pervasive, these kinds of inequalities and disparities are likely to widen.³¹⁷ The underlying point here, and a key component of a commons-centric standpoint on the information economy and the Fourth Industrial Revolution more generally, is that technical systems implicitly (or indeed explicitly) serve particular social and political ends.

Regardless of which ends it will serve, the rollout of the IoT infrastructure is in full swing. In 2003, there were approximately 6.3 billion people living on the planet and 500 million devices connected to the internet, a relatively modest figure, reflective of the ancient time before Apple's iPhone was even unveiled. By 2010, that number of connected devices had risen to 12.5 billion.³¹⁸ Though only half of the world's population was connected to the internet by 2015³¹⁹ this trend will likely continue. The Organisation for Economic Cooperation and Development (OECD) predicts that by 2020 this figure is projected to rise to around 50 billion connected devices.³²⁰ This is why the EU and many other developed economies are preparing for an era of 'ubiquitous computing.' Digital technologies are now woven into the fabric of the environments inhabited, and are gaining an increasingly interactive nature; cars have multiple networks to control engine functions, safety features, communications systems, and so on. Commercial and residential buildings also have control systems for heating, ventilation and air conditioning, telephone service, security, and lighting. As the IoT evolves, these networks, and many others, will be connected with added security, analytics, and management capabilities. As the journalist Kevin Kelly remarked as early as 1997,

³¹⁷ Alexander J. A. M. Van Deursen, Alex Van Der Zeeuw, Pia De Boer, Giedo Jansen, and Thomas Van Rompay, "Digital Inequalities in the Internet of Things: Differences in Attitudes, Material Access, Skills, and Usage," *Information, Communication & Society*, 2019, 1–19
<http://dx.doi.org/10.1080/1369118x.2019.1646777>

³¹⁸ OECD Digital Economy Outlook 2015, published on July 15, 2015 by OECD:
<https://www.oecd.org/internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm>
[accessed 26 April 2017]

³¹⁹ According to an estimate of the International Telecommunication Union; see
<http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf> [accessed 26 April 2017]

³²⁰ OECD Digital Economy Outlook 2015, published on July 15, 2015 by OECD:
<https://www.oecd.org/internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm>
[accessed 26 April 2017]

“we are now engaged in a grand scheme to augment, amplify and enhance and extend the relationships and communications between all beings and all objects.”³²¹ It is worth reiterating that this means that the locus of economic value is the information that is produced by these interactions. Thus, the information economy does not produce new market commodities and consumer markets as with say the first Industrial Revolution and the subsequent advent of the fossil fuel based economy. Yet, it is able to capture value from everyday social interactions, which we do not ordinarily conceive of as ‘labour’, though it perhaps should be if we loosely define labour as work or human activity that has the potential to create, either directly or indirectly, pecuniary value. In other words, the information economy produces a market of human affect, rather than a market of consumer commodities.

In addition to the exponential increase in connectivity the emergence of IoT, and the disruptive force of (near) zero-marginal cost productivity, are also coinciding with a substantial decrease in the cost of computational power. This is significant because computational power has become a major factor of production. In 2010, an iPad2 had enough computing power to process 1,600 million instructions per second (MIPS).³²² Three years later the iPad4 was running at 17,065 MIPS.³²³ Again, it is worth asking what ends all this computing power and the technological systems that accompany it, are pursuing. The philosopher Luciano Floridi emphasizes the importance of digital devices as the interface of human and digital interaction when he writes:

we rely on their capacities to manage huge quantities of MIPS much less to add numbers or call our friends than to update our Facebook status, order and read the latest e-books online, bill someone, buy an airline ticket, scan an electronic boarding pass, watch a movie,

³²¹Kevin Kelly, ‘New Rules for the New Economy’, IDEAS, 09. 01. 1997, WIRED: <<https://www.wired.com/1997/09/newrules/>> [accessed 26 April 2017].

³²² Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014), p. 7

³²³ Ibid.

monitor the inside of a shop, drive to a place, or indeed, almost anything else.³²⁴

It is worth noting where all this computational power is being directed, namely towards increasing numbers of interactions and connections that produce personal information. These can in turn be used by companies to tailor their services and 'customer experiences'.

Floridi claims that these developments are contributing to a change in the way we conceive of ourselves and relate to the world around us, as our environments become ever more interactive and relational.³²⁵ He distinguishes between three main technologies. According to his theory, "first order technologies" are simply those that change our relationship to nature, usually by giving us new means of manipulating our natural environment(s).³²⁶ "Second order technologies" are those that are not directly related to nature, but that relate us to other technologies. A prime example of this type of technology would be the engine, which provides energy to other technologies.³²⁷ "Third order technologies" are those that as Floridi puts it "are about removing us, the cumbersome human in-betweeners, off the loop."³²⁸ For the most part, our conception of reality remains predicated on a broadly Newtonian world view of objects and subjects arranged in a surveyable nexus of cause and effect. Floridi explains that:

[His generation] grew up with cars, buildings, furniture, clothes, and all sorts of gadgets and technologies that were non-interactive, irresponsible, and incapable of communicating, learning or memorizing. However, what we still experience as the world offline is gradually becoming, in some corners of the world, a fully

³²⁴ Ibid., p. 9

³²⁵ Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014)

³²⁶ Ibid., p. 131

³²⁷ Ibid.

³²⁸ Ibid.

interactive and responsive environment of wireless, pervasive, distributed, a2a (anything to anything) information processes, that work a4a (anything for anytime), in real time.³²⁹

Similarly, Paul Mason reflects that:

The merging of the virtual world with the real can be seen across many sectors: auto engines whose physical performances is dictated by a silicon chip, digital pianos that can pick from thousands of samples of real pianos, depending on how hard you stroke the keys. Today we watch movies that consist of pixels instead of grains of celluloid and contain whole scenes in which nothing real ever stood before a camera. On car production lines each component is barcoded: what the humans do, alongside the whizz and purr of robots, is ordered and checked by a computer algorithm. The relationship between physical work and information changed.³³⁰

What becomes apparent again here is the extent to which immaterial value creation is moving to the heart of our economy; even where material production is concerned, an increasing component is immaterial labour. This means that produced knowledge increasingly becomes central to wealth creation and determines value creation even in the material sphere.

Furthermore, while it is true that the 'information economy' blurs the line between virtual and material, one should not be carried away with conceptual metaphors around immateriality of information. Information has a material reality. As Rachel O'Dwyer notes:

³²⁹ Ibid., p. 48

³³⁰ Paul Mason, *Postcapitalism: A guide to our future*, (Penguin Books 2016). p. 111

The circulation of immaterial products – those ‘freely reproducible’ outputs of the digital commons – show their material and energetic expenditure. This is reflected not only in the productive power of minds and bodies, but in the storage and processing power, electricity, cooling resources and bandwidth required to support an immaterial economy of goods and services.³³¹

In fact, one of the key points of tension between the collaborative commons and the market economy is the use of near-zero marginal cost productivity in which the domain of ‘immaterial’ production contradicts the material and legislative frameworks of the traditional market economy within which it is embedded. When one refers to immaterial value creation and immaterial labour, it is important to remember that one is not just referring to the digital ‘good’ that is produced, be it a song or piece of software, but that these processes have nevertheless an underlying material reality which have significant social, ecological and political ramifications.

Thus, the information economy signifies a transition from a materialist perspective, where physical objects and mechanical processes inform our understanding towards an informational, interdependent and relational one, by which objects are ‘de-physicalized’, in the sense that they can be seen as support-independent.³³² The quality/use value of a digital music file on your laptop cannot really be distinguished from a copy that is made from it by virtue of analyzing its properties (except perhaps certain tools such as digital time stamps).³³³ This ‘dephysicalization’ of our technical environments further highlights the extent to which social and economic life increasingly revolves around digital objects. A key implication of this transition is that *accessibility* and *user rights* become more

³³¹Rachel O’Dwyer, “Spectre of the Commons: Spectrum Regulation in the Communism of Capital”, in *Ephemera: Theory and Politics in Organization*, volume 13(3): 497-526, 2013
<<http://www.ephemerajournal.org/contribution/spectre-commons-spectrum-regulation-communism-capital>> [accessed 10 August 2019].

³³²Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014), p.51

³³³*Ibid.*

important than *excludability*.³³⁴ This focus on accessibility and user rights is of course a key feature of the commons, and this is not a coincidence. Indeed, from the notion of 'peer-to-peer networks', to the 'sharing economy' and the 'collaborative commons', the language of the commons pervades discourses around the information economy (even in cases where it is used to co-opt them). A key commons-centric implication that is becoming apparent here is that property becomes more distributed. In other words, the information economy reflects a shift in the understanding of ownership that is centred on *autonomous control* to *access* and '*usability*', or to put it another way, echoing the philosopher Ludwig Wittgenstein, 'ownership is use.' Ownership becomes divided into intersecting spheres of responsibility connected by a code established by the relevant stakeholders. This means that property becomes more distributed and relational. Suppose you have just bought a fully self-driving automated vehicle. In what sense do you own the car? For in effect, the car here becomes a three legged stool between the 'owner' the company that owns the software and the manufacturer assuming the latter two are not the same entity.³³⁵

The sharing economy, as its name suggests is superficially based on the rejection of ownership. For instance, Rifkin overoptimistically suggests that the younger generations are not as interested in possession as they are in having access to a wide array of cultural entertainment and are more concerned about use value rather than exclusive private ownership.³³⁶ It is certainly true that the younger generations are perhaps more psychologically attuned to P2P principles as commonplace, activities such as streaming music may help cultivate a cultural attitude that is supportive of P2P production as an economic mode of production. The principal motivation for doing so, at pains of sounding like a rational choice theorist, is self-interest and convenience. It should also be noted that the digital commons are not to be seen as a free for all '*res nullius*' as I pointed out in the second chapter when I discussed Garret Hardins' thesis of the Tragedy of the

³³⁴Ibid.

³³⁵Ibid.

³³⁶Jeremy Rifkin, *The Zero Marginal Cost Society*. (2014).

Commons. Rifkin goes as far as to suggest that sharing resources is made ever easier courtesy of zero marginal cost productivity; individuals are less concerned with individual autonomy and become more attuned to an ethos of collective sharing.³³⁷ However, Rifkin's narrative remains an essentially individualizing one. People that are otherwise disinterested in each other collaborate on platforms that enable them to do so in pursuit of their own ends. In other words, while Rifkin's narrative of the commons is *collaborative*, it is not necessarily *social*. Rifkin and many other commons friendly thinkers such as Paul Mason seem to suggest that the inherently distributive nature of the emerging technologies seem to encode the emergence of a new economic paradigm entailed within their own internal dynamics.

However, what is needed to build commons which can help reinvigorate the distributive nature of the Internet, which in the current development of the netarchical economy is becoming increasingly enclosed. The Internet as a network of routers and cables has in 1995 been handed over to the private sector by the National Science Foundation Network (NSFNET).³³⁸ It has been in private hands ever since. The governance over and ownership of key infrastructures, particularly that of the IoT being in constant evolution, will remain a key political challenge and ideational contest (while not in the scope of this thesis to provide a detailed analysis, I will outline some of these in section 4.6 of this chapter). Moreover, the digital commons themselves have the potential to propagate new economic and social logics and create ownership structures that are fit for purpose for the digital era.

In section 4.5 of this chapter, I will outline the concept and seed forms of platform cooperativism, which seeks to apply principles of traditional cooperatives to the design of commons-centric digital platforms. Collectively owned platform cooperatives are a basis for reclaiming the Internet as an infrastructure that

³³⁷ Ibid.

³³⁸ Jay Kesan, and Rajiv Sha, 'The Privatization of the Internet's Backbone Network', *Journal of Broadcasting & Electronic Media* 51(, 51.1 (2007), 93–109.

facilitates laterally scaled P2P forms of ownership and production. The alternative practices and experimentations of their members allows them to address some of the issues related to working conditions in the sharing economy, to disclose the latent forms of enclosure and commodification of social life and social commons that have become characteristic of the current netarchical digital economy and to enable them to critically reflect on their relation to the internet.

The key question then is this: what normative, conceptual institutional, and legislative frameworks are required to effectively organize human knowledge and culture in the digital age where they can be shared, reproduced and changed at unprecedented levels?

The problem that economists are confronted with when near-zero marginal cost productivity is able to reproduce digital goods - from software to algorithmic protocols, from digital copies of music, literature, and art (and the file sharing systems that disseminate them) - is one of the effective management of seemingly limitless common pool resources. Information being the central 'commodity' in the era of the digital economy presents some serious challenges in terms of integrating it into the classical proprietary market economy.

Furthermore, we are witnessing a resurgence of the cultural, political and ethical conflict between the creation of commons and the attempts to enclose them by centralized forces in the digital domain. For instance, the EU's proposed legislation for copyright law (particularly under the proposed EU copyright legislation outlined in Article 13 of its Copyright Directive) is intended to find "copyright rules fit for the digital age."³³⁹ The underlying idea is to hold content uploading sites such as YouTube responsible for any copyrighted material that is uploaded. This may seem intuitively compelling, but there are obvious practical impediments to its implementation. In 2014, episode 2 of the global hit series *Game of Thrones*

³³⁹Ian Cooper, "The Politicization of Interparliamentary Relations in the EU: Constructing and Contesting the 'Article 13 Conference' on Economic Governance", in *Comparative European Politics*, 14.2 (2016), 196-214.

was illegally downloaded 1.5 million times in the first 24 hours of its release.³⁴⁰ To be sure, this was not uploaded on sites like YouTube but by individuals only. This shows that legislative frameworks are at present inadequate to confront the problems they are trying to address.

The fundamental reason for this inadequacy, beyond the obvious practical concerns, is that the policy toolkit of the liberal market economy as we know it is not able to frame the question as a problem of a commons. When confronted with the new productive capabilities of the digital economy, the question is caught in the old materialist paradigm, where on and offline are clearly delineated, where the virtual and the material can be easily separated. Economists and policy makers, as Lawrence Summers when he was trying to address the advent of zero marginal cost productivity, seem to be at a loss.³⁴¹ The argument that is predicated on the moral argument that one would not steal a DVD or a CD is based on a materialist conceptual metaphor that no longer holds. The classical market economy is based on commodities that are ontologically different from information. These (digital/non-material) commodities have three features that make them difficult to integrate into the market economy as a commodity. Firstly, it is non-excludable, that is to say my reproducing of a song does not impede on anyone else's ability to download and listen to the song the way that stealing a CD or record would. Secondly, it is largely non-rivalrous. Thirdly, as I discussed above, it is a digital good which has an extremely low marginal cost and therefore is easily shareable, reproducible and not easily constrained as a commodity, at least if understood as a conventional market commodity.

An interesting question that arises here is this: to what extent does the new economic paradigm of the information economy correspond to the rise of a new commons-based social and cultural ethic? As Floridi suggests: "Repurposing,

³⁴⁰Charlie Fripp, "New Game of Thrones Episodes Downloaded 1.5 Million Times in First 24 Hours", in *Hypertext South Africa*, April 13, 2015; <<https://www.htxt.co.za/2015/04/13/new-game-of-thrones-episodes-downloaded-1-5-million-times-in-first-24-hours/>> [accessed 26 August 2019].

³⁴¹Jeremy Rifkin, "Capitalism is making way for the age of free", *The Guardian (online)* 31 March (2014), <https://www.theguardian.com/commentisfree/2014/mar/31/capitalism-age-of-free-internet-of-things-economic-shift> [accessed 10 September 2019]

updating or upgrading contents need not be expressions of mere plagiarism or sloppy morality. They may be ways of appropriating and appreciating the malleable nature of informational objects.”³⁴² It is not possible to discuss intellectual copyright and how to address the problem of compensating authors and artists, as this would take us far beyond the scope and aim of this thesis. However, this issue illustrates the way in which the digital commons present a central problem to the current market paradigm, which will have to be resolved in an equitable manner that recognizes the socioeconomic realities of digital (re)production that we are living in. The fact that this is very unlikely to be met by the legislative frameworks currently available is symptomatic of the increasing inadequacy of neoclassical economic thought and the corresponding policy toolkit to address the changes and challenges of the information economy.

To summarize the discussion thus far, the socioeconomic transformation I have been discussing is characterized by the following dynamics.

- 1.) The socioeconomic transition towards the information society is marked by a shift from an economy centred on material goods, to immaterial goods, principally knowledge, cultural capital, social relations, affective capabilities etc. Many of these are held and/or produced in common; the value that is created here is inherently social (at least when compared to the market economy based on industrial capitalism).
- 2.) Consequently, while strict property regimes remain a central feature of the digital economy, rigid proprietary frameworks of the market economy are increasingly being undermined by the growth of this sphere of ‘immaterial production’, while the corporate sector is developing new ways of rent extraction in the form of netarchical capital.
- 3.) The antagonisms and contradictions between the market-based and commons-based forms leading to central conflicts between different cultural and social ethics and economic logics.

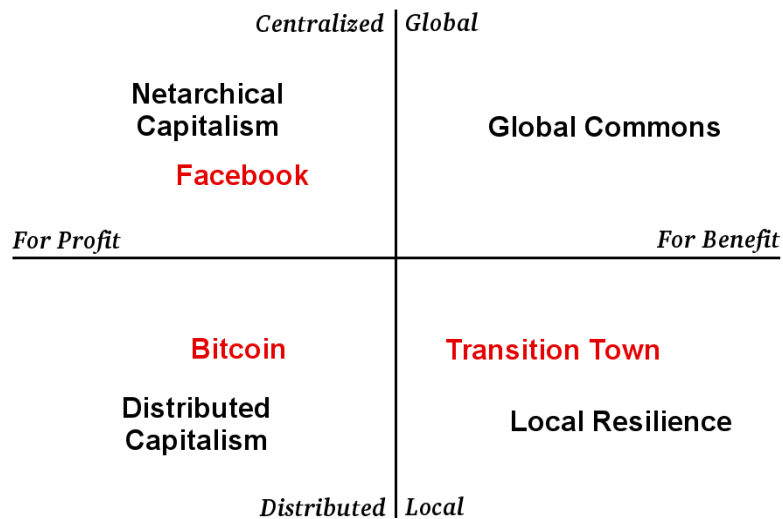
³⁴²Luciano Floridi, *The Fourth Revolution*, (Oxford University Press, 2014), p. 52

4.3.3 Four different value regimes of the information economy

In the previous section I noted the risk of being overly optimistic and the tendency to fall into teleological determinism that posits the commons as a post-capitalist scenario on the basis that the inherent distributive nature of the internet necessitates a commons-based economy. I was particularly referring to Jeremy Rifkin, Paul Mason and to some extent peer to peer theorists and digital activists such as Michel Bauwens. Michel Bauwens, co-founder of the P2P Foundation and former business man in the IT sector has developed a useful framework for understanding the different economic logics and associated value regimes that characterize the information economy. Bauwens' work is based on the assumption that horizontal socialization through networks is the key factor of our time and that consequently P2P modes of production are inevitable. In that sense, he could himself equally be considered a determinist. In section 4.3.6 I will elaborate on the reasons for being skeptical of historical approaches to the commons that construe them as a productive modality that transcends capitalism itself. For our present purposes however, I want to elaborate on the different value regimes of the digital political economy and the associated cultural and political struggles that result from this. Bauwens identifies four main value regimes. These are visualized in the graphic³⁴³ below which Bauwens presented in his closing speech at the QuiShare-festival in 2013.³⁴⁴ Each of the four quadrants represents one of the four main productive modalities. On the *mode* of production the choice is to work centralised or distributed, on the *range* whether you work local or global and on the *purpose* whether you are orientating your action for profit or for benefit.

