

The Limits of Cognitive Capitalism

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Declaration for the Ph.D. Thesis

I undertake that all the material presented for examination is my own work and has not been written for me, in whole or in part, by any other person. I also undertake that any quotation or paraphrase from the published or unpublished work of another person has been duly acknowledged in the work which I present for examination. Furthermore, the name and surname of all research participants that one will see in the following pages are entirely fictional.

Signed: Emrah Karakilic
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Abstract

Cognitive capitalism -or the “third capitalism” succeeding mercantilist capitalism and industrial capitalism- has been developed not long ago in the form of a Marxist research programme. This study, following in the footsteps of *operaismo* (workerism), undertakes a post-*operaist* (post-workerist) investigation of the state of socio-economic affairs that has been widely transformed with the rise of a new historical system of accumulation in which the absorption of productive value of virtuosic and biopolitical labour takes an ever-increasing priority. In particular, this work aims to make theoretical and empirical contribution to the research programme of cognitive capitalism through an exploration of the emerging dynamics of the labour-capital relationship and, in parallel, the new form of antagonism traversing the contemporary capitalism, which is characterised by the increasing confrontation between biopolitical production and capitalist biopower. Based on a number of semi-structured interviews conducted with wage-workers, a case study in the field of digital economy, along with the holistic consideration of stylised-facts, the thesis argues for the mutation of capitalist mode of production from vampiric mode to parasitic mode as a form of counter-attack to the growing autonomy of social labour power. In the age of general intellect, it is brought forward, the long-lasting political mediation between living labour and dead labour manifests itself as increasingly untenable in consideration of the new technical composition of labour. By expanding on the social powers of virtuosos, recognised as the collective workers of the general intellect, as the real substance/flesh of socio-economic life, the discussion is furthered that the paradigmatic figures of restructured labour are well equipped with the capabilities, skills, and competencies that are adequate for the organisation of the political project of *exodus* towards human liberation.

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Chapter One

Introduction: The Virtuosos

Production thus not only creates an object for the subject but also a subject for the object. (Marx, 1993: 92)

Labour is the living, form-giving fire; it is the transitoriness of things, their temporality, as their formation by living time. (Marx, 1993: 361)

The Virtuosos

In the *Results of the Immediate Process of Production in Capital* volume I, Karl Marx distinguishes between two determinations in which artistic, affective, creative, cultural labour, or as Paolo Virno (1996d) calls intellectual labour can express itself. This type of immaterial and cognitive labour, according to Marx, can either 'results in commodities which exist separately from the producer, i.e. they can circulate in the interval between production and consumption as commodities, e.g. books, paintings and all products of art as distinct from the artistic achievement of the practicing artist', or alternatively results in 'the product [which] is not separable from the act of producing' (1990: 1948). In the latter case, where products do not exist independently of the act of producing, the activities of the labour find their holistic fulfilment in themselves. In other words, the activities in question are not crystallised in an end work like a book, a painting, etc. For this second category, one might think of the labouring activities of the doctors, performing artists, teachers, orators, dancers, and so on whose work is alike virtuosic performance. We shall denominate the social figures of this type of virtuosic performances, borrowing Virno's (1996d) apt expression, *the virtuosos*.

According to Marx, 'for labour to be designated productive, qualities are required which are utterly unconnected with the *specific content* of the labour ... hence labour *with the same content* can be either productive or unproductive' (1990: 1044). In this respect, Virno (1996d: 191) seems to be in confusion when he interprets that for Marx a dancer

(i.e. the virtuoso) is characteristically -even by-nature- a non-productive worker. Yet what separates productive labour from unproductive labour, according to Marx, is that the former 'produces capital *directly*' (1990: 1040). More precisely, it is the labour which is 'directly incorporated into the production process of capital as a living factor ... maintain[ing] and partly reproduce[ing] the capital values invested ... augmenting them ... transforming them onto value valorising itself, into capital' (1990: 1040). In turn, Marx refers to the labour that is not 'a factor in the self-valorisation process of capital' (1990: 1045) as unproductive labour. In a concise manner, productive labour *directly* valorises capital, unproductive labour does not -while we are bearing in our mind that being unproductive is no obstacle against capitalist exploitation.

The following is significant that whereas 'the productive-unproductive distinction ... is determined by the social relations under which labour is performed, rather than the product of the activity' (Fine and Saad-Filho, 2004: 47), the aforementioned virtuosic activities which 'on the whole ... are consumed ... not in products separable from the worker and hence not capable of existing as commodities independently of him, but which are capable being directly exploited in capitalist terms,' according to Marx, 'are of *microscopic significance* when compared with the mass of capitalist production. They may be *entirely neglected*, therefore, can be dealt with under the category ... *not productive labour*' (1990: 1044-5, emphasis added). 'Here,' Marx says, 'capitalist mode of production occurs on a limited scale' (1990: 1048). Indeed, for Marx, the scale is so trivial that 'such peripheral phenomena can be ignored when considering capitalist mode of production' (1990: 1048).

We argue, at the outset, that the virtuosic labour is no longer of microscopic significance in the contemporary period of capitalist mode of production: can no longer be neglected or ignored. On the contrary, in today's organisation of production, Virno notes, 'activity-without-a-finished-work [the types of work whose products do not exist independently of the producer] moves from being a special and problematic case to becoming the prototype of waged labour in general' (1996d: 193). Indeed, the present-day economic production, which demarcates itself, to a large extent, from Manchester-type industrial production, is increasingly characterised by the virtuosic performance, revealing itself in diverse forms and contents. Maurizio Lazzarato makes a mention of 'restructured work'

traversing post-industrialism, and he puts forward that labour has increasingly come to be '*abstract*', that is, 'a labour of control, of handling information, of decision-making ... [of] the coordination of the various functions of production', requiring the labouring subjects 'to activate and manage productive cooperation' (1996: 134-5). Along the same lines, Virno, referring to the *Grundrisse* of Marx, presents his thoughts as follows:

Labour carries out tasks of overseeing and coordination ... its function consists no longer in the carrying out of a single particular objective, but in the modulating (as well as the varying and intensifying) of social cooperation, in other words, that ensemble of relations and systemic connections that as of now are *the great foundation-stone of production and of wealth*. (1996d: 193)

In the phase of 'restructuration' of labour, the virtuosos have increasingly come to the forefront as the paradigmatic figures, 'active subjects' within the processes of economic production 'instead of being subjected to it as simple command' (Lazzarato, 1996: 135) - which is typical of time-motion model of industrial production. Lazzarato refers to the concept of '*interface*' to provide a fair definition of the activities of this kind of worker -as an interface between different functions, between different work teams, between different levels of the hierarchy, and so forth' (1996: 134). The virtuosos are the living labour subjects who *play* the '*sui generis score*' (Virno, 1996d: 194) of *general intellect*¹. To put in other words, it is the general intellect 'as direct attribute of living labour, as a repertoire of a diffuse intelligentsia' (1996d: 194) that mobilises and constantly charges the capabilities and versatile activities of the virtuosos. They, in this respect, correspond to what Vercellone (2013: 432) opts to call 'the collective worker of the general intellect', performing under the domain of irreversible *mass intellectuality*². The virtuosos, therefore, are not to be perceived as a group of "elite" or privileged workers. Lazzarato concordantly writes that 'this form of productive activity [being interface] ... refers to a use value of labour power today, and, more generally, to the form of activity of every productive subject within post-industrial society' (1996: 136). We argue that

¹ A key Marxian concept which will be discussed in chapter five.

² For the elaboration of concepts of mass intellectuality and diffuse intellectuality, please see chapter five.

the virtuosos, the real substance, the flesh of socio-economic life, are progressively hegemonic and technically powerful figures of economic production today.

Now, allow me to examine the virtuosic activities that define the restructured work in their manifestations, or what are the empirical patterns/common themes traversing new and qualitatively hegemonic form of productive activity, that is, abstract labour?

A remarkable pattern has been discovered in my empirical study that labour is now increasingly defined by the activity of the transformation of an early idea, through working on a set of complex data-sets (i.e. manipulation of information), into a mature organisation report or a strategy, whose execution is often performed by the wage-worker him/herself. 'The split between conception and execution, between labour and creativity ... is simultaneously transcended within the labour process' (Lazzarato, 1996: 133). A wage-worker, working in a hedge-fund in the U.K., reports that:

My job ... I investigate an idea. For example, I might come up with the idea that "the stock index jumps whenever the lunar eclipse of the moon occurs". We have an historical data-set, going back to 1990s. I am looking at the data-set. I am doing the back test by using the data ... checking if any correlation exists. If there exists such a phenomenon ... the implementation phase begins. I, as a researcher, do the implementation by myself. I mean, I also perform the task of software engineer. (A.S, Research Analyst)

Lucy Maguire, an equity analyst working in the asset-management sector, explains the central activity of her job through an example. She 'relies on everyday' the Bloomberg 'company news, industry news, market news', which are directly linked to the spreadsheet software she is utilising, enabling her to notice, for instance, that 'Apple is going to launch something new next year'. She, accordingly, comes up with an early idea that 'it might be good time to buy Apple'. She creates a quantitative model on the spreadsheet, 'finishes the model, sets up the target price, and she compares it with the stock price'. 'If it is higher, then you [give the order of] buying it. If it is lower, then you [give the order of] shorting it'. *'Of course, all depends on your quantitative model'*, based on how you handle with information (historical data of Apple).

What grabs our attention with this pattern is that the restructured labour is increasingly marked by the processes of information-processing and decision-making, respectively. In terms of information-processing, a senior employee of an investment bank provided evidence after she had been asked about the complexity of operations performed by her departmental colleagues:

You [an employee] should understand the product and the whole complexity ... You have many variables you have to look at. The effects, the movements; you need to look at the movements across the global sphere, and you look at time decay on trades and the change of practice one day to next ... Also have to look after that portfolio across the maturity of trade ... You have to analyse them. (R.S, Head of Back-Office)

One of the participants makes our point lucid: 'The most important skill that I have is ... You give me big data, I will find the patterns within it. This is my skill ... The point is that: can you find the patterns in big data? This is the key issue' (A.S, Research Analyst).

What is also noteworthy, as a second aspect of the first pattern, is the advanced capacity of workers in choosing among different alternatives; more precisely, the responsibility-embedded activity of decision-making, which usually ensues the phase of information-processing. In actuality, workers do not only transform an idea into a formal report or an organisation strategy (whose implementation is to be decided on or approved by a high-level manager, a boss, or a figure of authority) but they also actively engage in the processes of decision-making.

The COO (Chief Operations Officer) of an investment bank in London characterises the workers (though he generalises) as 'innovative, entrepreneurial ... risk-takers ... [and] critical', and he marks 'procedural ... risk-free jobs' as 'boring' for all employees (E.E, COO). And the given corporate titles, for instance even a solid one like "analyst", should not mislead us, for their job usually involves not only the cognitive activity of reflecting and analysing but also 'the decision I am [one is] trying to make' (L.M, Equity Analyst). The same interviewee adds that 'you need a professional to make decision for you. So you need someone really decide why A is better than B ... And this person is me'. Even in

the case of recruitment, where the last-word is usually declared by the departmental manager (i.e. the hiring manager), we observe the aspects of decision-making. When a senior recruiter (called as head-hunter in a horrid manner) had been asked her most valuable contribution, she reported that:

I need to understand the requirement of the client and organisational requirement as well. It is about not sticking to the paper, or what people [her manager] say, but to take it one-step further and it is about the ability to say: “such a profile will be more beneficial for you...” That requires consultancy. You are actually not HR [Human Resources] but you come to be a consultant. (F.A, Senior Recruiter)

A second pattern concerns the autonomy regarding the act of coordination, that is, the autonomy in terms of the unification, integration, synchronization of various activities, different work-teams and levels of hierarchy in real-time. Coordination usually goes hand in hand with collaboration (i.e. aligning common goals and resources with others) and cooperation (i.e. working in tune with organisation fellows in order to achieve the organisation goals with given resources), whose exercise inevitably hinges on the competency in communication skills, that is, being *active subjects* in team-working. A research interviewee explains the organisation of production in the company:

The general motto in our company is *One Team One Dream* ... [When asked about the organisation culture] In a single sentence: take it easy. No yelling, rather collaborative. Look, we really try to understand ... We deal with the problems ... A scientific problem. Ok, not hard science but you can still approach the problem scientifically. While you are trying to answer that problem, people are helping each other. (A.S, Research Analyst)

In addition to ‘how [one] turns [one’s] monitor [to a colleague] and show what [she/he] is doing’ or ‘whatever problems I have work [how] I just go to him [colleague]. Whatever ideas I have, I just speak to him’ as a form of ‘unstructured’ every-day practice of social cooperation, one can also observe ‘structured practices’ of social cooperation such as

contributing to and sharing 'a common code base ... a common repository ... in-house electronic C++ library', which we [workers] often refer to', in addition to:

In everyday two weeks, we have research meetings. Everyone reports what he or she is working on. Extremely interactive. One says "I am working on momentum for gold prices", and I say "I worked on silver prices three months ago via momentum and I found these results". Then a discussion starts. (A.S, Research Analyst)

Therefore, the restructured labour is well associated with 'the capacity to activate and manage productive cooperation' (Lazzarato, 1996: 134). The same worker also provides an insight concerning the culture of coordination, which is indeed experienced by almost every wage-worker taking part in this research:

I send my reports to the partners and my colleagues. You get feedback on your report, you modify and resend it ... And the tests: the researcher shows his/her strategy ... The researcher shares the strategy with the software engineer who codes using C++. At the end, two models come into existence ... If they are in tune, the model enters into live trading ... The two models have to be in tune. Otherwise, the two parties have to work on the model before production. (A.S, Research Analyst)

In all, the amplification of internal communication channels is an on-going development. What might be more interesting is the increasing role of external communication as a result of the new quality of post-industrial commodity. It is acknowledged that the post-industrial commodities (be them goods or services) usually come into life by virtue of fruitful interactions between producers and the consumers.

We setup a portfolio. How do we do that? We do that with respect to client's investment profile ... [I comment: Seems customised?] Totally customised ... How is this person? Is he conservative or moderate? What does he want? Does he want a particular rate of growth? Equity-based? Bond-based? Is he interested in alternative investment; hedge-funds, commodities, private equities? So, first

you understand the profile of client; then you meet and talk to product specialist and create a customised portfolio and recommend it to your client ... (C.B, Client Advisor)

Where the consumer becomes an active subject in the design of the product, and where the commodity presents itself as ‘a social construction and a social process of conception and innovation’, the restructured work ‘creates and modifies the forms and conditions of communication, which in turn acts as the interface that negotiates the relationship between production and consumption’ (Lazzarato, 1996: 142). This subpart then might be concluded by a deduction that it is the active participation of labour into the flows of internal and external coordination, cooperation, and collaboration (and, of course, communication) networks that makes it productive today. Restructured ‘*labour produces first and foremost a social relation—it produces not only commodities, but also the capital relation*’ (Lazzarato, 1996: 142, emphasis added).

A third pattern concerns the redefinition of manual skills, more precisely, the interpolation of manual labour (as understood corporeal labour) with the immaterial and cognitive elements. An interviewee sheds light on the way in which manual labour of “sitting in front of screen and typing on Excel” is always accompanied by some cooperative and intellectual aspects of labour.

Ok, let’ talk about my job ... I would say I speak to people [internal and external clients and colleagues] half of my full time ... These conversations are very brainstorm [sic] because you raise the questions, you try to understand the companies [etc.] ... Those are very intellectual discussions. And after that you sit in front of the computer and spend fifty-percent of your time to do the Excel financial modelling. (L.M, Equity Analyst)

A client advisor complains about the physically exhausting part of his job. His work, along with the execution of in-office cognitive tasks, requires moving from one place to another, waking-up and going to airport at dead of night for only job purposes, standing up in the social networking events such as ‘cocktail receptions’ long hours far into the

night to get a chance to engage in a 'brainstorming' conversation with 'High-Net-Worth Individuals' (C.B, Client Advisor).

Even where the automation escalates such a fascinating level that the 'models works 24 hours on weekdays ... work independently of [the workers'] presence because [they] are algorithmic models ... A hundred-percent automatic', the manual labour manifests its presence (before and) after the implementation of 'order management system':

I do the back-test ... I code my models via Matlab and C++ [transforming Matlab code into C++ on computer], and after that even though 'almost nothing is manual, these processes may have a mind of their own. When a bug appears in one-step, I receive an error message ... I wake up at dead of night and modify these models at home [on computer]. (A.S, Research Analyst)

In conclusion, the conventional theoretical apparatus, conceptualising the industrial work in particular, no longer seems to be *entirely* adequate to make sense of the present day labour and labour force, where the division between intellectual labour and manual labour is increasingly blurred. For, above all, as we have attempted to discuss in this part, the labour has tendentially come to be identified as an assemblage of different skills and activities, comprising three overlapping elements/competencies: *cognitive, entrepreneurial, and manual/corporeal*. Labour is more and more cognitive in that, first and foremost, the activities of information-processing and decision-making (once delegated to "elite" and "smart" employees) have increasingly become the central pillars of everyday-job of active labour force. Secondly, labour is more and more defined through a reference to the performance of entrepreneurship, combining the elements of coordination, cooperation, and collaboration (as well as communication). 'Labour constitutes itself in the forms that are immediately collective' and 'produces first and foremost a social relationship', and 'only if it succeeds in this production does its activity have an economic value' (Lazzarato, 1996: 137). Finally, work requires manual labour activities which are, of course, not dead but manifest themselves in a new form in which they were redefined and enriched by cognitive and intellectual procedures. The manual labour that combines technical (e.g. how the raw material is operated) and intellectual (e.g. 5S, Kaizen, 6 Sigma, preventive maintenance, quality circle, data report) has become a sort of prototype not only in so-called elite service sector but in the conventional manufacturing sector as well.

Capitalism is an unstable, destructive, and crisis-prone mode of production. However, it survives. Nigel Thrift writes elegantly that:

We live in a world that exists on the economic edge, close to an abyss but never quite falling into it ... It [capitalism] is a like a battery that continues to accumulate energy without pause ... always with a kind of maniac zest that maintains and expands the system'. (2011: vi)

The head of back-office in a global investment bank, who has been in business almost three decades now, seems to affirm the viewpoint of Thrift through her experiences:

You know we survived the Lehman crisis and we are now in the next crisis which is sovereign-debt-crisis. And that one I think is even more difficult because it is happening around us where the euro-zone is very fragile, and it is going to impact banks severely ... I think the crisis is not over and we are going to go through another crisis, a longer crisis. But you survive the best way you can. (R.S, Head of Back-Office)

In retrospect, capital has indeed experienced *the great social crisis* of industrial capitalism that had found its historical fulfilment in the Fordist mode of development. Nevertheless, capital has not responded to it by scurrying off the stage of world history. It, instead, has achieved (certainly not from working-class perspective) to mutate itself into a new modality in (Fernand) Braudel's (1979) *longue durée*; into a new *historical system of accumulation* that we shall explore in the following chapters under the rubric of cognitive capitalism.

In the contemporary period of capitalist development, capital fixes its eyes on the social, cognitive, creative, manual, entrepreneurial energies of the labour force, that is, of the virtuosos: the collective worker of the general intellect. Capital desires to set in motion, absorb, and control the virtuosic capabilities that the labouring subjects have so long accumulated. That is to say, the virtuosos still, of course, experience the brutal aspects of

capitalism's structural invariants (e.g. the exploitation, the driving role of profit, the wage-relation), and these elements, in fact, are now being experienced more severely. The restructured labour, therefore, should not mislead us to assert that work is much more fulfilling and democratic in our age. By reflecting on the sociology studies on the transformation of labour relations (Beck and Ritter, 1992; Castells, 1996; Sennett, 1998; Beck, 2000; Bauman, 2005; Tonkiss 2006; Sennett, 2006), one can bring forward three common trends: wage-workers are increasingly performing within quite *flexible, nomadic and precarious labour conditions*³ in the period of advanced capitalism.

By *flexibility*, one could understand both flexibility in terms of tasks (i.e. the performance of multiple-tasks in one job) as well as temporal flexibility which concerns the division between work-time and the life-time. In terms of the performance of multiple-tasks it is observed in my research, as touched upon before, that the given corporate titles do not always entirely represent the content of work, which is far-reaching than one would expect. For example, an equity analyst does not only do analysis but he/she also does the coding, transformation of codes into another software, and intervention which might be expected as tasks of a software engineer. A relationship manager does not only act as a social bridge between client and the portfolio manager, that is to say his/her job is much beyond the activity of social networking as he/she, for instance, also plays part in the calculation of investment returns as well as in designing future investments. A senior recruiter, then running 20 different positions (e.g. sales and compliance), notes that 'I cannot publish the job and wait for the candidates' as she thinks that engaging in new ways of reaching the right candidate (e.g. attending social networking events after work) is a must in her job (F.A, Senior Recruiter). What follows is that of long work hours spent in the organisation: 'Our job [private banking] is better than the investment banks side. I would think that their average working hours would be seventy hours per week. For us, it is fifty hours' (LM, Equity Analyst).

In regards to the work-time and life-time distinction, the research findings affirm that 'when working performances imply vital faculties, then the definition of a temporal limit between working-time and life-time becomes impossible' (Morini and Fumagalli, 2010:

³ One of the topics examined in chapter six as well.

240). This, then, means that fifty hours or even seventy hours of work in a week does not depict the entire picture. Indeed, work almost never leaves one!

Interviewer: To what extent do you think the work fills up your life?

Interviewee: As percentage?

Interviewer: Not necessarily.

Interviewee: I would say eighty-percent. I really cannot differentiate between work-time and pleasure time while the market is open. But we have such an advantage; as the market is closed on the weekends, I am off on the weekends as well. But, for example, I was in China on my annual leave and I was always on a knife edge; checking the Blackberry all the time, checking the emails. (A.S, Research Analyst)

One of the research participants answers the same question as follows:

Eighty percent. I am with it days and nights. I wish I could fill up less but when you start at 8 and finish at 6, you still have it in your head afterwards ... I mean it all comes and goes in my head ... I continue in my head ... I don't work on the weekends but that thoughts related to job in my head ... You constantly receive emails ... Even if you are not checking you are thinking in your head if you have received an email or not. (F.A, Senior Recruiter)

Flexibility in work seems to be in synchronisation with the emerging nomadic labour conditions. By *nomadic*, the second common trend, one might understand both the mobility between jobs in a working career and the blurring of the border between working-place and the life-place. An interviewee was asked about the "best-trick" of her job. Her answer provides a surprising insight about the rising mobility between jobs.

Actually, there is such trick in recruiting: employment life. There is a lifetime of a product of four years. You need to change it or do something. Employment life also has this: four years. When you check a profile, if someone is in the same job for three years, that is a good target for a head-hunter. That is very important. In first year you are very excited; you are trying learn something. Then you think

Emrah [this is me] is in his first year, let's not touch him as he will not prefer to come. In your second year, you prove yourself there. You relax. You do not want to go anywhere since you are enjoying after the hard first year. In your third year you start to become "something", and the position becomes not satisfactory for you ... If you are doing the same thing for four years you are already in the nets of head-hunters, and you will be hunted. (F.A, Senior Recruiter)

The 2012-13 research of *Payscale*, which is a social survey to discover the length of job tenure (250.000 profiles) within *U.S. Fortune 500* companies, reports that 'once upon a time, it was common practice for somebody to dedicate most of their career to one company in exchange for a gold watch and a swanky retirement party. Nowadays, the typical worker stays at a company for just 3.68 years overall'⁴. In 2014, *The Bureau of Labor Statistics* in the U.S. reveals that the average tenure across the entire study stands at ~4.5 years.⁵ My research findings affirm the hypothesis of rising mobility that those whose work experience was less than a decade were working in their second or third companies, and the senior ones, whose work experience was more than a decade and so, were working in their fourth and fifth jobs. To conclude the first aspect, the words of the CEO of a global recruitment agency are worth sharing here:

It used to be that when you were looking at someone's resume and they changed jobs more frequently than every five to seven years, they would be labeled as a job hopper, unstable, greedy or selfish, unable to hold a job. Whatever it was, it usually flagged them and pulled them out of the stack. Now, in some regards, I think it has flipped. Now when recruiters look at someone who has stayed in a role for more than three years, the question is why? What have they been doing? (CEO, Jobvite, 2011)⁶

Nomadcity can be conceptualised, secondly, as the blurring of border between working-place and the life-place, and this is twofold. First, what appears as a common pattern in

⁴ <http://www.payscale.com/data-packages/employee-loyalty>

⁵ <http://www.bls.gov/news.release/pdf/tenure.pdf>

⁶ <http://www.itbusinessedge.com/cm/blogs/hall/employee-tenure-2-3-years-and-gone/?cs=47811>

my interviews is the colonisation of home by work, which is not very peculiar. Here, the technological apparatuses, usually provided by the corporate as gifts, have an important role in redefining home (as well as life-places) in the image of work-place.

Interviewer: Do you continue working at home?

Interviewee: Unfortunately, yes! [Her partner] hates this. He would say 'Enough!' ... I do not work on the weekends but we have just a Blackberry addiction.

Interviewer: Blackberry addiction?

Interviewee: You check it constantly: which mails received, who sent what since there is no rule that people cannot send emails after five. (F.A, Senior Recruiter)

Another research participant reports that:

We do not have something like "work is done in work-place" ... [At the expense of reiteration] I wake up at dead of night and modify the models because errors occur, and I intervene in at home [on computer] ... You have to be on-line. (A.S, Research Analyst)

Secondly, what we want to stress more is that becoming of 'non-places' as work-places (Augé, 1995). Augé introduces the notion of non-place 'in opposition to the sociological notion of place, associated by Mauss and a whole ethnological tradition with the idea of a culture localized in time and space' (1995: 34). He puts that '[if one defines "place"] as relational, historical and concerned with identity, then a space which cannot be defined as relational, or historical, or concerned with identity will be a non-place' (1995: 78); such as airports, hotels, train-lines, coffee-shops, motorways, etc. The virtuosos usually find themselves in working in these non-places and, in turn, the aspects of non-places are often brought back into work-place- yet, of course, with consequences. 'The space of non-place creates neither singular identity nor relations; only solitude, and similitude ... thin and abstract' (1995: 103), or and unfulfilled self: 'I mean eighty-percent of the people do the jobs that they don't want to do anyway. Unfortunately, I am one of these people. I do not like what I do a bit. Damn it!' (C.B, Client Advisor).

Precariousness (in relation to labour), discerned as the third trend, refers to 'all forms of insecure, contingent, temporary, intermittent, fractional, casual work', and precarity refers to 'the multiplication of precarious, unstable, insecure forms of living' (Gill and Pratt, 2008: 3). One can argue that it is no longer plausible to think of the phenomenon of precarity as a sort of deviation from the "normal" state of economic affairs. It has now become a structural attribute informing the workers' common condition.

Interviewee: What I always looked for a stable job and a good salary.

Interviewer: Do you experience the stability in your work?

Interviewee: Yes, actually, this is one of the disadvantages. Nothing is certain in finance; you can never know what will happen tomorrow. (A.S, Research Analyst)

Interviewer: Do you think finance people feel any sort of uncertainty about the future?

Interviewee: In terms of the future of people, I mean, finance labour: the uncertainty is huge. (R.S, Head of Back-Office)

The unstable, precarious, insecure forms of living bring severe repercussions. One of the interviewees explains how the current condition is a barrier in terms of the fulfilment of her desire:

Think as a woman ... Like I mean market changes very fast so if you get pregnant you go back home to care for the baby, stay few months home, you don't know how the market would turn out to be ... [In addition] this competitive world, once you step back you probably you are behind forever so I think that is a problem. (L.M, Equity Analyst)

In turn, the common strategy in terms of coping precariousness is revealed, by and large, as rigorous-saving, or better to say working hard, earning well, but not consuming as you wish or spending as minimal as possible: 'when you are making the money it is better to save for the rainy days. Supposedly, you are making better than average, right? So probably you just don't spend' (L.M, Equity Analyst).

Capitalism is indeed an unsteady, corrosive and crisis-prone mode of production –yet, as a matter of fact, it survives. Capital, in the period of cognitive capitalism, directs its attention to the virtuosic performances of wage-workers, attempting to set in motion, control, and exploit the cognitive, entrepreneurial, and manual/corporeal activities as well as the vital human-faculties of labour force. And there is no doubt that the labourers still experience the brutal structural invariants of capitalism. The majority of labourers indeed perform in flexible, nomadic, and precarious working conditions which yield repercussions. The labour has been under the process of restructuration; however, we do not argue that now labour is much more qualitatively rewarding and democratic. In that case, then, does not all come to imply that we tend towards Herbert Marcuse who seems to descend into a sort of deep and dark terrain of pessimism when he concludes his well-known book *Counter-Revolution and Revolt* with the following finale: ‘the final crisis of capitalism may take all but a century’ (1972: 134)?

Refusal to the acrid comfort of deep pessimism! We have always felt anyway hopeful since we have been self-assured by courtesy of Marx that capitalist mode of production is not a sort of everlasting human destiny. Capitalism has survived, and it accumulates energy now, that is to say, it just keeps the system of catastrophe going. However, we firmly believe that capitalism is only an extended period in the lengthy history of humanity, and at the outset we trust, perhaps one might find it a bit naive, the postulate of Marx that ‘capitalism ... works towards its own dissolution as the form dominating production’ (1993: 700).

The following work, on the whole, is an attempt to undertake an exploration of the current state of socio-economic life traversing the period of cognitive capitalism. More specifically, the thesis will engage in a detailed examination of the new composition of capital, that is, of the new controversial relationship between technical composition of labour and the organic composition of capital. We will ultimately bring forward that there constituted, before our eyes, a widening breach in capitalist relationship, or better to say the decomposition of capital is in movement. The argumentation is based on the

the findings that the living labour, the form-giving fire, tendentially emancipates itself from the command of dead labour in the organisation of production within the era of general intellect. More concretely, the collective-workers of the general intellect are ever increasingly autonomous subjects within the social production processes. At the same time, however, we acknowledge that the virtuosos still experience the reality of capitalist exploitation, that is to say they still perform labour activities under the vicious power of capital. On the one side, accordingly, we shall analyse how and why capital has mutated from vampiric form to parasitic form. On the other side, we shall reflect on how and why the parasitic mechanisms of capitalist exploitation, control, and discipline manifest themselves as severe structural fetters on economic health, understood not only in objective terms but also in subjective terms. At this point, where the mediation between capital and labour affirms itself increasingly unsustainable, we will declare our refusal to the deep pessimism.

Even if we can convince the reader that there exists a political breach, associated with the growing decomposition of capital, the reader may inquire into the subject(s) who is capable enough to cross it. In other words, who can organise the project of *exodus* in the direction towards our ultimate ambition which is nothing but the liberation of human?

It is in *The Human Condition* that Hannah Arendt ([1958] 1998) conceptualises politics around plurality and freedom, around reciprocal action and composition of singularities. She, accordingly, frames the political-praxis around communicative, collaborative, and cooperative practices of singularities blossoming precisely within the realm of common. According to Arendt, the realm of economy (or economic production) is instrumentally oriented towards producing a final end-product. Thus, she comments on economic production such that 'the strength of the production process is entirely absorbed in and exhausted by the end product' (Arendt, 1998: 233). On the other side, she continues, 'the strength of the [political] action process is never exhausted in a single deed but, on the contrary, can grow while its consequences multiply; what endures in the realm of human affairs are [only] these processes' (1998: 233). For Arendt, then, the capacities of living labour are independent of the qualities characterising the realm of politics - qualities such as action, cooperation, communication, and, above all, autonomy. The

economic life, concisely noting, is not so much relevant to political life precisely because the capacities of workers have no significant bearing on political-praxis.

Arendt is certainly accurate in her analysis when we consider the technical composition of labour traversing early and -even- mature industrial capitalism, marked by the mass-workers of -so-called- scientific production processes. However, this work will hold that the virtuosos, the paradigmatic labour subjects of economic life in cognitive capitalism, are well equipped with the capabilities, skills, and competencies that are adequate for the organisation of the political project of *exodus* towards liberation. The economic production in cognitive capitalism, first, has bio-political character. That is to say, the capacities of restructured worker and the activities these subjects actively engage in the processes of economic production are immediately political –precisely as Arendt defines the concept. Secondly, it has come to be bio-political in the sense that what is produced, at a higher level of abstraction, is not the production of objects for subjects but the production of forms of life, the subjectivity, that is, the *bios* that is hardly separable from the realm of politics. This work is, then, also an invitation for the reader to think of a threshold, a political opening, which can be crossed before our eyes by the virtuosos.

Mapping out the Thesis

Chapter 2: Framing Cognitive Capitalism: A Literature Review

The literature reveals a number of approaches that offer definitions and explanations for the current mutation of capitalism or/and how we might penetrate into and analyse the dynamics of new socio-economic reality through a new conceptual and methodological apparatus. In the following pages, the thesis attempts to engage in a review of such major approaches, of which some are frequently and, from my perspective, erroneously interpreted as the origins of the thesis of cognitive capitalism, as well as others that feel closer to home, to wit the theory of cognitive capitalism.

In this chapter, the focus, firstly, will be upon: i) Callonistics: ‘New’ New Economic Sociology; ii) The (Meta) Theory of Information Age; iii) The Knowledge-Based Economy

Approach, the perspectives from which the theory of cognitive capitalism demarcates itself theoretically or/and methodologically in a substantial manner. In the sequel, the chapter will turn to iv) The Economy of Conventions, and v) The Managerialist Capitalism, the intellectual orientations that feel closer to home, presenting inspiring ideas with respect to the analysis of contemporary capitalism, nonetheless whose main arguments are in need of re-contextualisation through a post-*operaist* reading.

Chapter 3: Fragment on Method

Fragment on Method is the third chapter in this work, and it consists of two parts. The first part of the chapter attempts to discover, with an introduction to *operaismo*, the theoretical and philosophical foundations of *the use of the political (and unmediatable) antagonism between labour and capital* as a prism for comprehending the dynamics of the mutation of capitalist mode of production. This will be the very *prism* placed onto the centre of this thesis's theoretical and methodological investigation of *The Limits of Cognitive Capitalism*. The second part rethinks "*Einleitung*" in the conditions of post-industrialism through the texts of Antonio Negri, Michael Hardt, and Carlo Vercellone.

Chapter 4: The Methodological and Conceptual Foundations towards a Definition of Cognitive Capitalism: Following in the Footsteps of Operaismo

One could regard the chapter four, which is divided into two parts, as one of the key chapters in the thesis. In the first part, the chapter attempts to look at: i) how *the partisan methodology*, along with the radical conceptual apparatus, developed by the political and theoretical current of Italian critical Marxism (i.e. *operaismo*), construct the very basis on which a post-*operaist* analysis of the dynamics of capitalism is erected; and ii) how such a valuable heritage directs the scholars of *MATISSE (Modélisations Appliquées, Trajectoires Institutionnelles, Stratégies Socio-Économiques)*⁷ towards rectifying and, to some extent, transcending the categories of analysis of Parisian

⁷ The academic laboratory of University of Paris I Panthéon-Sorbonne where *the research programme* of cognitive capitalism was introduced and developed.

regulation school⁸. The second part, predicating on the methodological and conceptual apparatuses discussed in the first part, expands on the capitalist mutation in its three periodical configurations qua three different *historical systems of accumulation*, that is, mercantilist capitalism, industrialist capitalism, and cognitive capitalism. The focus will be on characteristic aspects of the periods as well as the social dynamics informing the transitions. The chapter comes to end with an overview of the stylised-facts traversing cognitive capitalism.

Chapter 5: Locating the Thesis of Cognitive Capitalism in Marxist Theory

The chapter five congregates the key elements for a characterisation of a contemporary turn to cognitive capitalism through a first-hand reading of *Capital* -in particular *Results of the Immediate Process of Production*- and “the midnight notes” of Marx the *Grundrisse* - in particular *Fragment on Machines*-; the texts whose main themes traversing the thesis of cognitive capitalism have been examined and expanded by the theorists of *operaismo* and *post-operaismo*. In its attempt to answer the question of to what extent it is possible to find in Marx the elements for the identification of (i) the current turning point to a new modality of capitalism in *the longue durée*, and (ii) the new form of antagonism traversing the relationship between capital and labour, the chapter adopts an approach that combines theory and history, integrating the heuristic Marxian analytical concepts (e.g. “Formal Subsumption”, “Real Subsumption”, General Intellect) in conjunction with the *operaist* & *post-operaist* ones (e.g. Social Factory, Diffuse Intellectuality) with the historical accounts of social insurgencies. At the end, as conclusion, the chapter partly dissents from Antonio Negri’s and Carlo Vercellone’s readings and invites thinking of the emerging form of antagonism around the dynamics of the *co-existence* of formal subsumption of labour-process and capital’s increasing tendency towards subsuming the *bios* itself.

Intermezzo: Capitalism in Biopolitical Context

⁸ The thesis of cognitive capitalism has been developed under the influence of Parisian (or French) regulation school (see TextBox. 1 in Chapter 4), yet with a remarkable methodological discomfort (Paulré, 2000, 2009).

Intermezzo attempts to locate the transformation of capitalist production, following the industrial period of capitalism, on biopolitical horizon by a reference to Antonio Negri's philosophical and theoretical-political hybrid that integrates *operaist* Marxism with post-structuralist analysis of French political philosophy. It is in *Intermezzo* that I shall try to examine: i) Negri's interpretation of Michel Foucault (i.e. the subjectivation and interpolation of the concepts of biopower and biopolitics with Marxian concepts), and ii) the theoretical development of the argument that informs the thesis in the background: *capitalist biopower is no longer able to hold back biopolitical productivity*.

Chapter 6: A Paradox: The Enclosure of the Common

The sixth chapter, along with the seventh chapter, engages in a theoretical and empirical study of the current state of labour (or economic life) traversing cognitive capitalism. Following in Marx's footsteps, the chapters undertake an investigation of the new composition of capital, that is, the new relationship between technical composition of labour and the organic composition of capital, where the latter is understood as the relation between living labour and dead labour in both objective and, more importantly, subjective terms (the latter is contained in the expression of *capitalist exploitation* and the emerging form of antagonism concerning the class-relation).

Chapter Six, in this direction, manifests a paradox, or better a structural contradiction. This is a contradiction that manifests itself throughout the policies of enclosure (i.e. commodification policies of dead labour) of *the common*. More specifically, we will be looking at how the centrality of *the common*, or the tendential inversion of *separation*, or better the increasing *autonomy* of living labour within cognitive capitalism generates an alarming event for capital, and, in turn, how this alarming event is counter-attacked by the *ex-novo separation* policies of capital. Nevertheless, we will argue that -as the core argument of the chapter- that the brutal policies of enclosure, in the form of capitalist counter-attack, in effect manifest themselves as a fetter on economic health.

Chapter 7: Parasitic Capitalism

(Following the ideas presented in chapter six) Inasmuch as *the common* is the locus of surplus value, that is, profit, capital increasingly directs itself to the expropriation the common forms of social wealth which are the fruits of biopolitical labour-power. This chapter will hypothesise that capital discerns the productive power of labour-force that progressively produces in an autonomous manner in *the common*. Accordingly, capital is transforming its industrial mechanisms or logic of accumulation into rentier logic, extracting surplus-value without *directly* engaging in the organisation of production processes. I shall explore this rentier or parasitic form of capitalism through a post-*operaist* reading of the phenomenon of financialiation.

The second part of the chapter presents the abstract ideas, discussed in the first part, into their empirical forms through a study of an instance/case (i.e. Twitter, Inc.) of a broad economic phenomenon in which biopolitical labour and the new ICT complex have come together, to wit *the digital economy*. The conclusion is that insofar as capitalist power is losing its central role in the organisation of economic relations (i.e. its pivotal role in providing the means of cooperation, communication, coordination, collaboration as well as its role in controlling the social mechanisms of reproduction), or -approaching from the other side- insofar as labour-power is tendentially separating itself from the body of capital as an oppositional-force, capital progressively mobilises its parasitic energies such that it continually attempts to extract social wealth without directly intervening in the production processes of the forms of this social wealth.

Chapter 8: Conclusion: On Political Opening

The final chapter, firstly, re-elaborates and sums up the limits of cognitive capitalism via Marx. Then, it revolves around two questions: 'on what grounds one can argue that the subjective crisis traversing cognitive capitalism is more than ever unmediatable', and 'on what grounds one can regard the virtuosos as the subjects adequate to the organisation of the project of *exodus*'. The discussion is supported by further empirical findings.

Chapter Two

Framing Cognitive Capitalism: A Literature Review

The changes taking place within the capitalist mode of production are too obvious not to have been discerned by the analysts. The literature reveals a number of approaches that offer definitions and explanations for the current mutation of capitalism or/and how we might penetrate into and analyse the dynamics of new socio-economic reality through a new conceptual and methodological apparatus. In the following pages, the thesis attempts to engage in a review of such major approaches, of which some are frequently and, from my perspective, erroneously interpreted as the origins of the thesis of cognitive capitalism, as well as others that feel closer to home, to wit the theory of cognitive capitalism.

In this chapter, the focus firstly will be on: i) Callonistics: 'New' New Economic Sociology; ii) The (Meta) Theory of Information Age; iii) The Knowledge-Based Economy Approach, the perspectives from which the theory of cognitive capitalism demarcates itself theoretically or/and methodologically in a substantial manner. In the sequel, the chapter will turn to iv) The Economy of Conventions, and v) The Managerialist Capitalism, the intellectual orientations that feel closer to home, presenting inspiring ideas with respect to the analysis of contemporary capitalism, nonetheless whose main arguments are in need of re-contextualisation through a *post-operaist* reading.

Callonistics⁹: 'New' New Economic Sociology

⁹ The apt denotation of *Callonistics* has been borrowed from Ben Fine (2003).

The impact of Michel Callon's (1998) programmatic intervention into studying markets has been such profound that Liz McFall (2009) has heralded the emergence of *'New' New Economic Sociology*. By erecting the methodological and conceptual foundation, Callon's *The Laws of the Markets* has given rise to what Donald MacKenzie (2008) calls further 'specialisms' such as *Social Studies of Finance* which might be regarded as an exemplar of injection of ideas from Callonistics to the study of financial markets. In what follows, we shall try to persuade the reader that even though Callon and his followers' intellectual endeavour towards theorising a novel economic sociology has achieved a certain prominence within sociology and attracted a specialised and dedicated following, it does not stand up to critical scrutiny in a broader context.

Callonistic vision of economics rests precisely on a translation from earlier studies on anthropology of Science and Technology which itself is largely grounded in Actor-Network Theory. Indeed, Callon affirms the existence of such an interpolative development in several texts. For example, interviewed by Barry and Slater, he puts that:

The way we are now studying social sciences is only an extension of the work done on the natural sciences. It is simply the continuation of the anthropology of science, but anthropology of science which is concerned with economics in the broadest sense of the term. (Callon in Barry and Slater, 2002: 285)

We can note here that alike methodological interpolation also applies to *Social Studies of Finance* (henceforth SSF). For example, in his manifesto-like book *Material Markets*, MacKenzie declares that SSF 'refers to approaches to markets that are inspired by social science research on science and technology ... Michel Callon, whose work on markets has been a major source for the social studies of finance' (2008: 2 and 19).

To my mind, the essential question that one may ask is as follows: Could ANT, regarded as a thick sense-making framework, also serve as an analytical template for studying the economy? More precisely, does Callon's methodological and conceptual *transfusion* work unproblematically within the field of economy? The following discussion, fundamentally drawing upon Ben Fine's (2002, 2003, 2005) critical analysis of Callonistics as well as

Alberto Toscano's (2012) somewhat latent remarks, puts forward that such a translation exhibits some fundamental problems. The argument is developed in the following two parts: (i) *the major themes* and limitations of ANT in general, and (ii) the weaknesses of its infusion to the realm of economy in particular.