³⁴³Source of graph (Courtesy of Stefan Meretz): <https://keimform.de/2013/four-scenarios-for-the-collaborative-economy/>

³⁴⁴Michel Bauwens, "Four prospective scenarios for the collaborative economy", *Closing keynote of the QuiShare Fest, Oktober 2013*, <<https://amara.org/en/videos/nm26bIB2bKyL/info/michel-bauwens-four-scenarios-for-the-collaborative-economy/>> [accessed 6 January 2019].



Thus, Facebook stands for centralized control of horizontal P2P dynamics for profit, i.e. the netarchical model. Distributive control is the alternative to centralised control and in conjunction with the conventional profit orientation enables a kind of individualistic libertarian capitalism. Bitcoin exemplifies this model as it created its own global, socially created currency outside of the traditional market and state. Bauwens criticises Bitcoins' oligarchic set up as only few people are in control of 70% of the capital and that Bitcoin transactions derive from one big source only.³⁴⁵ This example clearly shows that distributive technology does not in and of itself change the inherent logic of capitalism. While it is distributed, bitcoins' for profit nature makes it little more than a speculative asset that is tilted towards early adopters and yields high profit margins for a few major players. With a for benefit purpose and with crowdsourced capital infusion from a particular community the same model can serve the development of strong independent financing tools

³⁴⁵ Ibid.

beyond market and state. Airbnb and couchsurfing stand as examples to address the difference between for profit and for benefit orientation as well.³⁴⁶

On the for benefit side most of the seed form projects are experimented on the local level and aim for resilience and needs oriented commons based peer-to-peer production. They may follow certain social and environmental norms or community oriented ethics, money is earned and jobs are created, but as a means to an end and not vice versa. The transition town movement stands here as a widely known example. While such initiatives are important to address local needs locally, they are limited in scale and are easily confronted with legal and territorial boundaries. Working both within and against the logic of predominant capitalist markets and for profit orientation, they are currently most of the time only functioning in parallel to this system as people may be able to sustain the commons through successful use value circulation, but not to reproduce themselves within the sphere of CBP.³⁴⁷ This dilemma indicates the interregnum, the *not anymore* and the *not yet* of our times.

Therefore, similar modes of cooperation, production and for benefit orientation are needed on the global level. The open software programme Linux and Wikipedia are examples to show how it can work. But here too, similar dilemmas persist. Often, the choice for young CBP-enthusiasts is to return to the for profit mode as in the Bitcoin quadrant. An alternative is suggested by Dmytri Kleiner with the Peer Production Licence (PPL), as I will discuss in section 4.7.³⁴⁸ The idea is to make everybody who is not contributing, but only using the commons to pay a licence fee in order to subsidize the commons and therefore contribute to the social reproduction within the commons sector, that is to say for commoners to be able to provide livelihoods for themselves. This is a crucial condition if the commons-sector is to achieve greater autonomy from the market. In the final section (4.8) of this chapter, I will look at some of

³⁴⁶Ibid.

³⁴⁷ That is to create sustainable livelihoods for themselves.

³⁴⁸ Dmytri Kleiner. 2010. *The Telekommunist Manifesto*. (Institute of Network Cultures, 2010).

the key political and indeed cultural battles that are being fought over some of the core infrastructures and legal mechanisms that underlie the information economy. While it is not in the scope of this thesis nor its subject matter to discuss the complex legal questions surrounding the regulation of the Internet as a global commons, I will outline the centrality of the electromagnetic spectrum to the information economy and some of the key contestations surrounding it. In doing so, I emphasize the importance of preserving commons-centric design principles at the heart of the information economy, in particular the principle of net neutrality. The extent to which CBP and other laterally scaled commons-based modalities can grow depends on the outcome of these contests.

4.3.4 The netarchical value regime

For our present purposes however, I want to analyze and critique the netarchical value regime by elaborating on two aforementioned issues: Firstly, a lot of value that is created in the digital economy dominated by netarchical capital is not recognized. Secondly, due to the social nature of the value creation ever more of social life becomes embedded into the commercialized arena. Taken together, these coinciding issues present us with a 'value crisis' at the heart of the information economy.

Several contemporary thinkers have pointed out that Facebook users can and should be conceived of as labourers of immaterial production. As Armin Beverungen, Christopher Land and Steffen Boehm claim: "If labour is understood as 'value producing activity', then updating your status, liking a website, or friending someone, creates Facebooks' basic commodity."³⁴⁹

The solutions that are developed by commons-creating peer-to-peer communities is that they aim to place the notion of care and affective labour to the fore of the

³⁴⁹ Armin Beverungen, Steffen Böhm and Chris Land, "Free Labour, Social Media, Management: Challenging Marxist Organization Studies", *Organization Studies*, 36.4 (2015), 473–89, <<https://doi.org/10.1177/0170840614561568>>.

way we conceptualize value and the socio-economic practices that go along with it; in other words embedding production into care commoning and affectivity rather than leaving them as mere externalities to it. In the current mode of 'netarchical capital', capital no longer merely produces commodities for sale through wage labour, but rather digital platforms act as middle men that 'enable' social exchanges and peer-to-peer sharing in order to extract economic rent, which is both socially and ecologically unsustainable.³⁵⁰ Thus, the free labour of digital workers and social media users, the non-recognition of care work, and the ongoing ecological erosion of the planet are deeply connected to the latent value residing in social relations is valorized within these gigantic networks of netarchical platforms that are controlled by an ever-decreasing group of digital platform owners, the 'netarchical elite.'

To further understand the transformation taking place in the political economy, it is important to outline the way in which the balance between supply and demand is 'disrupted' by the increased production facilitated by digital technologies. As I illustrated in my discussion of near zero marginal cost productivity, in many ways, capitalism could be said to be in the process of becoming too efficient for its own good; that is to say when production becomes too efficient, the abundance it creates becomes increasingly difficult to monetize. A useful starting point here is the Marxist distinction between use value and exchange value. In Marx's account, under conditions of non-capitalist production, the majority of the working population directly produce 'use value.' It is only in a market economy that a majority of the working population produces exchange value by selling their labour to firms. However, content creators on Facebook – ordinary users – are not workers producing commodities for a wage, and Facebook is not selling any commodities produced to create surplus value. Although Facebook is clearly a hub of value creation and constitutes a huge economy of circulating immaterial goods, the creators of the use value that is circulated can be said to be generating *social*

³⁵⁰ By 'rent' I refer here to rent seeking, the extra amount earned by a resource (e.g. land, capital, or labour) by virtue of its present use.

communicative value, rather than exchange value, even if their contributions are monetized through advertisement revenues. What is significant in the wider context of the information economy is that social life itself becomes the locus of capital and capital is extracted by facilitating, enabling, coordinating and surveying social activity between billions of participants.

A key element of the information economy is therefore the way in which previously non-market activity is increasingly necessarily becoming integrated within the market. The reason for this has to do with the fact that value creators in the information economy rely upon access to common knowledge and distributed networks for innovation, entrepreneurship and economic growth. In an economy where value creation is dependent on the monetization of knowledge and culture, and these 'resources' are in turn based upon production derived from socialized knowledge and distributive sharing, it becomes apparent that the social and cultural ethic central to the immaterial production in the information economy cannot easily be reconciled with the economic and social logic of the classical market economy. Knowledge, as a product of past and present social cooperation and as the central 'resource' of the information economy, is always to some degree held in common.

Culture and knowledge, are to borrow Marx's phrase, 'products of the general intellect'.³⁵¹ Coined in his unfinished manuscripts, the *Grundrisse*, Marx uses this term to advance a peculiar thesis that can help elucidate some of the key tensions with which we are confronted in today's information economy. Marx describes a transformation in the economy whereby,

it is neither the direct human labour he (a worker) himself performs, nor the time during which he works, but rather, the appropriation of his own general productive power, his understanding of nature and his mastery over it by virtue of his presence as a social body – it is, in a word, the development of the social individuals which

³⁵¹ Marco Rossi, *Reflections on Marx's "general intellect": social brain or science?*, 2014, https://www.academia.edu/9096056/Reflections_on_Marx_s_general_intellect_social_brain_or_science

appears as the great foundation-stone of production and of wealth.³⁵²

Marx was entertaining a thought experiment of what would happen if socialized knowledge became embodied in machines to such an extent that most of human labour was directed towards the maintenance of machines rather than directly in output of consumer goods. In doing so, he anticipated and described the dynamics that lead to a knowledge-based or information economy:

Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are organs of the human brain, created by the human hand; the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge has become a direct force of production, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it. To what degree the powers of social production have been produced, not only in the form of knowledge, but also as immediate organs of social practice, of the real life process.”

In his *Fragment on Machines* in Marx’s *Grundrisse*, Marx realized three main features of an economy that is based on machines that embody socialized knowledge, which would in turn lead to a significant shift away from the classical economic paradigm that his own value theory was based on. These features are as follows:

1. Value created through knowledge embodied in machines becomes harder to conceptualize and account with the labour/price dichotomy.

³⁵²Karl Marx, *Grundrisse: Foundations for the Critique of Political Economy* (London, United Kingdom: Penguin Group, 1993).

2. In a scenario where knowledge is the locus of value, the labour-capital divide becomes subordinated. The implication here is that the general intellect becomes the agonistic terrain where social and cultural ethics will clash with each other over how open currents of information and knowledge flows should be, and which forms of knowledge have a legitimate place in the commercial arena, and for which purposes it may be used outside of the market. Thus, labour and capital will less and less be the main confrontational poles. Rather political contestations will be a battle of ideas over how to conceptualize human knowledge (and its commodified form, information), and who gets to control it and to what ends information.
3. That the labour theory of value entails a contradiction, although not one that undermines it but one that provides some analytical insight and perhaps even predictive power should a scenario such as the one Marx envisions come to pass. As Paul Mason observes: "The labour theory actually predicts and calibrates its own demise. That is, it predicts a clash between the social forms driving productivity and productivity itself."³⁵³ Marx could not have imagined something quite like the internet, and he here envisions primarily a scenario where machines have liberated humans from labour through automation, rather than near zero marginal cost productivity. The combination of the notion that productivity is based on knowledge (and always social and distributed) with the zero marginal cost paradox and digital reproduction, leaves us with an economic system that can no longer be adequately represented by a model founded upon scarce inputs of labour and raw materials regulated by price signals alone.

As I outlined in the previous section, the classical market economy assumes that social and economic wealth can only be generated from things that exist in limited quantities. Yet, with the blurring between the material and the digital spheres,

³⁵³Paul Mason, *Postcapitalism: A guide to our future*, (Penguin Books 2016). p. 163

even where physical goods are concerned, value increasingly resides in immaterial wealth creation. In addition, large-scale automation and rapidly decreasing costs of material resources such as hardware for storage and so on underlie the information economy and present an unresolved crisis of value for the classical market economy. This is not to suggest that the economy will somehow create an abundance of economic and social value and supply everyone with universal basic income. The economy has already shifted towards services, with automation, plummeting labour costs and zero marginal cost productivity, which means monetizing ever-increasing amounts of services.

Thus, in the information economy, it is not technological entities that are the primary source of capital, but the social competences and affective capacities of individuals and their social relationships. Hardt and Negri described this dynamic in the following way: "The general intellect is also manifest in widely distributed forms of everyday sociality – informal knowledge, imagination, ethical tendencies, mentalities and 'language games'."³⁵⁴ This is a manifestation of the central paradox of peer-to-peer production and the proprietary market economy at a more abstract level: the social reproduction of the market economy is increasingly reliant upon monetizing our own social lives and relational affects. This is perhaps one of the most all-encompassing and most intimate social commons and given that the information economy will in large part be characterized by a struggle between enclosure and laterally scaled peer-to-peer formats, the commons will play a central role in resisting the enclosure of the commons of human sociality itself.

While culture and knowledge are the main shareable ingredients in the information economy, there is a genuinely scarce resource which is also at the heart of it, namely human attention. The notion that digital platforms in the information economy are competing over the scarce resource of human attention adds another dimension to the dynamics of value extraction under the netarchical regime. This is the subject of the next section.

³⁵⁴Michael Hardt and Antonio Negri, *Commonwealth*, 2011th edn (United States: Harvard University Press, 2011) p.24

4.3.5 The 'attention economy' as a new form of value creation

As digital platforms and apps are largely dependent on advertisement revenues, they are reliant on collecting swathes of information of their users, and in order to do this they have to find ways to get people to spend as much time on their platforms as possible. This means that the key 'resource' that digital platforms are competing over in the information economy is human attention. Their rates of return depend on capturing and keeping as much of it as possible. The CEO of Netflix Chris Reed illustrates this clearly when he suggested that his companies' biggest competitors were "Facebook, Youtube, and sleep."³⁵⁵ He went on to explain that "You get a show or a movie you're really dying to watch and you end up staying up late at night, so we actually compete with sleep."³⁵⁶ What Reed emphasizes here, is the fact that attention is a scarce resource and the competition over it is a zero sum game: if you are watching Youtube videos, you are not watching Netflix, or doing any other activity. This means that digital platforms like Facebook and Netflix are locked in a competition over our attention not only with platforms that offer similar services, but with all other forms of communication and activities whether they be online or offline.³⁵⁷ What I am illustrating here is the extent to which the blurring of the physical and the digital, and our online and offline lives, entails an ever greater commercialization of social life itself. Thus, harvesting and harnessing attention increasingly becomes a more important means of capital wealth creation than producing tangible goods and services in the traditional market economy. In fact, Michael Goldhaber anticipated already in 1997, the growing importance of attention as a resource and even likened it to a form of property.

³⁵⁵ Cited in: Emily Gaudette, "Netflix Just Declared a War on Sleep," *Newsweek*, 2017
<<https://www.newsweek.com/netflix-binge-watch-sleep-deprivation-703029>> [accessed 24 May 2018]

³⁵⁶ *Ibid.*

³⁵⁷ Helen Ai He, "Addictive Technologies and the Race for Our Attention," *The Human Condition, Blog*, 6. February 2018, <<https://helenaihe.com/2018/02/06/addictivetechologies/>> [accessed 19 April 2019]

Wealth that can endure and sometimes be added to is what we mean by property. Thus, in the new economy attention itself is property. Where is it? Primarily it is located in the minds of those who have paid you attention in the past, whether years ago or seconds ago. You may have forgotten all about some children's author whose books you had read to you as a child, but if you come across the book again, your memory will very likely be reawakened. Likewise, you will remember actors you saw on television, sports figures who captured your attention in the past, professors, teachers, politicians, business leaders, etc. Thus, attention wealth can apparently decline, only to revive later. It is rarely entirely lost.³⁵⁸

While he is writing at the time about the ability of *individuals* to capture attention and not the tech giants that have come to dominate the economy today, he already describes a key dynamic of the 'attention economy', namely that human attention is grounded in our intrinsically social and relational natures, and that it is precisely these qualities that have to be exploited in order for digital platform companies to be successful. It is perhaps no surprise then that the means of doing so produce results that are not always in society's interest. As Nathaniel Zinda explains: "Every time a person navigates through their smartphone, the action of clicking, swiping, and scrolling is psychologically connected to the possibility of experiencing a reward: that quick dopamine hit when someone likes their photo, shares their post, matches with them, etc."³⁵⁹ These subtle forms of intermittent social validation are habit-forming and embed social activities in a more instrumental economic logic than they otherwise would be. Consider for instance the popular social media app Snapchat and its use of a feature called 'snapstreaks:' Users get these 'snapstreaks' when friends communicate with each other (often in

³⁵⁸Michael H. Goldhaber, "The Attention Economy and the Net", Vol 2:4, 1997).

³⁵⁹Nathaniel Zinda, 'The Ethics of Persuasion in Technology', 2019

<<https://www.baruch.cuny.edu/facultyhandbook/documents/TheEthicsofPersuasioninTechnology.pdf>> [accessed 20 March 2019]. p. 4

the form of exchanging videos), for at least three consecutive days.³⁶⁰ As soon as a day is missed, the count starts over. In effect, this constitutes a quantification of friendship and may significantly redefine the very meaning of friendship. What this example demonstrates is that apps like Snapchat are finding ways to use our social natures and our inclination towards social reciprocity in order to garner our attention and in doing so diminish the very social qualities that are at stake.

Thus, the combination of competing for human attention in the confines of a market economy based exclusively on pecuniary value means that more of our social qualities and relationships will explicitly (e.g. direct monetary rewards to have more followers on one social media profile) or implicitly (as in the example I just illustrated) be viewed through the prism of rational choice. This reveals a further dimension of the internal dynamics of value creation in the regime of netarchical capital. Left to market price mechanisms alone, it is likely that the future development of the attention-based digital economy will embed more of our social relationships and qualities in the logic of rational choice. The technological environments and digital interfaces that mitigate everyday life can have a profound impact on the kind of habits, behavioural patterns and social attitudes are being cultivated.

The market of human attention is highly profitable. Facebook generates an estimated \$3.2bn per year, which interestingly translates \$3.79 in ad revenue per user, a subscription fee that Facebook may well be able to charge on a monthly basis without having to commodify its users.³⁶¹ This is why some digital activists such as Jaron Lanier have proposed to monetize the contributions that are made on these platforms and to enable individuals to sell their data and be directly compensated for it.³⁶² The problem is that this solution would merely replace the

³⁶⁰Lizette Chapman, "Inside the Mind of a Snapchat Streaker," *Bloomberg.com* (Bloomberg, 2017) <<https://www.bloomberg.com/news/features/2017-01-30/inside-the-mind-of-a-snapchat-streaker>> [accessed 24 October 2018]

³⁶¹Michel Bauwens, "Resistance 2.0," *Beyond Revolution* (Aljazeera English) <<https://beyondrevolution.wordpress.com/category/resistance-2-0/>> [accessed 10 January 2019]

³⁶²Jaron Lanier, *Who Owns the Future?* (New York, United States: Simon & Schuster, 2014).

indirectly monetized labour with directly commodified contributions.³⁶³ It would accelerate the commercialization of social life, given that as I have emphasized in this chapter, an underlying dynamic of the information economy is to integrate previously non-market activity into market activity. It would also radically shift the incentive structure towards a more utility-seeking and even more individualized experience and usage of digital platforms that do after all have the potential to be genuine social commons. Monetized incentives would essentially have the effect of subsuming the immaterial and affective labour that creates social value on these platforms, under the instrumental logic of rational choice, which as outlined in my discussion of the Tragedy of the Commons in the first chapter, has a high potential of producing all kinds of unanticipated detrimental outcomes.

The technological infrastructures and digital platforms that lie at the heart of the commercialization of social life are doing so because they are responding to market forces. However, this is a good example of how technologies are reflections of political choices; letting markets dictate how digital platforms have to behave to survive economically, is a political choice, not an economic inevitability. This is another reason why it is important to establish more participatory forms of governance on digital platforms and cultivate genuine sense of identification with the 'imagined digital communities' to which we belong. In other words, it is necessary to borrow and implement commons-centric governance mechanisms, design principles and elements of peer production in order to produce the social value that the advent of social media and the global connectivity on digital platforms originally promised.

In many ways the complexities and challenges surrounding value creation in the information economy I have been discussing somewhat reflect the tension between use value and exchange value. In an economy signified by an exponential rise in the creation of use value by a productive citizenry, value is increasingly produced outside the formal sphere of the market economy. Thus, the market economy once

³⁶³ Michel Bauwens and Vasilis Niaros, 'Value in the Commons Economy', (2015) p. 31.

again has to grapple with the question of what value is and how to account for it. As Arvidsson and Peitersen claim in their book *The Ethical Economy*, current value practices are no longer able to even determine what value itself is.³⁶⁴

Markets allocate scarce resources and capitalism is in fact not just a scarcity allocation system but also a scarcity engineering system, for the simple reason that there needs to be a tension between supply and demand in order for there to be market exchange and hence capital accumulation. In peer-to-peer production in the digital sphere, participants are mostly producing intangible outputs such as knowledge, software and creative content with the general aim of creating easily reproduced information, cultural entertainment and credible knowledge resources. For a market economy, the intangible outcomes created in the digital sphere pose a problem because it is hard to monetize goods when they are produced at such low marginal cost. In other words, there is an exponential rise in the creation of use value, but only a linear increase in the creation of monetary value.³⁶⁵

To summarize the argument, a fundamental challenge the market economy is faced with is that internet has enabled the collaboration and creation of use value in ways that bypass the traditional market economy or outcompete it. There is no sufficient metric for immaterial value such as intellectual copyright and recognition or reward of value creation in the digital sphere. Before the onset of this digital transformation, increases in productivity were always rewarded, which in turn enabled consumers to derive an income and buy products. The emergence of netarchical capital as the dominant form of value extraction will lead to the formation of natural monopolies. These entities are able to yield long-term rents (and often relying on the user community of their platforms to generate value) that will help intensify the concentration of their monopoly power. Because abundant, digitally reproduced, and immaterial use-value is generated outside the traditional

³⁶⁴ In an economy signified by an exponential rise in the creation of use value by a productive citizenry

³⁶⁵ Michel Bauwens and Alekos Pantazis, "The Ecosystem of Commons-Based Peer Production and its Transformative Dynamics", *The Sociological Review*, 66.2 (2018), 302–19
<<https://doi.org/10.1177/0038026118758532>>

commodity form, it moves to the periphery of market production. Therefore, ever greater amounts of use-value production can no longer be recognized through monetization. This creates a crisis of capital accumulation as it becomes harder for capital to find reliable sources of return. Even if the value regime of the traditional market economy could internalize and yield value from these new forms of value creation without the detrimental social and economic effects discussed above, this form of valuation would not create a flow of resources to the care economy. Nor would it provide livelihoods for 'commoners', both within explicit commons such as open software communities and in the context of the implicit, non-recognized, and every-day value creation as in Amazon or Facebook. This leaves us with profound dilemmas and challenges that seem inherent to the evolution of the predominant netarchical form of the information economy.

In the following section, I will discuss this dynamic further but orientate the discussion to the nature of the transformative productive agency of the commons. I will argue that the commons ought not to be construed as a post-capitalist paradigm and underpin the conception of the commons as developed throughout this thesis, as a political and economic framework to democratize the economy and reassess our understanding of the market, particularly with regard to the nature of 'economic' value.

4.3.6 The Transformative potential of the commons

Before I elaborate on the commons-orientated alternatives in the rest of the chapter, it is important to clarify the problematic relationship between the commons and the market. The current transformation of our political economy is forged out of an antagonistic dynamic between what one might call a 'monopolizing impulse' and the 'commoning impulse.' In this section, I will clarify the transformative potential of the commons that result out of this antagonism. This thesis has developed the commons as a framework for democratizing the economy, challenging key assumptions about the nature of the 'naturalized' digital

capitalist market in its current configuration, and potentially to foster an economic eco-system that is not wholly subordinated to the netarchical monopolies. In this sense, I have emphasized the particular philosophical, ethical and political relevance of the commons to the current socioeconomic and political transitions. I have not been primarily interested in historizing the destiny of those transitions, at least in so far as this relates to identifying a historical evolution with a teleological destiny or identifying a blueprint of a futurist economy. In other words, this thesis has been cautious about construing the commons as a transcendental productive modality that eclipses capitalism, in the manner that Rifkin, Mason and certain peer to peer advocates such as Michel Bauwens have sought to. In this section, I will clarify the reasons for why I see the commons as not necessarily constituting a post-capitalist scenario. A key element in addressing this question will be to further examine the nature of socioeconomic change that the commons may entail, and the forms of agency that may bring it about. This is the question which I will address first.

The commons have always been an integral part of economic transformation and innovation, not only because they inherently underlie most economic activity in some way or another, but also because they become the locus of developing new social values, alternative lifestyles and cultural attitudes and thus become a focal point of social and historical agency. This was the case in the Enclosure Movement which paved the way for the formation of the modern market economy, which ‘disembedded’ the economy from society while simultaneously giving rise to reformist attempts to re-embed the economy through labour laws and unions.³⁶⁶ The appropriation of the commons was at the core of the transformative impact that the Industrial Revolution of the 18th and 19th century had on society, and the commons are once again an integral component of the emerging Fourth Industrial revolution. The economist Adam Arvidson points to another unique historical

³⁶⁶ Karl Polanyi. *The Great Transformation: the Political and Economic Origins of Our Time* (Beacon Press, 2014).

parallel in which the commons played a crucial role in a period of social upheaval and economic innovation during the crisis of feudal Europe at the end of the 14th century.³⁶⁷ This period of crisis saw the formation of a new socioeconomic class, which managed to carve out an autonomous space outside the traditional feudal model at the end of the 14th century.³⁶⁸ The socioeconomic transformation that would pave the way for the dynamic market society we are familiar with today, was seeded by the very people who were excluded and/or sought to break free from the dominant economic order of their time. A key catalyst at the end of the 14th century was a severe ecological crisis that was taking their toll on the European Medieval economy.³⁶⁹ What is significant about these historical parallels is that they provide some insight regarding the kind of social mobilization of a commons-friendly agency that might arise out of the antagonism between the distributive and laterally scaled modes of digital commons-orientated production and the economic logic of the traditional brick and mortar firm.

If the underlying economic logic of the commons and the social and cultural ethic and attitudes of the digital commons are subversive and have the potential to manifest themselves as a recognizable economic ecosystem within the new digital economy, the question arises who will be the social agents that can propagate and implement these new commons. In many ways, the social and economic logic of the commons entail what one might call a 'DIY theory of historical change.' By this I mean primarily that the potential success of commoning is not the result of an unfolding determinate historical process. It is certainly true that particular historical situations provide the condition for certain opportunities and possibilities to be realized, and I have discussed some of the key technological innovations, ecological, political and macroeconomic fragilities that give credibility to the notion that we are currently in the midst of a 'great transformation.' This thesis has however been cautious against the humanist hubris of exuberant forms

³⁶⁷ Adam Arvidson. *Changemakers: The Industrious Future of the digital economy* (Polity Press, 2019)

³⁶⁸ *Ibid*

³⁶⁹ *Ibid*

techno-utopianism and 'solutionism' at both ends of the political spectrum. These conceptions of the innovative potential of the commons tend to have a thoroughly teleological character and tend to be destined towards some form of a post-capitalist future. Instead, I have rather been concerned with the ontology of the market, and the way in which the political, ethical and affective dimensions of the commons are rehabilitating lost foundations of the market and to some extent may re-embed it into the social domain. This does not in and of itself entail a collapse of capitalism, and it is for this reason that I have resisted identifying a theoretical social agent that may bring this about. However, it is important to further outline the basis for the political promise of the commons in its role to help democratise the economy and the forms of agency that may help to realize it. A key element of the political promise of the commons as developed in this thesis is economic democracy, and the potential to introduce new productive possibilities and economic logics as well as social values, cultural attitudes and ways of life that are having a profound impact on the character of society. The picture that Arvidson for instance paints, is that a new commons-centric economic logic is being propagated by millions of producers across the world having to adapt to changing pressures, circumstances, and making use of lowering production costs and simplified processes that enable them to break out of the prevailing economic order that they were previously confined in.

To summarize Arvidson in his own words:

I suggest that the people excluded from an industrial modernity that is declining in importance and attractiveness are driving to make up a new industrious modernity. Like the industrious revolution that pioneered the emergence of a new market society during the European Middle Ages, industrious modernity is marked by labor intensive and capital poor actors that rely to a large extent on common knowledge, resources or technologies and that are driven

by endogenous motivations like creativity, impact or self-realization. Taking this industriousness seriously provides us with a new perspective on the future of digital society, capitalist or not.³⁷⁰

In terms of political economy, the underlying paradox that both spurs and thwarts the commons, particularly in the digital domain, has already been established at length in this chapter, namely that commons-based peer production and other alternative productive modalities based on genuine reciprocity and radically different property and value regimes cannot be integrated and will likely not be able to be completely appropriated by the classical market economy. At the same time, cognitive and netarchical modes of capitalism are able to exploit these new forms of laterally scaled value creation. This happens without much reciprocity, by enclosing virtual spaces that capture the value created by commoning of collective resources, whether it is the shared knowledge and technological innovations that are shared in global supply chains, or the social commons of our everyday forms of language, human sociality and affect that is captured by tech platforms like Facebook. Yochai Benkler estimates that the vast majority of global software production relies on commons-based peer production.³⁷¹ Mariana Mazzucato in her book *The Entrepreneurial State* has also documented the extent to which research and innovation funded by public money created much of the value that underlies modern technologies such as smartphones, with very little reciprocity from the corporations that benefitted most from these technological innovations.³⁷² Similarly, Raj Patel has pointed out the vast hidden social and ecological costs and the latent value that underlies the formal market value of the goods we

³⁷⁰ "Industrious Future of the Digital Economy," *Industrious Future of the Digital Economy - P2P Foundation* <https://wiki.p2pfoundation.net/Industrious_Future_of_the_Digital_Economy> [accessed 10 March 2020]

³⁷¹ Yochai Benkler, 2006.

³⁷² Mariana Mazzucato. *The Value of Everything: Making and Taking in the Global Economy* (UK: Penguin Books, 2018).

enjoy.³⁷³ In the 21st century there is an ever greater recognition that social value requires greater recognition in our conception of the economy. Furthermore, we are beginning to realize that the mounting bill of the externalized social and ecological costs is finally due. What I want to illustrate here is not only the extent to which the commons are a condition of making this hidden value visible and recognized, and the greater need for genuine reciprocity between the commons and the capitalist market. What is significant regarding the nature of social change we are currently witnessing is that the global supply chains that underpin our economy are 'losing control' of the value that is produced.

By giving rise to more socialized knowledge, lower transaction costs and lower marginal cost due to digital technologies an increasing amount of value is created (and realized) outside of global supply chains. Digital outsourcing distributes production to hundreds or even thousands of factories, enabling multifaceted collaboration across complex value chains or 'value networks.'³⁷⁴ This also leads to a wider dispersion of technical solutions, skills and competences necessary to make key components of electronic and other hardware goods in radically extended ways.³⁷⁵ Small entrepreneurs are able to offer smart-phone upgrades, repairs, and a host of other services that cannot be centrally controlled. Paul Simon Adler and Charles Heckscher describe this phenomenon in the following way: 'the "mysteries" of effective commodity production have become common knowledge; they are now merely tickets for entry rather than keys to winning in competition.'³⁷⁶ The fact is that productive efficiency increasingly revolves and is dependent on the general intellect and 'mass intellectuality' (to borrow Paulo Virno's phrase) of ordinary producers, and it mobilizes agency outside of the traditional corporate structures.³⁷⁷

³⁷³ Raj Patel. *The Value of Nothing: Why Everything Costs so Much More than We Think* (Toronto: HarperCollins Canada, 2011)

³⁷⁴ Adam Arvidson. 2019

³⁷⁵ Ibid

³⁷⁶ Paul Simon Adler, Charles Heckscher, 2006: 28)

³⁷⁷ Paul Virno, 2004. p. 42

Arvidson for instance sketches a potential future agency of the commons in the following way:

This new commons-based economy might provide an alternative to a capitalist economy in what seems to be accelerating decline. This is already the case for popular consumers. (In the last decade, it was Chinese *shanzhai* or 'pirate' phones, not Nokia or Apple, that provided access to the internet to consumers in India and Africa. In the future it might provide new forms of resilience in the face of a growing ecological crisis. Whatever the case will be, its emergence over the last decades problematizes the straightforward opposition between commons, solidarity and sharing on the one hand, and markets and capitalism on the other.³⁷⁸

The value of the 'general intellect' at work in the global political economy is increasingly letting value creation leak out of the global supply chains and enabling an increasing amount of people the freedom or at least the means of survival outside or on the periphery of the formal market economy. Given the various social, ecological and political pressures that the globalized neoliberal economy is facing, it is increasingly becoming apparent that it is failing to provide the opportunities it once promised. Furthermore, the value of shared knowledge, resources, codes, manufacturing design and capabilities, software, and to some extent hardware are increasingly residing outside the walls of the corporation and is embedded in ordinary life processes. The millennial generation will have faced two major economic crises in little over a decade. It is perhaps not surprising that millennials in the US and Europe (particularly in the hard hit south of Europe), are far more skeptical of the traditional capitalist

³⁷⁸Ibid. p. 44

market economy than their predecessors.³⁷⁹³⁸⁰It is an open question whether the economic pressures and crisis of neoliberal globalization faced by this generation will make them more amenable to commons-centric logics, but the demands of the uncertain digital economy will require new forms of creative agency. It can enable ways of coordinating and organizing labour and economic activity at large, which may provide fertile ground for anti-systemic lifestyles, values and cultural attitudes as well as economic practices that go along with it.³⁸¹ I outlined above, how market-orientation and new forms of social value are increasingly coming together in the shadow economy of the globalized neoliberal economy.

Indeed, the nature of economic value and its imperial ambition are increasingly being challenged by a revaluation of value not only through the digital technologies discussed in this chapter, but the ethical re-orientation of the people who of course *are* the economy. The ‘economy’ is not an abstraction, but the expression of human affect and value. In light of the contemporary crisis at multiple levels (political, economic, ecological) of globalized capitalism where ever more fragilities are becoming apparent, there is an increased desire to see public values inform commercial value. As Mark Carney, former governor of the Bank of England writes: “As our digital and local lives expand and our physical and global ones contract, this sea of change will create and destroy value. Creativity and dynamism will still be highly prized, but new vectors will shape value: economic, financial, psychological and societal.”³⁸² In section 4.5 I will outline how the emergence of prototypes of a commons-orientated digital

³⁷⁹ “Millennial Socialism,” *The Economist* (The Economist Newspaper)
<<https://www.economist.com/leaders/2019/02/14/millennial-socialism>> [accessed 10 March 2020]

³⁸⁰ Max Ehrenfreund, “A Majority of Millennials Now Reject Capitalism, Poll Shows,” *The Washington Post* (WP Company, 2016).
<<https://www.washingtonpost.com/news/wonk/wp/2016/04/26/a-majority-of-millennials-now-reject-capitalism-poll-shows/>> [accessed 10 March 2020]

³⁸¹ Adam Arvidson, 2019.

³⁸² Maryk Carney. “Yield to Human Values,” *The Economist* (The Economist Newspaper)
<<https://www.economist.com/by-invitation/2020/04/16/mark-carney-on-how-the-economy-must-yield-to-human-values>> [accessed 10 March 2020]

economy such as Enspiral and Sensorica embody a commons-centric social and cultural ethic that are reflected in its very productive modality such as in its accounting system and internal property regime. These commons-centric seed forms have the potential to change the way we understand value through the proliferation of everyday economic practices. In any case, what is apparent is that in the changing economic environment and increasing precarious entrepreneurship, whether it is free lance knowledge and tech workers creating start-ups or labour intensive petty producers developing a shadow 'pirate economy' of consoling, phone repairs and other gadget upgrades, there is an increased pressure and necessity to become inventive and entrepreneurial in ways that manifest themselves in more autonomous relations to the classical market economy.

While freelancing, self employment and 'gig' economy entrepreneurship often end up consolidating netarchical and traditional neoliberal relations of production, they also draw upon and create the very resources and ethos that provide unprecedented opportunity for workers to become autonomous. An increasing amount of actors are making use of commons-based productive modalities and yield the potential to coalesce into an ecosystem of relatively small decentralized enterprises.³⁸³ They remain under corporate control, but they are increasingly developing semi-formal and informal production, often catering for the mainstream market economy, but being able to commit to their own economic ethics. Increasingly, people are able to form more autonomous relationships to the markets even when their livelihoods depend on it, as the economy moves outside the walls and proprietary net of the firm.

As I will outline in section 4.6 the 'gig economy' may appear to merely offer the bleak prospect of an exploited precariat. However, a key element of agency directed against the power of the platform economy will be to create federations of cooperative based platforms that may have the potential to create a co-

³⁸³ Adam Arvidson, 2019

existence with netarchical platforms. The source of agency for workers here is no longer labour power in and of itself, but again the gradual orientation towards a 'DIY' agency of appropriating and seeping out value from the hegemonic structure (in this case building a copyleft of netarchical platforms, using the same model but encoding transparency and democratic governance into its design). The new labour unions of the digital era may well turn out to be the socially innovative enterprises and cooperative firms that originate from the quest of worker emancipation from platform capitalism itself, even if they remain on the periphery of the economy as a whole. While the cooperative Airbnb or Uber competitor may not necessarily be an ideal digital commons, in the same way that many cooperatives resemble their corporate counterparts to varying degrees, the commons will have gained a foothold in the netarchical political economy. This is particularly true if the digital commons are able to help mobilize workers to carve out an autonomous space from their feudal platforms.