As a post-structural sociology of science, technology and knowledge, Actor-Network Theory¹⁰ has concerned with, along with other subjects, how science is being created, used, understood, transmitted and transformed. One of its most remarkable arguments (themes) revolves around the notions of symmetry and asymmetry (Callon, 1986). The separation between society and nature is countered against the position that society has no analytical or a sort of agential privilege relative to the nature. More precisely, within ANT, nonhuman –the technical or nature- and human beings –society- are treated as of equal causal status, that is *symmetrically*. What is brought forward then, on the one side, is the idea of 'irreducible interaction of natural and the social as a single world in which each acts upon the other' (Fine, 2005: 92). On the other side, it is also noted that the ways in which nonhuman and human agencies interact are varied and complex, growing into the networks of relations which are in fact subject to *asymmetry* and heterogeneity.

Ben Fine writes on the intrinsic contradiction in a concise form:

Once we reject the idea of analysis as simply linear and unfolding from initial starting points, then there is no reason why the asymmetry and heterogeneity of networks should not reflect back upon nature and society and privilege the latter, especially in view of ANT's claims to be reflexive sociology. (Fine, 2005: 92)

When we attend to Bruno Latour's late conviction that 'there is a sense, nonetheless, in which the old dualism was right. We do indeed have to alternate between the state of social relations and the state of nonhuman relations' (Latour, 1994: 806), then I think we will find Fine's critique in point: 'the methodology of Actor-Network Theory',

¹⁰ For the key introductory texts see. Callon and Latour, 1981; Latour, 1987; Law, 1997. In addition, you might want to see a valuable resource published by Lancaster University. <http://www.lancaster.ac.uk/fass/centres/css/ant/ant.htm>

treating human and nonhuman symmetrical and hence downplaying the uniqueness of human sociality and consciousness, is 'profoundly ahistorical and asocial, positing universal notion around actors and networks without regard to specificities that allow and justify the positing of particular forms of dualities' (Fine, 2005: 93).

One of the further speculative arguments of ANT, in association with the first argument, concerns the proliferation of hybrid forms, to wit the nonhuman & human integrated entities, within the modern world. For Latour, the hybrids have multiplied to such an extent that it is hardly conceivable to preserve *a priori* society-nature distinction. He states that 'it would appear that the scope of mobilization of collectives has ended up multiplying hybrids to such an extent that the constitutional framework which both denies and permits their existence can no longer keep them in place' (Latour, 1993: 49). The hybrid metaphor within ANT is discerned as 'diasporic' (Law, 1999: 10). That is, the expression has spread enormously; it has grown into a general critique of all dualisms and essentialist distinctions, in particular of the famous distinction between micro and macro. Inasmuch as the actors and their networks are simultaneously defined together, the micro/macro distinction comes to be thrown on the bonfire in its totality: no micro and no macro, only micro-macro, and no actor and no networks, only actor-networks. In this respect, Lee and Brown (1994) regard ANT as an all-encompassing model; the one that incorporates every human and non-human agency in principle, and eventually brings out potentially infinite number of interconnections to be reflected upon.

Whilst Latour (1994) acknowledges that everything is not necessarily networked else, hence recognises that some analytical choices must be made in regards to the aspects that the research would include or exclude, Fine (2002, 2005) pulls apart that *which* (aspects) and *why* (these aspects) questions remain mystery precisely because ANT *is light on theory*. This is actually not a deep secret at all. We learn from Latour that ANT is not a theory as such but 'a very crude method to learn from the actors without imposing on them *a priori* definition of their world-building capacities' (1999: 20). Providing a minute description of a particular relation within a network, and developing an explanation when the description becomes saturated are presented as an academic research virtue. At this juncture, nevertheless, the problem takes a new form, that is: how might one ensure that saturation is emerged without referring to a potent theory?

Fine (2002, 2005) argues concordantly that the analytical decisions stem from arbitrary choices, for there is no socially and historically rooted theory underlying ANT.

Finally and briefly, whereas ANT permits a form of scholarship-policing by pointing at how various intellectual attempts usually fall into trap of different modalities of dualism, its rejection of micro/macro distinction is subject to critique *per se*. As Allen (2004) discusses, macro is largely (if not entirely) eliminated from the analyses and, in turn, micro is evidently prioritised, culminating in empirically thick and rich descriptions. In other words, the micro/macro distinction was argued to be transcended, yet it appears that it was transcended at the expense of disregarding the macro altogether. In my view, this grows into a sort of peculiar experience for the readers of ANT-based publications: a confinement into rather rich and thick, nonetheless trivial and dull descriptions of social phenomena, an on-going struggle so as to create a fruitful dialogue between empirical findings and (the missing) theoretical ground.

We now turn to the examination of how ANT is extended to the sphere of economy, and the limitations such a translation unfolds. As a starting point, Noel Castree's (2002) general observation is worth emphasising: ANT has been dismissive of political economy in general and Marxist economics in particular. Indeed, ANT, in its analysis of economy, largely refrains itself from referring to the analytical categories of political economy (e.g. capital, labour, surplus-value, exploitation, accumulation, expropriation) which are in fact the products of high-level abstraction. Where researchers draw upon such categories out of necessity, the outcome is seldom articulated. This pattern sometimes takes the form of suggesting a "big" and peculiar concept without providing a supporting theory as in the case of *capitalisation* (see. Law and Hetherington, 2000) that does not understand the theory of capital, and it sometimes reaches an extreme level where one witnesses an assertion that '*capitalism is an invention of anti-capitalists*' (Callon in Barry and Slater, 2002: 297, emphasis added).

The opening and closing essays of *The Laws of the Markets*, written by Callon himself, by and large revolve around the famous performativity thesis: 'economics, in the broad sense of the term, performs, shapes and formats the economy, rather than observing how it functions' (1998: 2). More precisely, it is advocated that economic theory is not a

photographic reproduction of the world or an infeasible camera faithfully reproducing all empirical facts; instead, it is an engine that can change market in consequential ways (MacKenzie, 2006). Therefore, it is considered meaningless to 'distinguish between an existing reality [economy as thing] and the analytical discourse explaining it [economics as theory]' (Callon, 1998: 29). Within this context, Callon ultimately reveals his ambition that 'it would be fascinating to construct a social history of economics which would show how abstract notions ... have been formulated in constant relation to practical questions which, in turn, they help to reformulate' (1998: 2).

The thesis of performativity of economics has been developed by considering the notion of calculation as a starting point. According to Callon and Muniesa, the market is a complex process that opposes buyers and sellers who have divergent interests; yet at the end it 'allows compromises to be reached not only on the nature of the goods to produce and distribute but also on the value to be given to them' (2005: 1229). The authors acknowledge the outcome as remarkable, considering pre-transaction ambiguity, uncertainty, conflict of interest, and so forth. They associate the effectiveness of markets with the 'fact' that 'markets make complicated calculations possible' (Callon and Muniesa 2005: 1229). From there the authors begin to explore how such economic calculations are performed and completed.

Callon contends that 'if calculations are to be performed and completed, the agents and goods involved in these calculations must be disentangled and framed in a single space' (Callon, 1998: 16). In order to present the thought of Callon in a lucid manner, allow me to quote the following:

Framing is an operation used to define agents who are clearly distinct and dissociated from one another. It also allows for the definition of objects, goods, and merchandise which are perfectly identifiable and can be separated [disentangled] not only from other goods, but also from the actors involved, for example, in their conception, production, circulation and use. It is owing to this framing that the market can exist and that distinct agents and distinct goods can be brought into play. (Callon, 1998: 17)

Whilst the process of framing-disentanglement is presented as a prerequisite for the market exchanges, Callon, on the other side, introduces the concept of overflowing [i.e. incalculable or uncalculated aspects of market transaction], stressing the impossibility of total framing. Accordingly, this framing/overflowing duo is of the utmost importance, informing the *new* role of economic sociology:

It is at precisely this point that sociology can make its contribution. By focusing on the omnipresence of overflows, on their usefulness, but also on the cost of actions intended (partially) to contain them, constructivist sociology highlights the importance of the operations required to identify and measure these overflows. It also encourages us to question the mechanisms used to create frames by suggesting ways in which the social sciences might help develop or to confine such spaces of calculability. (Callon, 1998: 256)

The framing/overflowing scheme comes to be the basis upon which the core proposition of *The Laws of the Markets* is erected: *the performativity of economics*. Callon conceives economics as a set of technical practices, more precisely as a bundle of mediating tools between framing and overflowing inasmuch as they are 'constantly reconfigured to take into account in more and more detail a set of entities and relationships which were hitherto excluded from the framework of calculation' (Callon, 1998: 24). Thus, economic theory enables framing process to be more refined and richer. In so doing, it authorises a far more calculated decisions. The relationship between economics (as technical and calculative practices) and calculative agencies does not end up here though. The former does actively shape the very practices of calculative agencies [i.e. the practitioners] 'through the reactions they provoke, new strategies emerge which lead to the changing of goals' (Callon, 1998: 24). For providing an empirical case, Callon makes a mention of Marie-France Garcia's (1986) strawberry market research in which it is argued that the model of perfect competition as written in the textbooks serves as a frame of reference to institute each element of the market which is about to be constructed. Economic theory does not only report how the strawberry market functions but it also configures, formats, *performs* the strawberry market as well as the practices of its actors.

Callon extends the idea of performativity of economics in a footnote to the unpublished paper for the workshop from which the special issue of *Economy and Society* 31(1) has emerged:

[T]hat 'economic activities are embedded in economics'. This expression should not be misunderstood ... economics as a discipline is not alone in accomplishing this performing and framing. It is helped by other disciplines in the social sciences but also, and above all, by the actors themselves and especially by professionals of the market (marketing specialists, accountants, managers, etc.). (Callon in Fine, 2005: 98)

In this regard, it might be argued from Callon's perspective that not only does economics make the market but so does sociology, anthropology, organisation studies, and so on.

There are a number of limitations entangled to the Callon's performativity thesis. First, the extension of the thesis from economics to the whole of social science 'seems to be little more than acknowledging that the market must have an accompanying discourse that is drawn from many sources' (Fine, 2005: 98). In addition, one might ask whether sociology, for instance, works in the same way as economics in performing the economy. Yet even so, Callon sets aside the needed explanation of 'how the practices of markets themselves interact with ... the calculative discourses to which they are attached' (Fine, 2005: 99).

Second, the articulation of performativity of economics to the idea of quantification-framing happens to fall short inasmuch as 'while the market always incorporates a quantitative element in view of the monetized exchanges that take place, it also embodies a set of qualitative relations –not least those between capital and labour and labour and nature- in a capitalist economy' (Fine, 2005: 98).

Third, Fine (2002) observes that Callon has a habit of borrowing a well-established concept from orthodox economics, reinterpreting it, yet usually ending up with a sort of theoretical misinterpretation. Considering the notion of externalities informing the framing/overflowing framework in Callon as an example, Fine (2002) demonstrates

how Callon's interpretation of externality is theoretically misinterpreted with a number of solid references to Alfred Marshall. In this regard, Fine assesses Callon's approach as follows: 'invent a mythical beast, the unicorn, and then understand the horse by way of divergence from it' (2002: 7).

Four, whereas Slater neatly observes a logical fallacy as regards to the performativity thesis that 'we [including himself] also have to recognize that markets successfully emerged long before neo-classical economists were invented' (2002: 244), Slater's self-criticism, to my mind, is subject to critique, for the relationship between material and ideological cannot be proposed merely through providing thick descriptions based on observation. The practice of advancing descriptions towards a rich framework through which explanation and understanding might grow stands in need of a substantial theory.

Five, one of the most noticeable aspects of continuity in the translation is related to the idea of multiplication of hybrid forms. According to Callon, an economic actor is not only made up of human beings but also of 'prostheses, tools, equipment, technical devices, algorithms' (2005: 5). Writing down precisely via ANT terminology, an economic actor is made up of an *agencement*. The compound agencements are defined as hybrid collectives, the material and discursive assemblages from which economic action and meaning flow. Accordingly, a non-human entity gains an agency within economic life such that 'devices do things. They articulate actions: they act or they make others act' (Muniesa, Millo and Callon, 2007: 2). The following latent and critical note on the aspect of devices-as-actors seems to me more than compelling:

Attention to the ubiquity of technical devices that make market transactions possible ... forget[s] that non-human agency takes specific forms in a world of commodity-fetishism where social relations between individuals really appear as social relations between things. (Toscano, 2012: 331)

The critical review of *'New' New Economic Sociology* might be concluded with a passage authored by Alberto Toscano. Toscano's extended critical commentary was not cropped nor paraphrased so as to preserve and emphasize the power of his critique of Callonism from the perspective of sociology as well as Marxism:

Turns to difference, complexity, culture and materiality can be made intelligible in part through their negative reference to ... Marxism. But a broad move from explanation to description, from totality to multiplicity, and from macro- to micro-sociological perspectives has also entailed the abandonment or attenuation of many preoccupations of classical sociology [class and even capitalism as a mode of production] ... [T]he sociological exploration of the socio-technical devices that make the fiction of homo oeconomicus possible has generally refrained from combining its empirical inquiries with a broader critical explanation of the dynamics of capitalism as a whole. Recent sociological inquiries provide rich descriptions of the underpinnings of economic behaviour. However, they have a hard time accounting for the broader systemic compulsions which set the (contradictory) parameters for the strategies and operations of individuals, firms and states. This is largely because of their neglect ... of the potent contributions of Marx's theory to account for the real (that is, non-mental, determinate) abstractions that dominate society uniquely driven by an accumulation indifferent to its content ... The Marxist critique of political economy should not be presented as a reified, nostalgic description of nineteenth-century industrial capitalism. It is, instead, a method for understanding a society ... subsumed by the general equivalence of money ... founded on exploitation and reproduced through historically mutable institutional and ideological arrangements. (2012: 331)

The (Meta) Theory of Information Age

The end of millennium has coincided with a widespread conviction that the world would witness a sort of spectacular -qualitative- shift in human affairs in the third millennium. One of the most exhaustive works offered to account for the forthcoming transformation has been Manuel Castells's approximately 1500-page magnum opus: *The Information Age*, published back-to-back between 1996 and 1998 in three volumes. Castells, starting out with an axiom that that the world is already 'fundamentally altered' (1996: 1), aspires to provide a meta-theory, powered by historical materialism and an impressive collection of various sources (e.g. from science and technology studies to social

movement theory). Castells promises to delve into the new millennium's dynamics of economy, society and culture which are recognised as the social spheres increasingly dominated and shaped by the new information and communication technologies. What follows is an attempt to provide the major themes of Castells's trilogy and discuss why it experiences a hard time when read through Marxist lenses.

The Information Age, in general terms, 'seeks to describe an epochal shift in relations of production [i.e. human action upon matter], experience [i.e. human action upon the self] and power [i.e. exercise of the will of some over other] as they are mediated by all-pervasive information technologies' (Castree, 2000: 244). *The Rise of the Network Society* (volume I) explores production and brings forward the following core argument: in the early 1970s, there occurred a perfect convergence of two developments, namely (i) the information revolution with the rise of new information and communication technologies, and (ii) the reorganisation of post-war capitalism. The synthesis of these two major developments, according to Castells, has come to generate a new form of production: the network society, which is characterised by 'the application of knowledge and information to knowledge generation and information processing/communication, in a cumulative, feedback-loop between innovation and uses of information' (Castells, 1996: 32). The network society, designating a new form of production, accompanies a mode of production which is capitalist (i.e. exploitation, expanded production, competition), and a mode of development which is informational. For Castells, what differentiates the pre-1970s from the post-1970s in a fundamental manner is that while the former period was dominated by typical Manchester-style factories and based on the production of hard-goods, the latter has progressively come to be more and more informational, characterised by information and knowledge production, exchange of soft-goods, and above all by the accumulation of knowledge. Accordingly, the readers are invited to think of the phenomenon of contemporary social production through the following conceptual framework: the networked production within informational capitalism.

The major themes traversing *The Power of Identity* (volume II) concerns the experience of subjectivities, that is, how identities deal with the new reality, or better 'how new information flows are being harnessed and resisted today' (Castree, 2000: 246) and, consequently, with the power relations, that is, the exercise of the will of some over

other. Already introduced in the first volume three categories grouping all the citizens of the world, to wit i) the networkers (decision-makers), ii) the networked (decision-receivers), iii) the switched-off (nil or petty-power), Castells, within volume II, places the accent on the networked and switched-off. He associates the networkers and a small portion of the networked with a type of identity-building, namely legitimising identity, attempting to exercise its desire of maintaining the informational capitalism over other identities. Resistant identities (right-wing) and project identities (left-wing), associated with the majority of the networked and the switched-off, are against the informational capitalism. Therefore, they often become participants of social movements against the power of networkers. In the third volume of trilogy, *End of Millennium*, Castells discusses the novel aspects of information age in more detail. Furthermore, he explicitly engages in a sort of speculation, for instance, on how the major developments (e.g. the phenomenon of informationalism) witnessed in the late periods of twentieth-century may radically shape and structure the early periods of the third millennium.

Noel Castree (2000) provides us a useful outline whereby we can reflect upon the major drawbacks of *The Information Age*. Castree makes a remark that, for instance, 'Castells's informational capitalism is more informational than it is capitalist' (2000: 248). Let me open up this line a little. Considering that it is promised in the first pages of volume I, the reader expects an elaborated integration of the phenomenon of informationalism into Marxist understanding of capitalist mode of production, in particular into the dynamics of capitalist accumulation and class struggle. However, Castells seems to be mesmerised by the new information and communication technologies to such an extent that the motor of capitalist development seems to be regarded as 'the information technologies, reshaping, at accelerated pace, the material basis of society' (1996: 1). The latter echoes a sort of techno-fetishist reading which places the accent on technical formation over social systems. As another case, whereas Castells emphasises the pivotal role of knowledge and knowledge production in the present-day social production in a decent way, the reader cannot find the details of how the latter -as well as new information and communication technologies- are actually in an organic interaction with the dynamics of capitalist mode of production as a whole.

In relation to the first remark, secondly, it is implied everywhere in the trilogy that the elements of Castells's understanding of capitalism precisely corresponds to the Marxist fundamentals. However, it gradually becomes more apparent that Castells does not find it necessary nor useful to build up his meta-theory by providing some solid references to the analytical categories of Marxist thought such as capital, exploitation, surplus value, capitalist accumulation, class struggle, and so forth. Castree provides an elegant comment that *The Information Age* is 'more post-Marxist than post-Marxist' (2000: 243). In addition, whereas the author well attempts to engage in meso-level analysis so as to reach and reflect on the determinate phases of capitalist development, he does not offer a concrete outline that explains, for instance, how and why a mode of production and a mode of development become directly articulated. That said, Manuel Castells might have declared his exodus from Marxism. This is not significant though. What is important, in my view, is that the meta-theory of *The Information Age* does not refer to the fundamental categories of other major socio-economic theories either. Therefore, *the networked production within informational capitalism* grows into a sort of disembedded notion. At this point, Castree's remark is harsh but well made: 'Castells's theory of socio-economic change is an eclecticism which is not only non-Marxist but also lacking any real coherence and explanatory power' (2000: 250).

Thirdly, and most importantly, the trilogy 'over-states the decline of class politics and under-plays the power of agency to alter our supposed new world order' (Castree, 2000: 251). Castells is convinced that the categories of working-class and capitalist-class as well as the class struggle have lost their former significance. Instead, we are offered, as put above, a new hierarchy traversing the post-class world: i) the networkers, the directors of informational capitalism at the top of the hierarchy such as algorithm coders, finance experts, data analysts, programmers, and so forth (not necessarily the owners of means of production); ii) the networked, the generic workers who are controlled by the privileged networkers; iii) the switched-off, the outsiders who play a little role or non-role in shaping the trajectory of informational capitalism. For Castells, 'the locus of political struggle comes to revolve around all manner of new social movements reacting to one or other problem caused by informationalism' (Castree, 2000: 252). According to Castells then, the class struggle at present times primarily concerns the relationship between the "elite" networkers who want to maintain the so-

called “system” and the “ordinary people” who either resist or, at best, want to transform it.

From my perspective, this type of political reading is flawed for two reasons. As being one of the active participants, Castells would discern that the laboratory of *Occupy Movement* evidently demonstrated that a considerable number of his privileged and elite networkers (i.e. the most powerful people at the top of hierarchy) were actively struggling against capital with the members of the other groups of hierarchy, namely the networked and the switch-off. Secondly, the discussion whether a data analyst working in a hedge-fund, a software developer at a high-tech etc. is a bourgeois is put aside for now, it is harder to defend in Castells that the networked and switched-off labourers ultimately constitute a group of people that is largely determined under the hegemonic power of informational capitalism as powerless subjects -or even as victims- who at best can react against it but are hardly capable to transform it. We shall reflect on this aspect in the following chapters as well.

The Knowledge-Based Economy Approach

The statement that we live in the era of knowledge-based economy is based on the idea that advanced economies are increasingly driven by information and knowledge. To put it more precisely, there argued an ever-increasing correlation between economic growth and productivity and the production, distribution, use of information and knowledge, which is mediated by the digital revolution contained in the new information and communication technologies. The diffusion process of the managerial and popular discourse that knowledge and creativity are playing a greater role in a competitive environment into as a research programme has been undertaken, on the mainstream side, by the figures of neo-liberal economics (e.g. Foray and Lundvall, 1996; David and Foray, 2002; Foray, 2006). Expanding simultaneously (Foray as the principal analyst at OECD, Lundvall as the deputy director at OECD) from the realm of scholarship to that of international policy-making, the knowledge-based economy has become a sort of neo-liberal policy-rhetoric powered by the global organisations such as Organisation for Economic Co-Operation and Development (OECD), World Bank, The United Nations Educational, Scientific and Cultural Organization (UNESCO) (OECD, 1996; World Bank,

1994, 2002; UNESCO, 2005), imposing its power onto the member-states' governments usually in the form of right-wing policies.

Already by 1994, the World Bank began to put emphasis on some emerging trends such as the ever-increasing role of knowledge as a major driver of economic development. An initial definition of the concept was provided by OECD in a 1996 report edited by Foray such that knowledge-based economies are the economies that are 'directly based on the production, distribution and use of knowledge and information. This is reflected in the trend in OECD economies [including 34 member countries] towards growth in high-technology investments, high-technology industries, more highly-skilled labour and associated productivity gains' (OECD, 1996: 7). In 2002, the World Bank revealed through a quantitative analysis that 'knowledge has become the most important factor in economic development ... Today; economic growth is as much a process of knowledge accumulation as of capital accumulation' (World Bank, 2002: 7). A formal definition of the concept of knowledge-based economy was published in OECD's Glossary as follows: 'the knowledge based economy is an expression coined to describe trends in advanced economies towards greater dependence on knowledge, information and high skill levels, and the increasing need for ready access to all of these by the business and public sectors' (OECD, 2005). The context in which the concept of knowledge-based economy has come to existence was explained by the same organisation as follows: 'knowledge and technology have become increasingly complex, raising the importance of links between firms and other organisations as a way to acquire specialised knowledge. A parallel economic development has been the growth of innovation in services in advanced economies' (OECD, 2005).

More specifically, it is argued by the mainstream orthodox economics -despite changes in detail- that the knowledge-based economy has come into existence as an outcome of a sort of happy-encounter between two major developments. That is to say, it is put forward that two historical tendencies have perfectly intersected and culminated in a new phenomenon in economic life. First, we have witnessed a long-term historical tendency, beginning in the 1970, concerning the increase in so-called intangible capital, or rather as OECD opts to call knowledge-based capital (e.g. education, training, R&D, patents, licensing, design), progressively exceeding the share of physical capital within

overall capital-stock and ultimately affirming itself as the key factor in productivity and economic growth. This development has happened to merge with or bump into a second development, a second tendency which was identified as a major shift in the conditions of the production, transmission, reproduction, accumulation of information and knowledge as a direct consequence of the digital revolution reflected in the enormous diffusion of new information and communication technologies (Foray, 2006). Considering that 'knowledge has long been an important factor in economic growth' (OECD, 1996: 7), and recognising that Fritz Machlup (1962) had already discerned the growing role of knowledge as an endogenous variable and the importance of knowledge production in economies in the early 1960s, the mainstream approach of knowledge-based economy thus places the accent on the magnitude of the phenomenon (i.e. a sort of Hegelian shift from quantity to quality) in a such a manner that it is *only now* that knowledge has come to be *the major factor*, before everything else, in productivity and economic growth.

George Caffentzis, a pivotal figure within *operaist* perspective, states that the thesis of cognitive capitalism 'does not question the notion of a knowledge-based economy' (2011: 37). In my view, Caffentzis's comment is accurate *but* -and this but is crucial- it is accurate only to a certain extent. It is indeed accurate in the sense that the theorists of cognitive capitalism do not deny 'the principal source of value now lies in the knowledge ... not in material resources' (Vercellone, 2013: 433). 'The contemporary historical conjuncture is marked by the diffusion and the *ever-more central role of knowledge* in the organisation of production' (2007: 13, emphasis added). Indeed, cognitive capitalism is defined as 'a mode of accumulation in which the object of accumulation consists mainly of knowledge, which becomes the basic source of value' (Moulier-Boutang, 2011: 57). However, Caffentzis's review seems questionable inasmuch as Carlo Vercellone, a key figure within the research stream of cognitive capitalism, emphasises everywhere that 'the thesis of cognitive capitalism develops from a critique of the political economy of the new theories of the knowledge-based economy' (2007: 14); the thesis develops from a radical critique of 'the apologetic vision of the actual mutation entailed by the neo-liberal theories of knowledge-based economy' (2005: 2); from '... a theoretical misunderstanding that assimilates [the thesis of cognitive capitalism] ... to the theories of knowledge-based economy' (Lucarelli and Vercellone, 2013: 16). By extension, allow

me to provide a general outline informing how the thesis of cognitive capitalism approached and differentiates itself from the mainstream knowledge-based economy approach.

In the critical pieces of Lebert and Vercellone (2004), Moulier-Boutang (2011), and Lucarelli and Vercellone (2013), two major drawbacks concerning the knowledge-based economy approach are brought to the fore, and it is ultimately stated that ‘the meaning and stakes of the current transformation of capitalism are not to be found, in fact, in the simple constitution of an economy founded on knowledge, but *in the formation of a knowledge-based economy framed and subsumed by the [Marxian] laws of capital accumulation*’ (Lucarelli and Vercellone, 2013: 19-20, emphasis added).

Firstly, in orthodox accounts of knowledge-based economy ‘the social determinants that are at the origin of the social crisis of the Fordist model and on the historical bifurcation towards an economy founded on distribution and the primary role of knowledge remain largely hidden’ (Lucarelli and Vercellone, 2013: 16). There we are presented a sort of conceptualisation of some kind linear evolution of economic development –even though open to critique *per se*. There we are supplied with big data sets providing quantitative evidences to the hypotheses with respect to the economies which have come to be based on knowledge. Nevertheless, we are not endowed with a solid theoretical framework which would inform the dynamics that surround the mutation of industrial economies into knowledge-based economies and the new social relations traversing the new period of capitalism. This absence stirs up some trouble.

For example, whilst the mainstream knowledge-based approach underlines the linkage between economic growth and knowledge, it hegemonically assimilates the production of knowledge into the privileged entities, for instance, into the scientific research and knowledge industries or R&D departments, and accordingly to its “elite” workers. In tune with that, the idea of *a driving sector* comes to forefront such that ‘it is as if, after having vainly searched for the sector that might succeed the motor car as the driving force of growth, one hits upon the knowledge production as the next sector to incarnate the essence of Fordism’ (Moulier-Boutang, 2011: 39). Nevertheless, as we shall see later in far more detail through the notion of *mass intellectuality - diffuse intellectuality*, at

present times the production, reproduction and diffusion of knowledge, and further the paradigm of innovation can hardly be limited to a particular entity or strata of so-called intellectual-elite workers. Since the approach refrains itself from inquiring systemically into the historical and material dynamics that have driven the rise of knowledge-based economy, it experiences hard time in recognising that ‘the most important phenomenon to have taken place since the crisis of Fordism, namely the return in force of the cognitive dimensions of labour, which are apparent at almost every level of production, material and immaterial alike’ (Lucarelli and Vercellone, 2013: 18). Therefore, the rise of the *mass intellectuality - diffuse intellectuality* actually renders the idea of a *driving sector* obsolete -as it will become more lucid as we progress in this work.

Furthermore, the orthodox approach is entirely silent with respect to the new forms of contradiction and antagonism that are experienced in class relation in the new phase of economic development. Largely, knowledge is treated as a pure economic, disembodied object abstracted from the social actors who in fact happen to position themselves around it. ‘The transformation of social relations and the relations of knowledge / power ...’ (Lucarelli and Vercellone, 2013: 17) is by-passed. This is, of course, not peculiar -and indeed expectable- when one recollects that in orthodox accounts capital is primarily formulated as a reified category, as a thing, not as a -conflictual- social relationship between capitalist class and the proletariat. Thus, the mainstream approach is unable to identify the way in which the affirmation of the new preponderance of knowledge-based capital, incorporated and mobilised essentially by human beings, actually indicates a deep-seated transformation in regards to the relationship between living labour and dead labour.

A second reproach that one might level at the aforementioned orthodox reading is its salient tendency towards technological determinism. The approach ‘replaces the water mill and steam engine with computer and/or internet, informatics and telecommunications’ (Moulier-Boutang, 2011: 41), and holds them up as ‘a primary role in the shift to the “*mass production*” of knowledge and immaterial goods, adopting a mechanistic theory’ (Lucarelli and Vercellone, 2013: 18). On the subject of knowledge production, whereas the accent is placed on a powerful knowledge producing sector that would dynamically drive the economy, Foray and Lundvall (1996) do not miss out the

integration problem of the non-deliberate forms of knowledge production. But in that case, the non-deliberate forms of knowledge production on the horizontal level appear to be *directly* linked to the primary-role-given new information and communication technologies which are grasped as ‘the major vector for the effectuation of mechanisms of horizontal coordination and networked organisation at the origin of historically unprecedented modes of collective invention’ (Lucarelli and Vercellone, 2013: 18). The knowledge-based economy approach, therefore, experiences some difficulties as a result of its open tendency towards technological determinism. First, we shall examine in the following chapters -and this is paramount- that ‘it is not so much in ICTs as in the development of a diffuse intellectuality that one should seek the primordial factor of the transition towards a capitalism founded on knowledge’ (2013: 19). Second, it must be recognised that it is always the living knowledge of human beings that mobilises ICTs, enables them to operate. Information processing devices are dead machines without the living knowledge of human subjects. In parallel, third, ICTs play no role by themselves; their role and effectiveness in social production are articulated to the social context and social conditions surrounding them. Fourth, we argue against the positivist conception of science, knowledge and technological progress, that is, the neutral development of material productive forces, adopted by the mainstream knowledge-based economy approach.¹¹

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The Economy of Conventions

The economy of conventions, since the introductory work of André Orléan (1994), has been a strong critique of the fundamentalist/objectivist paradigm surrounding the mainstream/orthodox economics. In this ‘fundamentalist’ orientation, the economy is considered as ‘an efficient and opportunist adaptation to objective constraints of scarcity, as determined *ex ante* by the fundamental variables, i.e. individual preferences, techniques of production and available production’ (Orléan, 2006: 181-182). The mainstream economic models are constructed with the hypothesis of pure objectivity, that is, the economic world as an objective world, free of ambiguity, which can be known

¹¹ The latter will be examined in the methodology chapter via Raniero Panzieri’s (1980) epoch-making contribution

in a similar fashion that the natural world is known by the natural sciences. Accordingly, the subjectivity, in this approach, has nil or petite importance considering that the objectivity of facts cannot fail to impose itself on rational and informed individuals. The individual cognition is reduced to simple rational calculation, leaving virtually no space for beliefs, opinions or representations. Concisely, *homo oeconomicus* is regarded as largely subtracted from all particular conventions that structure the social life.

Orléan's intellectual orientation has been directed towards demonstrating the massive inadequacy of objectivist or, as he calls, the fundamentalist epistemology of orthodox economic theory in general, and of instrumental rationality in modelling the conduct of economic actors in particular. More precisely, his project has been directed towards integrating the subjective properties of economic reality into the economics discipline's analytical framework. That is expressed by Orléan in a lucid way: 'the thesis underlying our case is that economic reality cannot be understood in terms of fundamentals alone, for it also depends on beliefs and opinions [e.g. social conventions]. Economics must take into account what we call a cognitive turning point' (Orléan, 2006: 182). The argument that there exists *a cognitive rationality*, quite distinct from the idea of instrumental rationality, prepares the basis of the cognitive turning in the studies of economics.

Reserving our forthcoming post-*operaist* analysis of the phenomenon of financialisation, Orléan's direct challenge against orthodox finance theory, and particularly his critical analysis with respect to the value determination mechanisms within markets are worth emphasising. As a starting point, he argues that, in the realm of finance, 'the hypotheses made about the way individual investors anticipate future yields from securities are highly conditioned by the hypotheses made about the very nature of the future' (Orléan, 2012: 315). Inasmuch as the conventional finance theory conceives the future as existing objectively in a probabilistic form, and since it assumes an informational efficiency, it characteristically follows that a probabilistic accurate estimation in regards to value of the securities can be calculated, hence known *ex ante*. However, Orléan theoretically demonstrates that the hypothesis of the objectivity of the future, the stationary future, does not hold up. In other words, he explains that it is not possible to calculate such a true or an accurate estimate of the future value of securities. He puts forward on the

contrary that 'only subjective estimates can be made of this value, and these estimates are inherently diverse and heterogeneous' (2012: 316). He uses the term *opinion* to qualify these subjective beliefs, constituting the basis of the main argument of his work. In this framework, Orléan inquires into the line of reasoning suited to the non-stationery nature of the financial markets. Challenging the assumption of the calculated objective knowledge of the future which is shared by all the economic actors, he brings forward the concept of *financial convention*, to wit 'the collective representation produced by financial interactions' (Orléan, 2012: 325). Financial convention is understood then as the manifestation of collective opinion within the realm of finance, comprising 'a certain interpretation of the future development of the economy, combined with a set of specific conventions about valuation' (2012: 326), serving as a sort of reference point for all the investors.

Orléan's reflections on the nature of financial convention led him to relate the concept to the concept of *paradigm* developed by Thomas Kuhn (1962). Interpreting the paradigm of Kuhn as 'the conventional organisation of knowledge', he approaches to the 'financial markets as cognitive structures, collective cognitive systems that produce diverse conjectures, certain of which are then selected' (Orléan, 2012: 328). As scientific communities stick to a worldview as long as it is not *totally* discredited by the persistent accumulation of anomalies, the financial community too sticks to a particular convention as long as it is satisfactory, to wit profitable, for the investors. However, when the observed facts contradict with the prevailing conventional representation of the world, the market begins to search for another convention. This ultimately brings the question of reaching 'one unique conventional valuation of reference out of a heterogeneous group of individual opinions' (2012: 329).

For Orléan, the characteristic aspect of such a competition of opinions is the logic of self-referentiality. He writes that 'in a financial market, each agent tries to predict as accurately possible what the majority opinion to be' (2012: 317). The thesis is that 'it is this self-referential process that produces the market opinion [convention]: because each agent must determine his/her position in relation to the market opinion, he/she must conjecture about what this opinion is; by doing so, they give it life' (Orléan, 2006: 14). The reasoning of Orléan bears a striking resemblance to the Keynes's enlightening

illustration of 'beauty contest'. Keynes puts that 'professional investment may be likened to those newspaper competitions in which the competitors have to pick out the prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice nearly corresponds to the average preferences of the competitors as a whole' (2006: 140). Therefore, 'each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view' (2006: 140). We are very close to the famous concept of speculation, a trademark of finance: acting, or better "playing" on market by trying to anticipate the group opinion which, through interaction channels, progressively imposes itself on the greatest number of players.

In my view, André Orléan's insights on objectivist paradigm of orthodox economics in general, and the models of mainstream finance theory in particular are thought provoking in the full sense of the word. In general, I agree with Moulier-Boutang (2011: 44) in that through a close reading the economy of conventions we feel closer to home: the theory of cognitive capitalism.

One of the conclusions of Orléan's argument comes to the forefront that each individual agent on financial market acts by cognitive rationality, that is, engaging in market practices by reflecting on what the market thinks. A financial convention, imposing itself on various agents, is tightly articulated to the effectual assessment of a stock exchange asset, and hence to the value of a company. In cognitive capitalism, information and knowledge goods, the most characteristic commodities of the phase, 'are difficult to market; intangibles are difficult to codify; and finally, *the only way to apply price to them involves procedures of forming opinion among publics*' (Moulier-Boutang, 2011: 144, emphasis added). This culminates in an argument that price formation within cognitive capitalism borrows the mechanism typical of financial speculation: constituting a price convention among the public, similar to financial convention, and then imposing this price convention on social agents through various channels. In this regard, Moulier-Boutang states that:

There is a strong correlation between the formation of the value of a cognitive good and the financial assessment of a stock exchange asset. This means that, for the company, the formation of a common opinion among shareholders via the means of communication and the accumulation of 'confidence' are critical variables, since they determine market capitalisation. (2011: 45)

Further, when we consider that 'the value of a company depends to an increasing degree on immaterial assets such as "goodwill" and other intangibles' (Hardt and Negri, 2009: 312) as well as that under this condition there exists an 'inadequacy of accounting type of convention' in valuation, and finally that 'only financial market' is able to 'determine [the company's] value' (Moulier-Boutang, 2011: 141), then we can better comprehend how 'one of the main activities of cognitive capitalism' comes to be 'the production of different kinds of publics of which the stock market public is not the least' (2001: 145).

The Managerialist Capitalism

The theory of managerialist capitalism is developed by the French economists Gérard Duménil and Dominique Lévy (2004, 2011, 2013). Interpreting the evolution of capitalist production from a neo-Marxist perspective, the theorists characterise the major transition occurred between the 19th and 20th centuries with three epoch-making revolutions. The first one is discerned as *the corporate revolution*, marked by the rise of large corporations via mergers and acquisitions. The second one is acknowledged as *the financial revolution*, marked by the formation of a new system of large banks backing the rising large corporations. The third revolution, and the most significant one, is recognised as *the managerial revolution*, characterised by the spectacular enlargement of the delegation of tasks and upper aspects of decision-making processes traditionally performed by the capitalist class to the salaried managers or, as the theorists opt to call, to *cadrisme*. Furthermore, the researchers put forward that this type of managerial revolution, understood as in the piece of Alfred D. Chandler (1977), perfectly coincides with the financial revolution in time:

Not only management (as within corporations) was delegated, also the upper capitalist functions such as the collect of financing, the allocation of capital

between various fields of activity, the comparative assessment of performances, the discipline imposed on enterprises, and the like. These functions were transferred to the new financial sector backing corporations. (Duménil and Lévy, 2013: 4)

In this framework we are suggested to distinguish four components in the definition of class patterns: i) capitalist owners (the new financial institutions as the main agents); ii) managers [*cadrisme*] working in private and government sectors (as a class in the full sense of the term); iii) production workers (not far from Marxian perspective); and iv) non-production workers (clerical and commercial workers) (Duménil and Lévy, 2011). The authors place production workers and non-production workers under a single form of class which is called *popular class*. In the analysis of the contemporary capitalism, ultimately, we are invited to reflect on three forms of class: i) capitalist class (yet again, finance sector as the main agent); ii) managers or *cadrisme*; and iii) popular class.

‘With the new configuration of social relations, [to wit with] the delegation of capitalist functions to managers and financial institutions,’ the authors bring forward, a new era was opened in the history of capitalism: *the era of managerialist capitalism*, which is ‘a form of organised capitalism in which capitalist and managerial traits are tightly combined’ (Duménil and Lévy, 2013: 1). The era, from the early 20th century onwards, is characterised by ‘the dominance of capitalist ownership though the importance of the managerial features is growing’ (2013: 4). The expression of managerialist capitalism addresses to the twofold nature of social relations: ‘the capitalist aspect is manifest in the distinction between capitalists [capitalist-owners] and production workers; the managerial aspect, in the distinction between managers and the popular class of nonproduction and production workers’ (2013: 4). From there follows a sort of radical assertion that ‘*the continuous progress of managerial relations might lead to the prevalence of a new mode of production beyond capitalism*’ (2013: 4, emphasis added). That is to say, the transition to socialism, from the theorists’ perspective, seems possible only through *a social alliance* between *cadrisme* and *the people*, where the latter includes *the popular classes* of production and non-production workers. This is in fact in tune with the level of importance Duménil and Lévy (2011) attribute to the managerial class in shaping the trajectory of capitalism or rather, as the theorists call, in ‘consolidating

the social orders' (e.g. neo-liberalism): 'the historically rising role of managers, simultaneously the cause and consequence of structural crisis ...' (2013: 10). Here, the role of the struggle of popular class is certainly not dismissed. However, it is evident in the authors' analysis of periodisation of capitalism that *cadrisme* manifests itself as the determining group in shaping the trajectory of capitalism by its social alliance decisions which can acquire precisely either one form or another, that is, either a social alliance with capitalist class as in the case of neo-liberalism *or* a social alliance with popular class as in the case of Keynesianism.

The managerialist capitalism is another theory that feels closer to home, that is cognitive capitalism. Yet one finds oneself in a need of making some critical remarks. It feels closer to home because Duménil and Lévy recognise via Marx i) the diminishing role of owners of capital in organisation of social production; ii) the increasing degrees of socialisation of relations of production in contemporary capitalism; iii) the new role of finance sector becoming the administrator of money-capital; and ultimately iv) the growing autonomy of labouring subjectivities -though it is limited to managers- by referring to Marx's concept of general intellect. Whereas a brief discussion of whether *cadrisme* working in private and government sectors could be considered as a distinctive class separated from so-called popular class would not do justice to the sophisticated Marxian analysis of the concept of class (for a review see. Camfield, 2004), one may note here that the following statement contains but an eccentric assertion to be heard from any Marxist scholar: 'from the managerial revolution onward [since the beginning of the early 20th century], it is no longer possible to provide a concrete picture of class struggle along the lines of the traditional dual pattern pitting capitalists and the proletarian class of worker' (Duménil and Lévy, 2013: 3). Having noted that, my primary concern is directed towards researchers' halfway reading of *Capital* volume III. The notion of managerialist capitalism revolves and develops around the core argument that since the beginning of the early 20th century, the active capitalists' tasks, including strategic decision-making processes, have been transferred to the middle managers [i.e. managerial revolution]. The theorists ground their key argument in Marx.

In Part Five of *Capital* volume III, in particular in chapter twenty-three, we are endowed with a hypothesis that is built upon with a reference to two determinations of capital:

performing/functioning capital and capital ownership. Marx's hypothesis concerns the tendency of separation of capital ownership from its management. Marx observes that capital ownership is in a process of regression towards land ownership in a sense that it progressively becomes divorced from the sphere of production. At this point, '[t]here remains only the functionary, and the capitalist vanishes from the production process as someone superfluous' (Marx, 1992: 512). As a result of the separation of ownership of capital from the work of management, Marx puts that 'the mere manager, who does not possess capital under any title, neither by loan nor in any other way, takes care of all real functions that fall to the functioning capitalist' (1992: 512). Therefore, 'the functions of leadership and exploitation of labour take on the false appearance of a wage labourer practicing conceptual and organisational tasks in production' (Vercellone, 2010: 100). It was precisely that hypothesis of Marx whose progressive actualisation, according to Duménil and Lévy, has driven us to the managerialist capitalism.

However, Duménil and Lévy do not seem to discern a second hypothesis embedded in a footnote in volume III of *Capital*, which is thoroughly developed in the *Grundrisse*. Here in volume III, Marx gives a reference to Thomas Hodgskin's crucial observation:

The wide spread of education among the journeymen mechanics of this country diminishes daily the value of the labour and skill of almost *all masters and employers* by increasing the number of persons who possess their peculiar knowledge. (Hodgskin, 1825: 30 in Marx, 1992: 513, emphasis added)

What follows is connected to the thesis of mass intellectuality/diffuse intellectuality which we shall associate with the labourers' re-appropriation of knowledge, more precisely with the emerging preponderance of knowledge of living labour over dead knowledge crystallised in fixed capital. In the following chapters, it will be argued that since the social production is increasingly organised autonomously from capital in the age of general intellect, not only do capitalists (i.e. capital ownership) but also the conceptual and organisational tasks of managers (i.e. functionary capital) tends to vanish from the production process as superfluous. In other words, the activities and qualities defining so-called *cadrisme* in Duménil and Lévy are no longer 'like every other employment, the principal or sole trade and occupation of a particular class of citizens'

(1982: 115), as Adam Smith claims. Instead they disperse through society. Therefore, the theorists' ultimate vision of transition to socialism, via a social alliance between privileged *cadrisme* and popular classes, largely falls apart considering, above all, the reversal of the long-term tendency of polarisation of knowledge and the tendential dissolution of functionary capital.