Furthermore, while the common nature of productive resources has in many ways reduced the bargaining power of the global working class due to downward pressure on wages, courtesy of an increased qualified workforce and the globalization of skill sets (i.e. making a touch screen is no longer a rare skill set), it has also unleashed the productive and creative energies that are mobilized and increasingly detached from capital itself. As Arvidson succinctly summarizes:

Simply put, the becoming common of production has been paralleled by a new centrality of financial markets. These new surplus value commons suck up value from a multitude of pressure points that proliferate throughout social life, and redistribute it within the global capitalist class. The resulting new importance of financial revenue has transformed the nature of corporations from places of industry to places of business, as Torstein Veblen predicted long ago. The corporation is no longer a common ground where exploitation is

enacted through political confrontation with the working class, but a place where the global productive commons are organized into informational flows. The management of external resources, increasingly through algorithms and computerized platforms, is what now chiefly creates the kinds of 'intangible assets' that have grown to account for the lion's share of financial value of corporations. However, the resulting hegemony of the logic of financial accumulation tends to distance capital from the world of commodity production.³⁸⁴

Given the way the crisis of digital capitalism is unfolding with declining productivity levels and stagnating economic growth, an increasing precarious workforce, more sophisticated relations of production and a severe ecological crisis, it is becoming apparent that purely market-based mechanisms are not going to provide all the solutions. Consequently there is a need for economic action that is not merely directed by price signals, but whose governance is informed and embedded in moral and civic responsibility, where social value informs our conception of economic value. This may enable mobilize the state apparatus and the fiscal and monetary power that comes with it more directly to the points of crisis and a political orientation towards the stewardship of global commons. In this sense, the notion of a global commons should be seen as a framework for a potential reframing of governmentality, not necessarily as the basis for a new globalized economy. A commons-orientated transition entails a shift towards prioritizing the strengthening of local resources and crisis resilience rather than dependence on global supply chains. This in turn will potentially strengthen networks of resilience integrated at the level of communities (ie localized commons) and the producers who lie at the periphery of the globalized economy. It also opens up the question of whether the digital commons, construed as a post-capitalist scenario are not themselves too imperial in their

³⁸⁴ Adam Arvidson, "Capitalism and the Commons," *Theory, Culture & Society*, 37 (2019), 3–30. P 17

economic ambition of becoming a global digital economy given the ecological restraints placed on them. The commons as I have construed them in this thesis seek to rehabilitate the ethical foundations of the market and create a digital market economy that is shaped by the norms and values of the commons. This may even strengthen the digital market economy by allowing it to be more competitive the netarchical value regime which in many ways undermines the notion of market competition and efficiency itself. Challenging monopoly power does not undermine capitalism, it may even enhance it. Indeed, given the long term ecological constraints on an economic vision reliant on globalized economic networks (even if they are commons-orientated), a more and decentralized reform of the underlying architecture, infrastructures and ethical orientation of the digital economy may even contribute to a more sustainable digital private sector. Before I develop this issue further, I will briefly further outline the extent to which the re-politization of the market opens up the potential for a transformative productive agency to emerge. These forms of agency may also help bring about further decentralization of production.

As I outlined above, a clear element of the political and ideational contestation over the market are is being reinforced by the variety and often times more autonomous forms of relationships to the market that are being cultivated in this socioeconomic transition. As more productive potential is not under the direct control of centralized capital, the operational logic of the brick and mortar firm of industrial capitalism will lose some of its dominance. This is particularly true for the enterprises that are benefitting from digital reproduction, 'hardware piracy' and lower transaction and marginal costs, where a lot of agency is being mobilised without necessarily entailing a coordinated effort. This type of small-scale decentralised economy is akin to what Marx called 'petty production.' To Marx a 'petty producer' was someone who engaged in production where capital had not yet proceeded beyond the limits of individual property. In Marx's words, 'the labourer is the private owner of his own means of labour set in action

by himself: the peasant of the land that he cultivates, the artisan of the tool that he handles as a virtuoso.’³⁸⁵ However, such forms of petty production that realize value in the market economy are invariably reliant upon various forms of commons, and not merely private ownership over the means of production. As more of these petty entrepreneurs make up a larger proportion of market-orientated production, the commons will in turn become more central to the value that is created in the digital political economy.

Although the commons are central to the economy, their economic logic will not proliferate if they are being exploited or reside merely at the periphery. However, in the form petty production I outlined above, the commons are not being merely appropriated and exploited; some of the value that is reaped in the market is retained in commons-centric networks, which will in turn be able to grow. What is at stake here is the very nature of the market itself. The logic of market exchange and competition have undergone several evolutions in the history of capitalism, and all too often there is a tendency to equate the oligopolistic market economy that was formed under the dominance of finance capital and is escalating under platform capitalism, with the market itself. However, our ontological understanding of the market has undergone tremendous shifts throughout the dynamic evolution of capitalism, and as I mentioned above, the commons often played a central role in it. Thus, we might look at the increased role that the commons are playing in today’s market economy as a condition to transform and democratize the market, demanding greater reciprocity, transparency and implementation of democratic governance principles in order to meet the demands of the digital age.

While it is not in the scope of this thesis to provide a full historical account, it is worth noting that most of the theoretical work on the inner workings of capitalism that still informs contemporary economic thought today was done in the 19th century. The political economists of the time considered the ‘economy’ to

³⁸⁵ Karl Marx and Ernest Mandel, *Capital: a Critique of Political Economy* (Penguin, 1990). P 729

be a fundamentally ethical and political domain. The classical liberal John Stuart Mill for instance was generally in favour of cooperative enterprises and endorsed much more radical principles of economic democracy that nowadays would be unthinkable in mainstream economic thought. While rejecting centralized statist approaches and championing the importance of individual creativity, he also believed that socialization of capitalism consisting of worker-controlled enterprises would benefit the political economy and society overall.³⁸⁶ Mill understood democracy not merely as a form of representation, but as a fundamental principle that should structure other domains of social life.³⁸⁷ Even Adam Smith, who championed the free market and division of labour as lying at the heart of economic development, did nevertheless see grave implications of the division of labour. He understood that economic development and human development do not always mean the same thing. Consider for instance his stark description on the effects of the division of labour in the passage below:

The man whose whole life is spent in performing a few simple operations, of which the effects are perhaps always the same, or very nearly the same, has no occasion to exert his understanding or to exercise his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible to become for a human creature to become. The torpor of his mind renders him not only incapable of relishing or bearing a part in any rational conversation, but of conceiving any generous, noble, or tender sentiment, and consequently of forming any just judgment concerning many even of the ordinary duties of private life.³⁸⁸

³⁸⁶ Dale E. Miller (2003). "Mill's 'Socialism'". *Politics, Philosophy & Economics*. 2.2 215-38.

³⁸⁷ Ibid

³⁸⁸ Adam Smith, *The Wealth of Nations*. (2014, Shine Classics). P 340

Even if Adam Smith did champion the division labour despite his reservations, what is apparent is that the political economists of the 19th century were concerned with psychological, social and ethical implications of economic activity. His remark is perhaps particularly poignant to our present situation if we recall the psychological and emotional implications of having corporate platforms compete for human attention that I discussed in the previous section. The classical thinkers of the 18th and 19th century that theorized about political economy clearly had a sense of ‘the market’ as a fundamentally ethical, social and even affective domain, and saw them as important, if not directly related to the mechanics of price, demand and supply. They understood the dangers of transitioning from a market economy into a market society.

This is perhaps not surprising given that the political economists of the 19th century witnessed a time when capitalism advanced through the expansion of markets, and that this expansion was to some extent related to the destruction of traditional monopolies.³⁸⁹ It was a time when market competition was in many ways much more intense than it is today. Marx’s analysis of capitalism was based on the English Industrial Revolution, where relatively small companies engaged in intense competition.³⁹⁰ This situation resembled the ideal of ‘perfect competition’ described in economic textbooks much more than the economic landscape we have today. Indeed, the increased monopolization of human knowledge and social relationships subsumed under a nearly unprecedented centralization of capital seems to be signaling the death of the ‘genuine’ market as the netarchical platforms are increasingly controlling vast channels of human communication and indeed the means by which to organize economic exchange and economic activity itself. They do not have to produce ‘for’ the market, they simply capture value from the economic activity that goes on in the vast spaces that they control, whether its renting an apartment on Airbnb, or getting an Ueber lift. As I discussed in section 4.3.2, the netarchical value regime defies the

³⁸⁹ Karl Polanyi, 2014, p 391.

³⁹⁰ Adam Arvidson, 2019.

core ideals of even mainstream neoclassical economics, as it is caught in a paradox where the only way to valorize the value created by the commons it appropriates and exploits, is through the establishment of 'temporary monopolies' - an unacceptable long-term solution in the estimation of most mainstream economists. In many ways, the key elements of the commons that clash with the contemporary neoliberal and netarchical modes of accumulation concern some of the most important elements of the vibrant and innovative markets that even most contemporary economists want, and that have become increasingly lost in the course of the 20th and 21st century.

This perspective opens up for the possibility of a more pluralistic conception of markets and for petty producers, knowledge workers and digital commoners to open up domains of economic activity that share an intimate affinity and proximity to cultural and social ties by virtue of the small-scale and egalitarian nature of their enterprises.³⁹¹ It also implies a more diverse economic landscape where a greater number of not-for profit, worker owned enterprises and commons-orientated producers co-exist alongside traditional corporations. Cooperative platforms, commons-based peer production and commons-orientated digital communities that produce content or deliver services are various manifestations of emerging hybrid forms that are usually market and profit orientated (although they will usually not have shareholders) but that nevertheless promote an ethical reorientation of productive logic (at least within their own ecosystems). We might then begin to see the emergence of a commons-market based capitalism that will be comprised of a diverse range of enterprises from traditional corporate firms to not for profit sector and egalitarian-orientated commons. What is transformed is the business culture and ethical foundations of market exchange, where economic activity may increasingly reflect the shared social and public values that characterize our societies. It is indeed curious that the very values that we wish to see enshrined in our political systems, should not

³⁹¹ Ibid.

at least inform the way in which we organize economic entities and production, which is after all intrinsically and perhaps even more intimately political than the politics of representative democracy itself. As I mentioned above, this might well turn out to be the very means by which capitalism evolves in a way that resists the stagnation, excessive rent-seeking and stifling of innovation that it currently faces in the netarchical mode. In the same way that the political orientation of the commons I have developed in this thesis resists the liberal neutrality over any conception of the common good, the politics of the commons is also directed at the politicization of the economy. In so doing it resists some of the more pernicious appropriations of the commons by certain radical political forces, as this process of politicization is invariably linked to the tenets of economic democracy, which enshrine inclusiveness, reject rigid hierarchies and is generally committed to progressive values in order to realize the ideal of economic democracy.

Indeed, the key role that the commons play in the digital political economy has generated new forms of social mobilization and political hope. Michael Hardt and Antonio Negri for instance, suggest that this new situation will give rise to a 'multitude', which is not to be conceived of as a 'class' but as a diverse unity.³⁹² Initially they saw the anti-globalization movement most poignantly reflected by the 2000 Seattle protests, and perhaps more recently by the Occupy movement and more powerfully by the contemporary Extinction Rebellion movement, which surely has found the most potent universality. Hardt and Negri construe the 'multitude' as an active social subject whose political action and project is motivated by precisely those things that are held in common.³⁹³ They are keenly aware that the contemporary expropriation of the commons is providing the nourishment for an aggressive expansion of monopoly power, while at the same time mobilizing energies to create alternatives. In their own words "the creative

³⁹² Michael Hardt and Antonio Negri, *Commonwealth*, (United States: Harvard University Press, 2011)

³⁹³ Ibid.

forces of the multitude that sustain Empire are also capable of autonomously constructing a counter-Empire, an alternative political organization of global flows and exchanges." ³⁹⁴ The fact that platform capitalism under the netarchical value regime is reaching into the more affective and intimate spheres of common life also means that the stakes of anti-globalization and de-commodifying have attained a more intrinsic convivial, intimate and bio-political dimension. This may spur future social mobilization of the commons and related heterodox economic structures.

However, the 'multitude' is an abstract and vague social agent. It seems that Hardt and Negri are also describing an opportunity for individuals to gain independence from the productive forces that they have in common and gesture towards democratic and autonomous alternatives. To this extent, the idea of the 'multitude' might well be a useful concept to represent the trend towards greater autonomous relations to the market, resisting the imperial claims of pecuniary value, demanding reciprocity and being inventive with regard to organizing property and production. However, insofar as the 'multitude' and indeed other similar narratives are attempts to find a locus of historical change, we should be cautious. Instead of identifying a particular social class as the agent of social change, Hardt and Negri accept that the diverse make up of modern liberal democracies requires a less homogenized social construct around which to theorize revolutionary struggle. The commons as a focal point of the multitude become a means to theorize about revolutionary struggle. There is a general tendency of peer to peer scholars and digital activists to construe the commons as a political strategy to realize a predetermined end.³⁹⁵ There is an implicit risk here of adopting an overly instrumental approach to the commons; while it is important to stress the potential of the commons as forms of resistance against political ideologies and economic formations alike, the potential of the commons

³⁹⁴ Ibid p. 15

³⁹⁵ Michel Bauwens, "The Post-Capitalist Strategy of the P2P Foundation," *Resilience*, 2016
<<https://www.resilience.org/stories/2016-07-11/the-post-capitalist-strategy-of-the-p2p-foundation/>> [accessed 11 April 2020]

to reshape our understanding of the economy and the way in which we value it is undermined if the commons are construed as merely a means to advance anti-capitalist struggles. This is not to say that there are no identifiable groups that may fight for and establish the role of the commons. Platform cooperatives, petty producers reaping from the global supply chains, digital freelancers and knowledge workers and market orientated 'prosumers', are all engaged in a project of establishing more autonomous relations to the market, but neither one of them nor collectively represent a new locus of revolutionary struggle. They are directed against the netarchical value regime and key elements of the neoliberal global economy, but as I discussed above, a cooperative platform or a market-commons hybrid does not in itself constitute a post-capitalist scenario.

In this chapter I have developed the idea of the commons as a way to re-embed and rehabilitate the ethical foundations that characterized the market economy, rather than transcend it in a post-capitalist cornucopia of the commons as certain peer to peer schools of thought suggest. In other words, while certain advocates of the digital commons see a post-capitalist promise in the DNA of the commons, I think that there are several grounds to be cautious of this approach. Firstly, it overestimates the potency of the commons in relation to state support of monopoly power. In this thesis I have sought to construe the potential of the commons as constituting a third complimentary sector to the market and state, rather than transforming the latter into a 'partner state' or develop a post-capitalist economy.³⁹⁶ Secondly, while many peer to peer advocates, including Bauwens, Rifkin and Mason acknowledge the need to eschew teleological historical narratives, they nevertheless require a deterministic conception of historical change, precisely because they are still indebted at least implicitly to the historical project of transcending capitalism. Third, the conception of the commons as a post-capitalist scenario is implicitly over reliant on the promise of technological change and productivity.

³⁹⁶ "Partner State," *Partner State - P2P Foundation* <https://wiki.p2pfoundation.net/Partner_State> [accessed 11 March 2020]

While it is important to draw historical analogies to highlight the nature of the kind of socioeconomic change in question, it is important to see them as instrumental tools that shed light on particular aspects of our current situation. Bauwens for instance has drawn on the historical account of Kojin Karatani, who as I outlined in section 4.4 does an excellent job of showing the way in which commons-orientated modes of production always coincide with market orientated production as well as informal networks of gift economy and other modes of exchange.³⁹⁷ This provides a useful perspicuous overview of how different features and ‘design principles’ underlie different ways of organizing economic activity. However, by emphasizing that there is always one hegemonic mode, the temptation is to construe our present situation as one in which the commons are on the verge of usurping capitalism and becoming hegemonic in their own right. It is conceivable that this may be true, but it should be noted that while certain technological innovations disclose opportunities and possibilities, which are of course more apparent in particular historical situations, the realization of these opportunities is only partially tied to these innovations and contradictions in themselves. As I have emphasized throughout this thesis, technology has only limited agency in and of itself. It is the political and ethical contestation over them that will frame the possibilities and scope of our political imagination and the social, economic and legal infrastructures that are brought to life with them.

Thus, we ought to be wary of construing the commons as a ‘transcendental productive modality.’ This is precisely the interpretation of the digital commons that Bauwens, following Karatani’s historical framework adopts. Recall Karatani’s typology of different modes of exchange from section 3.5³⁹⁸ Bauwens

³⁹⁷ “Comparison of Four Quadriform Theories of Social Change,” *Comparison of Four Quadriform Theories of Social Change - P2P Foundation* <https://wiki.p2pfoundation.net/Comparison_of_Four_Quadriform_Theories_of_Social_Change#karatanifourmodesofexchange> [accessed 11 March 2020]

³⁹⁸ Mode A: reciprocity of the gift, based on the ‘community’ Mode B: ruling and protection, based on the ‘state’; Mode C: commodity exchange, mediated by the ‘market’; A hypothetical Mode D:

posits that his fourth mode ‘associationism’ supports the hypothesis that we may currently be at the threshold of a new type of civilization and economy based on a new mode of exchange.³⁹⁹ Thus, if mode A is dominated by the principle of gift exchange and the pooling of resources, then the digitized commons enable all kinds of pooling of physical and infrastructural resources, with the significant addition that in today’s world it can be scaled globally. In other words, ‘associationism’ can be framed as prototype for a global commons-orientated modality.⁴⁰⁰ The hope according to P2P advocates such as Bauwens is that by virtue of being globally connected, digital commons can expand on an unprecedented scale, and thus the digital commons and cooperative sector (particularly digital platform cooperatives as outlined in 4.5) can transcend their ‘dwarfish form’ to borrow Marx’s phrase, and become global entities in their own right.⁴⁰¹

This hypothesis seems particularly far-fetched. There are profound challenges and obstacles in constructing a global commons. While there is indeed an ecological imperative to think about our environment as a global commons, as I briefly outlined in the previous chapter, the multilateral infrastructures and level international integration required, at present exceed our political will and ability. However, the practical impediments are not my main concern here. There is a serious question to be asked whether a global digital economy, even on the basis of the digital commons is feasible or even desirable from an ecological perspective. The immense efficiency of productivity enabled by digital

‘associationalism’ resembles mode A but integrated at a much higher level of complexity and coordination and thus gives rise to the hypothesis of a global commons that can transcend the other three modalities.

³⁹⁹ “Capital System” - *P2P Foundation Wiki* <https://wiki.p2pfoundation.net/Capital_System [accessed 4 June 2019].

⁴⁰⁰ *Ibid*

⁴⁰¹ Kostakis, Vasilis, Michel Bauwens, Vasilis Kostakis, and Michel Bauwens, “Cooperativism in the Digital Era, or How to Form a Global Counter-Economy,” *OpenDemocracy*, 2017 <<https://www.opendemocracy.net/en/digitaliberties/cooperativism-in-digital-era-or-how-to-form-global-counter-economy/>> [accessed 11 May 2020]

reproduction and near-zero marginal cost carry a potentially unsustainable carbon footprint. Furthermore, the notion of a globalized digital commons economy seems to rely on a political vision of cosmopolitanism that is increasingly becoming untenable. Indeed, the commons have even been construed as way of transcending the nation state itself.⁴⁰² While it is clear that we need to remain internationally coordinated at the political level, this thesis has also emphasized the need to move away from a global cosmopolitanism that does not adequately confront the political and ecological realities we are facing. Furthermore, at the economic level, the commons-orientated economy needs to foster crisis resilience at the local and national levels and combined with a commons-centric politics of community, needs to emphasize ways in which to ‘de-globalize’ without playing into the hands of authoritarian nationalism. If we are at the dawn of a new commons-orientated civilization it will unlikely be on the basis of a globalized digitized economy, at least in the long run. In other words, we ought to be wary of the political promise of the commons being articulated through post-capitalist historical narratives as the ones outlined above, that are overly expansionist in their vision.

In this section, I have sought to emphasize the way in which the commons are at the very core (and have historically always been) of the dynamic evolution of capitalist market economy. Recognizing this means understanding that while the neoclassical market economy and the globalized project of neoliberalism may well be in serious decline, capitalist modes of production are far from being under existential threat. It is for this reason that in this thesis I mainly refer to the classical market economy and neoliberalism as a particular was of organizing capital and providing a corresponding infrastructural and intellectual edifice. I have outlined the ways in which the resulting netarchical value regime is confronted with internal contradictions and confronted with its increasingly

⁴⁰² Michel Bauwens, “The Post-Capitalist Strategy of the P2P Foundation,” *Resilience*, 2016 <<https://www.resilience.org/stories/2016-07-11/the-post-capitalist-strategy-of-the-p2p-foundation/>> [accessed 11 April 2020]

apparent inability to valorize and contain the commons it is producing and relies upon. However, the result of this process requires the reinvention of the market, not necessarily the usurpation of capitalism. Thus, we should be wary of equating the struggle against netarchical monopolies with transcending capitalism, reject deterministic conception of socioeconomic change and agency, and emphasize the contingent, decentralized and at times even anarchic nature of human agency rather than the promise of technological change.

This thesis has rather been concerned with developing the commons as philosophical and political framework to understand the normative bedrock of the market, particularly as it pertains to the currently existing digital economy. A key aim has been to rehabilitate some of the key ethical foundations that have been lost. In this sense, the commons may help us transition back from a market society into a market economy, where the market is a means to an end, and the economy is not divorced from the values and normative considerations that we apply and wish to see enshrined in our political frameworks and in social life at large. In the next section I will elaborate on the way in which the commons entail a productive logic that is fundamentally different to conventional market logic. In the remainder of the chapter I will show that the normative principles and social ethic reflected in the economic logic of the commons can contribute to a potential ethical reconfiguration of the market in certain sectors of the economy. I will argue that the underlying infrastructures of the digital economy, most importantly the internet itself, will need to continue to be governed under commons-centric principles. In this regard, it is important to emphasize the various ways in which the economic logic and governance mechanisms of the commons offer solutions to the digital economy, and that the digital economy will have to democratize if we wish to have an economy that makes the most out of the socioeconomic innovations available; an economy that is competitive, innovative, decentralized and thus in tune with the socioeconomic realities of today.

4.4 Commons-based peer production

Broadly speaking, commons-based peer production (CBP) describes a process by which a community of volunteering contributors design and participate in open contributory systems in order to facilitate the creation, maintenance and distribution of an intellectual resource. As Aaron Krowne writes:

CBP refers to any coordinated, (chiefly) internet-based effort whereby volunteers contribute project components, and there exists some process to combine them to produce a unified intellectual work. CBP covers many different types of intellectual output, from software to libraries of quantitative data to human-readable documents (manuals, books, encyclopaedias, reviews, blogs, periodicals, and more).⁴⁰³

It should be noted that open hardware communities may also employ similar principles of commons-based production and share designs for all kinds of tools globally through the internet. For instance, the Global Village Construction Set (GVCS) is a project that aims to deliver the technologies we take for granted to those who live on less than a dollar a day. This modular, Do It Yourself (DIY), low-cost platform enables the construction of (what project leaders consider to be) the fifty different essential machines required to build a small, sustainable civilization with modern comforts. Contributors publish their 3D designs, schematics, budgets, and product manuals as well as instructional videos on an open source platform.⁴⁰⁴ However, the barriers to maintain such projects successfully are higher than they are in the domain of software communities, as they run the risk of free-riding, lack of investment incentives, or market appropriation and privatization. In the app-based economy, data is the new fossil fuel. Therefore, I will now focus primarily on

⁴⁰³ Aaron Krowne, "The FUD-Based Encyclopedia: Dismantling the Fear, Uncertainty and Doubt aimed at Wikipedia and Other Free Knowledge Sources", *Free Software Magazine* 2, 28 March 2005 < http://freesoftwaremagazine.com/articles/fud_based_encyclopedia/ [accessed 7 March 2019].

⁴⁰⁴ CoNN (anonymous author), "Civilization In A Box: The Global Village Construction Set", *ANNONHQ.com*, 2015 <<https://anonhq.com/%ef%bb%bf%ef%bb%bf%ef%bb%bf-civilization-box-global-village-construction-set/>> [accessed 7 August 2019].

those CBP communities that operate in the domain of software and knowledge resources.

The term commons-based peer production was coined by Yochai Benkler in his aforementioned work *The Wealth of Networks*, which introduced the notions of a non-market and a non-state sector of economic production, particularly in the domains of culture, knowledge and information.⁴⁰⁵ However it should be noted that most commons-based modalities do indeed valorize value in the market. Benkler foresaw the potential of the internet to coordinate the creative energy of large groups of people into vast, globally connected projects, which revolve around a sense of common purpose and engage participants in sense making activity. In this sense they signify an ethical re-orientation of economic activity and take seriously the psychological and social components of labour and human affect as I elaborated upon in the first two chapters. This is in contrast to the productive logic of a firm (where a centralized decision process seeks ever-greater specialization) and market-based production (in which monetary incentives are the prime motivation for getting tasks done). Peer-to-peer production describes a modus operandi of a peer-based production of goods and services. The crucial distinguishing feature of CBP is that the locus of control in the production of goods and services is not exercised by a firm, government or a particular institution for its benefit, but rather by the production of goods and services through a collaborative network among individuals in an emergent community. Michel Bauwens identifies three main characteristics of commons-based peer production, which can be seen as the core design principles of most CPB communities. He summarizes them as follows:

- 1) A New Mode of Production –P2P-systems produce use-value through the free cooperation of producers who have access to distributed capital: “this is the P2P production mode, a 'third mode of production' different from for-profit or public production by state-owned enterprises. Its product is not exchange value for a market, but use-value for a community of users.”

⁴⁰⁵ Yochai Benkler, *The Wealth of Networks* (United States: Yale University Press, 2007).

- 2) A New Mode of Governance – P2P-systems “are governed by the community of producers themselves, and not by market allocation or corporate hierarchy: this is the P2P governance mode or ‘third mode of governance’.”
- 3) A New Mode of Distribution – P2P “make use-value freely accessible on a universal basis, through new common property regimes. This is its distribution or ‘peer property’ mode: a ‘third mode of ownership,’ different from private property or public (state) property.”⁴⁰⁶

I will get back to some of these features and the mechanisms by which they are implemented in the subsequent sections (4.6 in particular). Below, I outline how the economic logic of CBP corresponds to the nature of the Internet, as an inherently distributive infrastructure, which stands in contradiction to the way in which much of the digital economy is taking shape under the regime of netarchical capitalism.

The internet and zero marginal cost productivity are not predetermined to bring about any particular socioeconomic structure per se, but they do perhaps provide some insight into the kinds of normative principles best suited to designing an economic system based upon it. The internet is intrinsically distributed; while both the state and market can exercise controls over it by controlling the surrounding infrastructure, it is difficult to exclude access and use, or reserve access to a limited group of people. As the governments of countries such as China and Iran have discovered, even the state in its most authoritarian form can only have limited success in imposing full controls, unless they manage to implement a full internet shutdown.

As far as the internet is concerned, there is no a priori pre-selection to participation. A distinction needs to be made here between the internet and the World Wide Web. The development of Web 2.0 allows for the relatively

⁴⁰⁶ Michel Bauwens "Political Economy of Peer Production", *Wikipedia of P2P Foundation*, wiki.p2pfoundation.net/Peer_Production [accessed 7 August 2019].

autonomous communication and exchange between participants in self-defined, globally connected virtual spaces. It signaled a change by which “the World Wide Web became an interactive experience between users and Web publishers, rather than the one-way conversation that had previously existed. It also represents a more populist version of the Web, where new tools made it possible for nearly anyone to contribute, regardless of their technical knowledge.”⁴⁰⁷ Similarly, Bauwens claims that

The Web (in particular the Writeable Web and the Web 2.0 in the process of being established) allows for the universal autonomous production, dissemination, and 'consumption' of written material while the associated podcasting and webcasting developments create an 'alternative information and communication infrastructure' for audio and audiovisual creation. The existence of such an infrastructure enables autonomous content production that may be distributed without the intermediary of the classic publishing and broadcasting media (though new forms of mediation may arise).⁴⁰⁸

The term World Wide Web denotes a certain conception of an economic system based on the internet, based on client-server relations enabling digital platforms to control user interfaces. The significance of the internet is that it enables the creation of “use-value without the intermediary of manufacturing or distribution by for-profit enterprises.”⁴⁰⁹ For instance, in contrast to how publishing houses work in the traditional market economy, open source publishing projects such as citizen journalism allow anyone to post and to verify the authenticity of any given article.⁴¹⁰ This is not to say that it is an open access regime with no checks and balances; skills are verified, and communally validated, in the process of

⁴⁰⁷Angela Gorrell, *Always On (Theology for the Life of the World)*, (United States: Baker Publishing Group, 2019). p.171

⁴⁰⁸Michel Bauwens "Political Economy of Peer Production", *Wikipedia of P2P Foundation*, wiki.p2pfoundation.net/Peer_Production [accessed 7 August 2019].

⁴⁰⁹*Ibid.*

⁴¹⁰Luke Goode, "Social News, Citizen Journalism and Democracy", *New Media & Society*, 11.8, (2008) 1287–1305.

cooperative production itself.⁴¹¹ Furthermore, while anyone can contribute at any given time, tasks are generally assigned based on competence, a process which can be facilitated by the use of metrics and reputation systems which reflect the skill sets and experience of the relevant contributor(s).⁴¹²

Although I have highlighted significant differences between a commons-centric P2P-economy and the market economy, it should be noted that they are mutually dependent on each other. On the other hand, as previously mentioned in section 4.2.1 'commoners' engaged in peer production can rarely sustain their livelihoods, and are thus dependent on the conventional market. On the other hand, markets rely extensively on distributed networks, particularly when it comes to computing and digital communication. Bauwens summarizes the relationship between the market and p2p networks as follows:

The support given by major IT companies to open-source development is a testimony to the use derived from even the new common property regimes. The general business model seems to be that business 'surfs' on the P2P infrastructure, and creates a surplus value through services, which can be packaged for exchange value.⁴¹³

Furthermore, the internet has enabled a growing number of collaborative tools, from blogs and wikis, to the more complex governance mechanisms that foster trust and mobilize social capital. This facilitates an almost unlimited coordination within and between groups. I will outline some of these in more detail in section 4.5 of this chapter.

⁴¹¹Deka Maitrayee and others, 'Commons Based Peer Production in the Information Economy' <https://www.academia.edu/29210209/Commons_Based_Peer_Production_in_the_Information_Economy> [accessed 6 August 2019].

⁴¹² Michel Bauwens and Vasilis Kostakis, 'From the Communism of Capital to Capital for the Commons: Towards an Open Co-Operativism', *TripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, 12.1 (2014), 356–61.

⁴¹³ Ibid.

To summarize, the Fourth Industrial Revolution is beginning to have a major impact on virtually all sectors of the economy. As a result, we are faced with complex questions around issues of competition and ownership, particularly with regard to intellectual property, the value of labour and recognition of value in the growing sectors of the economy that may contribute to, but are not fully integrated into the matrix of market exchange, among a host of other impacts on the job market and socioeconomic life at large. Rifkin and Mason among many others share an overall optimistic outlook on the potential of the Fourth Industrial Revolution for the benefit of the many and not merely the few. The onset of near zero marginal cost productivity allows for more commons-centric productive frameworks to emerge and establish a third sector that has the potential to establish reciprocal relationships with the market. Within their own ecosystems, commons-centric based production generally does not make the allocation of resources solely dependent on market pricing nor is information, knowledge and culture enclosed through the mechanisms of cognitive capitalism, but rather shared and disseminated in p2p communities and networks. The facility to leverage communicative infrastructures, build complex mechanisms that support non-hierarchical cooperation and facilitate the relatively open and free circulation of non-proprietary (and indeed proprietary) content, has even led some commons scholars to speak of a 'virtual communism'^{414,415}.

While this growing sector of the economy may operate within the market economy and make profit, there are no shareholders and as the cost of participation decreases, an ethos directed towards the common good and civic values that are integral to the related political vision of the commons can be fostered, at least to a greater degree than was previously possible in most commercial activities. It is an open question as to how autonomous this third commons sector can be in the information economy. The antagonism between CBP and the market economy will likely produce an array of hybrid forms (of which I will outline some examples in

⁴¹⁴Paulo Virno, *A Grammar of the Multitude* (New York: Semiotext(e), 2004).

⁴¹⁵Michael Bauwens and Vasilis Kostakis, *Network societies and future scenarios for a collaborative economy*, (UK: Palgrave MacMillan, 2014).

the sections below). Crucially this implies that the market economy will have to fundamentally adapt in order to integrate the commons on the basis of reciprocity (not merely appropriate and subordinate). A key aspect of this adaptation is to integrate social and cultural ethic associated with the digital commons' laterally scaled mode of production into its own business ethos. This is a tempered vision of a commons-centric economy, one which sees the digital commons in a process of a socio-economic evolution, rather than a revolution that will supplant the capitalist market economy as thinkers such as Rifkin and Mason seem to suggest. Michael Hodgson suggested that "utopia should be understood as a socio-economic reality that is both non-existent and alleged by some to be desirable."⁴¹⁶

4.5 Outlines of a socio-economic logic beyond the hegemony of the market economy

This section will provide insights into institutional formats, governance principles and tools that digital platforms and networks embody. It will illustrate the way in which the socio-economic logic of the commons-based ecosystem in the information economy radically departs from conventional neoclassical economic logic, and provides tools that can be used to address some of the pressing challenges that the information economy presents us with.

As has become apparent in this chapter so far, the impact of the internet on the economy has made the question over the nature of value central once again. Most of the classical literature on economic value has been shaped by the debate between adherents of the 'labour theory of value', such as, David Ricardo⁴¹⁷ and Adam Smith⁴¹⁸ which posits that value always has to correspond to something 'objective' (such as the amount of labour, energy, raw materials, capital etc.) and the 'neoclassical school', which sees value as a reflection of individual desires,

⁴¹⁶Geoffrey Hodgson, *Economics and Utopia: Why the Learning Economy Is Not the End of History* (London: Routledge, 1999). P, 4

⁴¹⁷David Ricardo, and Donald Winch (ed), *The Principles of Political Economy and Taxation David Ricardo* (London: Dent, 1974).

⁴¹⁸ Adam Smith, *The Wealth of Nations* (Andesite Press, 2015). p 13-18.

whose aggregate constitutes an implicit social contract.⁴¹⁹ As we know, this works for the market economy but does not apply as easily to the information economy. The toolkit of liberal capitalism looks increasingly exhausted. As previously discussed, simple market solutions such as introducing payments for contributions on digital platforms are not viable or desirable solutions. Governments across the world face the enormous task of developing regulatory frameworks for the digital global utilities that form the lifeblood of this economy, and more importantly of devising ways to enforce them. Free market economists such as Larry Summers and Bradford Delong are struggling to address the dilemma of natural monopolies, among a host of other profound ethical and political questions concerning the use of data and intellectual copyright.⁴²⁰ The market economy cannot by itself address the value crisis, and the productive modality of the information economy is largely based on peer-to-peer 'collaborative commons.' This thesis posits that the means to address the value crisis can be found within the framework of the commons. The question then becomes: how can the social and cultural ethic and economic logic of the commons find ways of accounting and develop value practices that recognize and reward diverse forms of value creation, and that at a more fundamental level, recognizes the relational and distributive nature of value as such, and the organizational formats and frameworks that are best suited to implement this reconceptualization.

As I previously explained, one of the key problems with netarchical capitalism is that it produces a large precarious workforce and creates natural monopolies while extending monetization into all aspects of social life. The cooperative is particularly relevant in addressing the current trend in the information economy of replacing wage labour with an increasingly large precariat operating in the 'gig economy.' Hence, it is worth tracing the extent to which cooperatives form part of the current economy, as their role is often underestimated. In Japan, the Japanese Consumer

⁴¹⁹George R. Boyer and Robert S. Smith, "The Development of the Neoclassical Tradition in Labor Economics," *Industrial and Labor Relations Review*, 54 (2001), 199
<<http://dx.doi.org/10.2307/2696007>>

⁴²⁰ Lawrence Summers and Bradford Delong, 'The New Economy: Background, Historical Perspective, Questions and Speculations', *Economic Review*, 16.4 (2001) 29-59

Cooperative Union serves nearly a third of households nationwide.⁴²¹ Spain hosts one of the world's largest cooperative ventures in Mondragon, the nation's seventh largest industrial corporation. The Emilia Romagna area in Italy has encouraged a wide array of consumer and agricultural cooperatives as well as employee ownership of enterprises, and has seen more success than other Italian regions in reducing unemployment. In Brazil, 40% of agriculture in some way consists of cooperatives, while 36% of retail markets in Denmark are comprised of cooperatives.⁴²² Some 22% of New Zealand's GDP come from the cooperative sector.⁴²³ Even vital infrastructures can be owned by cooperatives as the initiative to form utility cooperatives to buy and operate Berlin's power grid⁴²⁴ demonstrates. In the information economy, the scale of cooperatives is nowhere near as large, but they have arguably had less time to develop.⁴²⁵ A coalition of digital platform cooperatives has the potential to carve out some spaces outside of netarchical platforms, and develop alternative ownership structures. Such platform cooperatives have the potential to create alliances, synergies and solidarity between what is currently a largely atomized anonymous workforce. Thus, the same technology that creates netarchical platform capitalism and an increasingly fragile precariat can be used for the end of economic democratization. For instance, rather than being reliant on Amazon's mechanical turk,⁴²⁶ or Taskrabbit (mini-job providing platform), it is possible to envisage a modus operandi of cooperative individual competitors. In fact, it already exists. Loconomics is a cooperative owned by freelancers, which has the aim of enabling members to own shares, receive dividends, and give members a direct say in how

⁴²¹Trebor Scholz, "An Introduction to Platform Cooperativism", Rosa-Luxemburg-Stiftung, 2016. Available from <http://www.rosalux-nyc.org/platform-cooperativism-2/> [accessed 15 August 2019].

⁴²²Ibid.

⁴²³Ibid.

⁴²⁴Nora Rocholl und Ronan Bolton, "Berlin's electricity distribution grid: an urban energy transition in a national regulatory context", *Francis & Taylor online*, 2016.

⁴²⁵Ibid

⁴²⁶ Amazon Mechanical Turk (MTurk) is a crowdsourcing marketplace that makes it easier for individuals and businesses to outsource their processes and jobs to a distributed workforce who can perform these tasks virtually, see <https://www.mturk.com/>

the company is run.⁴²⁷ In principle, cooperatives such as Loconomics could provide all kinds of services, an important aspect given the way in which the information economy is likely to be dependent on market expansion. Digital cooperatives are not limited to those owned by unions or workers themselves; they could be owned by an entire city. One such model is the Cities Alliance for Platform Economy (CAPE) based in South Korea whose purpose is to organize and facilitate cooperation between cities to find solutions to some of the issues facing them, such as those presented by Airbnb.⁴²⁸ Munibnb for instance is a software platform for short term rentals that would essentially be a common-pool resource. If such an infrastructure were in place, it would allow cities to act as gatekeepers for short term rentals and foreclose on the rent-seeking activities of companies like Airbnb. A similar suggestion is Allbnb, which would mirror policies such as the aforementioned Alaska Permanent Fund, whereby citizens would be paid dividends from any such rental platform.⁴²⁹ This is something that cities acting in their own interest may well opt to do, especially if political support is mobilized as more citizens get frustrated by encroachment of companies like Airbnb contributing to price hikes and scarcity in the housing market. It is clear that the underlying resource for developing such alternative platform-cooperative structures would be open software, which in turn would be developed by commons-orientated networks and communities. These digital platform cooperatives give workers an active role in shaping their working environments and might offer a way to protect workers' rights in an economic climate characterized by an increased precarious workforce for a variety of aforementioned reasons, from the ascendancy of the share economy, to the impact of automation, and the prolonged economic crisis besetting most developed

⁴²⁷ Nathan Schneider, "Legal Case Study: Loconomics Conversion to a Freelancer-Owned Cooperative", (Co-OpLaw.Org 2016) <<https://www.co-oplaw.org/legal-guide-cooperative-conversions/legal-case-study-loconomics-conversion-freelancer-owned-cooperative/>> [accessed 15 August 2019].