Chapter Three

Fragment on Method

- Part I -

The Logics in Contradiction

Operaismo, known in English-speaking world as workerism or as autonomist Marxism, refers to the theoretical and political brand of critical Marxism beginning with the work of Raniero Panzieri and the journal "*Quaderni rossi*" ("Red Notebooks") in 1961 in Turin Italy, and thereon gaining more and more prominence essentially in the writings of Antonio Negri and Mario Tronti. Against the backdrop of the radical struggles of workers in Italy in the 1960s and 1970s, the revolutionary and militant intellectuals' close reading of the texts of Marx, in particular of the *Grundrisse*, gave rise to new theoretical concepts and a new political method. 'The theories of Italian revolutionary operaism, which since 1968 shaped political experiences such as "Potere operaio" ("Workers' Power") and the multifarious movements of "Autonomia operaia" ("Workers' Autonomy), widely circulated also abroad (for instance in Germany, through a magazine like "Autonomie" and the work by Karl Heinz Roth, in France, through magazines like "Materiaux pour l'intervention", "Camarades" and the work by Yann Moulier Boutang, and in the US, through a magazine like "Zerowork" and the work by Harry Cleaver)' (Mezzadra, 2009: 1841). The catastrophic repression set in motion by capital on April 7th 1979 in Italy brought about imprisonments of Italian Marxist intellectuals or their exile from the country commonly to France. The early 1990s witnessed the "resurgence" of *operaismo* -as if its ideas were eradicated in the first place- in the form of the current post-*operaismo* in tandem with new radical students' movements (1990-1991) and 'new possibilities for political action and thinking' (Mezzadra, 2009: 1845). We have two new

leading journals in this period launched by the comrades: “Luogo comune” (“Common Place”) in Rome by Paolo Virno and “Futur antérieur” (“Future anterior”) in Paris by Antonio Negri and Jean-Marie Vincent. The research agenda of post-*operaismo* might be argued to be revolved, on the whole, around theoretical and political analysis of the dynamics of the transformations in modes of production and reproduction (i.e. the periodisation of historical time), tendencies in class composition, and mutations in the forms of capitalist domination. The revolutionary current constructs and corroborates its seminal arguments predominantly through “missing chapter” of *Capital*, namely *Resultate des unmittelbaren Produktionsprozesses*’ (*Results of the immediate process of production*) and *Fragment on Machines* in the *Grundrisse* along with the key texts of post-structuralist French political philosophy, in particular of Michel Foucault, Gilles Deleuze and Pierre-Félix Guattari. The post-*operaist* writings are essentially informed by and developed through the analytical concepts of general intellect, mass intellectuality, cognitive capitalism, immaterial labour, commonism, biopolitical production, capitalist biopower, and multitude.

The 1960s of Italy was marked by ‘the resurgence of fierce workers’ struggles ... [expressed in] the refusal of any socialist idolatry of work and the participation in the nationalist and productivist agenda of progress and negotiation [i.e. planning], but rather [solidified in] the unilateral demand for the immediate satisfaction of workers’ needs outside any rationale that would see these needs as predicated upon the buoyancy of the economy’ (Toscano, 2009: 80). Mario Tronti ([1966] 2006) was the prominent figure of Italian Marxism who ingeniously interpreted and then translated workers’ antagonistic “egotistical” struggles into a theoretical framework in the following book which, according to Mezzadra (2009), became a kind of “bible” within the first wave of *operaist* thinking: *Operai e capitale* (“Workers and Capital”). In *The Strategy of the Refusal*, entering into as *Operai e capitale* as “Initial Theses” #12, Tronti challenges the idea that ‘it was possible to interminably to engage capital in reformist political mediations safeguarding the livelihood of the working class’ (Toscano, 2009: 81) on the basis of his far-reaching argument that:

In the intervening period there is the refusal - collective, mass, expressed in passive forms - of the workers to expose themselves as "a class against capital"

without that organisation of their own, without that total demand for power. *The working class does what it is. But it is, at one and the same time, the articulation of capital, and its dissolution. Capitalist power seeks to use the workers' antagonistic will-to-struggle as a motor of its own development.* The workerist party must take this same real mediation by the workers of capital's interests and organise it in an antagonistic form, as the tactical terrain of struggle and as a strategic potential for destruction. (Tronti, 1980: 30, emphasis added)

What Mario Tronti brings forward in this passage has come to be a *structural invariant*, or rather a solid methodological teaching, traversing the works of both *operaist* and *post-operaist* currents of critical Marxism, manifesting itself in the works of many Marxist theorists; from Antonio Negri to Carlo Vercellone, from Yann Moulier-Boutang to Michael Hardt, from Antonella Corsani to Christian Marazzi, and to many others. In what follows, I shall try to look at Tronti's argument a bit closer.

What Tronti brings forward as a thesis, discerned and reflected upon by Negri (1991) in *Marx Beyond Marx*, is the presence of two different logics for two opposite classes: *the logic of capital* and -or versus- *the logic of antagonism of working-class*. When capital 'harnesses working-class subjectivity to the yoke of capitalist development', it comes to 'impose the contradictory unity of a dialectic relation' (Clever, 1991: xii). By *dialectic* here, it is not understood a sort of law or development but the *form* within which capital 'reduces the wealth of differences to a simple binary, an opposition, with then be recuperated within a new kind of unity or synthesis' (Weeks, 2005: 129). The dialectic logic is hence precisely the one whereby capital seeks to use of antagonism of workers and impose functionality in four-walls factory as well as diffuse factory (Weeks, 2005). Nevertheless, we have a *difference* (Zanini, 2010), the very expression of the key view according to which 'the working class expresses, from an historical point of view, an *absolute* (from the Latin, to make separate) interest, which cannot be mediated' (Zanini, 2010: 44). Working class is argued to be invested by its own logic, namely the logic of antagonism, contained in the '*antagonistic use of antagonism*' (Toscano, 2009: 81), which is absolutely non-dialectical, 'characterising a class seeking not to control another, but to destroy it in order to free itself' (Clever, 1991: xxi). Cleaver elucidates the logics in contradiction in a lucid and concise way: 'capital seeks to incorporate the working class

within itself simply as labour-power, whereas the working class affirms itself as an independent class-for-itself only through struggles which rupture capital's self-reproduction' (2000: 66).

The logics in contradiction, *which is grounded in the view of difference*, is worked out by Mario Tronti and his comrades. Tronti, via *the Grundrisse*, develops the idea of 'labour as subjectivity, labour as set against capital, as not-capital' (Mezzadra, 2009: 1843). The aporia of capitalism, according to Tronti, is as follows: 'from the outset, the conditions of labour are in the hands of the capitalist. And again, from the outset, the only thing in the hands of the worker is the conditions of capital' (1980: 31). More precisely, labourers bring, *grosso modo*, everything to the production process, but *the conditions of labour*. According to the theorists of *operaismo*, 'it is the overtly political framework of command, discipline and rationalisation of the labour process that serves to shackle living labour [labour as subjectivity] to the demands of capital, such that the ontological primacy [as not capital] and ineluctability of living labour is subjected to a thoroughgoing instrumentalisation' (Toscano, 2009: 84). However, these mechanisms of subordination, it is asserted, can only mask impermanently the intrinsic dependency of capital, nothing else. Therefore, capital is ultimately viewed as a mode of production in paradox in so far as, on the one side, it depends on human labour such that '*capital is truly capital only if it becomes value in process; only if, within the process of production, the magic touch of human labour transforms it from constant to variable capital*' (Maffi, 2002 in Toscano, 2009: 82), on the other side, there is an everlasting desire for capital to emancipate itself from living labour, a wild desire for untrammelled self-valorisation of capital.

Post-*operaismo*, following the core teachings of *operaismo*, argues for the use of this unmediatable political antagonism between labour and capital 'as a *prism* for comprehending the dynamics of social transformations in terms of the subjection and absorption of living labour by dead capital, foregrounding the subjectivity of the working class, which is both the presupposition and the principal threat to capitalist reproduction' (Toscano, 2009: 84). This thesis has attempted to place this *prism* to the very centre of its theoretical and political investigation of *Cognitive Capitalism*.

- Part II -

Walking beyond Marx in the Footsteps of Negri

or

The Einleitung in the Conditions of Post-Industrialism

In the *Introduction to the Grundrisse [Einleitung]*, written between the dates of 23rd of August and mid-September 1857, Marx sets out a powerful compact discourse on the method of historical materialism: 'social theory must be moulded to the contours of contemporary social reality' (Hardt and Negri, 2004: 140). There is no such a thing as trans-historical frameworks, fitted to all social realities. The mode of understanding must correspond to the contemporary social world, and mutate in tune with the progress of history: 'the method and the substance, the form and the content must correspond' (Hardt and Negri, 2004: 140). We must develop, contribute to or/and reflect on new theories to make sense of the new realities. Following in Marx's footsteps, in this regard, comes to imply walking beyond Marx, and to my mind, this is not against but within Marx. The object of Marx's method (i.e. capitalist production and society) has radically altered, and thus what is required here and now is to develop a new theoretical apparatus adequate to our contemporary world, and developing this apparatus precisely under the skin of Marx's method. This is the core of *walking beyond Marx*, nothing else.

Negri (1991: 41-59) in *Marx Beyond Marx* presents and elaborates the primary elements, formal presuppositions, of Marx's method of the critique of political economy: *i) the historical tendency; ii) the real abstraction; iii) the experience of antagonism; and iv) the constitution of a subject.*

(I)

In the epoch we are living, as I shall attempt to elucidate in the following chapters, there exists *a tendency* of shift from industrial capitalism to cognitive capitalism, material production to immaterial and biopolitical production, industrial labour to immaterial and cognitive labour, to wit the virtuosic labour. One, of course, can be conservative in regards to the creation of new and somewhat obscure concepts, especially the ones that are related to the capitalist mode of production. What about the sweatshops in China, Vietnam, Indonesia, et cetera? What about the vast manufacturing sites in Taiwan, India, Bangladesh, et cetera? What about the agricultural production in Turkey, Italy, Spain, et cetera? Indeed, today the agricultural labour remains hegemonic in quantitative terms. Moreover, one may demonstrate that the industrial working class has not diminished worldwide in numerical terms and that the corresponding figures of waged labourers are still working within “factories with walls”: *there is nothing new under the sun*, one may state. Then, why do we insist on a new theoretical apparatus based on a *tendency*?

Marx, in the *Preface to the First Edition of Capital*, remarks at the outset that his texts with respect to the industrial capitalist production, the relations of production, and the form of intercourse traversing it concern only a small fraction of England economy. Marx was well aware of the hegemony of agricultural and peasant labour in terms of *quantity* not only in England, but also in the Western Continental Europe. Having said that, Marx discerned in capital and industrial labour a *tendency*, a *driving force* in *qualitative terms*, increasingly imposing their main qualities and priorities over national economies across the world. He, for instance, kindly warns the suspicious German readers of *Capital* who are hardly convinced about the dominancy of capitalist mode of production and writes that ‘it is a question of these laws [the natural laws of capitalist production] themselves, of these *tendencies* winning their way through and working themselves out with iron necessity’ (1990: 90, emphasis added). More precisely, industrial production, along with the corresponding figure performing in the growing body of factories, whereas not hegemonic in quantitative terms, was acknowledged as tending towards qualitatively hegemonic position, and hence considered as a motor, a sort of formative factor of the future transformations of societies. In the *Grundrisse*, one could find this argument in the following passage:

In all forms of society there is one specific kind of production which predominates over the rest, whose relations thus assign rank and influence to the others. It is a general illumination which bathes all the other colours and modifies their particularity. It is a particular ether which determines the specific gravity of every being which has materialized within it. (1993: 106-7)

Negri interprets the notion of *tendency* in Marx as ‘the reason’s adventure as it comes to encounter the complexities of [becoming] reality’ (Negri, 1988: 125). He expands on it as follows:

The tendency gives us a forecast that is determinate, specified by a materialist dialectic which is developed by the factors comprising it. The tendency is the practical/theoretical process whereby the working-class point of view becomes explicit in its application to a determinate historical epoch. This means that to pose the tendency, to describe it and to define its contradictions is a far cry from economic determinism. Quite the opposite: to pose the tendency is to work up from the simple to the complex, from the concrete to the abstract, in order to *achieve an adequate overall theoretical perspective within which the specificity and concreteness of the elements which were our initial starting point may then acquire meaning.* (Negri, 1988: 125, emphasis added)

In *Reflections on Empire*, Negri (2008a: 178) provides a striking example that allows us think of the methodological notion of *tendency* and its formal correspondences between social theory and social reality. In this text, Negri re-reads René Descartes’s *Discourse on Method* of 1637, in particular Descartes’s discovery of the certainty of human mind which was argued to be autonomous from both body and material world. To recollect in brief, Descartes realized that he could even doubt whether he had a body as a proof of his existence as he could be dreaming of his body or it could be an illusion created by an evil demon. Yet, he could not doubt whether he had a mind or that he could think. The very act of thinking persuaded Descartes that his existence was certain. This was put forward as a universal truth in Descartes. At this juncture, Negri asks oddly enough yet ingeniously why Descartes bothered to underline in the same text that he was in the German Thirty Years’ War at the time of his revelation. ‘I was then in Germany, to which

country I had been attracted by the wars which are not yet at an end', Descartes says. It is certainly not as simple as -and will be deterministic- to conclude that the terrible reality of war was that of which had driven soldier Descartes to reflect on his thinking-self rather than the doubtful and catastrophic material world. Nevertheless, one must not overlook the linkage between Descartes's revelation and the social reality surrounding him. Descartes, Negri (2008a) argues, developed a mode of understanding, a social theory corresponding to the emerging tendency of his social reality. Once again, the emerging set of relations that were then only *tendentally* constituting the new social reality in modern Europe made Descartes's social theory conceivable.

(II)

For Marx, everything begins with production. 'The objective before us, to begin with, *material production* [which] is, of course, the point of departure' (Marx, 1993: 83). One can look at the material production to grasp the idea of *real abstraction* which is the second element of Marx's method to be followed. Marx does not demarcate himself from the figures of classical political economy such as Adam Smith and David Ricardo in that labour is the source of all value and wealth in capitalist production. However, Marx underlines the 'illusion' of individuality of productive labour presented in the works of these political economists (1993: 83-4). Marx states that 'production by an isolated individual outside society ... is as much of an absurdity as is the development of language without individuals living *together* and talking to each other (1993: 84). Thus, it is absurd to think of value as deriving from the labour of isolated individual: 'capital creates a collective, socially connective form of production in which the labour of each of us produces in collaboration with innumerable others' (Hardt and Negri, 2004: 144). Then, to understand capital and production the starting point must be social labour and social individuals: 'whenever we speak of production, then, what is meant is always ... production by social individuals' (Marx, 1993: 85).

The concept of social labour is an abstraction but a real abstraction inasmuch as it is more real (i.e. not mental, determinate) and essential to grasp the capitalist mode of production than any concrete instances of individual labour. In capitalist mode of production, the common element cutting across all various specific individual labours,

for Marx, is that of abstract labour; 'not this or another labour, but *labour pure and simple* ... absolutely indifferent to its particular *specificity*' (1993: 296). For Marx, it is the concept of abstract labour *as such* could be the base to understand the notion of value within the capitalist mode of production. Accordingly, it follows from the primary argument, which is labour is the source of all value and wealth, that *abstract* labour is the source of value and wealth in the main. The latter becomes evident when Marx writes this time in *Capital* volume I:

The value of a commodity represents human labour pure and simple [in the abstract], the expenditure of human labour in general ... A commodity may be the outcome of the most complicated labour, but through its value it is posited as equal to the product of simple labour [abstract labour], hence it represents only a specific quantity of simple labour. (1990: 135)

Post-*operaismo* research stream invites us to rethink, or rather reconsider Marx's notion of the relation between labour and value. Why do we need to reconsider it? At this point, I need to touch upon the hypothesis of *the crisis of the law of value* which particularly concerns the post-industrial phase of capitalism. Here only one key point discussed in Negri (1992) (via Vercellone, 2013) would be theoretically illuminating, as this issue has been discussed extensively for decades now. Negri writes of two variants of *theory of value* (x) coexisting in Marx's writings. The first one concerns the qualitative aspect of exploitation upon which the relation between capital and labour rests; an exploitation that presumes the transformation of labour-power into fictive commodity. Here, labour is indeed the sole source of all value and wealth. This is what one may regard as *the theory of surplus-value* (x1). The second variant concerns the determination of value in quantitative terms; considering the homogenous labour-time as the measure of value. Within *operaismo* terminology, this is called *the labour-time theory of value* (x2), standing for that: a certain quantity of value equals to a certain units of time of simple and abstract labour. In other words, 'the value of any commodity or service is measured in terms of the average time of labour necessary for its production ... every commodity will be measured against another by simple [abstract] human working time' (Moulier-Boutang, 2011: 31).

For Marx, as Vercellone rightly interprets, the law of labour-time value (x2) is *not* a structural invariant of capitalism. It is 'a function', 'side product', 'dependent variable', 'a historically determined articulation' of the law (or theory) of surplus-value (x1) which must be regarded as the real structural invariant of capitalism's *modus operandi* (Vercellone, 2013: 421-3). Vercellone puts that:

The law of labour-time value disposes of no autonomy whatsoever vis-à-vis the law of surplus-value ... The law of surplus-value, which makes surplus-value the source of profit and rent, is therefore primary and autonomous from the law of labour-time value as criterion for measuring labour and the development of relative commodity-prices. (2013: 422)

The law of labour-time value (x2), Vercellone brings forward, is connected to the specific configuration of the capital-labour relation (i.e. the real subsumption of labour process under capital) traversing industrial period of capitalist mode of production. Vercellone explains in a lucid way that:

The law of labour-time value reveals itself as the concrete expression of the disciplinarisation and abstraction of the very content of labour, an undertaking that made the clock and later the chronometer its preferred instruments for quantifying the economic value produced by labour, defining labour-tasks and augmenting labour-productivity. (2013: 422).

What is in crisis today, the post-*operaist* theorists argue, is that of *the law of labour-time value (x2)*. Then, why cannot the law of labour-time value be maintained? As we shall discuss in more detail in the following chapters, economic production is tending towards immaterial/biopolitical production which is increasingly '*immeasurable*', and always '*excessive*' (Hardt and Negri, 2004, 2009; Vercellone, 2007, 2013). For the nonce in brief, it is ever increasingly immeasurable (2004: 146) insofar as the very boundaries between labour and non-labour (i.e. work and life) is becoming increasingly blurred.

We say that in postmodern society the value of labour presents itself in a biopolitical form. What does it mean? It means that value is no longer in any

sense analysable and measurable in simple quantities of time, and not even in complex sequences, since living and producing have become a single whole, and the whole of life and the time of production have become increasingly hybridized. (Negri, 2008a: 189)

In the age of post-industrialism, labour tendentially presents itself, rather than as a sort of physical entity, as a creative activity and expression, that is, 'as a constitutive and cooperating *dispositif*' (Negri, 2008a: 183). Labour, that is to say, manifests itself as 'a concatenation of creative activities, in other words as productive *cooperation*' (2008a: 183). This does not mean that such an activity *per se* cannot be quantified or measured. This is not the actual argument. The argument is that such labour 'can no longer be simplified to the point of being reduced to a temporal quantity (and to a fixed relationship between activity and time)' (2008a: 183). Vercellone puts that 'the labour measured in terms of the time certifiedly spent in the firm is often no more than a fraction of the actual social labour-time involved. Here begins the domain of what is beyond measure' (2013: 424). In the same vein, Morini and Fumagalli put that:

The production of wealth and value is no longer based solely and exclusively on material production, but is increasingly based on immaterial elements, namely on intangible raw materials, which are difficult to measure and quantify since they directly result from the use of the relational, emotional and cognitive faculties of human beings. (2010: 235)

Furthermore, the idea of *excedence* comes to forefront once we begin to consider what *the virtuosos* come to provide into biopolitical production. The talents, capacities, talents expressed in the production of ideas, images, knowledge(s), designs, information, communication, codes, languages, relationships etc. exceed work and spill over the various terrains of life. The biopolitical productivity of *the virtuosos* 'exceeds all measure that is imposed on it' (Hardt and Negri, 2009: 242). That is to say, the capacities of biopolitical labour-power, contained in *the virtuosos*, 'are always *excessive* with respect to the value that capital can extract from it because capital can never capture all of life' (2004: 146). Concisely, it cannot absorb all where '*l'homme produit l'homme*'. This is the

juncture where we shall insert the idea of the *potenza of living labour* in the following chapters.

After all, nevertheless, labour is still exploited (recollection: the law of surplus-value as structural invariant). Labour is still, of course, the sole source of value and wealth. This is expressed everywhere by Negri and his comrades: '*labour still remains the fundamental and sole element of value creation*' (Negri, 2008a: 181); '*... nor does it entail that labour ... ceases being central to the production of value and surplus-value*' (Vercellone, 2013: 421); '*we are not questioning the fact that labour remains the only source of value and surplus-value*' (2013: 424); '*labour does remain the source of value in capitalist production, that does not change*' (Hardt and Negri, 2004: 145).

Eventually, we need to rethink the relation between labour and value. But, how? Hardt and Negri argue that '*the central aspect of the paradigm of immaterial production we have to grasp here is its intimate relationship with cooperation, collaboration, communication –in short, its foundation in the common*' (2004: 147). *The common* presents itself, in the first instance, as both presupposition and outcome of immaterial/biopolitical production. *The common*, furthermore, takes part precisely in the centre: '*production [processes] manifests itself as the productive expression of the common*' (Negri, 2008a: 181). This thesis will delve into *the common* in the following chapters and argue that the production of knowledges, communications, ideas, images, relations etc. is increasingly conducted in *the common*. On this matter, Negri writes that:

We assume not only that value is constructed within social production (which is obvious), but also that *social production* today presents itself in a manner which *increasingly has the quality of the common*, in other words as a multiplicity of increasingly cooperative activities within the process of production. (2008a: 183)

Under the paradigm of biopolitical production, a mode of understanding with respect to the relation between labour and value must assume *the common* as the exclusive point of reference.

(III)

According to Marx, the material wealth, concerning money, property, and so forth, is not to be conceived as end in itself. Instead, what is the end in itself, to wit the real wealth, is 'the wealth [concerning] the universality of individual needs, capacities, pleasures, productive forces, etc., created through universal exchange' (Marx, 1993: 488). What an elegant approach from Marx, as always! Such a Marxian understanding of real wealth, Hardt and Negri interpret the *Grundrisse*, 'resides in the common; it is the sum of the pleasures, desires, capacities, and needs we all share. The common wealth is the real and proper object of production' (2004: 149). However, the real wealth that is founded on the common production is yet to come, for the exploitation, the enduring structural invariant, remains under the rule of capital. That is to say that, the virtuosic labour of cognitive capitalism still experiences the brutal force of capitalist exploitation: exploited by the figures of capital, be it a capitalist, a rentier, or a boss who accumulates wealth by means of exploitation.

This is the juncture where *the antagonism*, the third aspect of Marx's method that we shall examine in Chapter Seven, steps in. When Marx speaks of the antagonism, he speaks of, first and foremost, the experience of exploitation, cutting across different modes of production. In cognitive capitalism, Hardt and Negri argue, 'the term *exploitation*, as ever, gives a name to the workers' constant experience of antagonism' (2004: 150). In Marx, the experience of exploitation consists in the relationship between an exploited class that produces the wealth and an exploiter class expropriating it. In *Capital* the exploitation within capitalist mode of production is examined through the labour-time theory of value (x2), more precisely in terms of the quantities of worker labour time. The rate of exploitation, as known very well, is presented as the ratio of surplus to necessary labour time. It, more precisely, denotes the proportion of unpaid labour time a labourer performs for the capitalist to the necessary labour time a labourer performs, producing the value equivalent of the wage they are paid (Fine and Filho, 2004: 36-40). However, inasmuch as the law of labour-time value is ever more in crisis today and since Marx's conception of exploitation is precisely based on that law, then one needs to reconsider the revision of the theory of exploitation. The latter is a distinctive *operaist* and *post-operaist* perspective that will be revisited in Chapter Seven.

The production of value and wealth is more and more conducted in the common. Surplus value/profit is ever increasingly extracted from the common by capital. In fact, we will not be far away from Marx's footsteps (as we shall see why) when we come to argue that *the expropriation of the common* is the very form that defines the living labour experience of exploitation within post-industrial capitalist production. Exploitation under the conditions of immaterial/biopolitical production, in other words, reveals itself as 'the destruction of the common and the expropriation of cooperation [of *the virtuosos*]' (Negri, 2008a: 181); as '*the expropriation by capital of the expressive surplus and of the cooperation of living labour*' (2008a: 184); as 'the private appropriation of part or all of the value that has been produced as common' (Hardt and Negri, 2004: 150).

Lastly, we must underline here that the production in the common does not indicate a sort of peace pact between labourers and capitalists, as if they were rubbing along concertedly without any contradiction. The class struggle presents itself in the full sense of the term. The antagonism, which is intrinsic and essential to capitalist mode of production, is now extended to whole of productive society. 'Workers and capitalists clash within social production, because the workers represent the common (cooperation) while the capitalists (power) represent the multiple -but always ferocious- ways of private appropriation' (Negri, 2008a: 192).

(IV)

The final element of Marx's method of the critique of political economy concerns the production of a subject. According to Marx, Weeks notes, 'production involves the fabrication of not just material goods, but also of relationships, subjectivities, and ideas; cultural forces and forms of consciousness are inseparable from, and thus crucial to, whatever we might delimit as a mode of production' (2011: 40). A subject is constituted, according to Marx, in the material practices of production. 'Production thus not only creates an object for the subject,' he famously states, 'but also a subject for the object' (1993: 92). I am rather convinced to suggest that, borrowing from Paolo Virno (1996d), *the virtuoso* well represents the paradigmatic figure of today's economic production, 'the

collective worker of the general intellect' (Vercellone, 2013). We introduce *the virtuoso* as the hegemonic social productive figure of cognitive capitalism, the flesh of biopolitical production, the real substance of socio-economic life, experiencing the force of capitalist biopower but at the same increasingly autonomous in its relation to capital. In the final chapter of the thesis, the analysis of dynamics of contemporary capitalism constructed to that point will allow us to affirm the presence of *the kairos* and how *the virtuosos*, the offspring of mass intellectuality, seem be the adequate political figure for organising the project of *exodus*.

Chapter Four

The Methodological and Conceptual Foundations towards a Definition of Cognitive Capitalism: Following in the Footsteps of *Operaismo*

- Part I -

Reading Marx Politically

By *reading Marx politically*, I refer to (as already anticipated) the Harry Cleaver's (2000) seminal work *Reading Capital Politically*, originally published in 1979. In the extended introduction part of this short but intense book, Cleaver presents a brilliant account, or better to say a taxonomy of alternative approaches to the reading of Marx's works and discusses the implications of those approaches. Further developing the key arguments of the book in his 1982 and 1992 essays, Cleaver ultimately strengthens his position in his 2003 piece by providing an exhaustive response to *Aufheben's* attacks concerning his Marxian insights in general and the current of *operaismo* in particular. Inasmuch as it will become more and more apparent to the reader that the development of the thesis of cognitive capitalism is tightly articulated to the methodological disposition of *reading Marx politically*, and since the latter informs my intellectual and political stance essentially within this work and expectedly beyond, I shall commence this chapter with presenting what the political reading of Marx means; how it is essentially different from other Marxist approaches; and finally how it usefully invites scholars to reread Marx's texts as revolutionary materials.

The way in which Cleaver categorises accumulating body of Marxist thought consists in discerning those readings of Marx which are essentially *ideological* and those readings of

Marx which are *strategic*. By ideological, Cleaver refers to the readings that interpret Marx's texts as ideological critique, or critical interpretation of capitalist mode of production. By strategic, he refers to the readings that understand Marx's works as strategic deciphering of the class war. For the latter, he makes a further distinction, that is whether the strategic deciphering is from the perspective of capital or from the perspective of working class. Ultimately, Cleaver adds a final breakdown, cutting across the above categories, whose outcome concerns me here: the distinction between *reading Marx as philosophy*, *reading Marx as political economy*, and *reading Marx politically*. The following figure demonstrates the distinctions made between the different approaches to the reading of Marx:

<i>Approaches to the Reading of Marx</i>	Ideological Readings	Strategic Readings
Political Economy Readings	From Capital's Perspective	From Capital's Perspective
Philosophical Readings	From Capital's Perspective	Empty Set
Political Readings	Empty Set	From Working Class Perspective

Figure 1: Approaches to the Reading Marx (Cleaver, 2000: 31)

Before introducing the political reading of Marx and differentiating this approach from other Marxist approaches, I shall first attempt to disclose –as concise as possible- what it means to read Marx's texts as pieces of political economy and philosophy as well as the major drawbacks of these types of readings that one can begin to reflect on.

The long tradition of reading Marx's works as political economy begins in the period of the Second International (1848-1914) and runs mainly through the history of orthodox Marxism. Predicating on an understanding deriving from the figures of classical political economy (e.g. from Adam Smith to David Ricardo), 'political economy' is traditionally distinguished as the study of 'the social sphere comprising the production, exchange, and distribution of commodities' (Cleaver, 2000: 31). In the readings of Marx as political economy –when abstracted from their differences-, it is contemplated that the sphere

under the scrutiny precisely corresponds to the economic base in the Preface to the *A Contribution to the Critique of Political Economy*, to wit 'the economic structure of society, the real foundation on which arises a legal and political superstructure' (Marx, 1970: 21). *The mode of production* traversing the economic base is regarded as the determining category of politics, law, culture, etc., whose development itself is argued to be determined by the dialectical interaction of the material productive forces and the social relations of production. Accordingly, the writings of Marx have been read as materials exclusively exploring the realm of economic base, the sphere as we know it from classical political economy, correcting the mistakes of the latter by providing an advanced scientific account, but not bringing forward a theory of superstructure, not least a theory of politics and of state.

In this approach, therefore, the split between political economy and politics manifests itself quite precise: Marxist political economy deals with the economic structure en masse, more specifically with the abstract economic *laws of motion* regulating the behaviours of capitalist class, whilst the political resides in the attic of superstructure. Accordingly, throughout the development of this tradition, Marx's insights have been progressively confined to the advanced models of mathematics, statistics, simulations, and economics whilst politics has tendentially become a disentangled realm in the hands of revolutionary politicians as well as vanguard Party members.

It is certainly not plausible to ignore the fact that reading Marx as political economy has culminated in heaps of vigorous scientific Marxist theories and quantitative models throughout the decades, not least those which delve into capitalist development, growth, crisis, accumulation, imperialism, and so on. They indeed present themselves as powerful critiques of capitalism's intrinsic and indeed catastrophic instability or/and its exploitative nature against the backdrop of heterodox economic theory. Nonetheless, Cleaver (1991, 2000) aptly invites us to reflect on the two fundamental limitations traversing reading Marx as political economy.

Firstly, Cleaver puts that by confining itself to the economic base Marxist political economy has increasingly become as a pure theory of 'capitalist factory'¹² (2000: 43) (i.e. the ensemble of industrial manufacturing sites and waged workers constituting industrial capital), relegating the capitalist social relations outside the industrial sphere (e.g. state, school, family, media) to the secondary phenomenon. In tune, Cleaver extends that Marxist political economy, as grasped above, has eventually come to experience hard-time in making sense of the struggles of subjectivities falling outside of its own distinctive formulation of working class people and hence in analysing the social crises of capitalist mode of production in a systematic way.

More significantly, secondly, Cleaver argues for the reading's one-sided class analysis, to wit the limited way in which working class makes an appearance in the theories and models of capitalist crisis, expansion, technological change, and so forth. Inasmuch as the concept of capital within this approach appears to designate some mindless-circulating-entities such as finance-capital, commodity-capital, money-capital, labour-power, finance-capital, etc. rather than an antagonistic social relationship between classes, the working class unsurprisingly presents itself as a *reified* entity too -as if the proletariat were either the naked spectator or a sort of outsider: ultimately the *victim of capital's autonomous self-activating and monstrous development*. However, one needs to discern that Marx does not only consider the category of capital as a social relationship between classes, but he also underscores the power of the working class in forming the trajectory of capitalist development.¹³ In connection, Cleaver further speculates that the form of ideological critique that Marxist political economy builds, though aimed to put a weapon in the hands of working class, has actually come to be detrimental because, he asserts, working out the internal contradictions of the capitalist mode of production systematically, scientifically, and exclusively from the perspective of *capitalist laws of motion* and, in this context, treating 'working class struggle as a derivative of capital's own development' (Cleaver, 1991: xxi) tends to prolong, even enhance the prosperity of ruling class.

¹² Even though Cleaver does not write down in an explicit manner, at this point he refers to *the social factory thesis of operaismo*, as we shall look at in the following paragraphs.

¹³ This is evident in many texts of Marx. For the most explicit one, one can revisit *Capital* volume I Chapter 10 Section 6 and 7 where Marx interprets the shortening of the working day as a direct consequence of workers' demands and struggles.

In the main, the tradition of reading Marx as a philosopher, or rather the current of philosophical Marxism might be considered as a theoretical exercise in ideology. Cleaver (2000) outlines two general tendencies here: orthodox and revisionist (see. Cleaver, 2000: 46 for the articulated branches). The orthodox tendency, as reformulated in Louis Althusser's (1970) and Althusser and Étienne Balibar's (1970) works, aims to rescue or revitalise historical materialism (one dating from Friedrich Engels) as an ideology, *a new science of history* in the pursuit of the mediation of widely discredited political practices of the revolutionary parties. In order to discover the place *Capital* occupies in the history of knowledge, the project first speculates on the very object of Marx's discourse, namely the capitalist mode of production, and then it attempts to find out a sort of unique epistemological status that separates Marx's discourse and its object from other forms of discourse. There is no concrete *history* but *the science of history*, argued in Althusser (1970), entailing 'the construction of an ahistorical, frozen conceptualisation of ethereal theoretical structures' (Cleaver, 2000: 50). The historical material aspects that one can find abundantly in Marx are reread and interpreted in an abstract manner in order to develop an advanced theoretical model of capitalist mode of production. After all, the theorists 'escape by a slight of hand any embarrassing need to verify [their] theory in history and simultaneously make of [their] theory a boringly dogmatic scientism' (2000: 50).

The revisionist tendency, finding its theoretical fulfilment in *Critical Theory* (of Frankfurt School), moves beyond the political economy of *capitalist factory* and theorises, through the analyses of *capitalist planning* and *technological domination*, the extension of the regimentation of factory as well as the commodity-form to the entire society, including the cultural realm, and investigates the emerging forms of domination along with their mechanisms of implementation. Once it is ascertained that capital, or more precisely the cultural and economic hegemony of bourgeois tends towards subsuming the society in its totality, the theorists seem to be paralysed by a sort of deeply felt pessimism. On this subject, Negri comments that 'in the whole Frankfurt School, and mostly in Adorno it [capitalist power] has been seen in terms which are completely apocalyptic, where power occupies the entirety of all possible space and leaves no margins of liberty' (2008b: 205). The following book-closing sentence extracted from Herbert Marcuse's

Counterrevolution and Revolt is rather self-explanatory: 'the next revolution will be the concern of generations and the final crisis of capitalism may take all but a century' (Marcuse, 1972: 134). Subsequently, the political programme of *Critical Theory* falls back to the traditional leftist one, calling for a committed engagement with the process of consciousness-building through providing ideological critique of capitalist society.

Under the rubric of orthodox philosophical research, Althusser and Balibar's search for an objective science leaves 'a lifeless sociological taxonomy of modes of production, the unresolvable problems of the interactions between the base/superstructure dualism, the mystery of the articulation of modes ... and a fetishism of production that justifies contemporary capitalism' (Cleaver, 2000: 51). More importantly, what we have here is that the class war is largely subtracted from the analysis of relations of capitalist society, presenting itself as 'a substructure of a structure' (2000: 50). On the other side, the revisionist tendency of *Critical Theory* excellently transcends the factory walls, theorises the extension of logic of capital to the entire society through inspiring ideas such as automation, consumerism, Keynesianism, and so forth, and reflects on the structure of capitalist hegemony in an insightful way. However, since it is not discerned that capital is power that itself struggles in imposing its strategies of command and subsumption, the workers, rather than being recognised as form-giving force, almost vanish as passive subjects in an one-sidedly hegemonic relationship. In this regard, Cleaver notes that 'Critical Theorists have remained blind to the ability of working class struggles to transform and threaten the very existence of capital' (2000: 56-7). In consequence, both orthodox and revisionist approaches in the current of philosophical Marxism ultimately find themselves in a terrain nourished by the ideological critique of capitalist society.

At last, what does Cleaver mean by *reading Marx politically*? In my view, the first thing to note is that Marx's ultimate purpose in his passionate engagement in writing was, above all, providing a weapon to the working class militants in their struggles against capital. By reading Marx's texts (not least, *Capital*) as political materials, labourers would be equipped with an analytical and scientific framework empowering them to penetrate the capitalist camouflage and 'study in depth the various ways in which the capitalist class sought to dominate them as well as the methods they themselves used to struggle against that domination' (Cleaver, 2000: 23). Indeed, it would not be a caricatured

form of saying that every book, every passage, every line in Marx is actually a political moment, articulated to the dynamics of the struggles between classes.

Cleaver is well aware that all readings of Marx are political in a certain degree. Their execution could comprise either revolutionary or conservative implications with respect to the dynamics of class relations. For Cleaver, nevertheless, the expression *political* conveys something different. It designates 'strategic reading [i.e. reading through class struggle] of Marx which is done from the point of view of the working class [struggle]' (Cleaver, 2000: 30). He enunciates the gist of the methodological positioning of political reading as follows:

[Political reading] is a reading that self-consciously and unilaterally structures its approach to determine the meaning and relevance of every concept to *the immediate development of working class struggle*. It is a reading which eschews all detached interpretation and abstract theorising in favour of grasping concepts only within that *concrete totality of struggle* whose determinations they designate. (Cleaver, 2000: 30, emphasis added)

The distinctive feature of political reading which differentiates it from political economy and philosophical readings might be specified through its two-step method of analysis, consisting in presenting '*how each category and relationship relates to and clarifies the nature of the class struggle and to show what that means for the political strategy of the working class*' (Cleaver, 2000: 76).¹⁴ The purpose is beyond contributing to the critique of capitalist mode of production or/and engaging in an abstract exercise in ideology. The purpose rather consists in, first and foremost, reconsidering or finding out new apparatuses for developing working class power against the power of capital, or better to say capitalist biopower (as we shall in the following chapters) towards the fulfilment of the ultimate aspiration of living labour which is nothing else than liberation from the command of constant capital. The works embracing this approach, therefore, could be recognised as both theoretical and political exercises in reflecting upon as well as engaging *corporeally* in 'the various ways in which people' could 'move beyond mere

¹⁴ Cleaver's implicit reference here concerns the *technical and political class compositions*. I shall attempt to explain these concepts within this chapter.

resistance to capitalism toward the self-construction of alternative ways of being' (Cleaver, 1992: 106).

At this juncture, one may plausibly inquire how come this form of reading, necessitating the exploration of each category and relations through class struggle, does not suffer from superficiality or one-dimensionality, that is the reduction of everything concerning the capitalist mode of production to class struggle. Quite the opposite! We may say so when we recollect that capital, according to Marx, is not a reified category or a solidified thing but precisely a class relation, and *this relation is one of struggle*. The antagonistic nature of class struggle within the capitalist organisation of production conveys the confrontation between capitalist class, seeking to impose all the categories and determinations of capital, and the working class, seeking to pursue its own interest against the priorities and the domination of capitalist class. Negri, on this subject, writes that:

[T]he concept of capital ... is premised on the idea of a relationship, an inter-relation: in other words, capital and capitalism are *categories of a relationship*, of a relation which embraces both those command and those who obey, those who exploit and those who are exploited, those who subordinate and those who are subordinated. (2008a: 32)

Therefore, the practice of reading and interpreting Marx's texts from the perspective of class struggle (i.e. political, hence strategic reading) can hardly be regarded as shallow or reductionist since, above all, the approach always requires exploring 'the meaning of each category from the differing perspectives of the two classes' (Cleaver, 2000: 75). Cleaver affirms the latter in a lucid way that 'the analysis of every category and phenomenon must be two-sided; there is no objective place beyond these two perspectives' (2000: 75).

From my point of view, *reading Marx politically* can be placed under a methodological rubric which is denominated by Alberto Toscano (2009) as 'partisan methodology', and this partisan methodology is best discernible in the works of Italian brand of critical Marxism: *operaismo*. In the following section, I shall attempt to bring out how *operaist*

authors' reading and reinterpretation of Marx *politically* has culminated in a powerful endogenous methodology concerning the historical periodisation of capitalist mode of production. In this attempt, I shall try to walk along a particular conceptual path that would expectantly enable me to introduce the key *operaist* analytical concepts which are referred every so often throughout the thesis.

From Compositions of Capital to Class Composition via the Inversion of Productive Forces

In chapter twenty-five of *Capital* volume I, Marx exposes the differences and relations between three compositions of capital: the technical composition of capital, the value composition of capital, and the organic composition of capital (see. Fine and Saad-Filho for an excellent elaboration, 2004). The technical composition of capital indicates the particular physical configuration of the mass of material inputs and the living labour in the production process. The rise in the technical composition of capital (TCC) denotes the increased productivity in relation to the reconfiguration of production process by increasing the use of fixed capital while not changing the quantities of labour force. For Marx, TCC and its changes can be measured only by reducing a bundle of raw materials and living labour to a common denominator, that is, *value*. He accordingly introduces the value and organic compositions of capital that have the same expression: constant capital (material input aggregated by value) / variable capital (labour aggregated by value). Marx makes this useful distinction in order to distinguish precisely whether the rise in c/v derives from the increase in technical composition of capital or not. More precisely, one may speak of a rise in the organic composition of capital only if the rise in the c/v stems from the increased use of *or* the introduction of (new) machinery, organisational methods and production techniques, increasing productivity. In this way, the rise in the value composition of capital comes to be separated from the technical composition of capital (for instance, weather might be a determining factor in value composition).

The compositions of capital in general and the tendency for the organic composition of capital to rise in the course of technological and scientific development in particular in

addition to the potential consequences of this progression (e.g. a rise in unemployment, over accumulation, the tendency of the rate of profit to fall, and the associated systemic crisis) have always been central and indeed controversial topics in Marxist economics. Having said that, within the orthodox Marxist political economy tradition, as discussed in general terms in the previous section, the forces of production have been typically posited a self-developing unity, a sort of by-product of competition separated from the relations of production. What we have here, according to Turchetto, is 'the idea of the progressive development of the productive forces, motor of humanity's march towards communism' (2008: 286). The following passage from Lenin's 1919 speech *Scientific Management and the Dictatorship of the Proletariat* implies how the productive forces are typically presupposed as politically neutral and largely stood apart from the social:

The possibility of socialism will be determined by our success in combining Soviet rule and Soviet organisation or management with the latest progressive measures of capitalism. We must introduce in Russia the study and teaching of the Taylor system and its systematic trial and adoption. (Lenin in Bell, 1956: 41)

Whereas the revolutionary parties of the 1960s lay stress largely on the benefits of the progress in the machinic formation of production (e.g. rising productivity hence wages) Raniero Panzieri (1976, 1980), one of the leading figures within the Marxist current of *operaismo*, directly challenged what he called 'objectivist' Marxist perspectives that examined so-called technological and organisational 'rationality' (i.e. the self-moving development of scientific innovation as a part of politically neutral forces of production) separately from the capitalist relations of production. Panzieri asserts that 'the capitalist use of machinery is not a mere distortion of, or deviation from, some "objective" development that is in itself rational' (Panzieri, 1980: 47). According to him, Thoburn notes, 'technical forces developed not in a logic of neutral scientific progress' (2003: 77). On the contrary, the development is argued to be organically related to the capital's endless drive of dominating and absorbing maximum labour power. 'Machinery was determined by capital, which utilised it to further the subordination of living labour; indeed, in the mind of the capitalists, their command and the domination of dead labour in the form of machinery and science were one and the same' (Panzieri, 1980 in Wright, 2002: 41). According to Panzieri, the machine, comprising the production and

organisation methods and techniques as well, is the solid manifestation of capitalist power and control, emerging 'as the fundamental site of the despotic domination of capital' (Panzieri, 1976 in Turchetto, 2008: 286). For Panzieri, one may say accordingly, there is nothing *natural* about the technological and organisational 'rationality'. Herein, reading the following lengthy passage from *Surplus Value and Planning* is essential:

The capitalist productive mechanism with respect to the workers finds its optimal basis in the technical principle of the machine: the technically given speed, the coordination of the various phases and the uninterrupted flow of production are imposed on the will of the workers as a scientific necessity and they correspond perfectly to the capitalist's determination to suck out the maximum amount of labour power. The capitalistic social relationship is concealed within the technical demands of machinery and the division of labour seems to be totally independent of the capitalist's will. Rather, it seems to be the simple and necessary results of the means of labour's 'nature'. (Panzieri, 1976: 9)

Panzieri thereby moves well-beyond the orthodox-apologetic vision of productive forces by underscoring *the immanence of the relations of production in the forces of production*:

The relations of production are within the productive forces, and these have moulded by capital. It is this enables capitalist development to perpetuate itself even after the expansion of the productive forces has attained its highest level [Panzieri challenges socialist planning of the forces of production too]. (1976: 12)

The radical argument that technological progress is tightly articulated the dynamics of relations of production should be contemplated in conjunction with Italian Marxist theorists' re-examination of Marx's *compositions of capital*. That is, the increase in the organic composition of capital, through increased use or introduction of new machinic and organisational formation, would have designated something over and above the realization of more relative surplus value (the latter has largely concerned the political economy readings). At this juncture, *operaismo*, more specifically the comrades in

association with the journal *Quaderni Rossi*, turns to investigate the relationship between the organic composition of capital and Marx's analysis of division of labour. The following arguments of Marx are re-contemplated: first, whatever form it takes, the division of labour is always an apparatus of capitalist control; second, 'it would be possible to write a whole history of inventions since 1830 for the sole purpose of providing capital with weapons against working-class revolt' (Marx, 1990: 563).

From there blossomed an epoch-making interpretation that the technical transformation should not be *merely* understood as a vehicle imposed by capitalists to generate more profit. Beyond that, as well as constituting the basis of capitalist 'response to a breakdown in the structure of control built into the existing division of labour', the technical transformation could be the vehicle of 'a new division of labour aimed at restoring [capitalist] control' (Clever, 1992: 111). Briefly, the technical transformation constitutes, above all, a capitalist plan for the division and control of the working class. What arises then is the reaffirmation (see. the method chapter) that from the perspective of capital, the only non-plannable aspect in the production process is the working class. This is the predication that working class is not a passive victim as such. Instead, working class potentially represents an autonomous power struggling against capital that needs to be controlled *ad infinitum*.

What one can discern here, to my mind, is a brilliant case of the partisan methodology of reading Marx politically. The orthodox Marxist readings of technical progress, placing the accent on its neutrality as well as its potentiality in increasing the workers' wealth and their ultimate well-being have been radically challenged by analysing the workers' lived experiences (e.g. in FIAT and OLIVETTI factories), that is by drawing upon co-research technique which embraces reflecting on and practically engaging in working class resistance against capitalist machinic transformation. What comes to fore is the new way of approaching to the implementation of science and technology on the ground of the dynamics of class struggle. Marx's own account -how a rise in the organic composition of capital via the technical advancement is a vehicle to the more surplus value- was not dismissed but it was usefully extended via Marx's further comments; eventually culminating in the key argument that the technical change is against working

class power; it is always a sort of weapon in the hands of capitalist class against the potent working *class composition*.

Class Composition, Cycles of Class Struggle and the Methodology of Historical Periodisation

The notion of *class composition* is central to the analyses of *operaismo*. The core of the notion of class composition is as follows: 'the form production takes and the form of struggle are closely intertwined and can only be articulated in relation to one another' (Mandarini, 2013: 259-260). In referring to the organisation of capitalist production process, whilst the concept of the composition of capital places the emphasis on 'the aggregate domination of variable by constant capital, the concept of class composition involves a disaggregated picture of *the structure of class power* existing within the division of labour associated with a particular organisation of constant and variable capital' (Cleaver, 1992: 111, emphasis added). How might one *approach to the structure of class power* that Cleaver speaks of here? Cleaver explains that 'the concept of class power is associated not only with the power of capital to dominate but also with the power of workers to resist' (1992: 111). Provided only an implicit manner in Cleaver, class composition, is made up of 'the combination of *material* and *political* characteristics'; hence requires analysing 'the bond between the objective *technical* characteristics evinced by labour-power at a given historical moment, as a result of its position within the capitalist organisation of the production process, and its subjective, *political* characteristics' (Turchetto, 2008: 288). Negri elaborates the concept of class composition as follows:

By class composition, I mean that combination of political and material characteristics - both historical and physical - which makes up: (a) on the one hand, the historically given structure of labour-power, in all its manifestations, as produced by a given level of productive forces and relations; and (b) on the other hand, the working-class as a determinate level of solidification of needs

and desires, as a dynamic subject, an antagonistic force, tending towards its own independent identity in historical-political terms. (1988: 209)

The technical class composition is ‘determined by conditions of exploitation imposed by capital: the manner in which workers are brought together in the process of production and the form of reproduction of the class’ (Mandarini, 2013: 246). It enables to characterise and analyse ‘the domination expressed by the organic composition of capital ... the forms of subsumption in the capitalist organisation of production and to identify the figures of work situated at the centre of the process of capital valorisation’ (Vercellone, 2005: 4). The political class composition, on the other hand, is ‘determined by how the objective conditions of exploitation are appropriated subjectively by the class and directed against those very conditions (Mandarini, 2013: 246). It enables to outline and analyse ‘the level of unit and homogeneity that the working-class reaches during *a cycle of struggle* in the process of going from one composition to another’ (*Midnight Notes Collective*, 1992: 4, emphasis added).

From Cycles of Class Struggle to Methodology of Historical Periodisation

Capital always desires to establish and maintain docile class composition in order to sustain the control of labourers in the process of valorisation and hence maintain the accumulation process without or with a minimum amount of disruption. Nevertheless, the ruptures have occurred and are always going to occur until capitalism as a mode of production scurries off the stage of world history. Before moving further, I want to put a brief parenthesis here: the last statement I have written should not be conceived as an instance of tautology. As I attempted to discuss in the method chapter, the insights of *operaismo* in regards to the *potenza*¹⁵ of labouring subjectivities are of the utmost importance concerning the analysis of the dynamics of the capitalist organisation of production as a whole. For the present, allow me to put here Mario Tronti and Nick Dyer-Witheford’s remarks on the *potenza* of proletariat:

¹⁵ “The English term “power” corresponds to two distinct terms in Italian, *potenza and potere*. *Potenza* resonates often with implications of potentiality as well as with decentralised or mass conceptions of force and strength. *Potere*, on the other hand, refers more typically to the might or authority of an already structured and centralised capacity...” (Casarino and Negri, 2008: 274).

It is productive labour which produces capital ... The worker is the provider of capital. In reality, he is the possessor of that unique, particular commodity which is the condition of all the other conditions of production. Because, as we have seen, all these other conditions of production are, from the start, capital in themselves - a dead capital which, in order to come to life and into play in the social relations of production, needs to subsume under itself labour power, as the subject and activity of capital. (Tronti, 1980: 29-30)

For from being a passive object of capitalist designs, the worker is in fact the active subject of production, the wellspring of skills, innovation, and cooperation on which capital depends. Capital attempts to incorporate labour as an object, a component in its cycle of value extraction, so much labour power. But this inclusion is always partial, never fully achieved. Labouring subjects resist capital's reduction. Labour is for capital always a problematic "other" that must constantly be controlled and subdued ... Rather than being organised by capital, workers struggle against it. (Dyer-Witheford, 1999: 65)

Systemic ruptures occur precisely when the working class *potenza* comes to be politically (re)composed against the *potere* of capital. It involves 'the overthrow of capitalist divisions, the creation of new unities between different sectors of the class, and the expansion of the boundaries of what the "working-class" comes to include' (*Midnight Notes Collective*, 1992: 4). What we call re-composition is indeed *political* inasmuch as it transforms the working class's relations of power to capitalist class (i.e. transforming inter-class relations). The balance of forces between the classes shifts in workers' favour. In turn, 'capital is forced to attempt to decompose the new level of workers' power through the imposition of a new technical or social division of labour through a process of repression and restructuring' (Cleaver, 2000: 115). The latter principally involves 'organisational changes and technological innovations that divide, deskill, or eliminate dangerous [i.e. insurgent] groups of workers' (Dyer-Witheford, 1999: 66). In decomposing attempts, the ultimate aim of capital concerns the reduction of worker subjectivity to the status of tame labour power.

We have a fundamental lesson deriving from Marx that the class antagonism is essential in capitalist society and can never be destroyed in its entirety. At the expense of reiteration: ‘the working class –as it is the only holder of living labour, the only living active, and productive element of the society– expresses ... an *ab-solute* (from the Latin, ‘to make separate’) interest, which cannot be mediated’ (Zanini, 2010: 44). Therefore, the re-established efficacy of capitalist production, from the perspective of capital, can be maintained effectively only until working class starts re-composing itself politically. Furthermore, Dyer-Witford notes that ‘each capitalist restructuring must recruit new and different types of labour, and thus yield the possibility of working-class recomposition involving different strata of workers with fresh capacities of resistance and counterinitiative’ (1999: 66). In addition, Franco “Bifo” Berardi argues that in the course of developing the ‘technoscientific intelligence’ in order to devitalize the working class struggle, capital, in effect, ultimately creates an increasingly ‘intellectual’ labour force that can potentially use science and technology in its own interests, for instance, in ‘subverting the instruments of information and ‘reversing the cycle of information into a collective organisation of knowledge and language’ (1978: 27 in Dyer-Witford, 1999: 71). In other words, capitalist decomposition attempts actually yield a possibility of working class recomposition.

The formulation of cycles of class struggle¹⁶, by means of the theoretical apparatus of composition-decomposition-recomposition, as a complex process and a method of analysis, is epoch-making on several accounts. Among them, one might firstly speak of how the *operaist* formulation of cycles allows the recognition of somewhat rigid concept of *class* in its dynamic nature: class as a process, class as a relationship, class as a mode of composition, rather than a static, reified category. Class in *operaismo* is ‘framed in terms of its *historical transformability*’ (Negri, 1988: 209). It is understood through the terms of ‘quality linked to dynamics and a field of force’ (Moulier-Boutang, 1989: 14). Shifting the focal point from ‘a sociological understanding of class as a socially stratified group, class composition is the effect of a more machinic co-functioning and variation of social, economic, technical, political, and cultural processes’ (Thoburn, 2003: 114).

¹⁶ It is important to note that (see. Cleaver, 1992: 112) this formulation does not indicate a law of history, a sort of *ad infinitum* movement in the interest of capital. This formulation breathes its last when insurgency/confrontation/systemic contradiction cannot be tamed by capital.

Secondly and perhaps more significantly, the formulation of cycles of struggle informs the way in which the legacy of *operaismo* schematises history, or better to say the way in which the current analyses the dynamics of transformations in the modes of production and reproduction. Allow me to look at the second dimension a bit closer.

Considering all its conceptual and theoretical articulations, the formulation of cycles of struggle provides an insight into the fundamental methodological principle of *operaismo* that concerns the metamorphoses of capitalist mode of production: '*the working class, through its struggles, is the motor of all development*' (Negri, 2008a: 36). Tronti takes the credit for having formalised one of two 'essential discoveries' (Moulier-Boutang, 1989: 15) of *operaismo*¹⁷ which is distinguished within critical Marxist thinking as a kind of 'Copernican revolution' (Toscano, 2009: 114). The relevant passage from Tronti's 1964 essay *Lenin in Inghilterra ("Lenin in England")*, republished in 1966 within the biblical *Operai e Capitale ("Workers and Capital")*, is as follows:

We too have worked with a concept that puts capitalist development first, and workers second. This is a mistake. And now we have to turn the problem on its head, reverse the polarity, start again from the beginning: and the beginning is the class struggle of the working class. At the level of socially developed capital, *capitalist development becomes subordinated to working class struggle; it follows behind them, and they set the pace to which the political mechanisms of capital's own reproduction must be turned.* (1979: 1, emphasis added)

Tronti translates the workers' refusal of the PCI (Italian Communist Party) imposing 'ideology of productivism, economic planning and worker sacrifice' (Toscano, 2009: 115) into a theoretical and methodological argument of utmost importance. He argues for 'the illusionary position' of 'the view whereby it was possible interminably to engage capital in reformist political mediations safeguarding the livelihood (if not the desires) of the working-class' (2009: 116). The argument is erected upon a radical thesis which thereafter has been embraced by both *operaismo* and post-*operaismo* streams of critical Marxism as the endogenous methodology identifying the periodisation of history: '*the*

¹⁷ According to Moulier-Boutang, the other one is the social factory thesis.

political history of capital as a sequence of attempts by capital to withdraw from the class relationship; at a higher level we can now see it as the history of the successive attempts of the capitalist class to emancipate itself from the working-class, through the medium of the various forms capitalist political domination over the working-class' (Tronti, 1980: 32, emphasis added). 'Workers' struggles against work compel capital to reconfigure [itself] in order to constrain and capture that which escapes or disrupts the smooth functioning of production' (Thoburn, 2003: 15). In other words, it is the unproductive entropy of insurgency that is inherent to each stage of capitalist development which urges capital to restructure itself in order to decompose threatening working class power. Consequently, it is brought forward that 'the economic laws of the movement of capitalist society' must be searched precisely in 'the political laws of the movement of the working class' (Tronti, 2006: 224 in Toscano, 2009: 117).

Towards Cognitive Capitalism via the Dialectic of Conflict-Innovation-Development

We are not far away from the *operaist* thinking of the dynamics of capitalism's development. In fact, we are precisely within it. According to the thesis of cognitive capitalism, formulated within the current of post-*operaismo*, it is the relation between knowledge -understood here as a broad analytical category; better to grasp as forms of knowledge- and power, constituting the structural invariant of the class struggle, that determines the development of capitalist mode of production. Carlo Vercellone (2005, 2007, 2008, 2013), a leading figure within post-*operaismo* research stream, theorises the economic and social transformation of capitalism on the basis of the driving force of the *dialectic of conflict-innovation-development* concerning the control of 'the intellectual powers of production' (Marx, 1990).

The following final section attempts to elaborate: (i) the methodology through which the post-*operaist* analysis of capitalism's dynamics has been developed; and (ii) how this methodology allows *MATISSE* (*Modélisations Appliquées, Trajectoires Institutionnelles, Stratégies Socio-Économiques*) (a research laboratory at University of Paris I Panthéon-Sorbonne where the programme of cognitive capitalism was introduced and developed) scholars to amend and, to some extent, transcend both the categories and analyses of

Parisian regulation school with which the thesis of cognitive capitalism is often fallaciously directly associated.

In the development of the thesis of cognitive capitalism, the emphasis is placed on one of the dimensions concerning the antagonistic nature of class relation: *the conflictual relation of knowledge to power*. In my view, this is highly noteworthy. Allow me to begin elucidating this aspect of class relation from Marx's elegant perspective. According to Marx, the most crucial human need is the need for the self-realisation of his/her very essence. Marx puts in *Economic and Philosophic Manuscripts of 1844* that 'man is ... in need of a totality of vital human expression; he is the man in whom his own realisation exists as inner necessity, need' (Marx, 1992: 356). In other words, human beings are in a *need* of revealing their 'personality', 'natural talents', 'spiritual goals', which all constitute the *essence* of men that makes them truly human (Fraser, 1998: 146). The fundamental medium through which human beings achieve such self-realisation is, according to Marx, *the creative and fulfilling labour* which is grasped by Marx as man's 'vital activity', his 'species activity' that sets free 'man's spiritual essence, his human essence' (Marx, 1992). In other words, it is precisely creative and fulfilling labour, understood in Marx as the indivisible unity of *cerebration (cognition)* and *action*, that realises one's very essence.

From this Marxian poetic perspective, one could begin to reflect on a key assertion brought forward by Carlo Vercellone: 'if the cognitive dimension of labour is the very essence of human activity, then awareness of this fact can become an obstacle to capitalist control of the production-process, thereby to the accumulation of capital. One begins to see, then, why the relations of power and knowledge associated with the organisation of production are essential to the antagonism between capital and labour' (2013: 419). The rationale behind such *an essentiality* is provided by Marx, and this is two-fold. Firstly, Marx indicated that those who control and dictate the ways in which labour is performed are potentially in a position to control the intensity and the quality of work. As explained in a lucid way in David Harvey's (2006: 266-270) *The Limits to Capital*, money capital, money invested at the beginning of industrial cycle of M-C-M', is characterised by its flexibility and freedom of choice. From capitalists' point of view, M-

M' is the ideal form, therefore, C is nothing but an interruption. Indeed, production is a process full of uncertainty.

There are many factors, along with the socio-economic ones, that might be accounted as one of the variables conditioning the quality of production. Among them, the most crucial one is -without doubt- labour. The buying of labour power, paying workers for the quantity of time they are supposed to spend in production, does not guarantee the expected work performance initially planned by the owners of means of production. Furthermore, the power of working class in its relation to possession of productive knowledge might always culminate in a proletarian aspiration to organise and manage the social production in its totality. Concisely, who controls *the intellectual powers of production* might desire to determine the production as a whole, to wit the organisation of labour and the social purpose of production (i.e. to what end it occurs). This is now beyond the idea of controlling, for it implies a potentiality towards overtaking the entire social production process.

From the contradiction in regards to the control of *the intellectual powers of production*, a conception of technical and organisational progress (i.e. a conception of innovation) as a second element of the post-*operaist* methodology arises which is exactly in tune with Panzieri's position, discussed briefly above. The technical and organisational innovation -though certainly consists in- cannot be reduced to an insight which exclusively recognises the relationship between socio-technical intervention and the maximisation of productivity and surplus value (i.e. an objective/quantitative reading). Herein, the attention is paid to, above all, how the technical and organisational innovation is being structured by the relation of knowledge to power (i.e. a subjective-qualitative reading). In other words, what is brought to the forefront is that of Marx's analysis of the progress of technical rationality as an expression of the relation of forces concerning *knowledge and power*. Following in Marx's footsteps, Vercellone puts a very important argument that '*the struggle over the control of the intellectual powers of production is explained by the tendency according to which, under capital, the development of science applied to production proceeds at an equal rate with the expropriation of the knowledge of workers*' (2007: 17, emphasis added). In this reading, the technical and organisational innovation applied to the production process is conceptualised as a capitalist *dispositif* oriented

towards absorbing the living knowledge of workers and transforming it into dead knowledge incorporated in fixed capital. "Innovation" then expresses itself as a kind of force of decomposition on working class subjectivities who tenuously control *or* tends to control *the intellectual powers of production*, and hence the overall structure of social production.

Nevertheless, the capitalist technical and organisational intervention does not phase out the irreducible antagonistic relationship between capital and labour which concerns the assimilation or the liberation of variable capital to or from the command and control of constant capital. Within such a form of intervention which is directed towards reducing the worker subjectivity to the status of labour power, it is always discovered new forms of revolt and autonomy. Working class struggles always tend to give rise a new type of knowledge defining the emerging technical composition of labour. Vercellone in this regard translates one of the teachings of *operaismo*, particularly deriving from "Bifo" Berardi (1978), as follows:

In effect, if technical progress in its capitalist form allows the expropriation of the traditional knowledge of the worker, the labour process remains irreducibly conflictual. In such a way, a new type of knowledge tends incessantly to reconstitute itself at the level of the capitalist development of the technical and social division of labour. (2007: 17)

This argument is grounded in Marxist precept that 'the dynamic of class struggle will tend to create, within capitalism, ruptures, and requirements resting on a different logic, one pointing in the direction of what Marx called *the dissolution* of capitalism qua *the form dominating production*' (Vercellone, 2013: 420).

Perfectly in tune with *operaist* vision, the *dialectic of conflict-innovation-development*, concerning essentially the control of 'intellectual powers of production' (Marx, 1990), constitutes the core of the post-*operaist* methodology on which the periodisation of capitalist mode of production is based. I shall attempt to elucidate what I have tried to discuss here abstractly in a more concrete and historical form in the second part of the chapter. Before moving to the second part, finally, I invite the readers to look at how the

methodology developed by *MATISSE* researchers ameliorates and, to some extent, transcends the categories of analyses of Parisian regulation school with which the thesis of cognitive capitalism is directly associated.

Beyond Parisian Regulation School

The thesis of cognitive capitalism has been developed under the influence of Parisian (or French) regulation school (see TextBox. 1) however with a strong methodological and theoretical discomfort (Paulré, 2000, 2009). It was argued that the categories of analyses of Parisian regulation school must be rethought and rectified in order to reckon and elucidate the magnitude of recent mutation of capitalism concerning, above all, the division of labour and the new role of knowledge. In this respect, the following three issues are brought forward.

The first is to reaffirm the pivotal role of conflict -traversing the control of intellectual powers of production in particular- in configuring the trajectory of capitalism. This informs the foundation of *the method of dynamic holism*, introduced by Vercellone in his doctorate thesis (1999). Vercellone (1999) suggests that the method of dynamic holism is not limited to explain how the individual and collective behaviours are determined by the structures and institutions. At the same time, it is taken into account the autonomy of subjects in relation to the structures and institutions and thus their ability to treat and act on them as objects of alteration (this is on the agency-structure riddle). The method, for instance, informs the way in which *MATISSE* researchers differentiate themselves in approaching to the crisis of Fordism. It is argued that the crisis of Fordism cannot be analysed by only referring to the structural objective economic conditions/parameters (e.g. the end of mass-consumption, external shocks, or an unsteady growth rate). It is first and foremost regarded as *a social crisis* where the subjective conditions such as the working class insurgency has played an essential role; firstly in disintegrating the social foundations of Fordist growth and secondly in the constitution of the new structural-institutional forms that would construct the base of an economy whose driving force would come to be production and the diffusion of knowledge.

The second contribution concerns the attempt to forge new intermediate categories that would deepen our analysis of the schemata of history of capitalism. Regulation school's historical analysis hinges on a particular configuration of capitalism: one and only industrial capitalism. The exhaustive yet exclusive stress on the mutations of industrial capitalism culminates in a theoretical difficulty, which is affirmed by Bob Jessop as well. There exists no intermediate category between the concepts of *mode of production*, designating the fundamental invariants of capitalism in Marxian sense, and the *mode of development*, designating the specific stages of the development of industrial capitalism. *MATISSE* researchers usefully remind us and adopt Fernand Braudel's teaching that 'capitalism is an old adventure, which anticipates and spans the industrial revolution' (1979: 311, emphasis added). According to Braudel, capitalist mode of production presents itself in various forms based on different modalities of surplus appropriation. Accordingly, the periodisation of capitalism needs to take into account the historical succession of different dominant configurations of capitalist accumulation.

The theorists of cognitive capitalism characterise this intermediate level situated between mode of production and the mode of development by the concept of 'system of accumulation' (Dieuaide, Paulré, Vercellone, 2003; Moulrier-Boutang, 2011) or 'historical system of accumulation' (Lebert and Vercellone, 2004, Vercellone, 2008). This concept refers to the association of a mode of production with a type of accumulation. A particular historical system of accumulation informs the long-term tendencies of capital valorisation, division of labour, and reproduction of social relations. Worth noting here that the concept of -historical- system of accumulation embodies the assumption of 'a structural crisis' at 'a higher-level (Corsani et al., 2001), or rather a higher-level major crisis vis-à-vis the concept of the structural crisis of -Parisian- mode of development. It is in this light that one could think of the originality and historical significance of the mutation of capitalism following the breakdown of Fordist mode of development.

The third contribution of *MATISSE* concerns the integration of knowledge into the analysis of the dynamics of capitalism via Marx. Considering that knowledge has always played an important role in the dynamics of capitalism (Rullani, 2000), it is important to discern why it is possible to refer to a new role of knowledge that allows us to speak of a

new system of accumulation. In order to understand better the historicity of the role of knowledge, Vercellone (2008) puts the emphasis on three complementary dimensions from which its place within the dynamics of capitalism can be acknowledged. The first dimension concerns the relationship between capital and labour. Vercellone (2008) underscores the contemporary conflictual relationship between the *living knowledge* as incorporated in labour and *dead knowledge* as incorporated in fixed capital and the firm organisation. The second dimension concerns the knowledge as becoming a central factor in configuring the capacities of competition at micro, meso, and macro levels. Knowledge, that is to say, plays an ever-increasing role in the analyses of the forms of competition and the modalities of integration of countries into international division of labour. The third dimension concerns the tension between dissemination of knowledge (i.e. knowledge as subtracted from the logic of the market) and the capitalist appropriation of knowledge (i.e. knowledge as subject to private appropriation, transformation into fictive commodity).

TextBox 1:

The Periodisation of Capitalist Development by Parisian Regulation School

One of the most significant questions of capitalist history is as follows: 'how and by what means the capitalist economies manage to create or maintain an *order* that is not fundamentally contradicted by certain *systemic* alterations'; or in other words, 'how capitalism transforms itself sufficiently to maintain compatibility between its fundamental conditions [i.e. accumulation, expansion, etc.] *and* fluctuations, antagonisms and conflicts inherent to the very nature of capitalist mode of production (Corsani et al., 2001: 2, emphasis added).

Parisian (or French) regulation school, pioneered by political economists including Michel Aglietta (1979), Alain Lipietz (1987), and Robert Boyer (1990), addressed the issue of reproduction of capitalist economic and social relations in an original way. *Regulation* emerged as a critique of structural Marxism -particularly Althusserian brand of Marxism- in which capitalist reproduction was viewed largely as a quasi-automatic process, that is to say 'structures somehow maintain themselves, independently of effective social agency, with no significant transformations' (Jessop and Sum, 2006: 37). The Parisian discomfort derived from two crucial theoretically informed observations: (i) capitalism as a mode of production is inherently antagonistic, conflict-ridden and crisis-prone; (ii) the history of capitalism is marked by a series of patterns of capitalist accumulation and expansion, interrupted *infrequently* by structural crisis. Given this paradox, the Parisian regulation school problematised the capitalist reproduction, which had been taken for granted by structural Marxism, through exploring the conditions under which the capital accumulation was viable in specific places and historical moments or better to say the conditions under which the Schumpeterian compatibility between *system* and *order* was possible, and how this compatibility enters a period of crisis and renews itself (Boyer and Saillard, 2002).

The Regulationist exploration of capitalism's long-term dynamics of change and stability hinges upon its profound conceptual framework. Whereas the proliferation of regulation theories (see. Jessop, 1990) has resulted in a profusion of terminology; I believe that one could still provide a set of well-established key concepts without which the approach's

fundamental results might lose their base (for the key concepts Boyer, 1990; Boyer and Saillard, 2002). At the most abstract level, regulation approach acknowledges Marxian understanding of *mode of production*, that is 'any particular form of relations of production and exchange; that is, the social relations governing the production and reproduction of the material conditions required for human life in society' (Boyer, 1990: 32). In *the capitalist mode of production*, setting the Marxist thesis, 'the form of production and exchange relations imposes the primacy of exchange value over use value and makes accumulation an imperative of the system'; however, that does not amount to 'a simple, invariable relation between the capitalist mode of production and forms of accumulation' (Boyer and Saillard, 2002: 38).

Accordingly, at the second level of abstraction, School postulates the concept of *regime of accumulation* which refers to a 'complex of production, distribution, exchange and consumption processes ... [including] dominant methods of production, distribution and exchange ... norms of consumption and patterns of demand' (Tonkiss, 2006: 91). The regime of accumulation 'encompasses the essential economic conditions [*regularities*] (technology, the labour process and the combination between the departments of production) for the operation of the system and is posited at the level of given economic structures' (Mavroudeas, 2012: 305). 'The content of the regularities defining the pattern of economic growth that constitutes a regime of accumulation is viewed largely as an expression of institutional structures governing intra- and inter- firm relations, the relations among capitals and the relationship between capital and labour -namely *the mode of regulation*' (Brenner and Glick, 1991: 47). Each mode of regulation, at the third level of abstraction, is formed by historically developed network of institutions, norms, routines, practices that, in their complex relationship, 'i) reproduce fundamental social relations through the mode of production in combination with historically determined institutional forms; ii) support and steer the prevailing regime of accumulation; iii) ensure the compatibility over time of a set of decentralised decisions, without the economic actors themselves having to internalise the adjustment principles governing the overall system (Boyer, 1990: 43).

The conjunction of an accumulation regime and a type of regulation gives rise to a distinctive *mode of development*. Capitalism takes the form of a gradual evolution within

the context of a stable *mode of development* in which 'the inherent and pervasive contradictions of capitalism have been attenuated and rendered latent, however temporarily' (Hay, 2001: 1335). Ultimately, 'the extension in time of each mode of development issues in a series of more crippling contradictions, which result from the fetters imposed by the already-existing mode of regulation upon the regime of accumulation' (Brenner and Glick, 1991: 48). The decomposition/break-down of the old mode of regulation brings about a *structural crisis* (e.g. overinvestment). Eventually, a new *mode of regulation* emerges and becomes institutionalised, restoring the conditions of capitalism's expanded reproduction (Hay, 2001: 1334) and may 'make possible a new mode of development' (Brenner and Glick, 1991: 48).

This theoretical and conceptual analysis has a solid reflection in School's methodological orientation concerning the periodisation of capitalist development. Once again, whereas the sheer diversity of regulation approaches does not enable us to reveal a single-settled periodisation of capitalism, we might still disclose, very briefly, the well-established one. The School periodises capitalism on the ground of historically contingent conciliations between a regime of accumulation and a mode of regulation. From the earlier phase of industrialism to the World War I (we are always in the realm of *industrial capitalism*), *competitive regulation* is accompanied by an *extensive accumulation* where the latter is characterised by the expansion of capital as it spreads into new areas of activity. Yet, in the first decades of the twentieth century, capital, as a consequence of exhaustion, turns to relative surplus value from absolute surplus value, that is *intensive accumulation*, but it still attempts to perform under the *competitive regulation*, growing into a severe structural crisis, regarded as underconsumption crisis, precipitating The Great Depression of the 1930s. Then rises a new mode of regulation, namely the *monopolistic regulation*, and eventually its accompaniment with *intensive accumulation* culminates in the golden era of capitalism: *Fordist mode of development* in which 'capitalist mode of production found its outlets in the workers' mass consumption of capitalist products' (Mavroudeas, 2012: 307). In the 1970s, Fordist mode of development solidifies its structural crisis, and consequently post-Fordist mode of development progressively emerges as its successor. The latter is largely characterised by 'the introduction of new information technologies, small-scale production processes, the relaxation of standardised production tasks, the growing significance of the service sector and new

lifestyles as stimuli of consumption' (2012: 307). Nonetheless, one may agree with Mavroudeas that 'neither the crisis of Fordism nor the characteristics of post-Fordism are defined sufficiently clearly' (2012: 307). In this regard, Hay writes that:

Some [Parisian regulationists] argue that a new and distinctive post-Fordist mode of development has already emerged, and that is characterised by flexible specialisation, the search for economies for scope rather than scale, and a workfare rather than a welfare state; others suggest that we are in the midst of an extended period of transition towards a post-Fordism ... whose precise form thus remains unclear; still others regard the politics of neo-liberalism and welfare retrenchment that seems to pervade the advanced capitalist economies as a symptom of the continuing crisis of Fordism, suggesting that no resolution in sight. (2001: 1335)

Chapter Four

The Methodological and Conceptual Foundations towards a Definition of Cognitive Capitalism: Following in the Footsteps of *Operaismo*

- Part II -

The Periods of Capitalism in the *Longue Durée*

Allow me to begin this part with a brief reiteration of an *operaist* lesson: ‘the political history of capital [is] a sequence of attempts by capital to withdraw from the class relationship; at a higher level we can now see it as the history of the successive attempts of the capitalist class to emancipate itself from the working class, through the medium of the various forms of capitalist political domination over the working class’ (Tronti, 1980: 32). ‘The working class, through its struggles, is the motor of all development’ (Negri, 2008a: 36). As we have already discussed in Part I, what is put here is a concise manifestation of methodological principle of the utmost importance embraced by the *MATISSE* scholars in theorising the formation and successive transformation of capitalism via *dialectic of conflict-innovation-development* concerning, above all, the control of ‘*the intellectual powers of production*’ (Marx, 1990).

Capitalism: an old adventure. The first period in the trajectory of capitalist mode of production in the Braudelian *longue durée* is acknowledged as *Mercantilist Capitalism*, developing between the beginning of the sixteenth century and the end of the eighteenth century. The model of production in this period is founded on the systems of *putting-out model* and *concentrated manufacture* which are largely based on the figure of mercantile entrepreneur organising production in the home by independent artisans and workers. The subsumption of labour under capital within this period is *formal*¹⁸. More precisely, ‘capital subsumes a labour process ... which pre-exists it and in which the co-operation of workers does not require mechanisms of capitalist direction of production’ (Vercellone, 2007: 20). ‘There is no change as yet in the mode of production itself.

¹⁸ The Marxian concepts of “formal subsumption” and “real subsumption” are elaborated in Chapter Five.

Technologically speaking, the labour process goes on as before ... Technological process remains the same' (Marx, 1990: 1026-31). The change is 'purely one of form', 'one which increases the continuity and intensity of labour' (1990: 1028-6). The fundamental change is that capital 'takes over' and begins to subsume 'an existing labour process, developed by different and more archaic modes of production' (1990: 1221). 'By formal subsumption of labour, Marx 'names processes whereby capital incorporates under its own relations of production labouring practices that originated outside its domain' (Hardt and Negri, 2000: 255). From technical point of view, therefore, the productive co-operation in labour relations remains autonomous with respect to capital. 'The control of the labour process and the modalities of appropriation of the surplus are founded, in the first instance, on mechanisms external to the directly productive sphere' (Vercellone, 2007: 20). The mechanisms of capital accumulation (i.e. the historical system of accumulation, see Part I) largely take the forms of financial and mercantile. Inasmuch as labour is technically autonomous, the appropriation of surplus labour rests essentially on the monetary subordination of workers.

The fundamental contradiction here can be recognised as that whereas the labourers are dependent on the figure of mercantile entrepreneur in monetary terms, hence come to appearance as wage-workers, they are in effect powerful subjects who can regulate the labour process. They largely control the intellectual powers of production and might always raise themselves to a position that would enable planning the production methods as well as the intensity and quality of labour process. From this "trouble" arise the well-known historical capitalist policies of decomposition such as enclosures, poor laws and so forth, aiming at the consolidation of the monetary compulsion of skilled craftsman, artisan, and independent worker to surplus labour. Notwithstanding the brutal forms of counter-attack as such, Vercellone notes, 'the force that regulates the labour process ... [in the last instance] remains incorporated in the living knowledge of the collective worker' (2007: 22). Marx writes that 'since handicraft skill is the foundation of manufacture, since the mechanism of manufacture as a whole possesses no objective independent framework, apart from the labourers themselves, capital is constantly compelled to wrestle with the insubordination of the workmen' (1990: 489). This contradiction concerning the control of intellectual powers of production is one of the aspects illuminating capital's strong *disinclination* to diffuse into the sphere of

production completely, as well as the limited development of concentrated manufacture until the arrival of technical innovation and progress in the midst of the first industrial revolution whereby the hegemony of the knowledge of skilled worker is progressively decomposed with technical and organisational intervention.

The period of *Industrial Capitalism* begins with the first industrial revolution and finds its historical fulfilment with Fordist mode of development through which *the real subsumption of labour under capital* comes to be *realised*. Fordism might be associated with a particular logic of accumulation (i.e. a historical system of accumulation) whose driving force is Manchester-style large factories specialised in the mass-production of durable and standardised goods. Fordist period, Moulner-Boutang explains, 'can be characterised by the fact that accumulation was based mainly on machinery [physical capital] and on the organisation of manual [material] labour, understood here as the organisation of production and the allocation of workers to fixed jobs' (2011: 56). What concern me here the four principles that characterise the Fordist period of industrial capitalism from the capital-labour perspective but are increasingly called into question by the rise of cognitive capitalism.

The first principle concerns the constitution of two hierarchical levels on which Fordist firms' division of labour is based. Fordism is characterised by the implementation of scientific management methods (i.e. Taylorist Production Methods), oriented towards establishing prescribed tasks on the shop floor to be performed in pre-determined time-slices, and to be described and measured by the medium of chronometer. What is achieved, from the perspective of capital, is the separation of *cerebration (cognition)* from *action* in the activity of labouring. The labour comes to be abstract in its content via its reduction to mere consumption of physical energy. 'Its [labour's] subjective factor is relegated to its objective factors', the subjectivity of labourer is separated from the activity, 'labour itself is objectified' (Vercellone, 2013: 427). In Marxian terms, one may say that variable capital is subordinated by constant capital *in real terms*. On the other side, there is, of course, a fraction of labour force who work in, for instance, Quality, Design, R & D departments, producing knowledges, ideas, images etc. to be implemented on the shop floor by the one whose 'mental make-up' resembles in 'ox than any other type' (Taylor, 1911: 59). Considering the status of knowledge within labour-capital

relation, Fordism represents the fulfilment of the following four tendencies proper to the capitalist enterprise of first industrial revolution:

[A] social polarisation of knowledge based on the separation of intellectual and manual labour; the hegemony of the knowledge embodied in fixed capital and managerial organisation of firms and of the forms of knowledge mobilised within the labour-process; the centrality of a material labour subject to Taylorist norms of surplus-value extraction; the strategic role of fixed capital, which represents the principal form both of property and of technological progress. (Vercellone, 2013: 427)

The second principle concerns the perfect converge of *the law of exploitation* and *the labour-time theory of value* (see. the method chapter). The former, a structural invariant of capitalist mode of production, is based on the exploitation of labourers, the production of surplus value through the transformation of labour power into fictive commodity. As Negri affirms Marx's premise, 'labour will always be exploited for as long as capitalism exists' (2008a: 68). The labour-time theory of value, which is not at the level of structural invariant of capitalist mode of production, concerns the determination of the magnitude of value, counting on immediate labour-time as the measure of value. Only and precisely on this basis of Fordist division of labour, to wit on the basis of the real subsumption of labour-process under capital, time of the clock becomes an apparatus both for quantifying the economic value created by the unqualified, abstract material labour and for measuring the productivity, planning of the surplus-value, and ultimately the economic growth and the distribution of wealth.

Through these two principles, one might think of a third principle which is related the exchange between capital and labour, to wit *the wage-relation* with reference to the conceptualisation of productive labour. In industrial capitalism, wage is understood as the remuneration for *productive-labour-time* that is spent by the labourer at the capital's disposal usually within a particular site of manufacturing, which principally reflects the provided labour-contract. Worker completely renounces every claim to ownership of the fruits of her labour which after all become separated physically from herself. Wage, then, is built upon a clear distinction between productive labour, concerning exclusively

the labour-time spent within manufacturing site, that is *the work time*, and unproductive labour, concerning all other social times, that is *the leisure time*. This, to my mind, might be approached as a sort of *opposite* manifestation of what Mario Tronti calls *social factory* or what Toni Negri calls *factory without walls*, as we shall see later on.

In industrial capitalism that finds its fulfilment in Fordist regimentation -this is the last principle I want to mention here- there is a very clear distinction between profit and rent as the latter does indeed *not* play any central role in economic relations. This is a crucial topic that I shall attempt to examine in the chapter entitled *Parasitic Capitalism*. In brief, it will be argued that the *labour process*, the objective functions of the capitalist production (i.e. in the sense of the production of use-values), and the *valorisation process*, the exploitative functions of the production (i.e. production of exchange-values and means of extraction of surplus-value) came together in harmony in industrial capitalism such that, as Marx reveals in *Capital* volume I and II, rent became assimilated to the wage-profit relation, and consequently the figure of rentier was marginalised from relations of production as a parasitic subject. On the other side, I shall examine the thesis of cognitive capitalism through the idea of becoming-rent of profit.

The social crisis of Fordism represents 'a structural crisis' at 'a higher-level (Corsani et al., 2001), or rather a higher-level major crisis compared to the other major crises that has marked the history of capitalism since the first industrial revolution. Here, *MATISSE* differentiates its position from Parisian regulation school's perspective by arguing that the dissolution of Fordism does not only correspond to the crisis of a mode of development within industrial capitalism but also, and more importantly, to the crisis of industrial capitalism *per se* understood as a broad category, as a 'a system of accumulation' (Dieuaide, Paulre, Vercellone, 2003; Moulrier-Boutang, 2011), or a 'historical system of accumulation' (Lebert and Vercellone, 2004; Vercellone, 2008). As we have seen in the previous part of the chapter, the theory of cognitive capitalism has been developed as a response to the insufficiency of the approaches (e.g. post-Fordist or Toyotaist) that, according to Vercellone, remains 'a prisoner of a neo-industrialist vision of the new capitalism' (2007: 14). Allow me to put Vercellone's remark lengthily here so as to elucidate *MATISSE's* position with respect to the neo-industrialist readings of contemporary capitalism:

Theories of post-Fordism, while capturing some significant elements of rupture, often remain bound to a factory inspired vision of the new capitalism seen as a further development of the Fordist-industrial logic of the real subsumption of labour by capital ... The category of post-Fordism appears to us to be inadequate for comprehending the profound transformation of the antagonistic relation of capital to labour related to the development of an economy founded on the driving role of knowledge and the figure of the collective worker of the general intellect ... The crisis [of Fordism] signals the exhaustion not only of a model of development specific to industrial capitalism but the tendential crisis of some of the more structural invariants of the long-period dynamic that opened with the first industrial revolution. (2007: 14)

What can we say about the dynamics of transition from industrial capitalism to cognitive capitalism? Inasmuch as this is one of the subjects which will be investigated thoroughly in the following chapter, allow me to limit myself here to shed light on one of the core aspects that informs the dynamics of transition from industrial capitalism (or Fordism) to cognitive capitalism. The main argument is that it was precisely *the accumulated* social struggles of mass-workers in the 1960s and 1970s against the deepening of real subsumption, or more precisely against the imposition of the trinity of Taylorism-Fordism-Keynesianism under the rubric of the *New Deal* that brought about the structural crisis of Fordist model of development while creating both subjective and objective conditions of a social reality which was constituted by the mass-intellectuality or diffuse-intellectuality, that is the 'living labour in its function as the determining articulation of the general intellect' (Virno, 1996b: 270). In brief, it was precisely the force of social struggles that established the foundation of an economy whose driving forces came to be knowledge(s) and the diffusion of knowledge(s). And it will be suggested that capital has not responded to the higher-level structural crisis of industrial capitalism by scurrying of the stage of world history, or by merely adapting and containing the major social and technical developments in itself. The latter will be only a part of the phenomenon. The capitalist counter-attack has been a major transformation into a new configuration, into a new form, discerned as a new period, a new historical system of accumulation, in the dynamics of capitalism in the *longue durée*,

namely *Cognitive Capitalism*, tending to mobilise and absorb cognitive and immaterial labour's creative energies; tending to exploit the labour of the emerging figure of social production: the collective worker of the general intellect, the virtuosos. Negri's remark on cognitive capitalism is relevant here: '*the originality of cognitive capitalism consists in capturing, within a generalised social activity, the innovative elements which produce value*' (2008a: 64). There is a conflictual relationship, therefore, between knowledge-based economy, which is logically and historically anterior and whose development should be searched in the mass-social insurgency, and cognitive capitalism which presents itself as parasitic, as we shall see, as the opus of capital's restructuring process.