⁴²⁸ 'An Internet of Ownership: Democratic Design for the Online Economy', *The Internet of Ownership*, 2016 <<https://ioo.coop/2016/09/an-internet-of-ownership/>> [accessed 15 August 2019].

⁴²⁹ Ibid.

economies, particularly in Europe. Below, I further outline the organizational format and internal structure of these newly developing 'platform cooperatives.'

In a report that summarizes a retreat to debate ideas around 'open cooperativism' in Berlin in 2014 which I attended, David Bollier and Pat Conaty succinctly establish four features open-platform cooperatives need to include.⁴³⁰ *Firstly*, they should create a genuine sharing of wealth by cooperatives with local communities. *Secondly*, it is necessary to create a safeguard against market buy-outs such as the one that sold out Couchsurfing, in order to assure a more persistent commons-orientated impact on the sharing economy. *Thirdly*, shared capitalization must be implemented to prevent disproportionate losses or harm to any single stakeholder. *Finally*, a highly participatory governance structure should be put in place instead of concentrated power based on capital ownership; and greater sharing of resources (food, seeds, water, energy) rather than artificially limited access.⁴³¹

An example of a co-op with all these features in place is the German housing co-op, 'Mietshäuser Syndikat', which participates in or designs projects primarily to withdraw them from the real estate market; Residents enjoy the right of self-management of their building, safe in the knowledge that any sell-off of their home would be difficult.⁴³² This is implemented by establishing joint ownership shared between the not-for-profit residents' association of 300 members and a limited liability corporation, with each member having one vote.⁴³³ Any fundamental change requires a 'yes' vote by both partners, essentially giving each the power of veto. The associated corporation essentially acts as a safeguard against a sudden move by a group of co-op members to try and sell the building.⁴³⁴

Enspiral

Within the sphere of digital commons, there are also prototypes that have begun to implement key commons-centric design principles and governance mechanisms.

⁴³⁰David Bollier and Pat Conaty, *Towards an Open Cooperativism*. Commons Strategies Group (2014). Available at: <http://commonstransition.org/toward-an-open-co-operativism/> (accessed 15th August)

⁴³¹Ibid.

⁴³²Ibid.

⁴³³Ibid.

⁴³⁴Ibid.

Founded in New Zealand in 2008 by Joshua Vial, Enspiral is a network of do-it-yourself (DIY) professionals, freelancers and companies whose mission is to support forms of social entrepreneurship.⁴³⁵ While different professionals from different backgrounds are part of different teams that can present their own brand to their clients, the groups share a common legal structure.⁴³⁶ Indeed, while Enspiral remains the largest company currently in the network, it acts as a kind of federated network of like-minded professionals and entrepreneurs; a hub (and community) for small companies and professional freelancers to collaboratively distribute money and knowledge in a network that lowers their transaction costs and provides a support system of skills and shared resources. Enspiral remains the central node and principal legal entity, receiving a stream of revenue from all its members. The budget is collaboratively managed and each Enspiral venturer can have a direct say as to where and how they would like their money directed.⁴³⁷ Participatory budgeting is facilitated by an open-source digital tool which enables people who have made financial contributions to have a vote in decision-making processes.⁴³⁸ Even members who have not made financial contributions can propose projects they deem to reflect Enspiral's value system and merit funding.⁴³⁹ Currently, services provided range from website development to project management and creative services. Enspiral specifically serves those projects they deem to be creating social value.⁴⁴⁰

Enspiral's flexible and dynamic structure allows for individual autonomy and self-realization according to different contexts, needs and outlooks, embedding this all into a sphere of collective collaboration. One of the key problems that many commons face is finding the right balance between individual and collective utility.

⁴³⁵ Michel Bauwens and Vasilis Niaros, "Value in the Commons Economy", *Heinrich Boell Stiftung*. (2015), p. 31.

⁴³⁶ *Ibid.*

⁴³⁷ Alex Pazaitis, Vasilis Kostakis, and Michel Bauwens, "Digital Economy and the Rise of Open Cooperativism: The Case of the Enspiral Network", *Transfer: European Review of Labour and Research*, 23.2 (2017), 177-92 <<https://doi.org/10.1177/1024258916683865>>.

⁴³⁸ *Ibid.*

⁴³⁹ *Ibid.*

⁴⁴⁰ *Ibid.*

While Enspiral is highly individualized and payments are largely based on market rates, there is an inherent wider social and cultural ethic that is propagated and which runs counter to the logic of the market economy; it is able to operate on the commons-centric design principles while existing within the market, without being co-opted, appropriated or simply existing outside it. It is able to generate capital from the market and transfer it to the commons-centric ecosystem.

One of the reasons Enspiral can resist co-optation by capital is that it has installed capped returns, which essentially separate its financial value from its social productivity. This is a particularly important feature in the context of netarchical capitalism, as the fact that corporations have a fiduciary responsibility to their shareholders to maximize their profits explains why prudent long-term investment decisions are not made. The race to the lowest brain stem in the chase for human attention is in part the result of warped incentive structures directing the business model of corporate digital platforms. The idea of 'capped returns' is basically to follow the principle that the returns investors may receive on the equity of a business are capped. New socially-driven entrepreneurs require funds. These are provided by investors, potentially in the form of issuing shares, which are mandated by a 'matched call option', an instrument which essentially insures that the shares are to be repurchased by the company at an agreed upon price.⁴⁴¹ Eventually, if the company is doing well, it will even be able to repurchase all its shares, which yields the potential that those involved in production have a direct participation in the governance of the company. The company in turn looks to direct the future profits gained towards socially orientated goals in line with its mission statement.⁴⁴²

Sensorica

Perhaps an even more developed commons-centric network is Sensorica, which specializes in the design and operation of sensors and sensing systems on the basis of open software and hardware. Its self-declared vision is to "empower

⁴⁴¹Michel Bauwens and Vasilis Niaros, "Value in the Commons Economy", (P2P Foundation and Heinrich Boell Stiftung, 2015) p.31.; see: <http://commonstransition.org/value-commons-economy/>

⁴⁴²Ibid.

communities to optimize interactions with our physical environment and realize our full human potential.”⁴⁴³ It’s a statement that reflects the profound and rapid expansion of the Internet of Things, the blurring of the material and the virtual, and the implicit humanist fervor that seems to characterize the brave smart world of the information age. While initially concerned with developing its own products and services, Sensorica gradually developed a network of open source sensors to supply the wider market.⁴⁴⁴ Similar to Enspiral, it is market orientated in that it provides innovations which are exchanged in the market to generate streams of revenue, while retaining its commons-centric identity within its own operational logic. While its structure is relatively informal, a non-profit organization is responsible for holding all assets and liabilities of the network as a commons, effectively acting as a custodian of the Sensorica eco-system.⁴⁴⁵

A key innovative element of Sensorica is that it operates as an Open Value Network (OVN). The basic premise here is that it allows individuals, social enterprises and organizations to create value held in common in an open network, while keeping track of all the contributions in a common ledger system. As Bauwens and Niaros explain:

Its economic dynamics are based on flat and large scale coordination, cooperation and collaboration. It builds on mass-customization of shared resources, in contrast to mass-production. It thus relies on economies of scope instead of economies of scale to increase returns, which are distributed amongst the contributors in proportion to their contributions.⁴⁴⁶

Sensorica has a much wider and flexible recognition of value creation. A contribution is understood as:

any tangible and intangible input, including a product or a service;
an idea or a prototype; time spent on tasks or projects; physical

⁴⁴³Ibid., p. 26

⁴⁴⁴ Ibid.

⁴⁴⁵Ibid.

⁴⁴⁶Ibid.,p. 27

space offered for activities; data or information; but also financial investments; social connections; manufacturing and distribution channels; as well as any type of provision or entitlement, such as liability acquisition, insurance, certification or evaluation. In other words, any effort that is a part of the use value is a contribution. This broad spectrum of contributions, which spans across all levels of the production, finance and governance of the OVN are evaluated and rewarded under the same terms.⁴⁴⁷

Contributions are evaluated by means of an agreed-upon metric system as well as direct participatory evaluation by the members themselves. This form of flexible and dynamic value accounting could help recognize and reward value creators currently neglected on the periphery of the market-based information economy. It should also be noted that despite its informal structure, Sensorica does have some checks and balances in place. Its value accounting system not only records but evaluates and tracks the input of every member, enabling revenues to be equitably distributed in proportion to the contributions made. Furthermore, Sensorica operates with a reputation system, which sets standards for behaviour within the communities and attributes merit, and in conjunction with a set rule system coordinates the different tasks that have to be done with the skills and interests among the members.⁴⁴⁸

4.6 Establishing reciprocity between the commons and the market

4.6.1 Net neutrality: Preserving the Internet as a global commons

Throughout this chapter, I have outlined a central paradox that lies at the core of the dynamics of the evolving information economy, namely the paradox of zero marginal cost productivity. Furthermore, the rise of netarchical capital makes use

⁴⁴⁷Ibid.

⁴⁴⁸Tiberius Brastaviceanu, "Why do we need a value accounting system?", *Multitude Project*, (2014) Available at: <http://multitudeproject.blogspot.com.ee>

of the 'commons on the outside, privatized on the inside' formula of netarchical platform capitalism currently poised to become perpetually hegemonic in the information economy. While it is true that the transformation in productive capacities that the digital revolution has paved the way for the dominance of the monopolistic platform capitalism, it has also enabled its polar opposite to emerge in the peer-to-peer networks, producing, sharing and distributing within their own eco-systems. This contradiction is also reflected in the distinction between the distributive logic of peer-to-peer production and the legislative and material infrastructures that reflect the proprietary and exchange-value based market paradigm. In elaborating on this aspect further, I will place particular emphasis on a commons that has thus far been latent in this entire discussion: the electromagnetic spectrum, for its surrounding ownership structures will play an integral role in shaping the society that is to emerge out of the Fourth Industrial Revolution.

Yochai Benkler's call for a 'core commons infrastructure' seems to be a utopian call in the sense that it refers to a non-existent socio-economic reality that is deemed to be desirable by some.⁴⁴⁹ Among those who are ideologically opposed to such an infrastructure, the question remains as to how value can be created in the context of an exodus from wage labour, decreased purchasing power and an economy increasingly revolving around immaterial labour and peer-to-peer production, for the economy at large. While both digital 'commoners' and netarchical elites are enthusiastic (sometimes over-zealously so) about the possibilities of p2P production, the latter simply do not have a feasible solution of how to integrate the new productive matrix into the property regime of the classical market economy. The solutions put forward by economists such as Larry Summers, allowing natural monopolies as short-term solutions, are not viable in the long-term. In the context of the current political landscape and long-term economic conditions that I outlined in the first chapter, political and economic elites can ill afford not to stem

⁴⁴⁹Yochai Benkler, "Property, commons and the first amendment: Towards a core commons infrastructure", white paper for the first amendment program, *Brennan Centre for Justice at NYU School of Law*, (New York, 2001).

the trend towards monopolies. For such a trend will only aggravate already existing inequalities, which are already set to increase given the disruptions of the information economy in the form of networked automation and the 'creative destruction' of whole industries. Current economic conditions of stagnating wages, growth and unsustainable levels of household debt will aggravate this situation.

Benkler explains his call for a core commons infrastructure as follows:

To flourish, a networked information economy, rich in social production practices requires a core common infrastructure, a set of resources necessary for information production and exchange that are open for all to use. This requires physical, logical, and content resources from which to make new statements, encode them for communication, and then render and receive them.⁴⁵⁰

Benkler is arguing that the communication infrastructure enables lateral p2p scaling of vast surrounding infrastructures. Thus, two key questions arise that can help frame discussions around the information economy. *First*, what are the resources that are foundational to the digital economy, and to what extent should these resources be governed by commons-oriented principles, and *second*, what institutional arrangements exist or can be brought about to achieve this? The answer to these questions is central to the political and cultural conflicts surrounding the information economy, and constitutes one of the biggest challenges. Yet, it is important to point out here that while one can argue against the commons or with them, it is increasingly difficult to argue without them. Ever more, key political questions and macroeconomic questions will need to be framed within the context of a discussion around the commons, and the extent to which we want to make the best use of the institutional arrangements and normative principles that they have to offer, and indeed further discovering what they are.

⁴⁵⁰ Yochai Benkler, *The Wealth of Networks*, p. 470

It is worth reiterating here, that the core infrastructure of the information economy is of course the internet as the technological infrastructure that by and large is decentralized and is characterized by relative transparency and relatively free and open exchanges and distribution of information, despite the fact that the infrastructure of the web layered on top of it has sought to integrate it into the logic of the classical market economy. Indeed, the internet has largely been governed as a quasi-global commons, in a similar way to the vast global ecological commons I mentioned in the first chapter. Governance of the internet has largely been assigned to non-profit organizations such as the Internet Corporation for Assigned Names and Numbers (ICANN), which, although initially under US jurisdiction, is currently regulated by an international board. In 2005 a working group set up by the U.N. Secretary General set up a governing framework which was adopted by 174 countries. The agreement laid out the governance of the internet as distributed between three key stakeholders: civil society, the state, and business interests. According to Rifkin, "Internet governance is the development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programs that shape the evolution of the Internet."⁴⁵¹ Here, civic activists and associations, and with them the non-profit sector and broadly speaking the social commons under the category of civil society, became recognized as being an integral part of the most important global infrastructure. This signifies a shift away from the dichotomous state/market paradigm that previously shaped regulations of key infrastructures. The tripartite governance model that is now enshrined in the Internet Governance Forum ensures that policy and governance around the Internet reflects its *decentralized horizontally distributed* as opposed to a *vertically integrated* structure, thus embodying commons-centric governance principles.

The core principle underlying its decentralized horizontal structure is the principle of net neutrality, which can be defined as "a principle that assures a non-

⁴⁵¹ Rifkin, Jeremy, *The Zero Marginal Cost Society*, p. 190

discriminatory, open, and universal communications commons in which every participant enjoys equal access and inclusion.”⁴⁵² Internet users usually pay to have access to the internet in the first place, and pay variable fees based on bandwidth, that is fees related to *access* and *usage*. However, the internet remains unique among informational networks in that one user does not pay service fee for access to another user or content provider. In other words, while Google and Wikipedia may pay for their access and use of the internet, they do not pay any additional fees to the Internet Service Providers (ISPs) for the users that they reach.⁴⁵³ Naturally, there are strong market incentives to change this. In 2013 the largest German communications company that controls around 60% of the country’s market share used its marketing position to do just this. First, it announced that it would impose download limits on all the customers that use its internet services due to the exponential increase in data traffic which was estimated to have quadrupled by 2016.⁴⁵⁴ Then, the company announced that it would sell upgrades to those customers that wanted to increase their limits.⁴⁵⁵ Finally, it declared that in order to reduce ‘traffic congestion’, it would be accepting information packets coming from its own internet-television service, but not from major competitors such as Google or YouTube.⁴⁵⁶ The proposal came under fire from both the public and the major regulatory body, Germany’s Bundesnetzagentur (Federal Network Agency) for violating net neutrality principles.⁴⁵⁷ Companies like the movie streaming service Netflix, have since struck deals with Deutsche Bank to reach their subscribers and provide them with access to its streaming service. At the time of writing, regulators have continued to maintain the main elements of net neutrality in prohibiting companies from

⁴⁵²Ibid p. 197

⁴⁵³Robin S. Lee and Tim Wu, ‘Subsidizing Creativity through Network Design: Zero-Pricing and Net Neutrality’, 2009.

⁴⁵⁴Kevin O Brien, “Limiting Data Use in Germany”, *New York Times*, May 12, 2013.
<http://www.nytimes.com/2013/05/13/technology/deutsche-telekom-data-use-and-net-neutrality.html>.

⁴⁵⁵Ibid.

⁴⁵⁶Ibid.

⁴⁵⁷Ibid.

prioritizing certain content over others.⁴⁵⁸ For example, in 2017, Telekom's StreamOn service gave customers the ability to stream songs and videos from certain providers without being charged additionally for it. This practice is known as 'zero rating'. It has traditionally been seen as undermining the principle of net neutrality.⁴⁵⁹ Germany's Federal Network Agency pointed out that Telekom was using StreamOn to prioritize certain streaming content over others, privileging music and audio content at the expense of video. While the practice of zero rating was deemed in practice permissible, Telekom had to enable participation on a non-discriminatory basis.⁴⁶⁰

Across the Atlantic, net neutrality has not fared as well recently. In 2017, the FCC in the US voted in favour to repeal legislation that would safeguard net neutrality protocols implemented by the Obama administration. Regulators had been going back and forth between legislation leaning more towards network neutrality and free market designs, but neither approach seems to be able to have strong and stable solutions and frameworks that address the underlying questions at stake. Are telecommunication companies natural monopolies, and if so how are they to be regulated? Are they to be treated as global public utilities and if so, how does one regulate a public utility that is globally scaled? The ISP mounted a legal challenge to the FCC over the latter's authority to regulate it, and in response the FCC issued the Open Internet Order, which sought to consolidate net neutrality principles and crucially classified ISPs as services. This in effect put ISPs under the legal jurisdiction of the FCC. No doubt, Deutsche Telekom and companies across the world will mount similar legal challenges, the outcomes of which will determine which political choices and values exert themselves in the technological infrastructures and digital interfaces that play an increasingly important role in structuring social and economic life.

⁴⁵⁸News editor, „Netflix inks deal with Deutsche Telekom“, Cerillion, 24.11. (2017), <https://www.cerillion.com/Blog/2017/Netflix-inks-deal-with-Deutsche-Telekom>

⁴⁵⁹Jan Kramer, „A Fresh Look at Zero-Rating“, *Telecommunications Policy*, 42.7 (2018), 501–13.