At this juncture, I think that I may turn to the general definition of cognitive capitalism:

'Capitalism' refers to the persistence, within the process of change, of certain fundamental invariants of the capitalist system, such as the driving role of profit and the centrality of the wage-relation, or more precisely of the various forms of dependent labour upon which the extraction of surplus-value rests. 'Cognitive' draws attention to the new character of the labour, value-sources and property-forms on which the accumulation of capital is now based, as well as to the contradictions thereby engendered. (Vercellone, 2013: 418)

Considering cognitive capitalism as a new *system of accumulation* (i.e. the association of a mode of production with a type of accumulation), Moulier-Boutang writes that:

Cognitive capitalism is a different system of accumulation, in which the accumulation is based in knowledge and creativity, in other words on forms of immaterial investment. In cognitive capitalism the capture of gains arising from knowledge and innovation is the central issue for accumulation, and it plays a determining role in generating profits. (2011: 56-57)

Cognitive capitalism ... is founded on *the accumulation of immaterial capital*, the dissemination of knowledge and the driving role of the knowledge economy. (2011: 50, emphasis added)

[The social production in] cognitive capitalism, if we want to give a description that is concrete but sufficiently general to cover all of its various situations (the production of material goods, services, signs, and symbols), is based on the cooperative labour of human brains joined together in networks. (2011: 57, emphasis added)

The Stylised-Facts traversing Cognitive Capitalism

According to Moulier-Boutang, 'the virtualisation of the economy, in other words the growing role of immaterial and of services related to the production of that immaterial, is one of the most distinctive features of cognitive capitalism' (2011: 50). Vercellone, in tune with Moulier-Boutang, speaks of 'the historic dynamic by which the component of capital intangible, which is essentially embodied in human beings, now makes up a larger part of the overall capital-stock than material capital, becoming the crucial growth factor' (2013: 434). By immaterial, or by the component of capital called intangible, essentially embodied in human beings, one might think of:

[A]n economic resource that is not reducible to a given product or service, including the elements such as the quality of a given population, interaction between agents, the quality of those relations (trust, cooperation), the quality of organisations, implicit knowledge, know-how, and culture. The character of intangibility can apply to a current resource or to a resource that represents a value in the future. (Moulier-Boutang, 2011: 199)

In 2006, Maurice Lévy and Jean-Pierre Jouyet at the request of *The French Ministry of Treasury* presented an official report entitled as *L'économie de l'immatériel, la croissance de demain*. Lévy and Jouyet argue in this report that:

In recent years, a new constituent has emerged as a key driver in the economic growth: immaterial. During *The Glorious Thirty*, economic success was based mainly on the wealth in raw materials, the manufacturing industries, and the volume of material capital available to each nation. This remains true, of course. Yet, less and less. Today, the real wealth is not concrete, it is abstract. It is not

material, it is immaterial. It is now the capacity to innovate, create concepts and generate ideas that structures the competitive advantage ... *In fact, the real wealth of a nation is its men and women.* (2006: 1, emphasis added)

According to Lévy and Jouyet, the emerging state of affairs - that of the value creation increasingly rests on immaterial elements - does not only concern one particular sector but, at the present times, it tendentially imposes itself on various sectors (e.g. industrial manufacturing, agricultural production). The authors state that 'in all sectors, regardless of the product or service they provide, value creation is based increasingly on immaterial resources' (Lévy and Jouyet, 2006: 1). The tendency that intangible capital is becoming a crucial growth factor is linked to the emergence of diffuse intellectuality, as we shall see later on. It is also important to note here that the incorporation of immaterial economic resources into production process is unthinkable without new Information and Communication Technologies (ICTs), in other words without digitisation, micro-electronics, software, or better without what Manuel Castells (1996) calls the 21st century technology paradigm of *informationalism*. Working on immaterial 'requires the inputting of information, its processing ... in the production of knowledge and in production itself' (Moulier-Boutang, 2011: 50). One may also consider that if immaterial resource is also a sort of virtuality in that it represents a value in the future that configures the very present, then the new ICTs might be viewed as apparatuses that facilitate the deployment of the virtuality in the present.

Lundvall (1988), Nonaka and Hirotaka (1995), Von Hippel (1998), Rullani and Romano (1998) stress on a particular immaterial among others in terms of its decisive role in both competitive advantage (at the level of companies) and the economic growth (at the level of national economies). This consists in the process of capturing the innovative elements present in the circulation of information and knowledge (it is often called tacit knowledge in the management literature), blossoming increasingly within the processes of social cooperation of production. 'Knowledge and science, which had been incorporated in the valorisation of industrial capital but had remained distinct, become strategic ... command the decisive linking factor of capitalist exploitation' (Moulier-Boutang, 2011: 51). This is to acknowledge that it is the knowledge(s) embodied in living labour rather than dead knowledge, crystallised in machinery and organisational

systems, that represents the main feature of cognitive capitalism. The novelty, according to Moulier-Boutang, is 'the centrality of [knowledge] of living labour that is not consumed and not reduced to dead labour in machinism' (2011: 54). In this regard, Vercellone speaks of 'the new qualitative preponderance of *living knowledge*, incorporated and mobilised by labour, over *dead knowledge*, incorporated in fixed capital (and the firm organisation)' (2005: 6-7). From this point of view, 'knowledge cannot be assimilated to capital (as in the theory of human capital), or constituted in a supplementary factor of production [as Enzo Rullani (2000) argues]. Knowledge and education are not nothing but the means of expression and creation of labour. These are subjective conditions of production that characterise the use-value of labour-power' (Vercellone, 2007: 32).

'The principal source of value now lies in the knowledge(s) set in motion by living labour and not in material resources' (Vercellone, 2013: 433). Under the modality of cognitive capitalism, 'the work performed by a growing section of the population consists increasingly of processing information, producing knowledge and providing services based on the circulation of knowledge and *the production of man by man*' (2013: 433). That is to say, 'routine productive activities and material labour, which consists in transforming matter with the aid of instruments and machines that are themselves material, become *less important than* the new paradigm of a labour that is simultaneously more intellectual, more immaterial and more communicative' (2013: 433). 'Material labour does not disappear, but it loses its central role as a strategic asset ... what is coming to an end is the hegemony of the paradigm of industrial labour and manual labour power' (Moulier-Boutang, 2011: 51 and 53).

Even though our argument will be elaborated in the following chapters, I can note here that immaterial and cognitive labour expresses itself as a tendency imposing its main qualities over other forms of labour, not least over material labour (Hardt and Negri, 2000). We have been witnessing radical changes at the level of material production since the late 1970s, becoming progressively more informationalised and attempting to mobilise and integrate communicative, creative, and innovative labour into production processes. 'Manufacturing is regarded as a service, and the material labour of the production of durable goods mixes with and tends toward immaterial labour' (Hardt

and Negri, 2000: 293). There have been published countless valuable in regard to the organisation of production following the Taylorist labour process (see. Tonkiss, 2006 for a review). The new models of material production such as flexible production, just-in-time system, flexible specialisation etc., as well as the articulated organisational methods such as multi-performance, team-production, employee training system, and so forth testify that within the contemporary phase of capitalist production 'efficiency [and profit-survival] depends on the knowledge and versatility of a labour-force capable of maximising its ability to learn, innovate [produce immateriality] and adapt to continuously changing context' (Vercellone, 2013: 435).

The stylised fact that the advantage a firm has over its competitors is increasingly linked to the its organisational capacity to innovate in an 'economy of variety' (Boyer, 2004) suggests us an idea with respect to the increasing withdrawal of static (size) economies of scale typical of industrial (or Fordist) organisation of production. By *static economies of scale*, what is understood is high-volume production at low unit costs, designed to overcome the law of diminishing marginal returns, driving ultimately mass-production and mass-consumption. Today, on the other hand, the production returns, to wit the growth in productivity, and even one may say "the wealth of nations", relies on two new economies of scale: 'dynamics economies of learning [connected to the processes of new knowledge production], strictly depending on the characteristics of new ICT ... [and] we have new spatial economies, related to the existing network and capabilities that affect a given territory and are able to increase diffusion of knowledge [and technological progress] (Lucarelli and Fumagalli, 2008: 78). To put it another way, productivity gains are increasingly based on learning processes, concerning the way in which information and knowledge moving around in the company and in society could be absorbed, and network economies, concerning 'the territorial factors outside the individual enterprise that generate productive innovation' (Moulier-Boutang, 2011: 54). It follows that the driving sectors of knowledge-based economy are not to be found exclusively in privately owned Research and Development laboratories. Similarly, the production of knowledge can hardly be attributed to a sort of potent specialised sector. The production of knowledge at present times increasingly occurs through the social cooperation between brains, and 'the sector ... corresponds today to the whole of society' (Vercellone, 2013: 435). In this regard, it is not unrelated then 'the division of labour model, which served

as the basis of political economy in Adam Smith's famous description of the pin factory and which was subsequently perfected by Taylorism, has been brought into question ... We are witnessing a revolution ... in the division of labour and its components' (Moulier-Boutang, 2011: 51).

Externalities, or rather external economies have ever increasingly become central to the economic life. More precisely, the organisational strategy of internalising the positive externalities tends to become an essential element in all sectors of economic production. 'If the core of the value to be extracted is based on intelligent, inventive and innovative labour [the labour of mass intellectuality as we shall see], and if the latter mobilises the cooperation between brains in networks, then capturing positive externalities becomes the number one problem of value' (Moulier-Boutang, 2011: 55). I shall attempt to discuss the notion of positive externalities via the notion of *the common* in the following chapters in detail.

Finally, as informing one of the main terrains of investigation within this work, 'the production of capital is, ever more clearly and directly today, the production of social life' (Hardt and Negri, 2004: 146); 'the results of capitalist production are social relations and forms of life' (2009: 131). The living labour, according to Hardt and Negri, is *biopolitical*, 'engaging social life in its entirety' (2004: 94). 'One might still conceive of economic production as an engagement of the subject with nature, a transformation of the object through labour, but increasingly the "nature" that biopolitical labour transforms is subjectivity itself' (Hardt and Negri, 2009: 172). In tune with Hardt and Negri, Moulier-Boutang argues for the current era that 'whereas industrial capitalism could be characterised as the production of commodities by means of commodities, cognitive capitalism ... produces living by means of the living. It is immediately production of life, and thus it is bioproduction' (2011: 55). In regards to the phenomenon of '*production of living by means of the living*' (Moulier-Boutang, 2011: 143), Boyer develops a hypothesis that 'if we had to hazard a guess on the emerging model in the next decades, we would probably have to refer to *the production of man by man* and explore right away the institutional context that would permit its emergence' (2002: 192). It is precisely in this biopolitical context that Marazzi (2005), one of the

leading figures of post-*operaismo*, speaks of the becoming-of-anthropogenic model of production: *human beings are produced precisely by the means of human beings.*

Chapter Five

Locating the Thesis of Cognitive Capitalism in Marxist Theory

This chapter attempts to congregate the key elements for a characterisation of a contemporary turn to cognitive capitalism through a first-hand reading of *Capital* -in particular *Results of the Immediate Process of Production*- and “the midnight notes” of Marx the *Grundrisse* -in particular *Fragment on Machines*-; the texts whose main themes traversing the thesis of cognitive capitalism have been examined and expanded by the leading theorists of *operaismo* and *post-operaismo*. In its attempt to answer the question of “to what extent it is possible to find in Marx the elements for the identification of (i) the current turning point in the dynamic of capitalism in the *longue durée*, and (ii) the new form of antagonism traversing the relationship between capital and labour”, the chapter adopts an approach that directly combines theory and history, integrating the heuristic Marxian analytical concepts (e.g. “Formal Subsumption”, “Real Subsumption”, General Intellect) in conjunction with the *operaist* & *post-operaist* ones (e.g. Social Factory, Diffuse Intellectuality) with the historical account of social insurgency against capital. As one of the conclusive remarks, the chapter partly dissents from Antonio Negri’s and Carlo Vercellone’s comments and invites readers to think of the emerging form of antagonism in an original way, more precisely around the dynamics of the *co-existence* of formal subsumption of labour-process and capital’s increasing tendency towards subsuming the *bios* itself.

Marx and Technical Machines, “Formal Subsumption”, “Real Subsumption”

‘The handmill gives you society with the feudal lord; the steam-mill, society with the industrial capitalist’ (Marx, 1995: 219-220). This well-known quote, from *The Poverty of Philosophy*, has been regarded for many (e.g. Friedman, 2005; Gray, 2005) as one of the satisfactory evidences to charge Marx with the terms of technological determinism. Rosenberg (1982) and Harvey (2010) have discussed thoroughly how Marx’s insight on machines is advanced and multifaceted. Before moving towards Marx’s sophisticated analysis, it is useful to mention very briefly as a starting point, as Thoburn (2003) had aptly discerned, how French post-structuralism, in particular Deleuze and Foucault, and Marx exhibit quite analogous recognition of technical machines.

Foucault's (1991) Bentham's Panopticon is an architectural technology whereby self-government is constructed through the interplay between visibility and invisibility. The prisoner who is put into darkness of uncertainty begins to observe and control his/her practice. The Panopticon is apparently constituted of physicality, to wit cells, tower, a wide-hall, and so on. According to Foucault, this physical technology cannot be thought in isolation since it operates only inasmuch as it is grounded in *diagram*, which concerns the realm of *social*, that is the regime of thought and relations. Technology, therefore, is conceptualised as the solidification of the social. What Foucault calls diagram appears as *abstract machine* in Deleuze: 'the abstract machine is the informal diagram' (1988: 34). In his book entitled as *Foucault*, Deleuze writes that 'the machines are social before being technical ... No doubt [a material technology] develops its effects within the whole social field; but in order for it to be even possible, the tools or material machines have to be chosen by a diagram and taken up by the assemblages' (1988: 34). Deleuze is precise when he says to Negri that 'the machines don't explain anything, you have to analyse the collective apparatuses of which the machines are just one component' (1997: 175). In this schema, the apparent concrete machine presents itself as a sign of *the abstract machinic environment*.

In a footnote of *Machinery and Large-Scale Industry*, chapter XV of *Capital* volume I, Marx writes that:

Technology reveals the active role of man to nature, the direct process of the production of his life, and thereby it also lays bare the process of the production of the social relations of his life, and of the mental conceptions that follow from those relations. (Marx, 1990: 493)

As David Harvey (2010) stresses in *A Companion to Marx's Capital*, Marx's commentary on technology connects six identifiable conceptual elements/moments/spheres in one elegant proposition. First of all, there is technology and organisational forms. Secondly, there is the relation to nature. Thirdly and fourthly, we have the actual process of production, and the production and reproduction of daily life. Fifthly and sixthly, there are social relations and mental conceptions. These spheres, embedded in a set of

institutional arrangements and administrative structures, are neither static nor causally connected but rather they are in motion; they are dialectically interwoven through the circulation and accumulation of capital. None of them dominates while none of them is independent of interaction. As Harvey notes, 'it is more like an ecological totality, what Lefebvre refers to as an 'ensemble' or *Deleuze as an 'assemblage' of moments coevolving in an open, dialectical manner*' (2010: 196, emphasis added). Technology, then, *reveals* or discloses or unveils the dialectically interwoven assemblage of moments but, as evident in Marx's text, never *determines*. As a concrete manifestation of his thought, it is worth to call to mind the way in which Marx, in a footnote (1990: 333-334), analyses the rudimentary plough, a concrete technology, as the *revealing* aspect of the socio-economic *totality* of slavery.

Marx's sophisticated understanding of machines, or better to say his refined analysis of the relationship between technical and social is well presented in the text entitled as '*Resultate des unmittelbaren Produktionsprozesses*' ('*Results of the immediate process of production*') which was originally planned by Marx to be Part Seven¹⁹ of the first volume of *Capital*. Yet he abandoned his intention to publish it. According to Mandel, Marx may have felt that the part would be out of place in *Capital's* dialectical artistic totality since 'it had a double didactic function: as a summary of volume I and as a bridge between volumes I and volumes II' (1990: 944).²⁰ I must note here that I will revisit the "missing chapter" of *Capital* throughout my thesis, for I read it as one of the exclusive terrains of reference, along with Marx's "*Fragment on Machines*" in the *Grundrisse*, in understanding the phenomenon of cognitive capitalism.

In this text, particularly in the second section of "Results", we find ourselves in Marx's reiteration of the historical transformation from centralised manufacture (associated with mercantile capitalism) to mechanisation and the emergence of large-scale industry (associated with industrial capitalism), which was originally examined within Part Four

¹⁹ In fact, as Chapter Six. 'Seven' was changed to 'six' as Marx intended to publish the Part One as introduction. Also note that Chapter was the term Marx was using what later became Part in the printed work.

²⁰ The enlightening text was first published in 1933, simultaneously in Russian and German, by Adoratsky, printed in Moscow. However, it only became an object of intense academic inquiry in the 1960s, when it was reprinted in other Western languages, appearing in English first in 1976, then in 1990, as an Appendix to the English Penguin edition of *Capital*.

of *Capital* volume I. Marx, in Part Four, discloses one of the characteristics of this transformation as an alteration in the form of surplus value. Conceptually speaking, he introduces two forms of surplus value: absolute and relative. Defining the absolute surplus value, Ben Fine writes that ‘the surplus value produced is expanded by the simple expedient of lengthening the amount of time for which a worker is required to work for a given value of labour power’ (2012: 121). What marks absolute surplus value, therefore, is the production of more surplus value without modification of production processes. In the period of centralised manufacture or in mercantile capitalism capital owners seek to increase the surplus value primarily through extending the working-day hereby ‘the value contributed in return for a given value of labour power’ increases ‘absolutely’ (Fine, 2012: 121).

Capital’s reliance on the extraction of surplus value through lengthening the working-day, however, clashes with some absolute physiological as well as political limitations. The former is inscribed both in the natural limits of a working-day and the need for time for the reproduction of labour power. The latter largely concerns the juridical limitation of working hours led by the Factory Acts. We have been given an important lesson in the *Grundrisse* that capitalism ‘is the endless and limitless drive to go beyond its limiting barrier ... Every limit appears as a barrier to overcome’ (Marx, 1993: 334 and 408). Marx puts that ‘the *specifically* capitalist mode of production has yet other methods of exacting surplus-value at its disposal’ (1990: 1021, emphasis added). In this phrase, he refers to the second form of surplus value, namely the relative surplus value, relying on ‘the re-division of a given working day in favour of surplus value. Formally, this is achieved through reducing the value of labour power by increasing productivity’ (Fine, 2012: 121).

Marx examines, throughout Chapter 13-15 in volume I of *Capital*, the ways in which the productivity of labour could be increased. Considering the improved conditions of the workers in terms of health and fitness, Marx nevertheless associates the main resource of productivity of labour with the application of science and technology to the capitalist production, that is to say with the radical transformation of the methods of production; for instance, the utilisation of technical machines. In this regard for example, Friedrich Engels (1891), introducing Marx’s *Wage Labour and Capital*, directly relates ‘discoveries

and inventions which supersede each other at an ever-increasing rate' to the 'productivity of human labour which rises day by day to an extent previously unheard of.

In the Section II of *Results of the immediate process of production*, Marx approaches the same transition by examining the forms in which labour process comes to be *subsumed* under capital. However, his analysis is now directly political in comparison to Part Four of *Capital*. By definition, subsumption is the qualification from the perspective of the degree to which labour process is integrated into capital's processes of value extraction. Marx uses the categories of 'formal subsumption of labour under capital' and 'real subsumption of labour under capital' (1990: 1019-1038). Allow me to delve into the central text of Marx.

'What is happening is that,' Marx observes the period, 'production processes of varying provenance have been transformed into capitalist production' (1990: 1220). However, he adds, 'this change does not in itself imply a *fundamental* modification in the real nature of the labour process, the actual process of production [i.e. mode of labour]' (1990: 1221, emphasis added). 'There is no change as yet in the *mode of production* itself. *Technologically speaking*, the *labour process* goes on as before ... Technological process remains the same' (1990: 1026-31). The change is '*purely one of form*'; the change 'is one which increases *the continuity and intensity of labour*' (1990: 1028-6). What occurs fundamentally is that capital 'takes over' and begins to subsume 'an existing labour process, developed by different and more archaic modes of production' (1990: 1221).

In formal subsumption of labour under capital, capitalists do work in the manner the labourers work. Capitalists 'differ only slightly from the workers in their education and their activities' (1990: 1027). The '*mode of compulsion* (i.e. the form of compulsion by which surplus labour is exacted') [is] not based on personal relations of *domination and dependency*, but simply on differing *economic functions*' (1990: 1021, emphasis added). Marx presents the latter as one of the essential features of formal subsumption of labour under capital:

The pure money relationship between the man who appropriates the surplus labour and the man who yields it up: subordination in this case arises from the *specific content* of the sale – there is not a subordination underlying it ... What brings the seller into a relationship of dependency is *solely* the fact that the buyer is the owner of the conditions of labour. There is no fixed political and social relationship of supremacy and subordination. (Marx, 1990: 1025-6)

Here, therefore, the production process is characterised by ‘an *economic ... a purely financial* relationship of subordination’ as it is conditioned by the state of affairs that ‘his [worker’s] *objective conditions of labour* (the means of production) and the *objective conditions of production* (the means of subsistence) confront him as a *capital*, as the monopoly of the buyer of his labour-power’ (Marx, 1990: 1026-7). Following the argument, accordingly, the sole manner of extracting surplus-value from workmen in the phase of “formal subsumption” is recognised, by Marx, as the lengthening of the working day: ‘the form based on absolute surplus-value is what I call the formal subsumption of labour under capital’ (1990: 1025).

Even while writing on ‘formal subsumption’, Marx begins to touch upon *the real subsumption of labour under capital*:

The way in which even the merely formal subsumption of labour under capital begins to become differentiated within itself is in terms of the *scale* of production ... [T]he real subsumption of labour under capital, i.e. *capitalist production proper*, begins only when capital sums of a certain magnitude [i.e. ‘the volume of the means of production invested, and the number of workers under the command of a single employer’] have directly taken over control of production. (Marx, 1990: 1022-7)

We now find ourselves in the realm of ‘*specific mode of production -capitalist production- which* transforms the nature of *the labour process and its actual conditions*’ (1990: 1035). In fact, we are now in the period of industrial capitalism. The production process is revolutionised by ‘the conscious use of the sciences, of mechanics, chemistry ... technology ... and machinery’ (1990: 1024); this ‘revolution takes place in the mode of

production constantly' (1990: 1035); the material expression of exploitation is the production of relative surplus-value, i.e. the intensification of productivity; capital becomes '*the direct purchaser* of labour and as *the immediate owner* of the process of production' (1990: 1023).

I want to underscore the two-fold dimension of the dynamic of development of "real subsumption". First, as Vercellone states, 'the subsumption of labour to capital is now imposed as an imperative dictated in some way by technology ... The compulsion to wage-labour is no longer merely of a monetary nature, but also of a technological nature, rendered endogenous by technical progress' (2007: 14). Therefore, the thesis of "real subsumption", first, designates the integration of labour process into the intricate processes of machinery. Marx says that 'it is machines that abolish the role of handicraftsman as the regulating principle of social production' (1990: 491). In the *Grundrisse*, the reconfiguration of machines and labour in the mechanism of "real subsumption" is provided in a lucid way:

The production process has ceased to be a labour process in the sense of a process dominated by labour as its governing unity. Labour appears, rather, merely as conscious organ, scattered among the individual living workers at numerous points in the mechanical system; subsumed under the total process of the machinery itself, as itself only a link of the system, whose unity exists not in the living workers, but rather in the living machinery, which confronts his individual, insignificant doings as a mighty organism. (Marx, 1993: 693)

At the second level, "real subsumption" designates the *tendency* of capitalism proper to invest the entire society, to wit the tendency of the subordination of social in its totality. I say *tendency* because it remains veiled in the "Results" by itself. For example, while comparing "formal subsumption" with "real subsumption", Marx argues that the former is not 'capable of determining the form of *society* as a whole' (1990: 1023). It would be plausible to argue, then, that "real subsumption" is essentially capable of determining the form of society in its totality -yet to be realised. The latter is implied once again when Marx prospectively speaks of the penetration of capital into social: 'capital must increase the value of its operations to the point where it assumes *social* dimensions'

(1990: 1035, emphasis added). What manifests itself ephemerally but at the same time remains largely implicit in the “Results”, namely that *the tendency of real subsumption of society*, or more precisely the tendency of the subordination of social as a whole into the capitalist regimentation, was reflected upon by the Marxist theorists of *operaismo* with a return to *Capital* volume II and III and the *Grundrisse*.

From Real Subsumption of Labour to the Social Factory Thesis

The thesis of *real subsumption of society under capital* is developed through the concepts of Mario Tronti’s *social factory* and Antonio Negri’s *factory without walls, diffuse factory, and factory-society*. All concepts mentioned here represent the very idea that the capitalist development has progressively extended the capitalist logic associated precisely with the industrial factory into society. Concisely, all concepts convey ‘the effective, functional and organic subjugation of all the social conditions of production’ (Negri, 1991: 113). The social has increasingly become a vast plane of capitalised activity such that, Negri argues, ‘the whole society [has been] placed at the disposal of profit’ (1989: 79).

The social factory or diffuse factory thesis was upheld, in addition to Tronti and Negri, by other important figures of *operaismo* as well. Panzieri, for example, puts it that ‘the more capitalism develops, the more the organisation of production is extended to the organisation of the whole society’ (1994: 68). In the same vein, Alquati develops an argument, grounded in an extensive empirical research in Turin, that there is no one moment of a labourer’s life that is not invested by capital:

Turin is considered the ‘factory-city’. And it’s even true that there isn’t one aspect of the ‘social life’ of the city that is not a moment of the ‘factory’, understood in the Leninist sense as ‘social relation of production’ ... There are no simple, clear-cut distinction, then, between the plants where surplus value is created, the residential zones where labour-power reproduces itself, and the centres of administration of the movements of variable capital, of commodities, products and semi-worked primary and auxiliary materials. (Alquati, 1975: 230 in Wright, 2002: 80)

As presently noted, Tronti had already expressed his primary thoughts in regards to the subjugation of entire social relations in an essay written in 1962:

The more capitalist development advances, that is to say the more the production of relative surplus value penetrates everywhere, the more the circuit production – distribution – exchange - consumption inevitably develops; that is to say that the relationship between capitalist production and bourgeois society, between the factory and society, between society and the state, become [sic] more and more organic. At the highest level of capitalist development social relations become moments of the relations of production, and the whole society becomes an articulation of production. In short, all of society lives as a function of the factory and the factory extends its exclusive domination over all of society. (Tronti, in *Quaderni Rossi* no. 2 in Cleaver, 1992: 137)

Therefore, extensive empirical studies in Italy demonstrated that capital increasingly extended to society. Yet we have noted that this was already provided in the “Results” in an implicit manner, as a tendency -but without a solid theoretical elaboration. The latter could be discovered in other writings of Marx.

The origins of the thesis of Tronti’s social factory or Negri’s diffuse factory are grounded in the *Grundrisse* and the second and third volumes of *Capital*. The thesis was primarily developed through Tronti’s (1973) analysis of Marx’s *social capital* in *Capital*.²¹ It was further elaborated by Negri (1991) throughout his reading of the *Grundrisse* in his epoch-making book *Marx Beyond Marx* (see. in particular, *Lesson Six: Social Capital and World Market*).

Moving from volume I to volume II and III, Marx’s analysis progresses from immediate process of production, to wit the production of surplus-value (I), to that of circulation and exchange of this surplus-value on the basis of given value relations within production (II), and the distributional relations as they emerge out of the interaction

²¹In this regard, it is very hard to agree with Maria Turchetto’s “Social Factory” interpretation. She says, ‘In Tronti, the idea of extension of the factory above all refers to the phenomenon of *the expansion of the service sector* in the economy’ (2008: 291).

between production, and circulation and exchange (III). In volume II and III, the reader finds herself in the realm of more sophisticated socio-economic structure in which the abstract categories of production are examined in forms that are more concrete. In terms of our subject matter, for instance, Marx analyses the interplay between the level of individual moments of production and the broader levels of circulation and distribution. Similarly, in the *Grundrisse* 'Marx's analysis tends more and more to the concrete ... from the surplus value theory to that of circulation' (Negri, 1991: 106).

Marx, in volume II, writes that 'every individual capital forms, however, but an individualized fraction, a fraction endowed with individual life, as it were, of the aggregate social capital, just as every individual capitalist is but an individual element of the capitalist class' (1957: 351 in Tronti, 1973: 98). Therefore, Tronti interprets, when one considers all the forms that capital takes in its cycle, 'the movement of individual capital turns out to be a part of the total movement of *social capital*' (1973: 98, emphasis added). Social capital points at such a high level that its 'annual function', according to Marx, is 'the commodity-product furnished by society during the year' (Marx, 1957: 351 in Tronti, 1973: 98). What might we really understand by Marx's social capital?

For neither Tronti nor Negri, does it denote the simple sum of individual capitals in society. 'Social capital', for Tronti, 'is the whole process of socialisation of capitalist production' (1973: 105, emphasis added). According to Tronti, the idea of socialisation of capital is evidently present within Marx's texts, particularly in volume II, in which Marx analyses the circulation of capital. Marx recognises that 'the maintenance of circulation on a broad scale (total annual commodity-product) necessitates not the operability of individual capital, or of 'production', 'reproduction', and 'consumption' as distinct spheres, but the maintenance of capitalist relations *as a whole* across society' (Thoburn, 2003: 78). Through its circulation, hence its socialisation 'capital raises itself to the level of general social power', that is to say to the level of 'ramified factory system' to which 'the whole society becomes articulated and thusly all of society lives as a function of it' (Tronti, 1973: 107 and 100).

The analytical transition from real subsumption of labour to society via the categories of *circulation*, *socialisation* and *social capital* does also take part in Negri's *Marx Beyond*

Marx (1991: 105-125). One may capture the core argument of Negri at the beginning of the Lesson Six:

Capital, in fact, becomes more and more a collective force through this expansion [i.e. socialisation of capital], and it subjugates ever more widely the productive forces ... whenever a higher level is reached: the level of social capital, of the subjugation of the whole society. (Negri, 1991: 106)

Marx states in the *Grundrisse* that 'the circulation of capital is at the same time its becoming, its growth, its vital process. If anything needed to be compared with the circulation of the blood ... [it] was the content-filled circulation of capital' (1993: 517). 'Circulation,' Negri writes, 'is *the expansion of the potency of capital*; and for the same reason it entails the *appropriation* of all the social conditions and their placement in *valorisation*' (1991: 112). Therefore, 'circulation is the sinew which organizes and ties together not only all of the separate moments of production, but also all of the social conditions of reproduction' (Cleaver, 1991: xxiv). It is through this circulation that Negri speaks of the socialisation of capital that 'is a process which determines ... an irresistible compulsion towards expansion, appropriation and homogenization –under the sign of a social totality' (1991: 113). In such a social totality, 'capital comes to be really unified' (1991: 113), and this is the level of 'social capital: in which the expansive power of capital is consolidated through and upon circulation' (1991: 121).

Therefore, when we speak of social factory or diffuse factory, we actually speak of the tendential realisation of Marx's foresight that 'the real community has constituted itself in the form capital'; 'capital has subjugated all the conditions of social production to itself'; 'quite obviously *adequate institutional forms* for capital and its state correspond to this progress in this subsumption' (Marx, 1993: 531-2 in Negri, 1991: 113-4). The society, to put it more concretely, is increasingly constituted by *capital* that is precisely and entirely *social capital*. The passage to the level of social capital is a '*qualitative leap which permeates the category of capital*' (Negri, 1991: 114). Society now reveals itself as capital's society. 'And besides the social conditions ... capital progressively subsumes all the elements and materials of the process of circulation, and thereafter, all those

pertaining to the process of production, so that herein lies the foundation for the passage from manufacture to big industry to *social factory*' (1991: 114).

The Historical Foundation

I think that it is now time to move on to historical and material foundations in order to solidify our somewhat abstract theoretical framework. Yet before that, I invite the readers to a very brief parenthesis consisting of two remarks.

Firstly, I want underscore that we have a categorical distinction between real subsumption of *labour* under capital and the real subsumption of *society* under capital. While the former primarily designates the integration of labour process into intricate processes of machinery, the latter indicates the process of socialisation of capitalist production concerning the society, to with the synchronisation of factory-based labour process with the society. Secondly, in my view, it will not be erroneous to think of real subsumption of *society* under capital via its two determinations: *the realisation* of real subsumption of society and *the fulfilment* or *the culmination* of real subsumption of society. By *realisation*, I want emphasise the fact, as we shall examine in what follows, that the factory, and the articulated capitalist production relations, had already begun to extend to society starting with the period following the structural crisis of capitalism of the 1920s. By *culmination*, on the other side, I mean a qualitative leap, the intensification of "real subsumption" of society under capital with the phase of post-industrialism such that capital now *tends* to invade the social *bios* itself; as understood the ways of life; the mode of living; 'the entire life made of needs and desires' (Negri, 1997: 37). "The culmination" will be introduced in this chapter but expanded in the intermezzo chapter. Allow me to look at the historical time informing *the realisation* of real subsumption of society under capital.

In the 1920s, the growth of industrial production in hegemonic capitalist nations was robust, fostered by dint of World War I, and the productivity levels were high, elevated by means of scientific production methods and techniques. However, there was a sort of anarchy of capitalist development; more precisely, a disorder of rational organisation of markets (e.g. wage-regimes) traversing all dominant countries that then resulted in the

crisis of capitalist overinvestment and working-class underconsumption (see. Devine, 1983). That was known as great economic crisis, or as many will recognise the great depression of the 1929. The catastrophic economic crisis hit all hegemonic capitalist countries. The United States was the country -actually the only successful country from the capital's point of view- that could set in motion an effective capitalist reform in order to restructure the economic relations. The capitalist reform mentioned here was Franklin D. Roosevelt's *New Deal* of 1933, which subsequently imposed its effects throughout the global terrain.

Michel Aglietta (1979) characterises the New Deal as a synthesis of *Taylorism*, *Fordism*, and *Keynesianism*: Taylorism as giving a name to the organisation of labour process; Fordism as the regime of wage and social reproduction; and Keynesianism as the model of regulation at the macro-economic level. In fact, the New Deal initially came to the fore as a restructuring programme of the United States that was directed exclusively towards the internal economic crisis. According to Keynes, however, the model progressively crossed the border and imposed itself to the global terrain via World War II so as to transcend capital's ultimate limit of expansion. The New Deal was eventually projected onto global capitalist governments as a kind of *crisis-rescue-model*. Through the dictation (see. Kennedy, 1987 for how come it was a dictation) of economic conventions and projects such as Bretton Woods of 1944, the corporatist state was gradually dismissed and 'the social state was born, or really the global disciplinary state, which took into account more widely and deeply the life cycles of populations, ordering their production and reproduction within a scheme of collective bargaining fixed by a stable monetary regime' (Hardt and Negri, 2000: 244). The model of New Deal continued to expand and develop at a rapid pace, becoming the global economic and political order, however until the 1960s.

According to Negri (1988) and Hardt and Negri (2000), the New Deal model represents one of the highest forms of disciplinary society. However, by disciplinary society, the authors do not solely refer to the juridical and political forms informing the idea. By disciplinary society, it is first and foremost understood that:

The entire society, with all its productive and reproductive articulations, is subsumed under the command of capital and the state, and that the society tends, gradually but with unstoppable continuity, to be ruled solely by criteria of capitalist production. *A disciplinary society is thus a factory-society*. Disciplinary production and disciplinary society tend to coincide completely. In this new factory-society, productive subjectivities are forged as one-dimensional functions of economic development ... The disciplinary capitalist regimes are extended across the entire social terrain. (Hardt and Negri, 2000: 243)

What is put by Hardt and Negri, to my understanding, corresponds to *the realisation* of real subsumption of society under capital, to wit the socialisation of capitalist production via the embracement of the trinity of the New Deal (i.e. Taylorism, Fordism, and Keynesianism) beginning early in the 1930s. Indeed, Negri, in *Revolution Retrieved*, seems to affirm that it was precisely with the introduction of the trinity of New Deal programme that capital began to synchronise itself with society:

Keynesianism ... demonstrated this awareness that ... the solution was to be sought across the entire span of production and circulation – in other words, involving the entire sociality of the relations of production and reproduction. Fordism had already transformed the high level of cooperation on the assembly line into a conscious policy, one might say, of the sociality of the assembly line – in other words, a policy of command over the relation between industrial production and the reproduction of labour-power ... Fordism recuperated social motivations and made them functional to the Taylorist organisation of work. (1988: 207)

We have noted that the model of New Deal served to the priorities of capital however until the late 1960s. The threatening presence of antagonism within class relations was brought under control; the balance between the social insurgency and capital's priorities was dealt with yet temporarily -as it has always been. The late 1960s was marked by the severe crisis of capitalist production. Negri (1988) taught us, in *Marx on Cycle and Crisis*, that capitalist crises cannot be understood merely as a sort of end-products of capital's

own objective tendencies or simply of the inevitable cycles of capitalist accumulation. Instead, they, in fact, directly stem from the antagonistic relationship between working-class and capital. The proletarian conflict is the motor of the capitalist crisis (and, in fact, it is the one that determines the capitalist re-arrangement process). In the late 1960s, it was the accumulation of struggles of the peasantry, post-colonial workers, students, scholars, industrial working class, emerging stratum of intellectual labourers against the transnational *social factory* system, imposed via the synthesis of Taylorism-Fordism-Keynesianism, that put downward pressure on the rate of profit and disrupted the relations of capitalist command.

Negri et al. (1996) in *Do You Remember Revolution*, Hardt and Negri (2000) in *Empire* present the ways in which the working class attack on capital presented itself. Firstly, the insurgency was expressed as a refusal of (factory) work; more precisely, the refusal of the capitalist models or ideologies of social production aiming at or promoting constantly-increasing productivity. The refusal of work was exercised through the wildcat strikes, sabotage, slowdowns and absenteeism. The social sphere subtracted from the factory came to be a sort of blossoming terrain animating new practices and ultimately a new form of living. Secondly, the mass-struggle was directed against the suffocating structures of capitalist command, hence, it was directly political, attacking the organisation of capitalist labour-process from its very core. Thirdly, the industrial divisions of labour market were increasingly put on pressure by the insubordination of workers. More precisely, 'the three primary characteristics of the labour market -the separation of social groups (by class strata, race, ethnicity, or sex), the fluidity of labour market (social mobility, tertiarisation, new relations between directly and indirectly productive labour, and so forth), and the hierarchies of the market of abstract labour-were all threatened by the rising rigidity and commonality of worker demands' (Hardt and Negri, 2000: 261-262). With respect to the latter, Dyer-Witheford argues that 'the new social movements of the era can be understood ... as [struggle's] blossoming: an enormous exfoliation, diversification, and multiplication of demands, created by the revolt of previously subordinated and superexploited sectors of labour' (1999: 75).

In the 1970s, the crisis became more open, more structural, and more severe. The model of New Deal, including the economic convention of Bretton Woods, was thrown into

disarray. Capital had to respond; had to engage in counter-attack in order to suppress the social uprising and resurrect its command on rebellious subjectivities. Among others, the major and most consequential strategy embraced by capital, according to Dyer-Witheford (1999), came to forefront as the execution of cyber-command, that is to say the implementation of brutal use of technology, in the form of high-automation and high-computerisation, to the labour-process. 'The previous fundamental technological transformation in the history of capitalist production (that is, the introduction of the assembly line and the mass manufacturing regime),' Hardt and Negri argue, has been radically modified and 'an enormous step forward in the regulation of the social cycle of reproduction' has been taken (Hardt and Negri, 2000: 267). Dyer-Witheford states that 'for what occurs from the mid-1970s onward is that computer and telecommunication devices, developed since the end of World War II primarily for the containment of international communism, are transferred for internal application as the command, control, communications and intelligence system for the reestablishment of capitalist discipline and productivity' (1999: 77).

In the service of capital's fundamental objective of reducing working class subjectivity to mere labour power (see. the method chapter), in concise, all the sciences, the accumulated set of knowledge(s) of humanity, the general cognitive schemes of brains have been continuously applied to the production process, ultimately desiring to achieve somewhat automated labour process to be controlled and driven by machinery and organisational systems rather than living working subjects. In fact, the latter type of development and its potential consequences had been contemplated by Marx.

General Intellect in the Fragment on Machines

Marx introduces the expression *general intellect* in a famous *Grundrisse* passage known as *Fragment on Machines*²², written in 1858, which is, according to Negri, 'without doubt, the highest example of the use of the antagonistic and constituting dialectic that we can find, certainly in the *Grundrisse*, but perhaps also in the whole of Marx's work' (1991: 139). Many Italian Marxists have indeed long insisted on the vitality of the "Fragment".

²² The Fragment on Machines covers the end of Notebook VI and the beginning of VII.

This is evident, for instance, when Virno regards the passage as ‘a sociologist’s toolbox ... a topographical map’ (1996b: 267) in understanding the composition of political forms in different socio-historical contexts. Virno in this regard writes that:

We have referred back many times to these pages ... in order to make some sense out of the unprecedented quality of workers’ strikes, of the introduction of robots into the assembly lines and computers into offices, and of certain kinds of youth behaviour. *The history of the ‘Fragment’s’ successive interpretations is a history of crises and of new beginnings.* (Virno, 1996b: 265, emphasis added)

In the “Fragment”, Virno notes, Marx brings forward a thesis ‘which is not very Marxist at all’ (1996b: 265). In these pages, Marx casts aside, though transiently, his established analysis of labour process in producing surpluses required for the social progress and engages in a historical projection (even one may say a *provocative* projection) in respect to the trajectory of capitalist mode of production. In the following part, I will attempt to disclose the general argument of *Fragment on Machines*, and then discuss the valuable contributions made on the text by Italian Marxist theorists, in particular by Paolo Virno, Carlo Vercellone, and Antonio Negri.

It is in the “Fragment” that Marx constructs an emancipatory hypothesis. The text is on an essential tendency of historical development; *a tendency towards the replacement of industrial capitalism by communism*. Marx suggests that at a certain period, not-too-distant future, in the development of capitalism the main force of production will cease to be ‘the distinct individual entities of the productive workers that are useful for capitalist production, nor even their work in a conventional sense of the word (Thoburn, 2001: 81). At this stage, rather, the main force of production and the creation of wealth will come to depend on ‘the general powers of the human head’ (Marx, 1993: 694); ‘social brain’ (1993: 694); ‘general social knowledge’ (1993: 705); ‘social intellect’ (1993: 706); ‘the general productive forces of the social brain’ (1993: 709); or famously known, ‘the general intellect’ (1993: 706). According to Marx, Virno aptly interprets, the general intellect refers to ‘the totality of abstract cognitive schemes that constitute the epicentre of social production and together function of as the ordinating principles of all of life’s contexts’ (2007: 3). It refers to, to put it another way, ‘the set of knowledges that

make up the epicentre of social production and pre-ordain all areas of social life' (2007: 4). And by *the set of knowledges*, one could understand 'the whole ensemble of sciences, languages ... activities, skills that circulate through society' (Thoburn, 2001: 81). This development, according to Marx, contains within itself a fatal impasse, to wit the seeds of capitalist nightmare, manifesting itself in two structural contradictions, as we shall discuss shortly. It is precisely in this context of impasse Marx writes that 'capital thus works towards its own dissolution as the form of dominating production' (1993: 700). Allow me to elaborate.

I have tried to examine, through *Capital* volume I, the thesis of real subsumption of labour under capital. Since formal subsumption of labour was not functioning in the pure interest of mercantilists given that, above all, independent workers were controlling *the intellectual powers of production*, capital progressively turned to real subsumption of labour process. The system of machinery was utilised in the production processes as a form of counter-attack that went hand in hand with the abstraction of labour through fragmentation and simplification of the labour processes. In the second section of the *Results of the immediate process of production*, Marx comes to an end by presenting the unfolding configuration of machines and labour, to wit the integration of labour process into intricate processes of machinery. In the "Fragment", however, Marx provides further and goes much farther.

At the expense of reiteration, let me commence with the *Grundrisse* passage in which one reads Marx's assertive statement with respect to the real subsumption of labour under capital. Marx argues that '*the [capitalist] production process has ceased to be a labour process in the sense of a process dominated by labour as its governing unity*' (1993: 693, emphasis added). If the capitalist production process is less and less dominated by labour, then one can ask the becoming principal force of production and the creation of wealth. Marx writes that:

To the degree that large industry develops, the creation of real wealth comes to depend less on labour time and on the amount of labour employed than on the power of the agencies set in motion during labour time, whose 'powerful effectiveness' is itself in turn out of all proportion to the direct labour time spent

on their production, *but depends rather on the general state of science and on the progress of technology, or the application of this science to production.* (1993: 704-5, emphasis added)

According to Marx, therefore, the advancement of capitalist production will increasingly rest on the application of general intellect to the immediate production. To put it more precisely, for Marx, the creation of wealth increasingly depends on the incorporation of already-accumulated and blossoming general intellect (i.e. the abstract knowledge, the accumulated social intellect, the general powers of the human head) into *fixed capital*. The following quotes from the *Grundrisse* are vital:

The accumulation of knowledge and of skill, of the general productive forces of the social brain, is thus absorbed into capital, as opposed to labour, and hence appears as an attribute of capital, and more specifically of *fixed capital*. (Marx, 1993: 694).

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. (Marx, 1993: 706)

Considering that the general intellect is progressively objectified in fixed capital, that is, transfused into the automatic system of machinery, and since, in parallel, the workers' operations are transformed 'into more and more mechanical ones so that at a certain point a mechanism can step into their places', the capitalist production tends to lessen the necessary labour time (Marx, 1993: 704). 'The human being comes to relate more as a watchman and regulator to the production process itself' (Marx, 1993: 705). In other words, the repetitive labour comes to be relegated to a peripheral and residual position. In principle, this development results in the accumulation of free-time that workmen enjoy for education, training, art, etc. or, in a word, for his fulfilling development. Subsequently, 'the more social agents enjoy free time for creative learning and experimentation, the more the general intellect flourish' (Smith, 2013: 237).

For Marx, however (and I think that this is the fundamental thesis of the “Fragment”), this stage of capitalist development contains within itself a fatal impasse. This impasse is related to two interrelated structural contradictions. First, insofar as the production process and the creation of wealth rest less and less on the labour power of workmen but stem increasingly from the general intellect embodied in fixed capital, ‘*the theft of alien labour time ... appears a miserable foundation*’, and accordingly, as already noted, the labourer ‘steps to the side of production process’ and ‘comes to relate more as watchman or regulator’, instead of constituting its principal agent (1993: 705). Nevertheless, ‘capital itself is the moving contradiction, [in] that it presses to reduce labour time to minimum, while it posits labour time, on the other side, as sole measure and source of wealth’ (1993:706). This implies the crisis of *law of labour-time value* (see the method chapter), which is formulated by Marx as the foundation stone of capitalist production relations. Therefore, ‘what comes to the fore is the lacerating contradiction between a productive process that now directly and exclusively relies on science [or general intellect] and a unit of measure of wealth that still coincides with the quantity of labour embodied in products’ (Virno, 2007: 4). Bowring interprets this explosive contradiction in the following passage:

Surplus value cannot be converted into capital –and thus capitalist social relations cannot be smoothly reproduced- when the income distributed for the consumption of an expanding volume of commodities is allocated to individuals in proportion to their labour time, which is now an infinitesimal, vanishing magnitude. (2004: 114)

The second contradiction which is linked to the first one is hinted in the previous pages of the *Grundrisse*: ‘since all *free time* is time for free development, the capitalist usurps the *free time* created by workers ...’ (Marx, 1993: 634). While enjoying the fruits of the general intellect by applying them to the machinery and organisational systems, capital creates the material and social preconditions for the blossom of social individual. However, ‘its [capital’s] tendency is always ... to convert it [disposable time] into surplus labour’ (1993: 708). Thus, capital at the same time comes to block the self-realisation possibility of the social individual by constantly attempting to transform disposable time

into surplus labour. According to Marx, Smith interprets, this contradiction indicates such a high level of '*social irrationality*' that 'it will motivate struggles for an alternative social order ... for creative learning and experimentation for all' (2013: 237, emphasis added).

Marx thusly saw in the tendency of the collapse of production based on exchange value and of the intensified social irrationality, the potential for communism –not too distant future - where the general intellect and its associated agent, the social individual, will come to flourish and realise themselves fully. It will be within communism where:

On the one side, necessary labour time will be measured by the needs of the social individual, and, on the other, the development of the power of social production will grow so rapidly that, even though production is now calculated for the wealth of all, disposable time will grow for all. (Marx, 1993: 708)

It is the phase of human development in which we will experience:

The free development of individualities, and hence not the reduction of necessary labour time so as to posit surplus labour, but rather the general reduction of the necessary labour of society to minimum, which then corresponds to the artistic, scientific etc. development of the individuals in the time set free, and with the means created, for all of them. (Marx, 1993: 706)

Now, it is hardly possible to disagree with Dyer-Witheford who writes that 'today, "The Fragment on Machines" seems simultaneously astoundingly prescient and sadly anachronistic' (1999: 221). Marx's anticipation has materialised in that 'all the sciences have been forced into the service of capital ... invention [has] become a business, and the application of science to immediate production itself [has] become a factor determining and soliciting science' (Marx, 1993: 704). Marx was certainly right once again: when we consider the incorporation of accumulated knowledge of men into fixed capital, the expansion of machines, the development of robotic factories as well as global computer networks, it appears that Marx's historical projection in terms of capital's technologic-scientific trajectory has factually realised. However, it has realised as anticipated

without an emancipatory reversal opposing what Marx had anticipated. Instead, 'contradiction in progress has become a stable component of the existing mode of production' (Virno, 1996b: 267).

For Virno (1996b) too, Marx's projection holds with respect to the integration of extraordinary levels of high technology and automation into production processes (primarily as a counter-attack against mass working-class struggles of the 1960s and 1970s). As Marx anticipated in the "Fragment", 'the actual time spent in labour and exertion has become a marginal productive force. Science, information ... and knowledge in general – rather than labour time- are now the central pillars on which production and wealth rests' (Virno, 1996b: 267). In this regard, Virno writes of 'the complete factual realization of the tendency [a productive process that makes direct and exclusive use of science] described in the "Fragment"' (1996c: 23). Nevertheless, even though Marx's projection holds in many respects, the production process has not left the ambit of capital-relation (e.g. wage, private property). 'Separate from its demand for a radical transformation,' Virno asserts, 'the "Fragment" is nothing but the last chapter of a natural history of society, an empirical reality, the recent past, something that has already been. Notwithstanding this, or precisely because of this, the "Fragment" allows us to focus on several aspects of the ethos of the present day' (2006c: 23).

Eppur Si Muove [Yet It Does Move]

First, I must note that Vercellone's interpretation of the *Fragment on Machines* in general, the general intellect in particular, is not identical with Virno's. However, both theorists agree upon the essential point: following the social crisis of capitalism in the 1960s and 1970s, the capitalist mode of production did not vanish from the world history but it prosperously, from the point of view of capital, mutated into a new modality in which the principle force of production, the creation of wealth increasingly came to be *the general intellect embodied in living subjects, living labour*. This is the decisive aspect, the fundamental constituent of contemporary capital accumulation. For Virno and Vercellone (as well as Negri), we live in the era of *society of general intellect* with its figure of the collective worker (of the general intellect) though (still) under the imposition of the invariant laws of capitalism. Capitalism has transformed itself into a

new modality precisely as a response to social struggles of the 1960s and 1970s, and it now attempts to mobilise and subsume the social and creative energies of immaterial and intellectual labour whereas, while attempting to do so, it increases the significance of the intrinsic antagonism between capital and labour.

In the period of the great social crisis of the 1960s and 1970s, as touched upon before, the insurgent mass labourers achieved to produce a new margin for freedom. More precisely, 'workers made use of the disciplinary era [in my suggested terminology: of the *realisation* of real subsumption of society under capital], and above all its moments of dissent and its phases of political destabilisation (such as the period of the Vietnam crisis, in order to expand the social powers of labour, increase the value of labour power, and redesign the set of needs and desires' to which capital had to respond' (Hardt and Negri, 2000: 273). The refusal of scientific organisation of labour was accompanied by 'a re-evaluation of the social value of the entire set of productive activities' (2000: 273). The value of being a member of stable, repetitive, and structured work process, of a massive factory, and ultimately of a mode of life: Fordist-Life with its fixed reproduction schemes were devalued especially by the youth population. New modalities of living, a desire of liberation, and a new subjectivity began to flourish. In accordance, people began to demand more creative, flexible, communicative, cooperative, or in a word, more fulfilling form of production. 'The movements valued ... a more flexible dynamic of creativity and what might be considered more *immaterial* forms of production' (2000: 274).

The intensified demand for more cognitive and immaterial labour was directly linked to the great transformation in the social fabric concerning, first and foremost, the diffusion of knowledge horizontally across society as it was precisely the latter phenomenon that set in motion the activities of cognitive and immaterial labour. According to Vercellone, in tune with Hardt and Negri, the imposition of social/diffuse factory was contradicted by the mass social insurgency in the 1960s and 1970s, and the force of social struggles culminated in a conflictual process that 'led to [i] the socialisation, on the part of the state, of certain costs of the reproduction of labour-power' (2007: 25), and '[ii] a formidable extension of the social wage' (2013: 431). With respect to *the socialisation*, one may think of the 'development of the institutions of the welfare state, [above all]

mass education is established' (2007: 25). The expansion of the Welfare State provided the basis for the development of knowledge-based economy because, Vercellone argues, the Welfare State institutions made possible the 'collective productions such as health, public education and university research rather than in the centres of research and development own by private companies' (2005: 7). In terms of the extension of *social wage*, the monetary constraints of the wage-form were weakened and it progressively 'gave sway to a degree of chosen flexibility between different activities and forms of labour' (2005: 8). This corresponded to a new margin of freedom for the workers, an expansion of free time in the Marxian sense in the "Fragment" that 'living labour could able reconvert a part of surplus labour into free time' (2007: 28). By virtue of (i) free time deriving from the extension of social wage; as well as (ii) the socialisation of access to knowledge (socialised and free mass education), wage workers could enjoy their free times in formal and informal education and training as well as in fulfilling forms of practices, growing ultimately into *a depository of cognitive capacities*. This progress 'permitted wage-labourers to accumulate a technological, theoretical, and practical knowledge adequate to the level attained by the capitalist development of the social and technical division of labour' (2007: 27). This state of affairs is called *diffuse intellectuality* by Vercellone (2005, 2007, 2013) which literally means the intellect that diffused across whole society (certainly including waged-labourers) in consequence of, above all, the 'democratisation (although partial) of education' (2007: 25) -but always at the outset by the virtue of victorious social struggles.

At this juncture, I reckon that one should turn to Virno. Virno undertakes a fundamental critique of the "Fragment". He asserts that 'Marx completely identified the general intellect with fixed capital' (2006b: 270). When Virno says 'identification', he refers to the conceptualisation of the general intellect that assumes the crystallisation of abstract knowledge in fixed capital, that is, 'general intellect as a scientific capacity objectified within the system of machines' (Virno, 1996d: 194). In Marx, in other words, general intellect coincides fully with fixed capital. Marx, according to Virno, 'thereby reduces the external or public quality of intellect to the technological application of natural sciences to the process of production' (1996d: 194). It is my view that this is a plausible critique even though Vercellone (2007) does not agree with Virno's reading of the "Fragment". Allow me to reiterate what Marx says: 'the accumulation of knowledge and of skill, of the

general productive forces of the social brain [this is the definition of general intellect], is thus absorbed into capital, *as opposed to labour*, and hence appears as an attribute of capital, and more specifically of *fixed capital ...*' (Marx, 1993: 694, emphasis added); 'the development of fixed capital indicates to what degree general social knowledge has become a direct force of production ...' (1993: 706).

For Virno, 'this notion of general intellect' is 'well beyond the idea of knowledge materialised in fixed capital' (1996c: 22). Marx neglected, he asserts, 'the instance when that same general intellect manifests itself on the contrary as *living labour*' (1996b: 270). In other words, the general intellect, 'rather than being [merely] a *machine machinarum*', also presents itself 'a direct attribute of living labour, as a repertoire of a diffuse intelligentsia' (1996d: 194). 'The general intellect understands artificial languages, system and information theories, the whole gamut of qualifications in the way of communication, local knowledges, informal "linguistic play", as well as certain ethical preoccupations' (1996b: 270). Virno speaks of the *mass intellectuality* in the same way Vercellone speaks of the *diffuse intellectuality*, the subjective component of the general intellect. Mass intellectuality, Virno elaborates, 'is living labour in its function as the determining articulation of the "general intellect" (1996b: 270). Mass intellectuality (and one may think of *diffuse intellectuality* as well) refers to the 'collective intelligence and accumulated intellectual powers that extend horizontally across society' (Virno and Hardt, 1996: 262). It refers to 'the repository of the indivisible knowledges [and cognitive competencies] of living subjects and of their linguistic cooperation' (Virno, 1996b: 270). It is the 'social body', comprising 'the faculty of language, the disposition to learn, memory, the capacity to abstract and relate, and the inclination towards self-reflexivity' (Virno, 2007: 6). It is 'the faculty of thought, rather than the works of produced by thought' (2007: 6). 'The expression designates ... a quality and a distinctive sign [the capacities] of the whole social labour force' (Virno, 1996b: 271) of the post-industrial capitalism.

Allow me to put pieces together before presenting a brief conclusion. One of the primary workerist lessons concerning the capitalist strategy and planning is that 'the history of capitalist forms is always necessarily a *reactive* history' (Hardt and Negri, 2000: 268). Individual capitalists primarily devote themselves to profit increases in the short term

although collective capital is tendentially converging to the devaluation in the long term. One may then say that capital would never keep away an immediate profitable regime at its own request. Capital transforms its form only when it is forced to, only when the immediate profitable regime goes under a strong threat. According to Negri, Tronti, and their comrades, the force mentioned here is nothing but the proletariat, imposing limits on capital and pushes it to transformation. More concretely, 'the power of the proletariat ... not only determines the crisis but also dictates the terms and nature of transformation' (Hardt and Negri, 2000: 268). That is, '*the proletariat actually invents the social and productive forms that capital will be forced to adopt in the future*' (2000: 268).

Accordingly, the force driving the mutation of capitalism towards cognitive capitalism is to be found in the dynamics of antagonism, more specifically in the accumulated social struggles of the 1960s and 1970s. The fight for liberation, whose influence had come to be felt in every interstice of world space in the late 1960s and 70s, abandoned the social value of the entire set of productive activities (and form of life) associated with the disciplinary regime of the social/diffuse factory, conceptualised above as the *realisation* of real subsumption of society. People increasingly began to engage in and practice alternative modes of living and different forms of labour. The integration of social values of mobility, flexibility, cooperation, communication into labouring practices, in a word the intellectualisation and immaterialisation of work was the first and foremost desire manifested by the labouring multitudes. This was certainly cannot be thought without taking into consideration the diffusion of the set of knowledges horizontally across society inasmuch as it was precisely the becoming of mass intellectuality that gave fire to the activity of immaterial and mass intellectual labour. In a concise manner, the very moment had already been invented and set in motion by insurgent subjectivities, the capital had to adjust itself. Capital had to confront and respond to the new social reality, it had to restructure itself in a way to command and hence exploit again. And capital has entered a phase of transformation, from industrial capitalism to cognitive capitalism, concerning both the command over labour and the modality of valorisation, attempting to integrate, dominate, and make profit from the social and creative energies of living labour emerging under the domain of mass/diffuse intellectuality.

Conclusion: A New Form of Antagonism traversing Cognitive Capitalism

The new form of antagonism traversing cognitive capitalism might be found in the dynamics around the *co-existence* of formal subsumption of labour process and capital's increasing motive towards subsuming the *bios*. This might appear, at the outset, rather a sort of polemical statement. Allow me to explain my reasoning briefly. Carlo Vercellone reflects on the thesis of cognitive capitalism with reference to the radical assertion that 'the subsumption of labour is once again formal' (2007: 31). I agree with Vercellone via Marx that (we shall discuss this subject in far much detail in the following chapters) the subsumption of labour process under capital is tendentially *formal* from the perspective that the 'co-operation in labour relations remains technically autonomous with respect to capital. The control of the labour process and the modalities of appropriation of the surplus are founded ... on mechanisms external to the directly productive sphere' (Vercellone, 2007: 20). What Vercellone states here, to my understanding, is that the labour process, or better living labour is more than ever autonomous in its relation to dead labour. However, on the other side, it appears that the author understands the real subsumption thesis only as the integration of labour process into the intricate processes of fixed capital. He does not seem to consider the socialisation of capital that I have attempted to examine in this chapter via Tronti and Negri. I suggest at this juncture that we should underscore and take into account the paradigm shift in the power of capital towards biopower with the mutation of social production: "capital ... presents [itself] as biopower' (Negri, 2008b: 4). In the context of cognitive capitalism, the comrades Morini and Fumagalli (2010) refer to 'a process of accumulation that is ... founded on the exploitation of the entirety of human faculties' (Morini and Fumagalli, 2010: 235); 'the production of money by means of the commodification of bios, M-C (bios)-M' (Morini and Fumagalli, 2010: 239). The phenomenon of capital's growing desire for subsuming the life (this is only a tendency) is what I call the *culmination* of real subsumption of society under capital, which is beyond the idea of the *realisation* of real subsumption. The antagonism in cognitive capitalism revolves around, in my view, on a complex and dynamic horizon where the biopolitical labour power is more and more autonomously producing the forms of social wealth and where capital tends to invade the social *bios* itself.

Intermezzo: Capitalism in Biopolitical Context

Danilo Zolo's description of Antonio Negri's recent research agenda is as follows: 'a philosophical and theoretical-political syntax ... that trans-figures fundamental categories of Marxism, interpolating them with elements drawn from a broad span of Western philosophical literature ... a prominent role is given to the post-structuralism... above all, Michel Foucault' (2008a: 12). Indeed, Negri reveals that 'I created a hybrid between my workerist Marxism and the perspectives of French post-structuralism' (2008a: 13). This type of syntax, in my view, directs Negri -and us- towards an intellectually fruitful terrain inasmuch as the interpretative results are unavoidably *open and controversial* on the ground that it is precisely within there that the essential Marxian analytical categories are integrated into the post-structuralist analysis of French political philosophy. Yet, there is no space here to elaborate 'a thousand roads that link the creative review of Marxism to the revolutionary conception of biopolitics [and biopower] elaborated by Foucault' (Negri, 2008b: 231), or, on the other side, to discuss Rabinow and Rose's (2003), Toscano's (2007), and Lemke's (2011) problematisation of Negri's reading of Foucault in general, and the limits of Negri's translation of Foucault's anti-totalising and anti-universal methodology in particular. My first and foremost ambition is rather to pave the way for the following argument which informs the thesis in the background: '*capital is no longer succeeds in grasping the productivity of labour power; [capitalist] biopower is no longer able to hold back biopolitical productivity*' (Negri, 2008b: 43, emphasis added).

Biopower versus Biopolitics

One of the axioms of Michel Foucault's research agenda is that where powers are continually made and remade, bodies resist. Hardt and Negri reveal what they think of remained in some sense implicit in Foucault, namely *the dual nature of power*. Foucault's theory of power in a broad sense is developed in *Discipline and Punish* (1991) and the first volume of *The History of Sexuality* (1976). Hardt and Negri (2009) interpret that within these texts the power in Foucault is always double. First, in these texts, the reader is given the complex ways in which the disciplinary regimes exercise social

command through a diffuse network of *dispositifs*. By *dispositif*, I understand the social, material, affective, and cognitive apparatuses working on the production of subjectivity. In addition, secondly, the reader is always given in somewhat veiled way, Foucault's theorisation of *other to power* or even *an other power* which remains categorically unnamed. The latter could be best defined, according to Hardt and Negri, as 'an alternative production of subjectivity, which not only resists power but also seeks autonomy from it' (2009: 56).

Acknowledging that the notion of power in Foucault has precisely a *dual-nature*, Negri and Hardt invite reader to rethink on the concepts of biopower and biopolitics. Taking up the Foucault's axiom on power, the authors argue that 'history cannot be understood merely as the horizon on which biopower [*'power over life'* (Revel, 2002)] configures reality through domination' (Hardt and Negri, 2009: 31). There always emerge the spaces of confrontation against the command imposed on subjects. That is to say, the power that administers and produces life is continually confronted by aspirations to alternative existence. The latter is a power that is discerned as *'power of life'* (2009: 57). Hardt and Negri now expose the difference between two powers on the ground that biopower is separate in its form from *the power of life* with which we move towards emancipation and liberation. In order to underscore this essential difference, Hardt and Negri adopt a terminological distinction, argued to be remained unexposed -even imprecise²³- in Foucault, between *biopower* and *biopolitics*, whereby 'the former could be defined as the power over life and the latter as the power of life to resist and determine an alternative production of subjectivity' (2009: 57).

Having said that, in my view, one can find a sort of more sophisticated approximation to biopolitics in Antonio Negri's (2008a, 2008b) *Reflections on Empire* and *Empire and Beyond*. Negri affirms evidently in the former (2008a: 70-71) that he is well-aware the way in which Foucault approaches the notion of biopolitics, namely as *a technology of power*, through *localised biopowers*, concerns itself with governing the health, hygiene, nutrition, sexuality and fertility of a population -population here is understood as 'an

²³ Indeed imprecise. 'Foucault used biopolitics in some texts as a synonym for biopower; in others he conceived of biopolitics as the opposite of biopower' (see. Lemke, 2011)

ensemble of living beings who present particular ontological/biological traits and whose life is susceptible to be controlled with the purpose of insuring, together with a better management of labour-power, and orderly growth of society' (2008a: 71). In the same text, nevertheless, he underpins and justifies his own interpretation of *biopolitics* (and *biopower*) through the tension he captures within the work of Foucault.

Negri discerns that biopolitics within the early texts of Foucault where the term at first appears is delineated as a police science [*Polizeiwissenschaft*], 'the science of the maintenance of social order' of populations (2008a: 72). It afterwards, on the contrary, seems to 'mark the moment of surpassing public law, and therefore every political function that lies within the traditional state-society dichotomy'; and thus comes to denote 'a political economy of life in general', to wit 'a general fabric that covers the entire relationship between state and society' (Negri, 2008a: 72). Yet, the second formulation here drives us to, crudely saying, a sort of T-junction: '*should we think of biopolitics as an ensemble of biopowers that derive from the activity of government or, on the contrary, can we say that, to the extent that power has invested the whole of life, thus life too becomes a power [potere]?*' (2008a: 72). Negri explicitly turns to the second perspective and 'lends the analytic of biopolitics the full ontological weight' (Toscano, 2007: 118). In Negri, that is to say, biopolitics is not viewed 'as an internal articulation of the governmental practices and rationalities of biopower' (Toscano, 2007: 114). On the contrary, biopolitics is recast as 'a power expressed by life itself, not only in labour and language, but also in bodies, in affects, desires and sexuality' and 'the power of life' as 'a sort of counter-power, of a *potenza*, a production of subjectivity that exists as a moment of de-subjectification' (2008a: 72). Allow me to cite a short passage from *Commonwealth* to make the (Hardt and) Negri's position more lucid:

Our reading not only identifies biopolitics with the localised productive powers of life –that is, the production of affects and languages through social cooperation and the interaction of bodies and desires, the invention of new forms of the relation to the self and others, and so forth – but also affirms biopolitics as the creation of new subjectivities that are presented at once as resistance and de-subjectification. (Hardt and Negri, 2009: 58-59)

In this way Negri (and Hardt) bring forward a polemical thesis that biopolitics and biopower are actually within an antagonistic relationship, or rather *biopolitics is biopower's antagonist*: 'history is determined by the biopolitical antagonisms and resistances to biopower' (Hardt and Negri, 2009: 31); 'we could say that its [the humanity] entire development is dominated by this insubordination of life (the power of life) against Power (the domination of life)' (Negri, 2008c: 207). What we have here then the distinction between the analytical categories of biopower and biopolitics at a level which does not seem to be very close to Foucault's own now. Negri speaks of biopower as 'the big structures and functions of power' imposing 'command over life its technologies and its mechanisms of power [from the top]', creating, at the same time, the social and material conditions for the production of alternative subjectivities. And, he speaks of biopolitics 'when the critical analysis of command is done from the viewpoint of experiences of subjectivation and freedom, in short, from the bottom'. Biopolitics, in this formulation, refers to 'the spaces in which relations, struggles and productions of power are developed', that is to 'the complex of resistances, and occasions and measures of the clash between social *dispositifs* of power' (Negri, 2008a: 73-4). In brief, as Toscano summarises, 'biopower is on the side of subjection and control, while biopolitics is rethought in terms of subjectivity and freedom' (2007: 118).²⁴

Capitalism in Biopolitical Context

Negri's project is oriented towards locating the transformation of capitalist production, following the industrial period of capitalism, on biopolitical horizon. The key aspect of his project, in my view, seems to be contained in the *subjectivation* of the Foucauldian aforementioned concepts via their *interpolation* with Marxian concepts of *living labour* (via infusion to biopolitical labour) and *real subsumption* (via infusion to biopower). Once translated into our context, I am rather convinced to say that it will not be erroneous to think of cognitive capitalism in biopolitical context. But, what does thinking

²⁴ I can note here that the transformation of these categories in this way also confirms Negri's position concerning the end of possibility of any sort of mediation and dialectic under the "real subsumption" under capital. In his 1989 book *The Politics of Subversion*, Negri openly declared that 'mediation is dead. The production of goods takes place through domination. The relationship between ... domination/profit and resistance/wages cannot be harmonised' (1989: 183).

of *capitalism in biopolitical context or horizon* mean? It designates the fabric of social production, defining the period of post-industrialism or better *cognitive capitalism*, in which 'capital ... presents [itself] as biopower' (Negri, 2008b: 4). By biopolitical context then, it is suggested, on the one side, that 'capitalist power has invested social relations in their entirety' (2008b: 235); to wit 'the total subjection of life to the economic-political rules' (2008b: 172) has reached to the level of *culmination* which is now beyond *the realisation* (of real subsumption). Nevertheless, it is in this very context, on the other side, 'the totalitarian self-assertion of biopower' 'no longer able to hold back biopolitical productivity ... by new subjects and by new social and political configurations' (2008b: 230-243-236). 'The biopolitical context is thus characterised by capital's wholesale invasion of life but, at the same time, by the resistance and reaction of [biopolitical] labour power, of life itself, against capital' (2008b: 182). The biopolitical context is, then, 'both a mark of the most endemic control and a sign of a new insurgency' (Toscano, 2007: 112). It is precisely in this context that the impasse and the possibility of crossing the threshold of cognitive capitalism will be reflected on in the following chapters –yet via rather Marxian categories. Allow me to break this part a little.

According to Negri, capital in biopolitical context expresses itself as biopower, to wit as eugenic command and control upon *the entirety of life from top*, or better to say capital increasingly orients itself towards integrating the entire productive potential of subjects into valorisation process, and 'hence traverses imperiously (and attempts to configure) all the moments which produce value' (Negri, 2008b: 75) by 'regulating social life from its interior, following it, interpreting it, absorbing it, and rearticulating it' (Hardt and Negri, 2000: 23). By capitalist biopower, then, one might think of 'the power [of capital] that acts to destroy humanity in order to put it at the service of capital and productivity' (Negri, 2008b: 32). In the interest of accumulation-proper, or of expanded accumulation, it 'invests the dimensions of the economic, those of the political, [and] those of *consciousness*' (2008b: 172, emphasis added). Capitalist biopower thus appears, Hardt and Negri argue, as 'another name for the real subsumption of society under capital' (2000: 365). The latter, in my view, signifies a level of subordination, not rejecting Marx's socialisation of capital, that moves beyond the social factory thesis as elaborated in the previous chapter.

The tendency of *culmination or fulfilment* of “real subsumption” corresponds, in my view, to the level of subordination which is *beyond the realisation* of “real subsumption” investigated in the previous chapter through the synthesis of Taylorism-Fordism-Keynesianism under the *New Deal* model starting in the 1930s. The *culmination*, to my mind, signifies such an intensified level of subsumption where not only do we have the synchronisation of industrial production with the spheres of social but also where we increasingly witness capital’s *attempt* to subsume the social *bios* itself as understood the ways of life; the mode of living; ‘the entire life made of needs and desires’ (Negri, 1997: 37). In other words, it is to argue that all energies and all spheres of life tendentially come to be core elements of subsumption under capital. At this level, Hardt and Negri write that ‘there is nothing, no “naked life”, no external standpoint, that can be posed outside this field permeated by money; nothing escapes money [read as money-capital]’ (2000: 32). The tendency of capital’s invasion of *bios*, the becoming of capitalist biopower, has recently informed the theorists of post-*operaismo*, particularly Morini and Fumagalli (2010), Fumagalli (2011) and Fumagalli and Lucarelli (2011), to introduce the concept of *biocapitalism*, referring to ‘a process of accumulation that is ... founded on the exploitation of the entirety of human faculties’ (Morini and Fumagalli, 2010: 235). The characterising feature of today’s social production is polemically revealed by these authors as follows: ‘*the production of money by means of the commodification of bios, M-C (bios)-M*’ (Morini and Fumagalli, 2010: 239, emphasis added).

At this juncture, we must note that the expression of capital as biopower, or the capital’s tendential attempt to subsume the bios itself, is ‘a [direct] consequence of the potent struggles [of the 1960s and 1970s within industrial period] whereby insurgent multitudes have forced an increasingly polyvalent and microphysical response by capitalist power’ (Toscano, 2007: 199). In other words, the shift of power of capital to biopower can be thought as a direct response to the transformation of social ontology, to the emergence of *mass intellectuality* and its figure of *the virtuosos, the collective worker of the general intellect*, driving the -qualitatively- hegemonic form of production -which we shall investigate under the category biopolitical production. For the *operaismo*, the constituent power is always anterior; there is a ‘primacy of proletarian subjectivity’ (Callinicos, 2006: 139 in Toscano, 2007: 119). Accordingly, ‘the form of [capitalist] command must itself be modified and articulated in a manner and on a scale adequate to

this process' (Hardt and Negri, 2000: 225). The tendency of *the culmination* of "real subsumption", therefore, 'was actually the [eventual] result of the desires and demands of Taylorist, Fordist, and disciplined labour power across the world' (2000: 256). 'The perfection of the function' of 'capitalist subsumption,' Negri writes, 'is the response to the invasion that living labour had effected into modern societies' (Negri, 2008b: 48). It was therefore precisely in the social factory were constructed conditions of becoming of a new social ontology, 'the *monster*'²⁵, that only the capital manifesting itself as biopower could control.

We have argued that Negri had conceptualised *biopolitical context* as a Janus-faced notion, comprising two *unmediateable* totalities: *capitalist biopower* and *biopolitical production*. I have attempted to touch upon the notion of capitalist biopower via Marxian "real subsumption" thesis and argued that it might be understood as a shift of paradigm of capitalist "power" as a response to the emerging modality of social production; a modality of social production that 'tends to create not the means of social life but *social life itself*' (Hardt and Negri, 2004: 146); in which 'the results of production are social relations and forms of life' (Hardt and Negri, 2009: 131); where 'the powers of production ... run throughout and constitute directly not only production but also the entire realm of reproduction' (Hardt and Negri, 2000: 364). As we shall examine in the following chapter in more detail, the emerging modality of social production here is recognised as biopolitical production, understood at a higher level of abstraction, 'not the production of objects for subjects ... but the production of subjectivity itself' (Hardt and Negri, 2009: x). When Negri says that 'biopolitical context is an *extension* of class struggle' (2008a: 74, emphasis added), he, to my understanding, wants to suggest two ideas: first, he seems to affirm that the potent class struggles of the 1960s and 1970s have eventually culminated in a social production operating on biopolitical horizon –as we tried to argue above. Second, more significantly, he appears to suggest that inasmuch the social productive powers of biopolitical production can no longer be contained in capitalist biopower, there is a growing rupture of the concept of capital into two

²⁵ The Monster becomes the real political and technical subject of the production of commodities and reproduction of life. *The monster has become biopolitical* ... He is no longer a margin, a residue, a leftover: he is internal, totalising movement, a subject. He expresses *power*' (Negri, 2008c: 206-7),

antagonistic subjectivities: this is the extension (or better culmination) of class struggle at a higher level. The latter is to be reflected upon throughout the thesis.

Chapter Six

A Paradox: The Enclosure of *the Common*

The sixth chapter together with the seventh chapter engage in an elaborated exploration of the current state of economic life traversing cognitive capitalism. Following in Marx's footsteps via the precepts of *operaismo* and *post-operaismo*, the chapters undertake an investigation of the new composition of capital, to wit of the relationship between *the technical composition of labour* and *the organic composition of capital*, where the latter is understood as the relationship between living labour and dead labour -not merely in objective but foremost in subjective terms which is implicated in the expression of *capitalist exploitation* and hence the new form of antagonism concerning the class relation.

In this direction, this chapter delves into a paradox (i.e. a structural contradiction within Marxian terminology) which is unveiled by the enclosure of *the common*. The following paragraphs discuss how the increasing centrality of the common, the tendential inversion of *separation* or ultimately the increasing autonomy of virtuosos produces an alarming situation for capital, and how capital, in turn, counter-attacks through the implementation of the *ex-novo separation* policies: i) the privatisation of common results of biopolitical production via Intellectual Property Rights; and ii) the draining of the common bases of biopolitical production. The key argument, nevertheless, is that while capital employs such novel strategies to break the emerging autonomy of virtuosos, the brutal policies of enclosure act, in the last instance, as a fetter on the development of social productive forces and hence economic health in the main.

The Technical Composition of Labour in Cognitive Capitalism

The technical composition of labour concerns 'the historically given structure of labour-power, in all its manifestations, as produced by a given level of productive forces and relations' (Negri, 1988c: 209). More specifically, the concept refers to the 'workforce's *material articulation* within the organic composition of capital' (Wright, 2002: 78, emphasis added). It reveals 'the figures of work situated at the centre of the process of

capital valorisation' (Vercellone, 2005: 4). In order to reach such a revelation, one needs to engage in an investigation of 'how people are integrated into the systems of economic production ... what jobs they perform, and what they produce, [and how they produce]' (Hardt and Negri, 2004: 65).

Therefore, it will be helpful to recollect how we have marked one of the stylised facts traversing cognitive capitalism: 'a tendency towards the hegemony or prevalence of immaterial production in the process of capitalist valorisation' (Hardt and Negri, 2009: 132). Immaterial products (e.g. knowledge, codes, ideas, information, symbols, images, logos, designs) *or* immaterial dimensions of products (i.e. their symbolic, aesthetic, and social value) preponderate over material products *or* material dimensions of products in the process of capitalist valorisation. 'In all sectors, regardless of the product or service they [companies] provide, value creation is based increasingly on immaterial resources' (Lévy and Jouyet, 2006: 1). In the same vein, Morini and Fumagalli put that 'the production of wealth and value is no longer based solely and exclusively on material production, but is increasingly based on immaterial elements, namely on intangible "raw materials"' (2010: 235). This is, of course, not suggesting that the production of material commodities (e.g. computers, cars, furnitures) is experiencing the process of gradual disappearance. Rather, the argument is that the value of material commodities increasingly rests on and is tendentially subordinated to immaterial factors and goods that are contained in these material commodities. According to Virno, we live in the era in which immaterial elements 'play an essential role in *each* unfolding of the process of production' (1996b: 271). The capture of gains from immaterial elements, according to Mouillier-Boutang, constitutes 'the central issue for accumulation, and it plays a determining role in generating profits' (2011: 57), and it, for Vercellone, 'becomes the crucial growth factor' (2013: 434, even a factor for "'the wealth of a nation'" as he notes in the same text).

Therefore, we assert that 'value is increasingly dependent on and subordinated to immaterial factors and goods' (Hardt and Negri, 2009: 132). In addition, we reaffirm that labour is unquestionably 'still remains the fundamental and sole element of value creation' (Negri, 2008a: 181). Accordingly, we can bring in that the forms of labour that produce these immaterial commodities *or* the immaterial dimensions of commodities -to

which value is dependent on- are called 'immaterial labour' (Lazzarato, 1996). Under the generic category of immaterial labour, Hardt and Negri speak of 'informationalised industrial labour, analytical and symbolic labour, and affective labour' (2000) which are revised to 'affective, and intellectual *or* linguistic labour' (2004); 'cognitive and immaterial labour' (Vercellone, 2007) which is revised to 'cognitive labour' (Vercellone, 2013); sometimes 'immaterial labour' (Moulier-Boutang, 2011: 31-34) and sometimes 'cognitive labour' (Moulier-Boutang, 2011: 98); and Virno (1996b, 1996d) opts to use the expression of 'mass intellectual labour'. I am not convinced that this type of diversity in "labelling" is subject to critique *per se*. The foundations of the becoming-immateriality of labour are quite solid, erected upon to Marx's *Fragment on Machines*, particularly to its interpretation by *operaist* theorists (see. the previous chapter). It is essential, in my view, to acknowledge that whereas the theorists use different concepts they, in effect, refer to the same idea. Once abstracted from their differences, the concepts can be thought under an overarching expression: immaterial labour as *the living labour of the era of general intellect*. What the theorists want to underscore, though through various labelling, is that the creation of value in post-industrial capitalism increasingly depends on *the ensemble* of intellectual, communicative, linguistic, creative, innovative, relational, affective activities expressed by the increasingly hegemonic figure of social production: *the virtuosos*.

Before moving further, a clarification seemed to be needed in a parenthesis via Hardt and Negri (1994, 2000). What we have brought forward up to now is *becoming*. That is to say, there is a *tendency* towards the -qualitative- hegemony of immaterial production in the process of capitalist valorisation. Qualified as qualitatively hegemonic because it progressively imposes its distinctive qualities over other forms of production. At the expense of reiteration: in the nineteenth century and twentieth century, for instance, the industrial production was a small fraction in numeric terms -as Marx argues in the first passages of volume I of *Capital*. Yet, for Marx, it was indeed hegemonic in qualitative terms inasmuch as agriculture, mining, and even society gradually came to embrace its main qualities (e.g. mechanical methods, wage relations, property regimes, working day). Of course, agriculture (or mining) has not vanished from the world history but it has largely transformed into a form of industrialised agriculture, thereafter employing the qualities of industrial production more and more (e.g. from Soviet tractor to

California irrigation system). Likewise, the major entities of society (e.g. the school, the family) have also become organised in tune with the rhythms of industrial production.

Concisely, the qualitative hegemony of industrial production progressively came to an end in the final decades of the twentieth century, and it gave its place to immaterial and cognitive production that has been aggressively tending to impose its main qualities over society and other forms of labour (e.g. material labour process) such that, for instance, the latter need to be informational, intelligent, creative, innovative, communicative, and cooperative. As a common -but empirically affirmed- case, the manufacturing tends towards 'service' through the incorporation of various models of flexible production. 'The material labour of the production of durable goods mixes with and tends toward immaterial labour' (Hardt and Negri, 2000: 293). The expression of these new qualities as a whole as well as the increasing integration of immaterial labour into material labour (e.g. problem-solving, performing analytical tasks, creating new ideas) is now one of the key sources of competitive advantage for the conventional manufacturing companies -too.

Nonetheless, the increasing hegemony of immaterial labour does not indicate that today all work is interesting, satisfying, rewarding, and democratic. The metamorphosis of work following the 1970s and 1980s has been studied in an extensive manner (Beck and Ritter, 1992; Castells, 1996; Sennett, 1998; Beck, 2000; Bauman, 2005; Tonkiss 2006; Sennett, 2006). These accounts put forward in common that workers increasingly perform within *flexible, nomadic and precarious* labour conditions in the period of mature capitalism.²⁶

By *flexibility*, one could understand both flexibility in terms of tasks (i.e. the performance of multiple tasks in one job) as well as temporal flexibility which concerns the division between work-time and life-time: 'when working performances imply vital faculties, then the definition of a temporal limit between working-time and life-time becomes impossible' (Morini and Fumagalli, 2010: 240)²⁷. By *nomadic*, the second common trend,

²⁶ See Chapter One in which these trends are discussed in their empirical manifestations.

²⁷ Concerning the latter, I do not agree with Camfield (2007) who acknowledges the enormous work-time expansion over the rest of life yet directly associates this phenomenon with the

one might consider both the frequent mobility between jobs in a working career and the blurring of the border between '*working-place and life-place*' (Morini and Fumagalli, 2010; Fumagalli, 2011). A third trend characterising the contemporary labour condition is provided as the precariousness of labour. Precariousness of labour defines 'all forms of insecure, contingent work from illegalised, casualised and temporary employment, to homeworking, piecework', and precarity conveys 'the multiplication of precarious, unstable, insecure forms of living' (Gill and Pratt, 2008: 3). Fumagalli and Morini (2012) argue for the multiplication of subjectivities (e.g. the figures of discouraged, neet young workers, the certified unemployed workers) who experience insecure living in one form or another, and the authors argue that the recent phenomenon of precarity can no longer be considered as a sort of deviation. Instead, it should be viewed as a structural and generalised mark of workers' condition, conditioned by the conflictual configuration of contemporary capitalism. *Theory, Culture & Society* (2008) devoted a special section (vol. 25) concerning precariousness (and cultural work), and one of the conclusions stated by the editors was striking as follows: 'intellectually and politically the articles [in this section] take contrasting positions, yet are united by the attempts to think precariousness as a defining feature of ... contemporary life' (Gill and Pratt, 2008: 4).²⁸

One of the main characteristics cutting across the forms of labour that produce immaterial products or immaterial dimensions of material products (e.g. image, information, knowledge, code, design, language, word, logo) is that these forms of labour *intrinsically* engage in the activities of producing 'communication, social relations, and cooperation' (Hardt and Negri, 2004: 113), 'all facets of social life, economic, cultural, and political' (2004: xvi); to put it differently, 'forms of life and ultimately the social life

increasing productivity demands of capitalist class. Has not the latter always been vampire or -in a more proper language-demanded high productivity and profit rates? At this point, one needs to consider the transformation of the forms of property on which the accumulation of capital rests and, accordingly, the new forms of property that capital desires to expropriate to generate profit. 'When production [also read as: profit] is aimed at [consisted in] solving a problem, creating an idea' (Hardt and Negri, 2004: 111), and when 'innovating constantly' (Moulier-Boutang, 2011) comes to be an essential aspect of *modus operandi*, how will the conventional temporality (e.g. eight hours performance of labour-power, eight hours of definite leisure or non-work time, and eight hours of sleep) be sustained? Marx states in the "Fragment" within the *Grundrisse* that 'direct labour time itself cannot remain in the abstract antithesis to free time ... [which] acts upon the productive power of labour as itself the greatest productive power' (1993: 711).

²⁸ I shall approach to the conditions of labour in the conclusion chapter as well.

itself' (2004: 109). In immaterial production, therefore, 'the traditional economic division between productive and reproductive labour breaks down' (Hardt and Negri, 2009: 133). In other words, 'the production of capital is, ever more clearly and directly today, the production of social life' (Hardt and Negri, 2004: 146); 'the results of capitalist production are social relations and forms of life' (Hardt and Negri, 2009: 131). In this regard, the living labour, or one may say *the general intellect-embodied-living labour* is *biopolitical* as it tendentially 'engages social life in its entirety' (Hardt and Negri, 2004: 94). More precisely, 'one might still conceive of economic production as an engagement of the subject with nature, a transformation of the object through labour, but increasingly the "nature" that biopolitical labour transforms is subjectivity itself' (Hardt and Negri, 2009: 172).

Hardt and Negri are accompanied by other figures of Marxist thought with respect to the extension of the biopolitical dimensionality of labour. At a certain point, for instance, Moulier-Boutang characterises cognitive capitalism on biopolitical horizon: 'whereas industrial capitalism could be characterised as the production of commodities by means of commodities, cognitive capitalism ... produces living by means of the living. It is immediately production of life, and thus it is bioproduction' (2011: 55). In relation to the '*production of living by means of the living*' (Moulier-Boutang, 2011: 143), Robert Boyer prognosticates that 'if we had to hazard a guess on the emerging model in the next decades, we would probably have to refer to *the production of man by man* and explore right away the institutional context that would permit its emergence' (2002: 192). In same vein, Christian Marazzi (2005) speaks of the *becoming-of-anthropogenic model of production where* human beings are produced precisely by means of human beings. In a concise manner, we are invited here to mull over that 'the *object* of production is really a *subject*, defined; for example, by a social relationship or a form of life ... Producer and product are both subjects ... The biopolitical production directly treats the constituent elements of human subjectivity: this terrain is precisely where subjectivity is born and resides' (Hardt and Negri, 2009: 133, 136, 172).