⁴⁶⁰*Ibid.*

Regulators have been going back and forth between legislations that on the one hand seek to enshrine net neutrality and on the other hand favour free market principles. This will continue to be an ongoing battle. Are telecommunication companies natural monopolies, and if so how are they to be regulated? Should they be treated as global public utility companies? What institutional and legislative frameworks would have to be devised in order to come to regulate a public utility that is global in scale? In what ways and to what extent does the enclosure of information by netarchical platform undermine the broader principles of net neutrality in maintaining the internet as a collaborative, peer-to-peer, laterally scaled architecture? To reiterate Tim Berners-Lee's warning in his own words concerning the enclosure of the internet "large social networking sites are walling off information posted by their users from the rest of the Web."⁴⁶¹ He is right to conclude that "the more this kind of architecture gains widespread use, the more the Web becomes fragmented, and the less we enjoy a single, universal information space."⁴⁶²

Thus, the ideational battles surrounding the infrastructures on which digital commons depend will play a defining role in shaping the information economy. It should be reiterated here that the digital commons are already at the core of the current economy, intertwined with the market economy in the digital sphere, in both mutually reciprocal and antagonistic relationships. To give an example of how embedded the commons-paradigm is already within the market economy, consider the huge success of Android, which is relatively commons-based as it is technically open source and developed by the Open Handset Alliance. Android is symptomatic of the reciprocal and antagonistic relationship between commons-orientated production of the market and economy. As a business model, it has a relative competitive edge over the more proprietary operational logic embraced by

⁴⁶¹Josh Halliday, "Tim-Berners Lee - Facebook could fragment web", The Guardian, (22.11. 2010). <https://www.theguardian.com/technology/2010/nov/22/tim-berners-lee-facebook>, Tim-Berners-Lee, "Long Live the Web: A Call for Continued Open Standards and Neutrality", *Scientific American*, 12(2010).

⁴⁶²Ibid.

companies such as Apple. Tech giants like Google are the polar opposite of commons-based peer production but it should not be underestimated that in keeping Android open source (even if in an ironic contradiction they are doing so to assert monopoly power), its owners are implicitly supporting prototypical modes of production that are in and of themselves not dependent on centralized capital. The question of how autonomous the digital commons sector can become remains an open one, but it follows from the discussion thus far that it will have to develop a greater autonomy than it currently enjoys if we are to avoid living in the enclosed social and economic spaces controlled by the platform oligopoly. I want to stress here that the social and cultural logic inherent in commons-based peer production will need to be propagated and reflected within the new socioeconomic reconfiguration of the information economy. This will require infrastructural and legislative support just as much as the development of commons-centric productive modalities themselves.

The market economy of the information age relies upon a communism of capital.⁴⁶³ While commons-based peer production produces vast knowledge, culture, as well as software and open hardware design, corporate entities are able to free ride on the value produced through this dynamic productivity, or as Bauwens puts it “peer production functions within the cycle of accumulation of capital but also within the new cycle of the creation and circulation of the Commons.”⁴⁶⁴ Here, we have a tragedy of the commons, precisely because there is a lack of an appropriate ownership model. Again, left to its own devices, the market economy is likely to bring ownership and/or control over vast peer-to-peer networks into the hands of a few ‘natural netarchical monopolies’ that will have control over the communications, logistics and transport infrastructures that lie at the very heart of social and economic life. Meanwhile, corporate ventures are able to free ride on the latent economic contributions and creative outputs of people providing free value through their interactions with various digital platforms. Furthermore, much of the

⁴⁶³Michel Bauwens and Vasilis Niaros, "Value in the Commons Economy", (P2P Foundation and Heinrich Boell Stiftung, 2015) p.31.; see: <http://commonstransition.org/value-commons-economy/>

⁴⁶⁴Ibid.

innovative capacity of commons-based peer production is simply not going to be harnessed, or its potential not realized to the best possible outcome for the public good. Legislation such as the aforementioned Article 13, section 4 of the proposed EU copyright directive (the so called ‘upload filter’ regulation) are simply not timely mechanisms⁴⁶⁵ to utilize the productive capacities made available by the information economy. I already outlined how peer production in the vector of vertically integrated Silicon Valley enterprises leads to deficient outcomes due to the insistence on monetizing human attention. The key implication is that ownership models have to be structurally rethought in order to be more dynamic, distributive, and based on use and access rights rather than exclusive control. Viewed in the wider context of the contradiction(s) I have discussed in this chapter, between the productive logic underlying immaterial production in the digital sphere on the one side and in the classical market economy on the other, it becomes apparent what the commodification of information does to the nature and quality of our social relationships. The current market paradigm is unlikely to be able to completely subvert the socioeconomic logic entailed by peer-to-peer production. The current market paradigm is likely not able to completely subvert the socioeconomic logic entailed by peer-to-peer production. Thus, if the market economy is based on the organizational and structural format of cognitive capitalism, in which the information is a full market commodity, though under-used, then consequently an economy based on the full sharing and utilization of information cannot be solely based on a free market or be governed by absolute IP rights.⁴⁶⁶

In some cases, the intermingling between traditional market entities and commons-based production can foster mutual reciprocity, as in the Linux/IBM model. However, even here commons-based production is not able to develop its own autonomous institutional and legislative framework to enable its social

⁴⁶⁵Proposal for a Directive of the European Parliament and of the council on copyright in the Digital Single Market, Article 13 + related definition, (Unofficial consolidated version: https://juliareda.eu/wp-content/uploads/2019/02/Art_13_unofficial.pdf), [accessed 26 September 2019]

⁴⁶⁶Paul Mason, *Postcapitalism: A guide to our future*, (Penguin Books 2016). p.132

production, that is to say, to provide for livelihoods within an autonomous ecosystem of peer-to-peer networks.⁴⁶⁷ Here, the ethical and axiological considerations that either latently or explicitly form part of economic thought, rather than concerns around economic efficiency, come to the fore. The contradiction of integrating largely immaterial commons-based peer production into a proprietary economic logic that contradicts the economic logic of the peer production upon which it relies is not only a complicated practical one, but also a cultural political and ethical contestation. This brings attention to a question that is not often posed in debates around the information economy; namely that of whether economic infrastructures ought to reflect the cultural and social ethic of the mode of production they are designed to facilitate. A more concrete question that follows from this, is whether there are sufficient mechanisms in place that ensure sufficient reciprocity between the commons and the market.

To address this question, it is worth reiterating that the technology underpinning any given economic system does not pre-determine all of its design elements. It may well play a central role in enabling some productive modes over others, thereby facilitating the development of some infrastructures that may previously not have been a feasible option; they are contingent upon the ideological and normative frameworks within which they are conceived and developed. It is an open question as to whether the 'netarchists' will be able to subsume commons-based production entirely, or whether as peer-to-peer optimists (such as Rifkin, Mason etc.) would have it, commons-based peer production will not only underlie the economic system, but actually become hegemonic in its own right. This is an intriguing puzzle to be sure, but one ought to be careful not to place too much emphasis on it, as this runs the risk of framing the debate in terms of economic and technological efficiency alone. The future of the Fourth Industrial Revolution is in human, value-driven hands, and not the dynamics of any given technology. While it is clear that the internet has certain intrinsic features which account to a large

⁴⁶⁷ Michel Bauwens and Vasilis Niaros, "Value in the Commons Economy", (P2P Foundation and Heinrich Boell Stiftung, 2015) p.31.; see: <http://commonstransition.org/value-commons-economy/>

degree for the cultural and social ethic propagated by commons-centric modalities of production, allocation and distribution, it should also be noted that the legislative, infrastructural and conceptual apparatus that provide the contexts within which the socioeconomic logics of the new system develop are integral to shaping the information economy. In other words, a socioeconomic transformation such as the one presented by the information economy will require us to develop fundamentally different institutional modalities and legislative instruments.

So it would appear that what is needed is a way to develop ownership models that recognize the contributions of digital commoners while also protecting and sustaining the mechanisms of sharing and distribution and retaining enough safeguards to avoid the tragedy of an unmanaged commons. This is not a solution that can be offered here, but it is a question that ought to be asked. What is needed is a reframing around central questions of political economy. For instance, we have to ask ourselves in what way our conceptions of property and ownership have to be amended in light of the relational dynamics that lie at the core of the new productive modus operandi of the information economy.

Below, I will address two specific ways in which ownership models may be reframed, firstly in the immaterial domain primarily related to open software production, and secondly the way in which the material infrastructure that lays the foundations for the entire information economy in the first place.

4.6.2 A License to reciprocate

In the case of creative content and software, licences such as the Creative Commons (CC) licences, the Fair Use Act, and the General Public Use (GPU) licences have formed part of the mainstream regulatory framework. CC licences aim to provide protection for those authors and creators of creative content who do not want their work commercialized without due compensation for their labour, without being as restrictive as conventional copyright law. In other words, they facilitate monetization on the basis of reciprocity. Netarchical platforms can be seen as reinventing the old order to best take advantage of new productive

possibilities. But the question whether this format make the best use of the productive capacities opened up by the fourth industrial revolution? I have already outlined several reasons why this may not be the case. Furthermore, as I discussed above, the reciprocity between the commons and the market is lacking here, and the social logic that underlies the productive matrix of the information economy is undermined. The Peer Production Licence or commons-based Peer Production Licence (PPL) proposed by Dymitri Kleiner is one of the commons-centric instruments that has been devised in order to generate a stream of revenue directly to the commons economic ecosystem by requiring companies and others who use the code or content (but do not contribute to it) to pay a licence fee.⁴⁶⁸ In other words, while creative commons licences and other such instruments make no distinctions (at least none with real consequences between different types of benefactors and the way in which they use certain works) the PPL aims to do precisely this. Consider for instance content creators on YouTube or Flickr (an image uploading site where users contribute content under a CC licence). In the case of Flickr, Yahoo, the company who owns it, is able to sell these images without compensation to the original content creators. In the case of YouTube, advertisement revenues monetize the content created by users. In contrast, according to Alex Pazaitis, Vasilis Kostakis and Michel Bauwens “PPL-based Commons would be explicitly oriented towards their contributions to the Commons, and the alternative value system that it represents. From the point of view of the peer producers or commoners, a Commons-based reciprocal license, like the PPL, would allow the contributory communities to create their own co-operative entities.”⁴⁶⁹ We should not misunderstand commons-based licences such as the PPL as being against market activity and commercialization; in fact they encourage market exchanges on the basis of equity and reciprocity. Licences such as the CC promote sharing but make gainful commercialization for the creator very

⁴⁶⁸ Dmytri Kleiner, *The Telekommunist Manifesto*. Amsterdam: Institute of Network Cultures, (2010).

⁴⁶⁹ Alex Pazaitis, Vasilis Kostakis, and Michel Bauwens, "Digital Economy and the Rise of Open Cooperativism: The Case of the Enspiral Network", *Transfer: European Review of Labour and Research*, 23.2 (2017), 177–92.

difficult as they are not designed to allow for it. This makes licences such as the PPL much more dynamic even from a market perspective.⁴⁷⁰

The inherent principle at stake here is that of reciprocity. The underlying contradiction between commons-based peer production and the market economy cannot be resolved without developing mechanisms by which mutual reciprocity is ensured. Without some design features that structurally enforce reciprocity, the information economy is destined to gradually form into a cognitive capitalism that is only going to aggravate the very reasons we are in a political and economic crisis in the first place. Thus, the main principle is that while economic contributions can be given, they should not be taken away easily without any reciprocity. A further step for commons-centric licenses would be to allow economic contributors to have some degree over accounting, in the same way that in the domain of free software, contributors can access the code, and crucially have the ability to change it.⁴⁷¹ In fact, the entire domain of software production relies on this principle, as most information is transparent and accessible within the network. Thus, reciprocal licenses would mandate that if companies sell products that were initially made available under commons-centric licenses, then they have to allow customers access to the capital generated. In an economy increasingly dominated by 'prosumer' relations of production, it is not enough to define 'consumer freedom' in terms of choices between different competitors; the relations between producer and consumer need to become more mutually reciprocal. Initiatives such as the commons-centric licenses and the platform cooperatives discussed above are steps towards realizing this principle.

In this last section (4.6) I have been discussing a variety of contests between the digital commons and the prevailing logic of the market, from the battle over commons-orientated principles, network neutrality, to the usage of licences in the

⁴⁷⁰Ibid.

⁴⁷¹Wolfgang Leister and Nils Christophersen, "Open Source, Open Collaboration and Innovation", *Norsk Regnesentral* (2009). <https://www.nr.no/directdownload/1331299722/Compendium-ITLED4240V12.pdf#page=99> [Accessed 20th September 2016]

domain of software production with the aim to introduce and demand reciprocity from the market. While it has not been in the scope of this thesis to provide a full treatment of these issues, these examples reflect the growing tension between the digital commons and the market in a major political and ideational contestation that is going to have a determining role in the future development of the information economy, as well as of the extent to which some of the main commons-centric features, normative principles and productive modalities will be realised. A third and final example can be found in the battle that is being fought over control and governance of the electromagnetic spectrum, which I will outline below.

The electromagnetic spectrum, which can be said to be an immaterial non-rivalrous 'resource' that is embedded in a material infrastructure that renders it artificially scarce, is perhaps the most vital network (or meta network if you like) at the core of the information economy. While the spectrum may ostensibly appear immaterial, the radio waves of which it consists have a material component; the spectrum is often rendered as an excludable resource depending on the infrastructures and economic logic within which it exists. In the still predominant logic, the spectrum appears to be rivalrous; on the other hand, it is also virtually freely reproducible and held in common to some degree. It can be said to constitute a perfectly renewable resource in Yochai Benkler's sense of the term, in that it is reusable from one moment to the next, with virtually no degradation, and therefore does not impose real costs on the licensed owner, but crucially offers a socially valuable communications network.⁴⁷² The spectrum then is symptomatic of the complex interrelations of material and immaterial components at play in the complex dynamics of material and immaterial digital labour.

What is becoming apparent is that the neat divisions between rivalrous and non-rivalrous, scarce and abundant, common-pool resources and private goods that underpin the classical market economy, are becoming increasingly fluid and

⁴⁷²Yochai Benkler, "Overcoming agoraphobia: Building the commons of the digitally networked environment", *Harvard Journal of Law and Technology*, (287/1998): 1-113.

require both a conceptual and institutional reconfiguration to provide the best outcomes and create an information economy directed toward the public good. Its importance to the information economy lies in the fact that it comprises “layers of software-defined protocols that proceed from the user down to the physical resources underpinning the network: storage and processing technologies, terminal devices, transmitters, routers, spectrum, real estate, man power and energy. Together these form the substrate architecture over which the digital commons is produced.”⁴⁷³ Ever more immaterial value is realized within spaces dependent on this material infrastructure, from the value chain of telecommunication networks, and to the ‘attention economy’ of netarchical platforms. The rights that regulate access to this communication infrastructure underlie the digital labour that is essential to the innovative potential of the information economy. The aforementioned mode of cognitive capitalism, coinciding with growing netarchical capitalism, relies upon the enclosure of the spectrum through technological infrastructures. Christian Fuchs’ notion of a prosumer commodity refers to the value creation and capital accumulation derived from the production, distribution and consumption of cultural capital.⁴⁷⁴ While ostensibly constituting a democratization of media, it also enables the commoditization of human creativity.⁴⁷⁵ Contemporary spectrum-orientated networks pervade spaces and biologies, not just through the recent influx of smart phones and tablets, but through ambient sensor networks, meshes, smart grids and even microscopic sensing systems, all of which rely on electromagnetic waves for transmission.⁴⁷⁶ Once again, what is revealed is that key political and ethical questions have to be contested prior to celebrating the internet of things and zero marginal cost productivity as the dawn of an abundant era.

⁴⁷³ O’Dwyer, Rachel, ‘Spectre of the Commons: Spectrum Regulation in the Communism of Capital | Ephemera, 2014

⁴⁷⁴ Christian Fuchs, “Labor in informational capitalism and on the internet”, *The Information Society*, 2010, 26: 179-196.

⁴⁷⁵ Rachel O’Dwyer, “Spectre of the Commons: Spectrum Regulation in the Communism of Capital”, in *Ephemera: Theory and Politics in Organization*, volume 13(3): 497-526, 2013.

⁴⁷⁶ Ibid.

From a commons perspective, the electromagnetic spectrum constitutes one of the global commons I discussed in the first chapter, with the crucial difference that the physical infrastructure is man-made and therefore far more subject to constraints imposed on it stemming from territorial, political and economic incentives and conflicts. Nevertheless, early forms of regulation and legislation surrounding the spectrum at least recognized the public nature of the spectrum and its orientation towards the common good. For instance, the 1927 US Radio Act declared the airwaves as public property and assigned stewardship to the Federal Communications Commissions (FCC).⁴⁷⁷ In a rather civic minded approach to public policy, rights were assigned to those who were deemed to broadcast “in the service of public interest, convenience and necessity.”⁴⁷⁸ While the spectrum was an excludable resource under state control, it did not constitute an inalienable property exclusively enclosed from the common, to echo John Locke’s notion of private property. However, economists increasingly began making arguments to use the market as an allocation mechanism for transmission rights. One of the most influential economists in this vein, Ronald Coase, argued that auctions could be used to assign and distribute these rights and furthermore that these rights would not only be distributed in the form of licences, but would constitute exclusive property rights.⁴⁷⁹ Neoliberal economists are right to point out that shared ‘resources’ such as the spectrum can be integrated into the framework of privatization and generate large amounts of revenue from auctions and other market transactions. They arguably even allocate rights efficiently (though the extent to which the public good has a place in these decisions raises similar concerns to those I raised with regard to the ‘attention economy’), but this rights allocation also facilitates rent-seeking behaviour, which is widely regarded as detrimental to economic innovation and growth.

⁴⁷⁷Marcus B.K., “The spectrum should be private property: The economics, history, and future of wireless technology”, in *Essays in political economy*, (Alabama: Ludwig Von Mises Institute, 2004).

⁴⁷⁸*Ibid.*

⁴⁷⁹Ronald Coase, ‘The Federal Communications Commission’, *Journal of Law and Economics*, 2.1 (1959), 1–40.

Furthermore, the sheer scale of the demand placed upon the spectrum presents challenges for the framework provided by the market economy. For instance, given the aforementioned global rise of devices connected to mobile networks, rising to an estimated 50 billion in the next decades will require the expansion of current networks and a rapid increase in bandwidth availability that a parcelled out spectrum in an exclusively proprietary market economy may struggle to provide.⁴⁸⁰ This in turn requires greater flexibility in the infrastructures providing these, which lends support to a more commons-orientated framing of the infrastructure. There is some evidence that policy makers are taking on board this development, and at the very least are beginning to reinstitute a recognition of the public nature of the spectrum, if only to meet the economic demands that the exponential increase in connectivity will bring. The European Commission report 'Perspectives on the Value of Shared Spectrum Access' finds that there is a "need to move away from exclusive and persistent channel assignments...reflected in a growing emphasis on shared spectrum access, which our findings support."⁴⁸¹ This presents the opportunity for significant policy reconfigurations ranging from greater fluidity in user right allocations as well as less exclusive licensing assignments, which in turn corresponds to a significant increase in domains of the spectrum that are unlicensed.⁴⁸²

Rent-seeking can take many different forms, and, where distributive technologies or 'resources' are in tension with proprietary infrastructures and/or legislative frameworks, artificial scarcity is usually at least part of the story. Given that the spectrum is a perfectly renewable resource, rent-seeking behaviour is not the product of the intrinsic rivalrous and scarce nature of the 'resource' itself, but again, here too, due to an economic logic which is centred on exclusive usage

⁴⁸⁰Rudolf van der Berg, "Digital Economy Outlook", 2014, 40. P. 40
<https://www.oecd.org/internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm>
 (accessed 10th June 2016)

⁴⁸¹Rachel O'Dwyer, "Spectre of the Commons: Spectrum Regulation in the Communism of Capital", in *Ephemera: Theory and Politics in Organization*, volume 13(3): 497-526, 2013

⁴⁸²Ibid.

rights in lieu of shared and more dynamic unlicensed allocations. While various commentators and thinkers around the information economy from a wide array of backgrounds, from Jeremy Rifkin⁴⁸³ and Paul Mason⁴⁸⁴, to Yochai Benkler⁴⁸⁵ and Lawrence Lessig⁴⁸⁶ among many others, have much to say about the nature commons-orientated production in the political economy, they pay less attention to the political ramifications related to a corresponding change in property relations. Particularly relevant is the question how our conception of property and the institutional frameworks surrounding it, as well as perhaps the conceptual metaphors used to consolidate the concept as part of our internalized mental infrastructure, will have to change in order to adequately correspond to a political economy in which property relations are increasingly *distributed* and *relational*.

In sum, political contestations surrounding the example of the governance of the electromagnetic spectrum reflect a core antagonism within the information economy. The digitization of the economy produces an exponential growth of immaterial labour and social value dependent on peer-to-peer networks, low barriers to participation, and free and open access to all kinds of input resources (such as code, design, algorithmic protocols etc.), which are not easily integrated into the property regimes of the market economy, and at the expense of extensive rent-seeking behaviour and monopolistic or oligopolistic formations. In the end, all of this produces a central contradiction with the process of capital accumulation and value creation wherein the necessary open infrastructure essential to its productive logic and output resist the attempts to impose excludability and commercialization of licences and user rights, thereby imposing artificially higher barriers to cooperation, reciprocal sharing of resources and innovative collaboration.

⁴⁸³ Jeremy Rifkin 2014. P 276

⁴⁸⁴ Paul Mason, 2016.

⁴⁸⁵ Yochai Benkler, 2007.

⁴⁸⁶ Lawrence Lessig, *Remix: Making Art and Commerce Thrive in the Hybrid Economy*. (Penguin Books, 2005)

5.0 Conclusion

5.1 Summary of key findings

In the aftermath of the 2008 financial crash, the crisis of the neo-liberal economic system and to some extent of liberal democracies has become ever more apparent. However, when I started on my thesis writing project six years later, the notion that political liberalism was in crisis still seemed like a rather daring proposition. Today, it is not a question anymore.

Countries remain debt-ridden, bond markets unstable and economic growth in most European economies remains stagnant. As the triumph of the globalized free market economy is waning, centrist liberal political elites on both sides of the traditional political spectrum find themselves confronted with an array of political, economic, social and ecological crises. Furthermore, they lack the political imagination to adequately confront these issues. In the meantime, their political survival is increasingly under threat from a divisive brand of populist politics. The resurgence of far right nationalist populist movements from the Front National in France, the AFD ('Alternative for Germany') and the Lega Nord in Italy, as well as the political and constitutional crisis in the United Kingdom following the Brexit vote, are all 'morbid symptoms', as Gramsci would put it, of an 'interregnum' where the old has not yet died and the new has not yet been born.⁴⁸⁷ This interregnum is a result of an ensuing political and economic crisis coinciding with techno-economic transformations which constitute nothing less than a fourth industrial revolution. In addition to exogenous shocks from the increasingly severe consequences of climate change, the impacts of immigration (which will only increase as the ecological crisis worsens) and changing demographics in major

⁴⁸⁷ Antonio Gramsci and Quintin Hoare, *Selections from the prison notebooks of Antonio Gramsci* (International Publisher, 2014) p 276.

economies that undermine the basis of the welfare state model, it is becoming apparent that a new socioeconomic logic is required to tackle the multiple political and economic challenges we are facing.

In this thesis I demonstrated the ways in which the concept of the commons can help frame key challenges that are arising within current political and economic crises, theoretically and practically. In the first chapter I showed that the commons offer a wide array of political ideas and social innovations that go beyond the repertoire of policies and ideas available to the state/market paradigm, and that yield the potential of addressing some of the main challenges and problems that lie beneath the contemporary political crisis. I emphasized the importance of reformulating liberal politics on the basis of politics of community that engages with questions of human meaning and is centered on civic responsibility. This entails a shift away from the primacy of liberal individualism, state neutrality and the preoccupation with choice, efficiency and utility as the ontological foundation of freedom. Rather, freedom is to be seen as being inherently intertwined with others and not merely rooted in the notion of choice. The broader relational perspective that underlies this reformulation of liberal politics is a key theme of this thesis. By moving away from the conception of the commons as merely resource-orientated or merely consisting of 'social spaces' this thesis has contributed to the theoretical understanding of the commons by emphasizing the centrality of the relational and affective and psycho-spiritual dimensions that are woven into the fabric of the commons. In this vein, this thesis has sought to broaden the scope of what we consider to be the 'economic' and 'productive' domain and to reintegrate the psychological, ethical, and political aspects that were once central to economic thought. In this sense, the interdisciplinary approach I have taken in this thesis reflects an attempt to rehabilitate the concept of a political economy that is as concerned with the moral foundations of human economic activity as it is with the mechanics of demand and supply.

In the third chapter, I particularly focused on the relevance of the commons to a fundamental tension, or even contradiction, that underlies the contemporary

economic crisis which is in part attributable to the advent of the Fourth Industrial Revolution, namely that the socioeconomic logic of the market economy based on proprietary regimes and price signals is coming increasingly under tension with emerging commons-centric productive modalities. These new modes of production are already an integral part of developed economies, where the digital sphere of economic production is becoming larger and more significant. However, commons-orientated socioeconomic structures and entities that could potentially coalesce into an autonomous productive sector are only starting to emerge. Therefore, only a relatively brief outline could be provided of this emerging sector. In light of the digital transformation of the political economy, with this thesis, I provided a critique of the regime of netarchical capital from a commons perspective. Through this discussion, I demonstrated the ways in which the commons are central to understanding and framing some of the key dynamics at play in the netarchical economy and the social and economic problems associated with them. Consequently, I explicated some of the ways in which commons-centric design principles and laterally scaled modes of production can form the basis of socioeconomic structures that are able to emerge within the current hegemonic market economy, while propagating a fundamentally different economic logic. Instead of looking at commons-centric formations as a way of supplanting the market economy, I focused on two related questions that can help reframe the contemporary economic landscape from a commons-centric viewpoint. *Firstly*, I highlighted how the commons constitutes an independent and integral, and yet still relatively unrecognized third sector of the economy that transcends the market and the state and offers social and political innovations that go beyond the policy toolkit and political ideas that both, state-based and market-based solutions have to offer, on which in turn mainstream political parties on both sides of the political spectrum rely. *Secondly*, I argued for the importance of reintroducing the principle of reciprocity into the market economy and discussed some of the commons-centric ideas and instruments that can be used to achieve this. In this vein, I revealed the central role of the commons in some of the key political battles that

are being waged over the future shape of the information economy. It is important to note that these battles are being waged in large part over the extent to which the commons sector and the social and cultural ethic it reflects are going to be enshrined in the information economy. While much attention has been paid to the developments of the Fourth Industrial Revolution and the information economy, comparatively little attention has been paid to the central role that the commons play.

A central element of the information economy that I critiqued in this thesis was the centrality of netarchical capital in its current configuration. The emergence of zero marginal cost productivity undermines conditions of economic efficiency established by free market theory itself (namely that price is meant to equal marginal cost of production). Furthermore, the rise of netarchical capital emerging as the hegemonic value regime in the digital political economy is leading to a concentration of monopoly power that extends centralized control over key areas of human social life and increasingly over key logistics, communication and likely even energy infrastructure. Netarchical platforms are able to establish their dominant position by providing ostensibly 'free' and 'open' collaborative commons where unrecognized forms of affective labour and value creation provide a stream of revenue for the netarchical platforms that capture this value by virtue of the 'virtual fence' that they have formed around social life. This mode of value creation requires an ever increasing expansion of the market into domains of social and human life that were previously outside of the commercial arena; that is to say the digital information economy revolves around the commodification of social life itself. The monetization of human affect in the race to the lowest brain stem in the 'attention economy' represents an enclosure of perhaps one of the most important and humanly intimate commons; human sociality itself. In the netarchical mode of capitalism, human affect is increasingly integrated into the prism of rational choice instrumentality. Market-based solutions such as monetizing contributions on digital platforms are not going to be able to address the value crisis at the heart of the information economy. Nor can we rely on the

state to develop and enforce regulatory frameworks that can tame and subordinate the netarchical tech giants. Thus, the alternative solutions have to be found within the social and economic logic of the commons. The value regime of netarchical capital and the corresponding emergence of the attention economy are key areas that illustrate the centrality of commons in questioning the netarchical mode of capitalism and in framing the key dynamics of the emerging information economy. In this thesis, I highlighted a further problematic aspect of netarchical platforms by discussing a growing economic space created by the digital platform economy known as the 'sharing' economy, which comprises a growing precarious workforce. Within the context of widespread automation and the prolonged economic crisis, skills disparities (and the wider inequalities and asymmetries associated with the roll out of the IoT infrastructure), and an ailing welfare state, will likely pose a serious threat to workers' rights. Regulated by market forces, the sharing economy seems to become a globalized digital on-demand auction economy in which perhaps 25% of the population are highly skilled globetrotting knowledge workers, while the large majority is precariously employed in the 'on demand' gig economy.

Workers' rights will be an important issue as the sharing economy expands, but a politics based solely on labour rights will not be sufficient because the power of labour in an economy where digital labourers join a daily auction for their own jobs is drastically reduced. As I argued in the third chapter, the development of digital platform cooperatives is needed. These will have to incorporate commons-based design features such as incorporating multiple stakeholders, implementing safeguards against potential buy-outs, and a highly participatory governance structure. It is in these decentralized, federated structures where some autonomy from the market and the state exists, and where commons-oriented counterparts to the sharing economy can find the space to further develop their current seed forms.

The future of work is going to be a key political discussion as the Fourth Industrial Revolution sets in. One of the central areas that will be particularly relevant is the

care sector. A commons-centric economy will place care and affective reproductive labour in the human and natural environment at the centre of economic activity, rather than being a mere externality to it. As I argued in chapter three in my elaboration of the value crisis that underlies the information economy, an unprecedented and rarely recognized development lies in the notion that a lot of value is latent and not formally recognized. Thus, an important consequence of the commons-centric perspective I developed throughout this thesis, and of my critical approach to the evolution of the information economy in a predominant logic of market-based frameworks, allows for added emphasis on the affective and social-relational dimension of labour and of value more generally. This means embedding economic activity within it rather than the other way around, or to put it another way, developing a commons-centric framework based on domains of productive activity instead of integrating all productive activity into market-based frameworks. This commons approach to the care sector, marginalized in the mainstream economy, exemplifies this dynamic well. The solutions that are developed within commons-creating peer-to-peer communities prioritize the notion of care and affective labour when conceptualizing value and the socioeconomic practices that go along with it. In other words, this approach embeds production into care commoning and affectivity rather rendering it an externality at the margins.

This brings us to a crucial point I emphasized in my discussion of netarchical capital and the socioeconomic transformation(s) embedded in the Fourth Industrial Revolution, namely that in the more distributive, horizontally integrated and digitally connected information economy, value is increasingly created and shared in common. The 'digital goods' of the information economy do not easily lend themselves to an economic logic based on inherently rivalrous and scarce goods, for they are inherently common-pool resources. This illustrates a key tension between the market economy and the emerging commons-based productive modalities, and the central role of the digital commons in finding ways that integrate the production and dissemination of human knowledge and culture into

productive modalities and embed them in a social and cultural ethic that resists the proprietary logic of the market, which is becoming increasingly anachronistic in this sector.

Thus, the commons also play an important role in our attempts to re-imagine and re-frame ownership and to align these efforts to the socioeconomic reality of the digital sphere. The information economy signifies a commons-orientated shift from our understanding of ownership based on *exclusion* and rivalrous control, to one that is more predicated on *access* and *use* value. In the technological environments of the Fourth Industrial Revolution where the physical and the digital worlds are increasingly merging, ownership is becoming more distributed across different stakeholders rather than residing within the exclusive domain of one particular entity. At least within certain contexts, current understandings of ownership and ownership structures are increasingly becoming untenable in the digital age. The key here is that commons-centric notions around ownership have to be realized in order to challenge the proprietary narrative of the 'tragedy of the commons', particularly in the digital sphere, where the conceptual metaphor of 'fencing off' property in the digital economy can only serve to legitimize the regime of netarchical capital. In many ways, the entire discussion of netarchical capital in this thesis reveals that the persistence of these old ideas around ownership, imported from the brick and mortar world of industrial capitalism into the digital economy, cannot feasibly be implemented in a sustainable manner. In other words, what is needed is a shift away from the emphasis on the legitimacy of enclosure towards more commons-centric designs and federal approaches to ownership. This is yet another important area where the need for the formation of commons-orientated socioeconomic structures and networks is revealed. It is only through the conscious design of commons-centric digital networks that create and discover new value practices and develop new ways of devising ownership structures, that we can begin to develop institutional and legal frameworks and socioeconomic structures that reflect and recognize the relational and distributive nature of

ownership and value in the information economy and the merging of producers and consumers to 'prosumers' in digitally networked production.

At the time of the writing of this thesis, it remains an open question to what extent the emerging autonomous commons sector can develop into its own independent economic sector within the information economy and to accelerate the evolution and frameworks for commons-centric seed forms such as Sensorica and Enspiral. While one should be cautious of the promise that such prototypal commons of the digital era bring, it should not be underestimated that digital platform cooperatives and seed forms like Sensorica exist in totally different spatio-temporal realities than their brick and mortar predecessors, in that they can be laterally scaled and integrated at a global level. The emergence of such open global commons may be a distant socioeconomic reality. However, this does not mean that the experimentation with alternative value practices such as Open Value Accounting and heterodox ideas developed by commons-based 'seed forms' such as Sensorica, cannot provide fertile grounds for a meaningful contribution to a socioeconomic reconfiguration that addresses some of the challenges regarding the value crisis, while also fostering greater autonomy of the commons from the market and demand reciprocity.

Commons-based peer production, the laterally scaled mode of production that is relevant to a commons-centric conception of the digital economy and enshrined in prototypal entities such as Sensorica, are ideally suited to meeting the demands of such an economy. The most important 'resources' of 'immaterial' production in the digital economy are principally the development of software, algorithmic protocols, sensors and sensing systems, and the wide range of other areas in which code is the underlying substrate. These areas range from developing 'smart infrastructures' of the IoT (recall the exponential rise of communication between 'smart objects' and humans and between devices of artificial intelligences themselves) to data analytics and Big Data.

Therefore, some of the key areas and sectors of the information economy, in which future value is going to be located, could provide fertile ground for future growth

or even flourishing of these commons-centric networks, where they can operate on equal footing with traditional market entities. A significant reason for this is that the kind of production involved in the digital economy shares a natural affinity with commons-centric organizational formats and productive logics. Thus, the modus operandi embodied by commons-centric digital networks, can help form the basis for a re-conceptualization of value that is more in line with the distributive productive matrix of the digital information economy. Sensorica may be a fragile seed form, but it is already competitive in the market. By being able to operate within the market without appropriating its economic logic (through multiple protective mechanisms fending off the ever present threat of cooptation and marketization), it is able to extract or 'import' value from the market modality and 'export' it into the emerging commons-centric mode of production.

5.2 Concluding remarks and outlook

Given the context of the consolidation of netarchical capital, the relatively unregulated precarious sharing economy, and the contradictions entailed in the rise of zero marginal cost productivity, it becomes clear that the global political economy has set sail on uncharted waters. The particular emergence of the sharing economy has produced a number of sites of key political and ideational contestations and will continue to do so in the future.

I highlighted the centrality of the commons in the information economy by emphasizing the importance of preserving commons-centric principles such as net neutrality (which essentially maintains and sustains the internet as a universal commons). The way these contests will play out in the future have a defining impact on not only the economic sphere of production but the social spaces we inhabit, as they will have an integral role in designing the digital interfaces and platforms that we use on a daily basis to communicate, learn and create value for others. These designs will have to identify, reflect and respond to political choices and normative judgments.

Furthermore, the 'digital gold' of the information economy, the data that we produce through our everyday sociality, is essentially collected and competed over in an ungoverned 'terra nullius', producing a free-for-all tragedy of an unmanaged commons. In other words, information has been turned into a commodity without yet really being conceived of as such, and thus without the necessary frameworks in place to regulate economic competition.

This implies a need to reconceptualise our understanding of value and relatedly of labour. The question of value, how to conceptualize it, where it resides and who finally controls it will likely remain one of the biggest intellectual, political and ethical challenges of our time. However, it can be stated here that developing answers to this question in the digital age will be difficult without at least implicitly invoking the commons. We are perhaps more likely than not going to increasingly refer to the design principles, governance mechanisms and the wider social and cultural logic(s) of the commons in order to develop a more pluralistic understanding of value and to develop new practices of value creation that respond to the new economic and even more importantly, social and ecological realities that we are going to live in.

We are in the 'Wild West' era of the information age. It is an open question whether antitrust legislation and comprehensive regulations that effectively treat netarchical giants such as Facebook as global public utilities can be implemented. These questions will remain an integral part of major political contests that will ensue in the 21st century. However, it is difficult to envision how nation states, unless multilaterally integrated in ways that far exceed currently existing formats, will be able to regulate increasingly powerful globally integrated agents. Facebook's plans to issue its own currency, Libra, evoking connotations of individualistic autonomy and freedom demonstrate this trend poignantly. This creates the prospect that we are headed for Silicon Valley's 'Global Village', which can provide all the services you need and design an App for whatever you may desire, but at the cost of being completely transparent to an opaque entity.

Given the popularity of Facebook, and the likely popularity of Libra and other instruments that make our lives easier, help optimize our decisions, and become more efficient, we risk embracing a 'triumphant calamity' of a netarchical digital era.⁴⁸⁸

A significant element to consider in light of these technological transformations of not just our economy, but our entire social world is that our traditional political systems are lagging behind the immense technological revolution and evolving socioeconomic and ecological realities. Our current political systems are not able to pose the profound philosophical and political questions around which political and moral ends our technologies should serve. As Ivan Illich beautifully illustrated in his portrayal of the impact of introducing a loudspeaker to a native population, technological systems, and in particular when they reach the scope of infrastructures, always carry with them subtle forms of enclosure and diminishing of capabilities that can easily go unnoticed. In learning to 'see' the commons, we can also see the way in which the technologies we develop may affect some of our core human qualities, our own sociality and affective capacities. The shape that the information economy will take as the Fourth Industrial Revolution unfolds, depends on the extent to which reciprocity between market and commons can be (re-)established. It remains an open question how the tension between the commons-centric productive modalities and the classical market economy can be reconciled. If we wish to escape a political economy governed entirely by a netarchical oligopoly and cannot simply rely on the inevitable emergence of a post-capitalist cornucopia of the commons that replaces the market economy, then it becomes apparent that a greater recognition of the commons and a fundamental adaptation of the digital economy in light of the social and cultural ethic that the laterally scaled digital commons embody, is the only way that we can

⁴⁸⁸ The term 'triumphant calamity' is borrowed from Horkheimer and Adorno. Max Adorno, Theodor Horkheimer, *Dialectic of Enlightenment*. (London: Blackwell Verso, 1997).

conceptualize and begin to implement a socioeconomic reconfiguration that comes to terms with the newly emerging social and economic realities of the digital age.

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