Cognitive and immaterial labour, or rather (it is time to say) biopolitical labour *exceeds* the bounds set in its relation to capital. Excedence seems to me as quite underdeveloped notion. By excedence, I envision two ideas. Vercellone speaks of 'the driving role of the

production of knowledges by means of knowledges' (2007: 16), and he argues that 'the labour-force's capacity for learning and creativity replaces fixed capital as the key factor in accumulation' (2013: 435), and he ultimately summarises the great mutation in the following formula: '*we pass from the static management of resources to the dynamic management of [the set of] knowledges*' (2007: 33, emphasis added). That is to say, 'the knowledge mobilised by living labour is now hegemonic with regard to the knowledge embodied in fixed capital' (2013: 433). This signifies the increasing importance of *living knowledge* of labour over dead knowledge of capital. Moulner-Boutang, in accordance with Vercellone's insights, writes that 'the essential point is no longer the expenditure of human labour-power, but that of invention-power: the living know-how that cannot be reduced to machines' (2011: 32). This conveys that the knowledge of living labour has to be constantly *impelled* and *managed* by capital. Therefore, on the one side, we affirm that capital desires to set in motion and absorb the living knowledge of labour. On the other side, however, in knowledge-based activities or immaterial production in general labour is not crystallised in a material product that can be divorced from the producer. A car, for example, which is produced with material labour is immediately divorced from the producer. However, a research article, a code, an analysis etc. cannot be divorced from the producer inasmuch as these products intrinsically reside in the living subjects who produce them in the first place. Therefore, biopolitical labour potentially *exceeds*; it potentially *overflows* the subsumption mechanisms set by capital.

Secondly, and in a direct connection with the first argument, in industrial capitalism, which finds its fulfilment in Taylorist production process, one's innovative, creative, technical capacities are rigorously confined to a particular site, that is the specific site of material production. Consider, for instance, an assembly line worker working in a cable assembly factory. The whole ensemble of technological and mechanical knowledge the worker has accumulated through her/his lifetime are hardly put into work, and more significantly, those put into work are almost exclusively site (e.g. factory) specific. However, the production of immaterial products or immaterial elements of material products immediately drives workers to actualise and develop their creative, intellectual, communicative, networking, know-how, cooperative etc. capacities. Furthermore, the fruits of biopolitical labour-power, not confined by the corporate walls, *exceed* work and spill over different spheres of life (as economists call

externalities), and they begin to produce *the common* forms of wealth. This is point from where one might begin to envision the linkage between the *excedence* of biopolitical labour-power and the accumulation of its fruits in *the common*.

One of the central aspects characterising biopolitical production is its foundation in the common. What is meant by the common? Typically, the common denotes the wealth of nature in its totality (e.g. earth, water, air, elements, animal life) to be shared by all humanity. In other words, the common, or better to say *commons* refers to the natural world, harbouring the natural resources, outside of society. By a fair extension, *the common* also denotes '*those results of social production that are necessary for social interaction and further production*' (Hardt and Negri, 2009: viii, emphasis added). Concisely, we understand the concept of *the common* as permeating equally all spheres of life, blurring the division between nature and culture, referring not only to the fruits of nature shared by human beings but also, and above all, to *the artificial commons*: the creative, social, knowledge commons (e.g. the languages we construct, the knowledge(s) we create, the social practices we enact).

According to this second formulation, the common, *prima facie*, makes an appearance both at the beginning -as presupposition- and at the end -as outcome- of biopolitical production. To put it more precisely, the common consists of both the fruits as well as the means of -future- production. In terms of being the presupposition, it might appear convincingly in mind that biopolitical labour performs, and it can actually perform only on the terrain of the common. One can acknowledge that no one really cerebrate all alone but only within and through the spectres of the others' past and present thoughts. Consider, for example, the production of ideas, knowledge(s), words, images, codes, languages, and such products. These products cannot be really produced by such a figure of genius in an ivory tower; by a human who is entirely isolated from the accumulated common intellect, or better to say from the common forms of real wealth. As Hardt and Negri say 'our common knowledge is the foundation of all new production of knowledge; linguistic community is the basis of all linguistic innovation; ... and our common social image bank makes possible the creation of new images' (2004: 148). The producers then must have an *open-direct access* to the previously accumulated common intellect (e.g. the common knowledge(s), codes, communication circuits). This open-

direct access is *essential* for one's creativity, productivity, and more importantly for the realisation of one's *potentia*.

The outcome of biopolitical production, on the other side, *exceeds* and accrues to the common that ultimately becomes an objective condition for expanded production. One can acknowledge that the results of biopolitical production are not identical to material products, for they immediately and intrinsically tend towards being the common via their circulation in the circuits of social, cultural, digital networks. Gorz argues that when knowledge (one may consider other goods of biopolitical production as well) is produced and diffused, 'it no longer has proprietors' (1997: 18). From the perspective of economics, Moulrier-Boutang argues (2013) that today scarcity is no longer fatal. What we witness, according to the author, is that 'digital world restores abundance that had been destroyed partly or fully by industrial organisation of scarcity of commons' (Moulrier-Boutang, 2013: 86). In other words, inasmuch as the outcome of immaterial production could be coded in the digital media, reproduced, and delivered virtually at zero marginal cost, we may speak of the inversion of scarcity of commons with respect to the immaterial products. Considering technical development, in particular the peer-to-peer protocols, Moulrier-Boutang underscores how the digital revolution has challenged, in terms of immaterial products, the statue of 'a) reproduction; b) monopoly of circulation; c) authority that tackle with monopoly in interpretation; d) and finally authorship in science and culture' (2013: 86). The latter aspect of the commonality as well as how capital responds in turn will be discussed in the final part of this chapter.

What we have here is then a sort of virtuous cycle which is typical of biopolitical production process: the virtuosos, through working on the accumulated common forms of wealth, create new commons which in turn come to be the base for the expanded social production. From what we have noted until now, can we discern another aspect of biopolitical production? Allow me to consider, for instance, the production of scientific knowledge (other immaterial products can be considered as well). The potential outcome in our case might be a journal paper, monograph, conference speech, series of lectures, accruing to *the general intellect* and at the same time contributing to the ground basis for the production of further scientific knowledge. Yes, we have already pointed out this. Extending our case, the production of scientific knowledge intrinsically requires a sort of

engagement in social communication, relation, collaboration etc. between researchers, students, supervisors, editors, academicians, and so on. No scientific knowledge, no idea, no computer code, no natural language, no artificial language, no authorship etc. can be produced without a sort of engagement in collaborative, cooperative, communicative social relationship. From this point of view, the common appears in the centre as well. Concisely, the biopolitical production is *increasingly* conducted in the common (common understood as *shared process*). In this respect, Negri puts that:

We assume not only that value is constructed within social production (which is obvious), but also that *social production* today presents itself in a manner which *increasingly has the quality of the common*, in other words as a multiplicity of increasingly cooperative activities within the process of production. (2008a: 183)

To sum up, the general outlines of the technical composition of biopolitical labour which positions itself hegemonically in cognitive capitalism reveal the growing autonomy of labour process in its relation to capital considering first and foremost that in biopolitical production, living labour *tends* to get direct access to *the common* where the raw materials of production are located, work on it with the terms of a shared process and produce a new product that *tends* to accrue to *the common* that eventually serves for or facilitates the expansion of production. Thinking of biopolitical labour process, Hardt and Negri state that 'labour itself tends to produce the means of interaction, communication, and cooperation for production directly' (2004: 147). The labourers, in this context, are virtually in no need of a figure of capitalist or/and state representatives or rather a sort of *outside* that would involve into the surveillance and control of labour process. Production tendentially reveals itself as a sort of shared, and hence a common process. The collaboration, communication, and coordination between producers, which are the essential aspects of social production, no longer have to be made available by capital as external constituent insofar as these aspects increasingly flourish internally within the social networks of production (i.e. a by-product). Thus, biopolitical labour is more and more capable of self-managing the production process. Nevertheless, on the other side, we were well-taught by *operaismo* that the increasing power of labour in its relation to capital has always been accompanied by various controlling strategies of capital. Today,

the transformation of technical composition of labour or, in particular, the increasing autonomy of the biopolitical labour process based upon the common is accompanied by the novel strategies of primitive accumulation which are oriented towards enclosing the common.

Revisiting 'So-Called Primitive Accumulation'

In Part Eight of *Capital* volume I, Marx writes on *So-Called Primitive Accumulation* (1990: 873-940). This is the part which has predominantly been read through two different lenses within the Marxist literature. After discussing these interpretations briefly, I will reflect on an alternative reading that was developed through journal *The Commoner's*, in particular Massimo De Angelis's (1999, 2001, 2004) and Werner Bonefeld's (2001, 2002) - as well as Sandro Mezzadra's (2011) - theoretical and political contributions.

One could discern within the Marxist literature a *historicist* interpretation of primitive accumulation. Within the works of Lenin (1899), Dobb (1963), Leibman (1984), Sweezy (1986), primitive accumulation is conceptualised as a temporally crystallised process through which the preconditions of capitalist mode of production, to wit the emergence of (i) a section of population divorced from all means of production but their labour-power, and (ii) an initial accumulation to be used for emerging industries, have been given birth. Here, the meaning of primitive accumulation indicates, above all, 'causality, where an historical event is understood to have caused the formation of a distinct mode of social relations which renders the causing event obsolete' (Bonefeld, 2002: 3). Accordingly, the accent is on the temporality of the phenomenon; that is to say once the process – a history of blood and fire- had been completed, we were no longer in the realm of primitive accumulation, thusly requiring a critical analysis of the established relations of capital. Following this perspective, one may inquire into either the transition from feudalism to capitalism by rendering it a question of genealogy or the intricate issues of the capital-relation by rendering it a question of economics. Eventually, both orientations imply a certain understanding of a linear model of development in which

primitive accumulation indicates an epoch that is distinctly separated from “capitalism proper”.²⁹

The second interpretation of primitive accumulation is grounded within the Marxist writings on historical geography of capitalism, particularly within Rosa Luxemburg’s (2003) and Hannah Arendt’s (1973) seminal works; *The Accumulation of Capital* and *Imperialism* (in *The Origins of Totalitarianism*) respectively.³⁰ In Luxemburg’s theoretical framework, the accumulation of capital cannot be grasped merely as an ‘economic process’ concerning ‘the commodity market and the place where surplus value is produced’ inasmuch as it has a further facet concerning ‘the relations between capitalism and the non-capitalist modes of production’ (2003: 432). More precisely, Luxemburg argues that capitalism depends for its own expanded reproduction –to realise surplus value- on the subjugation of capitalist *periphery*, consisting of latent populations, small independent producers, lands, and natural resources. The organic connection between these two aspects of capitalist accumulation presents itself in violent methods such as colonial policy and war. As noted by Harvey (2003), this echoes Hegel’s conception of inner dialectic of capitalism, forcing it to seek solutions external to itself; translated into Luxemburg’s framework as capital’s *modus operandi* that it must make use of a sort of *outside* in order to stabilise its crisis tendencies (i.e. the opening of new markets to realise extracted surplus value in exchange). According to Luxemburg, De Angelis interprets, ‘once the whole world becomes capitalist, capitalist accumulation will have reached its historical end’ (2001: 3). Arendt (1973) develops an argument along the similar lines by discussing how the depression of the 1860s and 1870s in Britain, driven by the lack of productive investment within the national borders, initiated the policies of imperialism and the subjugation of an *outside* by capital. Arendt, along with Luxemburg, relates the continuity of coercive practices of primitive accumulation to the logic of capitalist accumulation and its crisis tendencies. “The original sin of simple robbery [certainly referring to Marx here], which centuries ago has made possible the original accumulation of capital and had started all further

²⁹ This type of linear reading of model of development is evident in Lenin’s (1899) *The Development of Capitalism in Russia* in which he considered the expropriation of peasants as a “positive” and inevitable process in the creation of capitalist market in Russia.

³⁰ In this vein, we may also think of the thesis of ‘accumulation by dispossession’ put forward elegantly by David Harvey (2003). Also see, Harvey (2010) Chapter 11.

accumulation, had eventually to be *repeated* lest the motor of accumulation suddenly die down' (1973: 148, emphasis added).

Massimo De Angelis's (1999, 2001, 2004) and Werner Bonefeld's (1988, 2001, 2002) discomfort with traditional interpretations have both theoretical and political foundations. As we shall discuss in more detail, first of all, it is argued that 'primitive accumulation is necessarily present in mature capitalist systems and, given the conflicting nature of capitalist relations, assumes a continuous character' (De Angelis, 2001: 2). Here the approach openly differentiates itself from the first interpretation yet, on the other side, it appears close to the second traditional reading of primitive accumulation. For the theorists, nevertheless, the second interpretation overlooks the crucial point that, according to Marx, capital is a '*force* with totalising drives that exists together with other forces that act as limit on it' (De Angelis, 2004: 60). The continuous character of primitive accumulation, accordingly, cannot be explained only via the objective mechanisms of accumulation and circulation of capital or from one-sided class (capitalist) perspective. Primitive accumulation is regarded as a dynamic process *in the world we live in now* where the real subsumption of society is real and complete, and where this dynamic process comprises *the clashes of existing social forces* in the forms of enclosures and counter-enclosures -commodification and *commonification*. Thus, working-class attack and capitalist counter-attack / working-class resistance and capitalist response should be taken into account as constitutive elements of dynamics of ongoing primitive accumulation. And politically, rendering the logic of primitive accumulation to the pre-capitalist history or to the objective mechanisms of capital-logic inevitably translates into a lack of profound theoretical framework for understanding, conceptualising and supporting the counter-movements, that is the alternative developments within and against capital. *The Commoner* thusly invites us to rethink the theory of primitive accumulation through, what Cleaver (2000) would call, a *political reading* of Marx.

An Alternative Reading

I shall begin with Bonefeld's apt argument that 'primitive accumulation is *Aufhebung* in accumulation proper' (2002: 4). The Hegelian term *Aufhebung*, Bonefeld elucidates,

'connotes the dialectic process in which the negation of a form transforms the negated into a new form, in which it loses its independent existence and at the same time maintains its essence, constituting the substance of the new form' (2002: 4). Translating into our context, the historic form of primitive accumulation is argued to be 'raised to a new level where its original form and independent existence is eliminated (or cancelled) at the same time as its substance or essence (*Wesenhaftigkeit*) is maintained ... as the social constitution of capital' (2002: 4 and 6). This is, then, to my understanding, to bring forward two ideas: first, primitive accumulation principally specifies historical epoch preceding capitalist mode of production; however - this *however* is everything -, second, the *essence* of primitive accumulation maintains its existence as *the indivisible principle* of capitalist mode of production such that capital reproduces this very *essence* so as to posit itself capital.

I shall argue that such a continuity-thesis whose anchor point is the reproduction of systematic character of a historical process in accumulation proper falls short when we consider Marx's argument concerning *capital's becoming* and *capital's being* in the *Grundrisse*. In this respect, I am convinced to bring to the fore De Angelis's (2001, 2004) political and theoretical formulation that re-evaluates primitive accumulation, that is *enclosure*, not only as a kind of by-product of the process of reproduction in expanded accumulation but also *ex-novo*. The whole argument needs breaks down a little.

Primitive is translated from the German word *ursprünglich* which could also be translated as *original*. Indeed, Marx within this part of *Capital* stresses on the origins (*ursprung*) of capitalist mode of production. As Mezzadra brilliantly notes it is in this part that Marx 'sets out the study the conditions under which a whole set of real abstractions becomes for the first time in history embodied as real powers' (2011: 304). It was the process of primitive accumulation that enabled, Mezzadra (2011) interprets, the power of abstraction that allows capital and labour as such to come into being. As we have noted before, Marx formulated capital against the definitions given by the vulgar economists. It is not a thing referring to a stock of commodities but understands a social relation. The capital-relation embodies a precise presupposition, namely 'a complete separation between the workers and the ownership of the conditions for the realisation of the labour' (Marx, 1990: 874). In other words, 'which creates the capital-relation can

be nothing other than *the process* which divorces the worker from the ownership of the conditions of his own labour' (1990: 874, emphasis added). And, Marx identifies *the process* at issue here as primitive accumulation. Primitive accumulation is thus viewed by Marx as 'nothing other than *the historical process* of divorcing the producer from the means of production' (1990: 875, emphasis added).

One may bring forward, by positioning this quote as a point of reference, that Marx's examination of primitive accumulation defines a question of genealogy ('*historical process*', Marx says). There is no doubt that one can capture akin statements that associate *primitive* with *pre-history* or the ones in which primitive accumulation is identified as the *historical* premise of the capital-relation. For example, Marx indeed writes that 'primitive accumulation ... is the *historical basis* ... of specifically capitalist production' (1990: 775). However, as Bonefeld (2001, 2002) points out, we are also given the systematic character, the principle, or *the essence* of primitive accumulation which is *nothing other than* the *separating* the workmen from the means of production. Marx, that is, distinguishes himself from the classics by approaching primitive accumulation as a process 'resulting in a decomposition of the original union existing between the labouring man and his instruments of labour [that is separation]' (Marx, 1935: 39). What concerns me here the foundations informing that *the separation* as the essence of primitive accumulation.

Before moving further, I should stress in a parenthesis that *the separation* has a pivotal role as a concept in Marx. The separation of producers from the means of production principally primarily conveys that:

The objective conditions of living labour (namely, material in which to realize itself, instrument with which to realize itself, and necessities with which to stoke the flame of living labour capacity, to protect it from extinguished, to supply its vital processes with necessary fuels) appear as *separated, independent* values opposite living labour capacity as subjective being, which therefore appears to them as a value of *another kind*. (Marx, 1993: 461)

Through this separation, then, 'objects rule subjects ... and the doing of human activity is channelled into forms that are compatible with the priority of capital's accumulation' (De Angelis, 2004: 64). At the social level, this separation is closely connected to Marx's theory of reification. For, it is still through *the separation* that:

[On the one side] the objective conditions of labour attain a subjective existence vis-à-vis living labour capacity; on the other side, the merely subjective presence of the subjective labour capacity confronted by its own conditions gives it a merely indifferent, objective form as against them – it is merely a value of a particular use value alongside the conditions of its own realisation as values of another use value. (Marx, 1993: 462)

Capital, therefore, separates and thusly creates an opposition between 'an alien subject, confronting the living labour capacity' (Marx, 1993: 462), where the latter is rendered to a thing or what mainstream economics would call a factor of production.

Closing the parenthesis, how could we think that the logic of primitive accumulation, or better to say the systematic character of original accumulation, to wit *the separation*, necessarily assumes a continuous character in mature capitalism? And, how could we put forward through Marx's writings that primitive accumulation presents itself 'as a conscious imposition of power-over' (De Angelis, 2004: 77, emphasis added) *in the world we live now*. I shall attempt to focus on these two questions seriatim, for I shall argue that they are related but not identical questions.

Once again, *the separation* is historically the constitutive principle of the capital-relation inasmuch as it entails the constitution of subjectivities of seller and buyer of labour power. Marx is precise on this when he writes that 'a division between [the separation of] ... subjective labour-power from the objective conditions of labour was therefore the real foundation in fact, and the starting-point of capitalist production' (Marx, 1990: 716). And, this is paramount, one should remember that capitalist production does not only produce goods and services bearing surplus-value but it also produces and reproduces the capital-relation. Marx famously asserts that 'the capitalist process of production ... seen as a total, connected process, i.e. process of reproduction, produces not only

commodities, not only surplus-value, but it also produces and reproduces the capital-relation itself; on the one hand the capitalist, on the other hand the wage-labourer' (1990: 724). In one word, *capital reproduces its constitutive proviso*. In addition, Marx in the *Grundrisse* (see. 1993: 459-461) writes on the distinction between the conditions of *capital's becoming or arising*, and the conditions of *capital's existence or being*. He argues that the conditions of capital's becoming 'disappear as real capital arises' and the conditions of capital's existence do not appear as 'conditions of its arising, but results of its presence'. Marx thusly puts that 'once developed historically, capital itself creates the conditions of its existence (not as conditions for its arising, but as results of its being)' (1993: 459). According to Marx, that is to say, '*whatever happened for the first time at the origin of the history of capitalism must logically repeat itself*' (Mezzadra, 2011: 305, emphasis added).

In this context, it should not be peculiar to find out that the continuity of the systematic principle of primitive accumulation within the so-called *post-history* takes part everywhere in Marx's writings. In volume I of *Capital*, writing on *The Process of Accumulation of Capital*, Marx argues that 'what at first was merely a starting-point [the separation]' is 'constantly renewed and perpetuated' 'by simple reproduction' in capitalist production (1990: 716). Proceeding from primitive accumulation to expanded accumulation in the *Theories of Surplus Value*, he argues that 'accumulation of capital ... on the basis of the relationship of capital and wage-labour, reproduces the separation ... on an ever-increasing scale'; therefore, 'accumulation merely presents as a *continuous process* what in *primitive accumulation* appears as a distinct historical process' (1971: 315 and 271 in De Angelis, 2004: 64). In volume III of *Capital*, Marx is very determined to say that accumulation is 'simply' the separation which is 'raised to a higher power' (1992: 354).

What Marx seems to indicate in these texts is that 'while sharing the same principle - separation-, ... the former [primitive accumulation] implies the *ex-novo* production of the separation, while the latter [accumulation proper] implies the reproduction -on a great scale- of the same separation' (De Angelis, 2004: 66). In the case of accumulation proper, the separation occurs and re-occurs by the condition of *natural laws of production*. Marx puts it that 'the organisation of the capitalist process of production,

once it is fully developed, breaks down all resistance ... The silent compulsion of economic relations sets the seal on the domination of the capitalist over the worker' (1990: 899, emphasis added). However, in the case of primitive accumulation, the separation occurs by the condition of 'direct extra-economic force', manifesting itself in the form of state-power or particular sections of social classes (1990: 899). Through expanded accumulation, in other words, the separation reproduces itself in the realm of 'ordinary run of things' (Marx, 1990: 899). Yet, primitive accumulation indicates precisely an *ex-novo* separation; in other words, 'the social forces that are posited outside the realm of impersonal pure economic laws' (De Angelis, 2004: 66) create *ex-novo* opposition between producers and the means of production.

At this juncture, Massimo De Angelis (2004) makes a brilliant contribution. He does not merely set forth that the systematic character of primitive accumulation presents itself in accumulation proper as a sort of by-product of the process of reproduction. In other words, it is *not only that* the separation of labour from its means is re-constituted continuously in accumulation proper, and thusly capital maintains itself as the form assumed by the condition of labour. I am hardly convinced that this reading might be the rationale that upholds the permanence of primitive accumulation or the persistence of capitalism's pre-history in the present. If it were the case, we would wish to re-consider Zarembka's (2002) essay in which he puts that the accumulation of capital entails the permanently *reproduced* separation and this has to be understood within the logic of accumulation-proper.

De Angelis develops a political-theoretical framework in regards to *the instances* of the *ex-novo production of the separation*. He argues that the separation 'must not be seen as the necessary result of its [capital's] dynamic', rather 'as necessary *aspiration* embedded in its drives and motivation as well as its survival instinct vis-à-vis emerging alternatives to capital' (2004: 69). He, in my view, ably discerns what primitive accumulation in Marx's texts refers to; that is '*the problematic of the preservation and expansion of the capitalist mode of production any time the producers [and the spaces of life] set themselves up as an obstacle to the reproduction of their separation from the means of production*' (De Angelis, 2004: 69). Thusly, primitive accumulation is reread as 'those social processes or sets of strategies aimed at dismantling those institutions [and social

productive forces and its results] that protect society from the market' (2004: 13). I can only grasp through this *political reading of Marx* that even if primitive accumulation were a problem of genealogy, the genealogy would manifest itself until the radical historical reversal would take place.

Marx's account of capital, as a process of circulation of values which are congealed in different things at various points, refers to the *ad infinitum* movement in which money is recapitalized in search of more money (Harvey, 2010). 'What capital does is that it attempts to create life-worlds in its own image or to colonise existing ones, to put them to work for its priorities and drives ... since the beginning of its history ... until it has colonised all of life' (De Angelis 2004: 67). However, there arise some limits any one of which has to be transcended by capital. Marx (1993), in the *Grundrisse*, argues that the circulation and accumulation of capital cannot abide limits; whenever it encounters a limit, it turns them into barriers that then could be transcended or by-passed. At this point, Marx cites Hegel's *Science of Logic* as a footnote in the *Grundrisse*: 'something's own boundary posited by it as a negative which is at the same time essential, is not merely boundary as such but barrier ... and it does overcome it' (Hegel in Marx, 1993: 334). Marx aptly adapts the argument for capital: 'capital is the endless and limitless drive to go beyond its limiting barrier ... Every limit appears as a barrier to overcome' (1993: 334 and 408). Capital is thusly conceptualised as a social force devoted to transcend every limit it encounters in order to expand itself continuously.

Translating into our context, De Angelis (2004: 75) discloses the essential quality of the limit -defined either *by* capital or *for* capital- whose presence is accompanied with capital's imposition of brutal policies of *ex-novo separation*. This essential quality consists in *the tendency of people's open-direct access to social wealth that is not mediated by the natural laws of capitalist production*. When capital's *ad infinitum* desire to colonise and accumulate, and ultimately its subsuming power is constrained or threatened by the producers who begin to construct and obtain open-direct access to *the social, knowledge and creative commons* which grant protection and offer *different forms of living*, and ergo the workers begin to *invert the sine qua non separation* and increase their *autonomy* in their relation to capital, capital encounters with an alarming situation in both economical and political respects. It, in turn, begins to impose power-over. It strives to

separate people *ex-novo* from the emerging or/and threatening *common forms of wealth* through draining, destructing, and subsuming by means of commodification policies.

The Structural Contradiction Revealed by the Enclosure of *the Common*

There is a kind of a back-and-forth movement, *rather than a dialectical relationship*, between capitalist structures of control and the struggles for liberation. The insurgency of labourers drives capital to restructure itself that, in turn, shapes and conditions the upcoming struggles of workers. We shall argue for the tendential/potential breakdown of this seemingly vicious movement in the final chapter. Now, allow me to discuss how and why the processes of primitive accumulation (i.e. enclosures) that are set in motion as a response/counter-attack to the increasing autonomy of workers culminate in a structural contradiction.

The capitalist control with respect to the increasing role of *the common*, hence to the increasing autonomy of labour manifests itself in the following two modes of enclosure: i) the privatisation of the common results of biopolitical production via Intellectual Property Rights³¹; and ii) the increasing annihilation of the common bases of biopolitical production.

(i)

I want to begin with some primary definitions regarding the subject of property rights. I find Moulner-Boutang's broad definition of property rights useful:

Property rights are a body of social conventions and norms that permit the transformation of what is valuable for any given society, group or individual into an economic good capable of monetary valuation (price) or non-monetary valuation (donation), or of a market exchange (private goods) or non-profit exchange (public goods). (2011: 100)

³¹ See Chapter Eight in which the role of IPRs as a form of counter-attack is discussed empirically.

From the juridical and institutional standpoint, the system of property is based on two levels of provisions (see. Moulier-Boutang, 2011, 2013). The first level concerns the rules, norms, conventions, laws, etc. (these are the forms of obligations in differing intensity) that establish the *usus* (the delimitation of uses, the right to enjoy a good), the *fructus* (the enjoyment of the fruits, the ability to earn income from it), and the *abusus* (the alienability, the ability to sell without limitation) of goods, where good is understood 'anything that is the object of a symbolic, social or economic valuation' (Moulier-Boutang, 2011: 99). The second level concerns the institutional arrangements, or better the conditions for the enforcement of those rules and norms. The two levels are interrelated inasmuch as if the forms of obligation are ignored, they fall into disuse and the character of enforcement is rendered obsolete.

On the basis of the *unification* of the *usus*, the *fructus*, and the *abusus* (labour-power is undoubtedly excluded here) the system of private property relations is established. We were taught by Marx how this unification came into being. The first industrial revolution had progressively abandoned the mercantilist or artisanal production and given rise to the market-norm based heavy industry, striving for more and more labour-power. The subsumption of slaves of the South had been one form of capitalist attacks. The second attack had been directed towards peasants; the one concerning their proletarianisation and exodus from villages. Blood and fire, crude force, massacres had been yet one pillar. The application of technology in agriculture to increase productivity (e.g. new types of fodder and machines), the enforcement of tax in cash-form rather than good-form, and the progressive stream of commodification in society or the transformative pressure of emerging economic relations had driven the metamorphosis of the agriculture system. That agriculture becoming a sector of capitalism, requiring more labour and more money-capital, had granted a sort of legitimating power to the parliamentary to decide on and execute the rules, laws, conventions, etc. concerning the enclosures. The landlords had gained the *usus*, *fructus*, and the *abusus* of the land, but, of course, not the whole *abusus* of dependent-worker. There then had emerged the complex system of free wage-labour. Concisely, it had been through that transformation of ancient customary rights to private property rights via the unification of its threefold aspect (where the quality of unlimited transferability (i.e. *abusus*) had been the key criterion) that the bourgeois property had been established.

In industrial capitalism, on the whole, the juridical and institutional arrangements which informed the nature and execution of property rights were not always at the forefront as a subject of debate as if the bourgeois property relation were a natural law, imposing itself as *non est disputantum*. Nevertheless, in cognitive capitalism, the issue of property rights, especially Intellectual Property Rights (IPR), has become a central topic. The legal proceedings and the court cases over the conflicts of IPR are everywhere. The eccentricity will be devalued when we consider two things: i) in cognitive capitalism, as noted before, the object of accumulation increasingly consists of the general intellect of living labour which comes to be the basic source of value; *nevertheless*, ii) in cognitive capitalism, we witness the tendential breakdown of the strong links between *usus*, *fructus*, and *abusus*. It is in a process of collapse by the force of digital revolution. What comes to emerge instead is 'limited user rights, conditional *fructus*, and non-alienability' (Moulier-Boutang, 2011: 106).

In industrial capitalism, the monopoly of the trade of ideal, immaterial or intangible products such as knowledge(s), ideas, logos, authorships, codes, images in addition to the artefacts that are by their nature not separable (divisible), rival, and excludible was erected and regulated by the system of patents, trademarks/branding, and copyright. These apparatuses enabled the transformation of such goods into marketable *scarce* goods, thusly providing the tenant of IPR the right to enjoy a sort of *monopoly* before the law. The technical innovations (e.g. printing, photography, and photocopy) came into being, challenging the IPR enforcement and escaping the legal apparatuses. However, I agree with Moulier-Boutang that 'in the history, no disclosure of the size of what has produced the digital revolution has ever existed' (2013: 86). In *Cognitive Capitalism*, Moulier-Boutang notes that:

The new information and communications technologies make all knowledge-goods (language, image, sound) [immaterial products] reducible to a sequence of binary digits that can be stored and managed by computers, thanks to developments in memory capacity, software compression and encryption ... The nature of innovations set to work by the new information and communication technologies (removal of the barriers to reproduction, and an almost infinite

capacity for the storage of immaterial goods) makes it difficult to create property rights that are capable of being exercised over the new goods ... The diffusion of new information and communication technologies among a very large number of people (a 'digital multitude') demolishes the technological 'locks' that used to guarantee, for the holders of intellectual property rights, that it would be difficult to copy their contents. (2011: 115 and 104)

In the digital world, first, the reproduction based on meta-data is virtually identical with the original whereas in the analogical world the latter is always distinguishable, for it is necessary to utilise a physical medium (e.g. tape recorder) used for the process of its reproduction. Second, more importantly, as so far as the digital data could be coded in the digital media, reproduced, and delivered virtually at zero marginal cost, *the inversion of scarcity* of creative, knowledge commons in relation to immaterial goods has come to the forefront. At this point, we also need to recollect the notion of *excedence*: the results of biopolitical labour cannot be really divorced from the producer, cannot be confined by corporate walls; they exceed work and spill over life and accrue to the common to be shared by another fellow for further social production. From the point of view of capital, three major problems among others could be discerned. The first problem concerns the overall laws of price theory in regards to the results of biopolitical labour process where scarcity is no longer indispensable. The second one concerns the tendential difficulty of enforcing property rights on articles of biopolitical production whose transition and multiplication are scantily traceable in a *network structure* (no longer hierarchy or market). Lastly, and the *most significantly*, capital encounters with an alarming situation in political sense that producers *invert the sine qua non separation* and hence increase their *autonomy* within the antagonistic capital relation.

Capital has counter-attacked via the privatisation policies of enclosure: an aggressive plan was directed towards the privatisation of common fruits of biopolitical production. To mention a few, some strict measures [i.e. laws and treaties] were set out, via *World Trade Organisation (WTA)*, in the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS Agreement), as finalised at *Marrakesh Agreement in 1994*. The measures were then furthered in *Doha Development Rounds*. In 1998, *Digital Millennium Copyright Act (DMCA)* passed in the United States, followed by *European Union Copyright*

Directive in 2001. *World Intellectual Property Organisation (WIPO)*, with its 188 member states, presents twenty-six comprehensive Intellectual Laws and Treaties (2015 data).

(ii)

A second mode of enclosure concerns the increasing annihilation of the common bases of biopolitical production. We need to recognise that it was primarily by means of the services of welfare-institutions, built up as an outcome of potent and successful social struggles, such as health, education, training, and so forth that there constituted and cultivated diffuse intellectuality, enduing biopolitical labour with a form. In addition, it will be constructive to recollect that cognitive capitalism is ultimately tending towards *l'homme produit l'homme*. The social commons have been put under attack for more than twenty years now, beginning with the transition from welfare-state to workfare-state. The enclosure of welfare institutions dealing predominantly with knowledge production and diffusion has been on the forefront. They have been drained by capital through the policies of 'privatisation of education, the selling of public libraries and schools ... the subordination of education and knowledge to the perpetuation of competitive markets' in the interest of capital, desiring, in this context, to '*direct and shape the creation of knowledge, and control access, content and modes of delivery*' (De Angelis, 2004: 81).

(iii)

The processes of enclosure, which are set in motion as a response/counter-attack to the increasing technical autonomy of workers, manifest a paradox or, using Marxian terminology, a structural contradiction. This structural contradiction might be elaborated through two interrelated perspectives.

i) Marx and Engels, in their analyses of the transition from feudal mode of production to the capitalist mode of production in *the Communist Manifesto*, argue that since the feudal relations could not contain in itself already developed *productive forces*, they were inevitably superseded by a new relations of property, namely by the capitalist relations of property. Marx and Engels elegantly write down that 'the feudal relations of property became no longer compatible with the already developed *productive forces*; they became

so many fetters. *They had to be burst asunder; they were burst asunder.* (2004: 9-10, emphasis added). The significant question is, then, whether the social productive forces, or rather the human, social, and subjective powers are in a process of being fostered, expanded, and developed to their fullest in a mode of production. To put it differently, the question in our case concerns whether the enclosure of *the common* contradicts with the qualitative expansion of human, social, and subjective forces.

We have put that biopolitical labour performs creatively and productively only within a form of *open and directly accessible cycle of the common*. In a caricaturised expression, it begins with an access to the common resources and, at the end of the process, provides much-enriched common which in turn must be open and directly accessible to be the foundation for the new cycle of –expanded- production. An undisturbed *accumulation of the common*, in my view, is another way of speaking of *the development and growth of social productive forces*. By biopolitical production or by accumulation of *the common*, it is meant not solely some quantitative enlargement of our forces (e.g. more information, more knowledge) but also, and above all, that ‘our powers and senses increase: our powers to think, to feel, to see, to relate to one another, to love’; that is, in one word, our creative and productive qualities and capabilities (Hardt and Negri, 2009: 283). At a higher-level of abstraction, biopolitical production comes to convey not the production of objects for subjects but the production of forms of life; the subjectivity; the *bios*. Hardt and Negri write that:

The biopolitical circuit is really all contained in the production of the common, which is also simultaneously the production of subjectivity and social life. The process can be understood as both, depending on one’s perspective, the production of subjectivity through the common and the production of common through subjectivity ... [a blockage in the common] should be understood, then, as a blockage in the production of subjectivity. (2009: 299-300)

The enclosure of the common, therefore, is a fetter on the development of human being itself.

ii) The contradiction that we have associated with the enclosure of *the common* via, in particular, Intellectual Property Rights can be approached from the vision of capital as well. Moulier-Boutang makes mention of 'the absolute and internal need for this kind of capitalism, cognitive capitalism' to disclose, that is to say 'to create the spaces [the commons in general] of liberty and new digital commons as a fundamental and inescapable condition for extracting value' (2013: 90). He explains that through the idea of *human pollination*:

Economic value relies upon ... pollination by human activity. Collective intelligence innovation need new free spaces where human bees can pollinate, they need new commons. Human pollination to develop itself must have its disposal platforms. A too hasty merchandizing of these platforms will threaten participation and interaction of the multitude. The tremendous difference between industrial capitalism and cognitive capitalism lies in the fact that the former needed to destroy the ancient commons in order to transform the independent worker into proletariat whereas the later requires disclosure and constitution of a new kind of commons. (Moulier-Boutang, 2013: 90-1)

The theorist in his book *Cognitive Capitalism* assertively brings forward that 'without the richness of the multitudes who 'pollinate' society through the wings of the digital [common], the honey harvest weakens; but then, above all, *we can bid farewell to the profit opportunities offered by the knowledge society*' (Moulier-Boutang, 2011: 108).

A Concluding Remark

In his 2012 essay, Slavoj Žižek refers to the *operaists* and *post-operaist* readings of contemporary capitalism (in particular to the texts of Antonio Negri) and argues that the associated theorists miss a vital point in their analyses. For Žižek, the missed point is that 'today's capitalism has successfully privatised the general intellect itself', period! It is difficult to agree with Žižek that Marxist comrades have not discerned this point. Capital has attempted to enclose at all times, and now it tends to enclose yet again by initiating some novel policies of dead labour including the privatisation of the general intellect -as Žižek remarks. What needs to be unscored, however, is that the enclosure of

the general intellect (better diffuse intellectuality) or the enclosure of the common bases of production, where the general intellect flourishes and grows, presents itself as a fetter on economic health not only from the perspective of working class but also from the perspective of capitalist class. The enclosure of the general intellect is not to be regarded as a qualifying movement of capital; a strategy carrying the system a step forward. The new enclosures as a manifestation of capitalist counter-attack do not only concern the blockage of the development of human forces in Marxian sense, but they, and this time from capital's perspective, threaten the *survival* of economy in Schumpeterian sense as well.

Chapter Seven

Parasitic Capitalism

In the previous chapter, I have attempted to examine the new technical composition of labour traversing cognitive capitalism: who produce, what produce, and how produce. The focus then has been placed on the policies of dead labour that have been directed towards enclosing the common forms of wealth: the social, creative, knowledge commons produced by biopolitical labour, and where, simultaneously, the subjectivity is produced. The orientation has been rather *political*, understood as Cleaverian respect. More concretely, the previous chapter has been constructed through an examination of the ways in which the centrality of *the common*, or the inversion of *separation*, and ultimately the increasing autonomy of labour in its relation to capital have produced an alarming situation for capital and, in turn, how this alarming situation has been counter-attacked by the *ex-novo separation* policies of dead labour, implemented chiefly through i) the privatisation of the common results of biopolitical production via Intellectual Property Rights, and ii) the draining of the common bases of biopolitical production. Capital, that is, comes to implement some novel ways to break the emerging autonomy of proletariat. We have then put forward, nevertheless, that the modes of enclosure as forms of counter-attack in effect constitute a structural fetter on –capitalist- economic health in both objective and subjective meanings of the term.³²

I must begin this chapter with an axiom that has been mentioned only in an implicit manner in the previous chapter. We have noted and insisted earlier that labour ‘still remains the fundamental and sole element of value creation’ (Negri, 2008a: 181). In cognitive capitalism, we have underlined, it is the productive value of living labour under the domain of mass/diffuse intellectuality that assumes priority. That is to say, the source of value now rests increasingly on the creative, innovative, relational, and communicational activities of living labour rather than fixed-capital or repetitive activities of mass-worker corresponding to the industrial period of capitalism. We know this labour in its name as *immaterial labour* or, when abstracted from their concrete differences, as *biopolitical labour*. In addition, we have brought forward that *the common*

³² We will turn to this issue in the final chapter of the thesis.

does not only appear at the beginning and at the end of biopolitical labour-process inasmuch as the latter is more and more cooperative, shared, and autonomous: the production increasingly conducted in *the common*. Negri elegantly asserts that 'production manifests itself as the productive expression of the common' (2008a: 181); 'what forms the basis of the ontology of production and reproduction of life is the common' (2008a: 185). When the pieces are gathered together, one can make sense of the implicit element: 'in this ... post-Marxian critique of political economy, we assume not only that value is constructed within social production (which is obvious), but also that social production today presents itself in a manner which *increasingly has the quality of the common*, in other words as a multiplicity of increasingly cooperative activities within the process of [biopolitical] production' (2008a: 183). The creative, innovative, and versatile immaterial elements producing value are expressed within a generalised social activity which is increasingly conducted in the common.

After all, nevertheless, arguing that biopolitical production tends towards the common does not mean that one shares the common forms of social wealth *according to one's needs*. For capital, 'the common ... has become the locus of surplus value' (Hardt and Negri, 2004: 150). Capital now expropriates the common forms of social wealth that the biopolitical labour power produces (e.g. knowledge(s), information, images, codes, words, and social relationships) to generate surplus-value; that is, profit. This chapter asserts that capital has come to recognise, in some sense, the productive power of biopolitical labour force that produces increasingly in an autonomous manner within and through the common, and accordingly it has transformed its industrial logic of accumulation into rentier logic, extracting value with a minimum or none engagement in the organisation and surveillance of production process.

In the first part of the chapter, I shall attempt to investigate this rentier form, or better the parasitic form of capitalist accumulation through a post-*operaist* reading of financialiation. In the second part of the chapter, I shall attempt to link the abstract ideas, reflected upon in the first part, to their concrete appearances by analysing a particular economic formation in which biopolitical labour and the new information and communication complex has come together: *The Digital Economy*.

- Part I -

Financialisation-as-Usual?

Financialisation as understood a process towards recovering what capital hardly gets in industrial production in financial markets is hardly a novel phenomenon. One of the most well known economic sociology approaches to financialisation, broadly associated with Marxist political economy, springs from Giovanni Arrighi's (1994) seminal work: *The Long Twentieth Century*. Arrighi's theoretical orientation stresses that the circuit of capital $M[\text{oney}]-C[\text{ommodity}]-M'[\text{oney plus surplus-value}]$ by itself enables us to reflect on the systemic cycles of long-term trajectory of capitalist development. Each systemic cycle consists of two primary phases, succeeding each other: first, the phase of material expansion where money capital is utilised to facilitate the production of commodity capital; and second, the phase of financial expansion where capital increasingly jettisons the burden of productive activities and becomes articulated to financial operations.

In Arrighi's theory, the capitalist centre, consisting of a leading hegemonic power and several sheltered capitalists, first, engages in material expansion by the way of making investments in the real economy. This corresponds to the sustained expansion of commodity production. By the time of progress, nevertheless, inasmuch as other capitalist states take part in the global competition of production, the industrial profit rates increasingly fall down. The stagnating industrial profit steers the capitalist centre shift into second phase, to wit financialisation: the shift of investments from productive capital into financial assets. The partial withdrawal of the hegemonic capitalist states from making investments in the real sector paves the way for emerging capitalist states to fill that space. The latter, for Arrighi, is followed by the commencement of a new cycle of expansion in association with the rise of a successive hegemonic power.³³

A similar kind of perspective could be found in one of the greatest historical economists Charles P. Kindleberger's (1996) classic *Manias, Panics, Crashes: A History of Financial*

³³ Arrighi argues for four such systemic cycles of accumulation in the long-term development of capitalism, each is associated with a different capitalist power. In Arrighi's account, the last financialisation phase with the United States hegemony started in the 1970s and came to an end.

Crises. According to Kindleberger, the business cycles, from the 17th century to the end of the 20th century, have always been formed by a particular sequence: *displacement, boom, overtrading, revulsion and tranquillity*. In his model, Kindleberger puts forward that the instability of macro-economic system has always been attempted to be recovered through the expansion of the credit channels –*boom*- and the subsequent activities of overspeculation, overestimation of prospective returns, gearing, or once gathered under a roof-concept: *overtrading*. ‘In the phase of overtrading, activity becomes frenetic ... and the prices of virtual financial assets – that is, the price of elements constitutive of people’s wealth- are inflamed’ (Aglietta, 2008: 8). The speculative boom in the financial markets keeps progressing until a few big insiders’ strategic decision of “*take the huge profit-leave the market*” (linked to the rush for liquidity) culminates in a sort of financial distress.

At this juncture, I want to lay stress on the theoretical common ground that is shared by Arrighi (1994) and Kindleberger (1996) which represents the typical conceptualisation of *twentieth-century financialisation*: financialisation as a process characterised by capital’s deviation from the stagnating industrial production (i.e. from the decreasing profit margins), as a result of capitalist competition on an international scale as well as social forces undermining geopolitical equilibrium in the international division of labour, with the ultimate intent of revitalising the profit rates; a process towards recovering what capital hardly gets in industrial production in financial markets (Marazzi, 2011); more precisely, a process characterised by decreasing levels of (re)investment in constant and variable capital, and accordingly by increasing levels of investment -refuge seeking- in the monetary markets particularly in the stock market (e.g. speculative activities). Indeed, it is not uncommon to conceive financialisation as a profit making process occurring increasingly through “virtual” financial channels rather than through “real” production. In this vein, for instance, Stockhammer (2004) positions financialisation against industrial economy and argues that financialisation is a process unfolding at the expense of real investments, to wit the real economy. Rossman and Greenfield similarly associate the process of financialisation with ‘the elimination of productive capacity’ (2006: 2). In tune, Epstein underscores ‘the growing dominance of capital market financial systems over bank-based financial systems’ (2005: 1) where the

former conveys speculative profit making whilst the latter conveys the conventional credit system facilitating the expansion and reproduction of capitalist relations.

In the late 1970s and early 1980s, there witnessed indeed all the premises of recurrence of *financialisation-as-usual*. Reflecting its classic formulation of development, the recent financialisation process was triggered with the social crisis of industrial capitalism, or better with the exhaustion of the economic foundations of Fordist mode of development. Magdoff and Sweezy (1987) and Sweezy (1997) highlighted the slowing down of the overall rate of growth as one of the trends of late capitalism of the 1970s. The profit margins diminished around fifty percent between the 1960s and the 1970s, and this was principally explained by a reference to 'the exhaustion of the technological and economic foundations of Fordism, particularly by the market saturation of mass consumption goods, the rigidity of productive processes, constant capital and the politically downwardly rigid working wage' (Marazzi, 2011: 30). Subsequently, the capitalist companies, under the pressure of owners and investors, have employed some "innovative" strategies so as to revitalise the profit rate up to the highest levels of two decades before. Harvey (2003, 2005) thoroughly discusses capital's counter-strategies that have been put into practice from the 1970s onward: political assault upon the organised labour and precarisation at work, automation in production process, geographical mobilisation of capital and human population, neo-liberal policies under the rubric of 'accumulation by dispossession' (e.g. privatisation, commodification, marketisation etc.), and he, above all, speaks of the process of financialisation.

Financialisation was once again theorised in terms of the dichotomy between industrial and financial economies. It was recognised as a process of accumulation of fictitious capital and argued to be reiterating itself in its prevalent following conceptualisation: 'increase in profit not as excess of cost proceeds (that is, not in accordance with manufacturing-Fordist logic) but as excess of value in the Stock Market at the time T2 with respect to T1- where the gap between T1 and T2 can be a few days' (Marazzi, 2010: 29). This corresponds to the so-called transition from industrialism to financialisation where the latter is principally characterised by the 'block of accumulation understood as non-reinvestment of profits in directly productive processes ... [in other words] shifting of profit quotas to financial markets to ensure *profitable growth without accumulation*'

(Marazzi, 2011: 28-29, emphasis added). The 1980s, in the shadow of financial bubbles, witnessed and theoretically embraced the economic trend of *non-accumulated profit*, expressing the resurgence of profit rates despite the on-going stagnation of the rate of accumulation. Starting from the 1980s, subsequently, the bifurcation between the rate of profit and the rate of accumulation stemming from the activities of financial rent-seeking in monetary markets has been regarded as a fundamental descriptor of today's financialisation.

All in all, *financialisation* was formulated as a process characterised by i) profit making in monetary markets while sustaining the inertia of investing in real economy, and in tune ii) the increasing bifurcation between financial and real economies. It was regarded as a 'desperate' attempt/process aiming at 'recovering what capital could no longer capture in the real economy in financial markets' (Marazzi, 2011: 26). More precisely, the process of financialisation corresponds to a kind of *anomaly* (the dimension of *transiency* is as well contained in here) in that "good" capital divorces from the production and seeks profits in monetary markets, culminating in a lack of reinvestment in constant capital and variable capital. On that account, the recent crisis in the global economy is viewed to be a consequence of the contradictory relationship between real and financial economies. This view has, of course, a concrete political articulation such that the "good" industrial capitalism must be saved from the "bad" speculative finance through the policies of de-financialisation/re-industrialisation (e.g. via state regulations) that would hypothetically culminate in a compromise between productive capital and wage labour against the dangerous hegemony of finance.

A Post-Operaist Reading of Financialisation

The argument brought forward by the current of *post-operaismo* is that 'the process of financialisation ... we are living now is distinguished from other phases of financialisation historically recorded' (Marazzi, 2010: 25). The *post-operaist* theoretical framework hinges upon the problematisation of separation of finance and its logics from the realm of so-called real economy. In the following part, I will attempt to argue that the analysis of financialisation as an anomaly, or better a temporal catastrophic deviation from industrialism, is, in fact, to overlook the development of capital, and that in what

follows the crisis of Fordist mode of development the very nature and functioning of the so-called real economy have transformed in a fundamental way. Accordingly, the process of financialisation we have been living through will be re-examined through a framework in which the transformation of capitalist accumulation's industrialist logic into rentier logic is stressed.

The very foundation of post-*operaist* theorisation of financialisation lies behind the critical scrutiny into the conventional thought that *profit increases without accumulation* (i.e. non-accumulated profit) constitutes the very basis of financialisation. As we have noted before, the accent here was placed on the tendency of "late" capitalism's move towards financial avidity which was argued to be characterised by the securitization of credit under the form of Marxian fictitious capital and by *the lack of reinvestments in productive processes*, to wit as "good" industrial processes. This approach, for instance, represents post-Keynesian analysis of financialisation (see. Epstein, 2005, Pollin, 2007, Crotty and Epstein, 2008) in which it is mainly argued that the *re-emergence of financial rentier as money lender* has cultivated the financial sector at the expense of the performance in "real" investment, output, and growth. What is recommended, therefore, a strict governmental regulation of finance sector which would hypothetically re-foster the employment and income figures in the global economy. Post-*operaist* reading turns this analysis on its head by setting forth that even though the last thirty years indeed witnessed *increase in profits*, it actually occurred *with accumulation*. However -and this *however* is everything- this new process of accumulation does not represent the image of typical industrialist accumulation, which had lost its hegemonic role parallel to the crisis of Fordist model of growth. Instead, it is a novel accumulation process, increasingly characterised by *rentier logic*. Before moving further, I must consider Carlo Vercellone's (2008b, 2010, 2013) significant contribution concerning *the becoming-rent of profit*.

On Becoming-Rent of Profit

According to Marx, there are three major categories of income distribution traversing capitalist relations: wage, rent and profit. Vercellone's essays (2008b, 2010, 2013) provide a conceptual apparatus to understand the transformation in the relationship

between these categories -in particular the blurring of the border between rent and profit- following the crisis of Fordist model of development.

One may commence with the category of wage. In capitalist mode of production, wage indicates the remuneration of productive labour generating surplus value. For Marx, this surplus value does not indicate the aggregation of individual surplus values. It is not, that is to say, a simple sum of added single surplus labour of each worker. Instead, the first and basic expression of the law of surplus value conveys *the cooperation of labour*. In Marx, then, the surplus value designates 'the gratuitous appropriation of the surplus generated by the social cooperation of labour' (Vercellone, 2010: 93). This is an important aspect to keep in mind because, as I shall discuss, the social cooperation of labour -whereby the surplus is generated- is no longer circumscribed by a particular place (e.g. factory) dedicated to the production of goods and services but is now diffused across whole society.

What could we say about rent? One must admit that Marx's theory of rent is extremely complex. Nonetheless, we can still suggest three aspects of rent from the standpoint of production and distribution relations. Firstly, in terms of the production relations, the essential character, or rather *the essence* of rent concerns the process of 'expropriation of the social conditions of production and reproduction' (Vercellone, 2010: 94), or to the process of de-socialisation of the economy in (Karl) Polanyian sense, to wit the process of transformation of the common into commodity. This is sensible when the association between the formation of *ground rent* and transformation of *common* land into 'fictitious commodity' (see. Karl Polanyi) is taken into account. In this regard, then, one might say that rent is a pre-capitalist category. Indeed, it is not wrong to say that rent concerns the epoch of primitive accumulation. Nevertheless, it will be theoretically inadequate when we consider that rent takes and manifests itself in different forms throughout the history when the expansion of capital clashes with the re-socialisation of the economy; more specifically, every time the creation of new commons present themselves beyond capital and threaten its subsuming logic (Mezzadra, 2008). In the contemporary period of capitalism, it is *the capitalist rent* that is to be associated with the expropriation of new commons.

As a second aspect of rent, Vercellone acknowledges that ‘resources on which *rentier* appropriation is based do not generally tend to increase with rent; indeed they do exactly the opposite’ (2010: 95). In other words, rent principally rests on the natural or artificial scarcity of resources on which the rent revenue is generated. This explains the contemporary -artificial- policies of enclosure such as Intellectual Property Rights which are directed towards creating monopolistic forms of commodities and thus higher prices and profits. Thirdly, from the standpoint of distribution, capitalist rent is considered ‘a form of distribution pure and simple’ as it ‘performs no function in the production process, at least not in the normal case’ (Marx, 1992: 1023). That is to say, capitalist ‘rent presents itself as a credit title or a right to the ownership of some material and immaterial resource that grants a right to drawing value from a position of exteriority in respect to production’ (Vercellone, 2010: 96).

The historical legacy from classics considers rent as ‘what is left once everyone who contributes to production has been remunerated’ (Vercellone, 2013: 426). This is understandable when we think of ground rent: the owner of the land is remunerated in return for passing the right of using of land to someone else. Profit is defined as ‘the remuneration of mass of capital invested in production’ (2010: 96). There emerges a sort of conceptual impasse since the remuneration in return for the organisation of production [i.e. coordination, control, surveillance] seems absent, and accordingly one might argue that ‘the remuneration of capital is also a form of rent’ (Vercellone, 2013: 426). Marx, in volume I and volume II of *Capital*, develops two arguments for developing a precise distinction between profit and rent. The first argument is that profit, unlike rent, is retained within the company and reinvested in production in order to reinitialise the whole process. Whilst profit corresponds to the figure of industrial capitalist who is directly involved in capitalist production relations and accordingly make investments for the development of the productive forces, rent corresponds to the subject of rentier [money-capitalist] whose presence is parasitic in the relations of capitalist production.

The second argument concerning the distinction between profit and rent is pertinent to the internal character of capital with respect to the production process. Vercellone’s remark on Marx needs to be put here lengthily:

According to Marx, the capitalist process of production is the contradictory unity of two dimensions. The first dimension is the *labour process* aiming at the production of use value: from this point of view the potentially directional function of capital is an objective function of the organisation of production. The second dimension is the *valorisation process* aiming at the production of commodities through the exploitation of wage-labour. From this point of view, capital's form of direction is despotic and marked by an antagonism that leads capital to restructure the *labour process* according to the *valorisation process*. In Marx's opinion, in the age of industrial capitalism, it is the capacity to simultaneously assure these two functions that make of the capitalist an *agent of production*. Thus, this capacity gives the appearance of an objective and necessary condition to the management of the labour process to capital's power over labour. For this reason, profit appeared as a category of distribution internal to the productive process, unlike rent which is considered as *a pure relation of distribution*. (2010: 97-98)

According to Marx, the *labour process* (i.e. the objective functions of the capitalist production) and the *valorisation process* (i.e. the exploitative functions of the production) came together to act "harmoniously" with the development of real subsumption of labour under capital. 'This convergence depends on how far the embodiment of science in fixed capital and in the separation of conceptual from executive labour provides the management of capital with an objective function inscribed in the very materiality of the productive forces' (Vercellone 2010: 99). Through this reading, Vercellone interprets Marx that the landowner was identified as useless excrescence, while the capitalist and labourer as the agents of production in industrial capitalism.

In volume III of *Capital*, nevertheless, Marx works up his aforementioned argument concerning the distinction between rent and profit. In Part Five, particularly in chapter twenty-three, Marx provides two hypotheses which are founded on two determinations of capital: *performing/functioning capital* and *capital ownership*. The first concerns the tendency of separation of capital ownership from its management. According to Marx, capital ownership was in a process of regression towards land ownership in a sense that

it was progressively becoming divorced from the sphere of production and tendentially extracting surplus value without directly engaging in the organisation of labour process. Marx writes that '[t]here remains only the functionary, and the capitalist vanishes from the production process as someone superfluous' (1992: 512). As an outcome of the separation of *ownership of capital* from the work of management, Marx writes that '[t]he mere manager, who does not possess capital under any title, neither by loan nor in any other way, takes care of all real function that fall to the functioning capitalist' (1992: 512). Therefore, 'the functions of leadership and exploitation of labour take on the false appearance of a wage labourer practicing conceptual and organisational tasks in production' (Vercellone, 2010: 100).³⁴

The second hypothesis can be found in a footnote in volume III of *Capital* –even though it is thoroughly developed in the *Grundrisse*. Here in volume III, Marx gives a reference to Thomas Hodgskin's crucial observation:

The wide spread of education among the journeymen mechanics of this country diminishes daily the value of the labour and skill of almost all masters and employers by increasing the number of persons who possess their peculiar knowledge. (Hodgskin, 1825: 30 in Marx, 1992: 513)

This is linked to the thesis of mass/diffuse intellectuality which is associated with the workers' collective re-appropriation of knowledge, or better with the preponderance of knowledge(s) of living labour over dead knowledge crystallised in fixed capital. Inasmuch as productive cooperation is organised more and more autonomously in the age of general intellect, not only do capitalists, *capital ownership*, but also the coordinating and intellectual practices of the manager's production, *functionary capital*, vanish from the production process as superfluous. In this regard, the sublation of real subsumption of *labour* under capital is not unrelated to the assertion that the categorical border between profit and rent gets increasingly blurred. One may consider that profit,

³⁴ I should note here the relevancy of Slavoj Žižek's 2012 essay which is on the rise of new class which is called *high-salaried bourgeoisie*.

like rent, hinges more on the capture of value that is produced autonomously within the diffuse factory.

According to Vercellone, all these tendencies occurred in tune with Marx's extraordinary power of foresight. In the period of industrial capitalism, rent was largely marginalised as a result of (i) the Fordist principles of organisation of production in which productive investment was prioritised over unproductive modes of capitalist valorisation; (ii) the institutional tools curbing the power of patrimonial property; and (iii) the development of welfare institutions ruling out a growing amount of incomes from capital's logic of valorisation and of financial power (Vercellone, 2008b). In this framework, the income distribution was principally structured around the company profit and labour wage dynamic whereby rent was relegated to a secondary role.

Cognitive capitalism, on the other hand, is characterised by the blurring of categorical distinction between profit and rent. In our times, profit increasingly relies on what Chevalier (1977 in Vercellone, 2008b) would call *unproductive valorisation of capital*. That is to say, profit increasingly comes to derive from '*collecting a part of the generated value from a position that is external to [the organisation of] production process*' (Vercellone, 2010: 104, emphasis added). In particular, profit is more and more hinged upon the exteriorisation of capital and its apparatuses of appropriating value produced by the increasingly autonomous living labour of mass intellectuality. Profit making, in other words, comes to be a matter of seizing the rent tied to the productive cooperation external to the company grounds, that is to say a matter of drawing surplus value without having any *real* function in the process of production. This is how we speak of the assimilation company profits into the category of rent through Marxist framework.

Back to Financialisation

Today, as Paulré (2000, 2009) underlines, large industrial companies seem to engage in everything in order to generate profit but the direct organisation of production. It is in this regard that the idea of becoming-rent of profit, or better the transformation of capital's industrial productive logic into rentier logic is justified as a result of the capture of value produced outside *directly* productive spaces. One of the outcomes of the new

processes of capital valorisation is the generation of enormous quantity of surplus value. In this respect, the *financialisation-as-usual* perspective is right in suggesting that we have indeed been in the presence of excess of surplus value in the last thirty years. However, this is not the consequence of a lack of accumulation or/and a mere financial avidity as the perspective suggests. Instead, the generation of enormous quantity of surplus value should be tied to the transformation into *a new accumulation process*. The latter is what one might call *rent oriented accumulation process*. It is my view that this is the point where post-*operaist* political economy turns the conventional reading on its head by asserting that the last thirty years indeed witnessed *increase in profits, though with accumulation*. The analytical concept of financialisation gains a new meaning now. Financialisation 'is not an unproductive/parasitic deviation of growing quotas of surplus value and collective saving, but rather the form of capital accumulation symmetrical with new processes of value production' (Marazzi, 2011: 48). In other words, financialisation is conceptualised as the '*the adequate and perverse modality [or form] of accumulation*' (2011: 64) which is symmetrical with the externalisation of value production typical of cognitive capitalism.

Concluding Part I: Setting the Discussion in a Context via Exploitation of Labour

Regarding the law of value of Marx, the followers of Marx (in particular the students of Marx reading *the Grundrisse* after Rosdolsky) have long argued that this "law" should move beyond the tautology of economics. In this regard, Negri (1992) and Vercellone (2013) speak of two variants of the law of value: i) the labour-time law of value; and ii) the law of surplus value. The former considers 'the temporal unit of labour as the basis for measuring the creation of value' (Negri, 2008a: 181). According to Vercellone, the labour-time law of value is not a structural invariant and it is 'closely linked to the specific configuration of labour-capital relation that emerged in the wake of industrial revolution and in accordance with the logic of the real subsumption of labour under capital' (Vercellone, 2013: 423). As very well known by the followers, Antonio Negri and his comrades have authored so many theoretical texts on the crisis of the labour-time law of value, to wit the limits of the famous formula that immediate labour-time is the measure of the value of commodities. In this current, Vercellone (2013), for instance,

discusses in a lucid way (in the book *Beyond Marx*) how Marx views the labour-time law of value as a temporal function of the law of surplus value. On the other side, nevertheless, the law of surplus value, the theorists argue, is the structural invariant of capitalism's *modus operandi*. By the law of value, the theorists argue, Marx understands the law of surplus value, and the latter conveys nothing but *the law of exploitation* upon which the labour-capital relation rests. According to Hardt and Negri (2004) and Negri (2008a), *the law of exploitation in terms of temporal measures* (i.e. quantities of labour time, to wit surplus labour time) concerns the real subsumption of labour process under dead labour typical of industrial capitalism. Exploitation, according to the theorists, is in fact *the experience of being exploited*, and this experience is not consisted in the surplus labour time but precisely in capital's expropriation of wealth that the labour produces.

Negri summarises two premises of Marx's ontology: 'the first premise is that the world is created by labour. The second is that this labour will always be exploited for as long as capitalism exists' (2008a: 68). Then, how might we think of the law of surplus value or the law of exploitation today in the light of above introductory paragraph? Centering the emerging financialisation process, we attempted to show that capitalist accumulation in cognitive capitalism is increasingly external to the production process. Capital acts in a parasitic form in the sense that it comes to be a matter of capturing the social wealth, produced by the increasingly autonomous labour force, without performing any "real" function (e.g. organisation, surveillance, provision of cooperation) in the labour process. *Exploitation*, hence the law of surplus value, presents itself in a new form: *expropriation of the common at the level of social production and social practice* (Hardt and Negri, 2004, Negri, 2008a, Negri, 2008b, Hardt and Negri, 2009). In other words, *exploitation comes to be an expression of the expropriation of various forms of social wealth; that is, the results of social production conducted in the common*. The exploitation of labour power, and accordingly the accumulation of surplus value take place increasingly in the rent-form –once again, for capital extracts the social wealth to generate profit without directly engaging in organisation and surveillance of the production process. And the more capital -not only *ownership* but also *performing/functioning* capital- subtracts itself from the production process, the more it asserts itself parasitic.

The analyses have been rather abstract so far. I reckon that I am in a need to make the discussion more concrete. Therefore, in the second part of the chapter, I shall turn to an economic formation, namely The Digital Economy, where the manifestation of parasitic capitalism is most lucid. The intricate discussion presented hitherto in this chapter find their material accord in the second part of the chapter. A brief conclusion will ensue.

- Part II -

The Digital Economy

The 1990s witnessed the emergence of a new economic phenomenon which is known as the digital economy. The diagram enabling and structuring (and restructuring) this formation was acknowledged as the Net. The term digital economy denotes, according to Terranova (2004), a formation in which post-modern production or -translating it to our context- biopolitical production and the new information and communication complex come together.

The rise of digital economy was at first celebrated in a peculiar -but not an unexpected way- by the neo-liberal wing out of academia. According to *Wired*, one of the leading business-technology magazines published in the United States, the digital economy was the exact manifestation of long-awaited pure *laissez-faire* capitalism, or better high-tech neo-liberalism. Reducing the complex formation to the rising opportunity of electronic commerce, it was argued that the cyberspace would be sheltered from the state restrictions and government regulations as it would operate, by dint of its unique technicality, on the terrain of on-line global platform transcending the national borders. The key discourse is, as we know it; everyone would buy and sell freely and taste the delightful fruits of free-market capitalism.

It was around this Californian neo-liberal dream that Richard Barbrook (1997, 1999) began to write on the digital economy. According to Barbrook, *Wired's* reading of the digital economy was nothing but a 'false dream', a 'fantasy' (Barbrook, 1997). The Californian ideology of *Wired* principally represented the interests of (so-called) virtual class whose members aspired to make fortunes out of this new formation. *Wired*, for

Barbrook, did not consider that the main tenets of neo-liberalism had already dead, even in the United States. More importantly, *Wired* could not acknowledge the revolutionary potential of the phenomenon. I reckon that it is possible to think of Richard Barbrook's core argument as follows: the political and economic model of digital economy tendentially and *irreversibly* renders the logic of capital obsolete and it does its valuable task precisely from the inside. Allow me to look at this argument a bit closer.

According to Barbrook (1999), the digital economy is a mixed formation in which high-tech gift economy and the market economy are intertwined. On the one side, Barbrook puts that from its beginning the digital economy has 'remained predominantly a gift economy' (1999: 133). He writes that:

For most of its users, the Net is somewhere to work, play, love, learn and discuss with other people. Unrestricted by physical distance, they collaborate with each other without the direct mediation of money or politics. Unconcerned about copyright, they give and receive information without thought of payment. In the absence of states or markets to mediate social bonds, network communities are instead formed through the mutual obligations created by gifts of time and ideas. (Barbrook, 1999: 135)

What we witness on the Net, according to Barbrook, are 'open cooperation ... interactive creativity ... information can be freely adapted to suit the users' needs ... people successfully work together through an open social process involving evaluation, comparison and collaboration ... [producing] knowledge ... software ... web-sites ... music [etc.]' (1999: 134-5). At this point, he radically asserts that 'at exactly this moment in time, a really existing form of *anarcho-communism* is being constructed within the Net ... the emergence of digital anarcho-communism' (1999: 136). That said, Barbrook recognises as a second dimension of the digital economy that capital is very well embedded in this formation: 'money-commodity and gift relations are not just in conflict with each other, but also co-exist in symbiosis' (1999: 136). So he discerns that capital always tends to commercialise the cyberspace through 'enforcing copyright payments ... privatising the shareware programs and enclose the social spaces built

through voluntary effort' (1999: 135-6). Capital, that is to say, is always in a desire of demolishing the emerging anarcho-communist relations.

After all, Barbrook argues in a hopeful manner that market relations and gift relations are always irreconcilable. The logic of capital seems to be overcome in not-too-distant future from the inside. What generates this sort of positive perspective, in my view, lies in Barbrook's observation that the commercial sector has inevitably begun sponsoring anarcho-communism in order to compete with the monopolistic corporations' market power and render the products of these corporations obsolete [i.e. Netscape vs. Internet Explorer]. The commercial sector, consequently, finds itself in a position of distributing the digital commodities (e.g. software) as a gift and, in return, 'realising the opportunities opened up' by the 'digital artisans' who could happily develop the digital commodities and 'enjoy the delights of giving [and receiving] gifts' (1999: 137-8). In addition, inasmuch as the political system would have to provide the essential support for the technical and social infrastructure of the Net in the execution of its interests, the tendency of anarcho-communism which was then limited to Net users would become an everyday common reality for the world in the future.

I agree with Barbrook's general argument that the digital economy is a mixed economy, containing elements of both gift and capitalist market relations. I also agree with Barbrook's remark on the technical difficulty of imposing property rights even though, as we noted in the previous chapter, the measures have been radically intensified since Barbrook's time of writing (1999). What Barbrook does not take into account, in my view, is capital's further developed strategy, which is much more beyond the copyright issues. It concerns seizing the productive elements and social-wealth linked to the "anarcho-communist" 'labour of love' (Barbrook, 1999: 137) generated gift relations, and doing this without directly intervening in their generation. Capital is no longer in a need of enclosing. Instead, capital tendentially discloses everything on the Net [e.g. Google services and products]. In this regard, I am convinced to say that Barbrook's early writings seem *to overstate* and abstract the autonomy of high-tech exchange from capital: cyberspace is not beyond the reality, it is within capital.

My understanding of the digital economy has been substantially built up by Tiziana Terranova's (2004, 2010) critical and inspiring essays which I read as pieces of post-*operaist* literature. Terranova invites us to rethink the digital economy around the triangulation of labour-technology-capital, and she analyses the phenomenon around the dynamics of development of capitalism following the crisis of Fordism. The essays are oriented towards reflecting on the link between digital economy and the social-factory (Mario Tronti) or factory-without-walls (Antonio Negri) (see. the chapter *Locating The Thesis of Cognitive Capitalism in Marxist Theory*). The author regards the digital economy of the Net as an emerging economic formation in which capital, via the technology of Internet and computer networks, mobilises and exploits the immaterial labour force, where the exploitation manifests itself now at a higher level.

In the beginning, Terranova gives a brilliant definition of the digital economy that is certainly worth to put here lengthily:

The 'digital economy' [is] a specific mechanism of internal 'capture' of larger pools of social and cultural knowledge. The digital economy is an important area of experimentation with value and free ... labour. It is about specific forms of production (web design, multimedia production, digital services and so on), but it is also about forms of labour we do not immediately recognise as such: chat, real life stories, mailing lists, amateur newsletters and so on. These types of cultural and technical labour are not produced by capitalism in any direct, cause-and-effect fashion, that is they have not developed simply as an answer to the economic needs of capital. However, ... they are part of a process of economic experimentation with the creation of monetary value out of knowledge/culture/affect. (2004: 79)

First, Terranova reflects on the *quality* of the labour of the digital economy in order to 'make sense of the ... commonalties of Internet users' (2004: 82). She discerns that the labour performed in the digital economy is increasingly creative, technical, cultural, affective, cognitive labour - that is immaterial labour - producing immateriality on the Net, or better when abstracted from their different expressions: *biopolitical labour*. She introduces the idea of immaterial labour, via Lazzarato (1996), in the way we have

attempted to analyse the concept and its historical development in the previous chapter. The 'productive capacities' of immaterial labour on the Net, she writes, 'encompass the work of writing/reading/managing and participating in mailing lists/websites/chat lines' (Terranova, 2004: 84). She, furthermore, notes that 'the commodity [on the Net] ... becomes increasing ephemeral ... it becomes more of a process than a finished product' (2004: 90). This, in effect, conveys that the work on the Net is '[continuously] updatable work and is extremely labour-intensive' (2004: 90). Terranova also acknowledges that immaterial or biopolitical labour, producing all the ephemeral commodities collectively, performs under the domain of *mass intellectuality*. Therefore, she argues that the labour on the Net cannot be understood by a mere reference to the activities of a specific "elite" class (e.g. "professional" waged knowledge workers); instead, this labour incorporates the activities of the common, "mass-intellectual", diffused labour force of post-industrial period.

Second, Terranova speaks of the nature of the labour executed on the Net in its relation to capital. She argues that 'only some of [labour] was hypercompensated by the capricious logic of venture capitalism. Of the incredible amount of labour which sustains the Internet as a whole, we can guess that a substantial amount of it is still 'free labour'' (2004: 91). The concept of free labour is pivotal, for Terranova, to the conceptualisation of digital economy. The concept comes to highlight two characteristics of the labour that animates the immaterial production process on the Net: i) *willingly-performed* and ii) *unpaid*. For the first aspect, willingly-performed, she argues that the labour of the Net presents itself as a 'desire': 'free labour is a desire of labour immanent to late capitalism' (2004: 94). Whereas I could not figure out very clearly how it comes to be a *desire* in Terranova, I may guess that she, from the perspective of post-*operaismo*, argues that cognitive and immaterial labour performed freely on the Net has not been created or ordered by capital (though capital in the present times has to set in motion) in a direct fashion but flourished in the development of capitalist mode of production as subjects' (Marxian) *need of self-expression*. In my view, we may also think of willing-performed labour is a part of irreversible *excedence* of new labour force. In the previous chapter, we put that the production of immaterial products or the production of immaterial aspects of material products drives workers to actualise and cultivate their creative, intellectual, communicative, networking, and cooperation capabilities. We also said, above all, these

capabilities/competences of immaterial labour-power and the outcome of the latter cannot be confined by the corporate walls, *exceed* work and spill over life, for instance it spills over cyberspace and produce *the common forms of wealth*. That said, we must not overlook the remark of Christian Fuchs that the desire in this context is directed ‘a certain degree to achieve what Bourdieu terms social capital (the accumulation of social relations), cultural capital (the accumulation of qualification, education, knowledge) and symbolic capital (the accumulation of reputation)’ (2012: 722). *Free*, secondly, connotes *not remunerated, not-waged, not compensated financially*. The digital economy, according to Terranova, is increasingly characterised by the marginalisation of waged labour. The digital economy is then animated predominantly by free labour which is ‘voluntarily given and unwaged, enjoyed and exploited’ (2004: 74).

Before moving further, we should note in a parenthesis that Terranova was one of the earliest theorists who integrated the idea of free labour into the digital economy through Marxian categories. Yet the analytical category of free labour at a broad level can be witnessed in the literature. Toffler (1980) introduced the notion of *prosumer* in the early 1980s. Huws (2003) wrote on how the emerging information and communication technologies enabled *consumption work*. Kucklich (2005) integrated the notion of *playbour* (play-labour) into the literature. Ritzer and Jurgenson (2010) invited us to think of sociology of *presumption* linked to the rise of prosumer capitalism. Fuchs (2010) vindicated and analysed *the internet prosumer labour* through Marxian categories. All these concepts, though some are apologist, signal the tendency that the commodity production more and more relies on the labour that is not remunerated.

From this perspective, the digital economy might be viewed as a formation where the desires come into collision. The labour of mass intellectuality wants to express itself as a desire in return of the very pleasure of giving and receiving, and it always *exceeds* the boundaries of dead labour and spills over the various social terrains. However, sure enough, ‘capital wants to retain control over the ... process of valorisation. The relative abundance of [immaterial] production on the Net, then, does not exist as a free-floating post-industrial utopia but full, mutually constituting interaction with late capitalism’ (Terranova, 2004: 84). In other words, capital wants to mobilise and channel ‘collective [and free] labour [on the Net] into monetary flows’, it wants to structure this immaterial

labour 'within capitalist business practices' (2004: 80). It is in a desire of extracting and expropriating value that is produced in some sense externally to it.

The Accumulation Model of Social Media Corporations

How can we show the collision of desires in the digital economy in a more concrete way? In my view, inquiring into political economy of social media corporations (e.g. Facebook, Twitter, Youtube, Foursquare, Pinterest) operating on the digital terrain of Web 2.0 can provide us an important insight.

The notion of social media has been associated with multiple concepts such as 'the corporate media favourite *user-generated content*, Henry Jenkin's media-industries-focused *convergence culture*, Jay Rosen's *the people formerly known as the audience*, the politically infused *participatory media*, Yochai Benkler's process-oriented *peer-production*, and Tim O'Reilly's computer-programming-oriented *Web 2.0*' (Mandiberg, 2012: 2 in Fuchs, 2014: 35). The following definitions and reflections enable us to build up the essential conceptual elements of the formation in our vision: 'the very word social associated with media implies that platforms are user centred and that they facilitate communal activities, just as the term participatory emphasises human collaboration. Indeed, social media can be seen as online facilitators or enhancers of human networks – webs of people that promote connectedness as a social value' (Van Dijck, 2013: 11); 'social media indicates a shift from HTML-based ... practices to Web 2.0 [practices]' (Lovink, 2011: 5); '... a social web or Web 2.0 model where the possibilities of users to interact with the web have multiplied. It has become much easier for a layperson to publish and share texts, images, and sounds. A new topology of distribution of information has emerged, based in real social networks, but also enhanced by casual and algorithmic connections' (Terranova and Donovan, 2013: 297).

What concerns me, first and foremost, is the political economy of corporate social media. Fuchs (2012, 2013, 2014) argues that -once abstracted from their differences- all 'corporate social media, such as Facebook, Twitter, YouTube, Weibo, Foursquare, LinkedIn or Pinterest, use *targeted advertising* [tailored to individual user data and behaviour] as their *capital accumulation model*' (Fuchs, 2013: 113, emphasis added).

One can challenge from different angles that these social media platforms should not be put altogether under such a totalising umbrella. Indeed. However, my attempt is only to shed light on the business model, or better *the process of capital accumulation* that is embraced by corporate social media platforms as a common model.

The form of capital accumulation on corporate social media is elaborated by Fuchs in his articles and books (2012, 2013, 2014). The following might be regarded as a synopsis. Social media corporations invest money (M) for buying the outlays of (I) constant capital (c) in the forms of fixed constant capital (e.g. buildings, server space, computers, machines, organisational infrastructure) which is fixed in the production process and circulating constant capital which is immediately used up in production and must be renewed. The social media corporations also purchase (II) variable capital (v1) (waged-labour force). The waged-employees (v1) working in the corporation, using the constant capital outlays (I), code the software platform, update and maintain the “system”, and sustain the organisational operations (e.g. marketing, human resources, finance, accounting, etc.). What the waged-employees of the corporation create at the end cannot be put under the category of commodity inasmuch as they are not sold on the market but are given away as a gift. Indeed, one is even promoted to use the software platform as free and to suggest it to friends, colleagues, etc. We need to note that ‘the waged-employees [in this model] produce [only a tiny] part of the surplus value’ (Fuchs, 2014: 110). The social media platform and articulated services, which are designed, created, and maintained by the waged-employees (v1), come to be *fix constant capital* of a second process where money-capital is actually realised.³⁵

In this second process, the Net user willingly logs in, becomes increasingly (and sometimes obsessively) entangled to the platform, and engages in somewhat joyful activities and produces, always in the common and autonomously, various forms of immaterial products (e.g. knowledge, code, text, image, sound, idea, reflection). The social media corporation transforms what the online users (v2) produce into in a form of marketable commodity (C') generally in the structure of -now famous- big-data-set.

³⁵ At this juncture, we must share Marazzi’s excellent remark on the becoming of new –fixed-constant capital: ‘new constant capital, differently from the system of machines typical of the Fordist age, is constituted ... by a totality of immaterial organisational systems that suck surplus-value by pursuing citizen-labourers in every moment of their lives’ (2011: 55).

Therefore, the articles of biopolitical labour are sold to advertising clients by the social media platform. It is central to recognise the real commodity is the data-set, not the corporate platforms or services. The surplus value contained in the commodity derives hegemonically from Net-user labour who is not remunerated for her/his labour. Net Labour is the living labour expressing itself as the totality of 'sociality, emotions, desires, relational capacity [i.e. the aspects of mass intellectuality], and... *free labour*' that 'deterritorialised, despatialised, dispersed in the sphere of reproduction, consumption, forms of life and individual and collective imagination' (Marazzi, 2011: 55). Whenever what you produce on the social media platform is purchased by the advertising client, the surplus value takes the form of money-capital for the social media corporation (C'-M').

As a result, the corporate social media generates profit³⁶ by selling a commodity whose production is conducted in *the common* by a collective intelligence/diffuse intellectuality and whose producer is not paid for her/his labour at the end. For Terranova, the digital economy concerns:

[A]ttracting and individuating not only this free labour but also, in some way, variate possible forms of surplus-value able to capitalise on diffused desires of sociality, expression and relation. In this model, the production of profit for a business through the individuation and capture of "lateral" surplus-value (selling advertising, the property and sale of data produced by user activity, the capacity to attract financial investments on the base of the visibility and prestige of new global brands like Google and Facebook). (2010: 156)

Furthermore, the corporate social media does hardly ever intervene in (i.e. organisation, providing cooperation, surveillance in the sense of overseeing) the production process.³⁷ Considering our discussion of corporate social media, it is noticeable that i) exploitation reveals itself in the form of expropriation of *the common forms of wealth*, and ii) capital tendentially expresses itself in a parasitic form by increasingly refraining itself from the

³⁶ Assuming that money-capital at the end is larger than the invested (c) and (v1)

³⁷ As a remark for the reader, 'service access cannot be seen as a salary [for the users] because users cannot 'further convert this salary ... [They] cannot buy food' (Bolin, 2011: 37 in Fuchs, 2014: 110).

organisation of production process and applying itself to an external mode of extraction. Please allow me to focus on a representative case before moving to a brief conclusion.

*The case of Twitter, Inc.*³⁸

Twitter, Inc. is a global and on-line micro-blogging platform where any user can create a Tweet, limited to 140 characters of text and hence engage in a sort of public self-expression and conversation in real time. Registered users of Twitter are able to post, search, and view photos, videos, comments, reflections, ideas and so on in Tweets to get the whole story at a glance and in one place. One may get access to *twitter.com* via the web, short-message-service [SMS] or mobile applications. The company was founded by Jack Dorsey (current chairman), Evan Williams, Biz Stone and Noah Glass in March 2006, and it was officially incorporated in April 19, 2007. Twitter's headquarter is located in San Francisco, California. October 2014 data show that Twitter has more than half a billion users out of which more than 284 million are active users, generating 500 million tweets in a day. That is an incredible figure indeed, for it is another way of saying that 36% of the global internet population possess a Twitter account and 21% of them use Twitter actively on a monthly basis. In November 2014, according to *Alexa.com*, Twitter was holding #8 in the global most-visited web sites listing.

It is not within my objectives to refer to the apologist pieces that highlight and celebrate Twitter business success and champion the corresponding entrepreneurs. Let me stress only on the last four years' core financial figures for Twitter, Inc.. At the end of 2010, the annual revenue of the company was recorded as \$28 million. This figure jumped to \$106 million in 2011 and to \$316 million in 2012. At the time of closing the year 2013, Twitter doubled its revenue (even more) by the figure of \$664 million. The expected revenue for 2014 is around \$1 billion. The rise from \$28 million to \$1 billion of revenue in five years time vindicates that the venture has been growing enormously.

³⁸ The data on Twitter, Inc. are collected through the following web-channels:

<https://www.google.co.uk/finance>

<https://investor.twitterinc.com/>

<http://www.marketwatch.com/investing/stock/twtr/financials>

http://www.hoovers.com/company-information/cs/revenue-financial.TWITTER_INC.4dfdad7abb42d7eb.html

<http://www.bloomberg.com/research/stocks/financials/financials.asp?ticker=TWTR>

It might be surprising that the social media company has not reported any annual profit yet. Twitter is not profitable company on paper. The year 2010 witnessed \$67 million net loss which reached at a level of \$128 million in 2011. In 2012, the market witnessed the decreasing of net loss, recorded \$79 million. However, the net loss skyrocketed to \$645 million next year. That is to say, Twitter reported more than half a billion net loss in 2013. Does it mean that the Twitter is an unsuccessful capitalist venture? Most probably, not! Twitter is relatively a new venture, only 7 years old, making massive investment on Research and Development. The latter does not only consist of personnel-related costs (e.g. salaries, benefits, and stock-based compensation) with regards to the engineers, coders, and other employees researching, designing and developing Twitter products and services. It, above all, includes the amortization of acquired intangible assets. Twitter has acquired 34 companies since 2008. The R&D Expenditure/Total Revenue ratios starting with 2010 are as follows: 103%; 75%; 37%; 89%. Considering 2013 particularly, Twitter achieved incredible revenue of \$664 million out of which \$594 (89%) million was spent on R&D. Analysts agree that there will be a breaking point where R&D investments will eventually saturate and the company will start making profits, even early starting from 2015.

The market agrees with analysts' anticipation in regards to Twitter's profitable future. Twitter announced its Initial Public Offering [IPO] via Twitted. September 12, 2013 was the day when the company tweeted that 'We've confidentially submitted an S-1 to the SEC for a planned IPO. This Tweet does not constitute an offer of any securities for sale'. At the time of public offering, the company was constantly losing money, and this was lawfully reported to the potential investors. The company's initial purpose was apparent on documents filed with financial regulators: raising \$1 billion in its stock market debut. At that time, Wall-Street investors valued the company around \$10 billion. On November 7, 2013, Twitter was presented for the first time on the New York Stock Exchange at \$26.00. At the end of the day the shares closed at \$44.90. Twitter raised \$1.82 billion from IPO. With the incredible jump of 72.7% (or \$18.90) the company found a new valuation: \$31 billion. In December 2013, it was recorded that the market capitalisation of Twitter was \$32.76 billion. The founders Evan Williams and Jack Dorsey take place on the list of The Richest People in America, possessing net worth of \$2.6 billion and \$2.4 billion respectively.

The question is that how does *twitter.com* generate such massive revenue around \$1 billion per annum? The source of following data is not confidential. It derives from Twitter's Form 10-K³⁹, the name of official annual report submitted to the U.S. Securities and Exchange Commission. It provides an extended summary of Twitter's financial matters. The report states that there are two major channels whereby Twitter generates revenue. First, Twitter generates the substantial majority of its revenue from *the sale of advertising services*, more precisely from selling its *Promoted Products*. The company presently offers three types of Promoted Products:

1) Promoted Tweets, which are labelled as "promoted," appear within a user's timeline or search results just like an ordinary Tweet regardless of device, whether it be desktop or mobile ... *We enable our advertisers to target an audience based on our users' Interest Graphs*. Our Promoted Tweets are pay-for-performance advertising that are priced through an auction. We recognize advertising revenue when a user engages with a Promoted Tweet.

2) Promoted Accounts, which are labelled as "promoted ," appear in the same format and place as accounts suggested by our Who to Follow recommendation engine, or in some cases, in Tweets in a user's timeline. *Promoted Accounts provide a way for our advertisers to grow a community of users who are interested in their business, products or services*. Our Promoted Accounts are pay -for-performance advertising that are priced through an auction. We recognize advertising revenue when a user follow s a Promoted Account.

3) Promoted Trends, which are labelled as "promoted," appear at the top of the list of trending topics for an entire day in a particular country or on a global basis. *When a user clicks on a Promoted Trend, search results for that trend are shown in a timeline and a Promoted Tweet created by the advertiser is displayed to the user at the top of those search results*. We sell our Promoted Trends on a

³⁹ The key report, available at http://www.sec.gov/Archives/edgar/data/1418091/000095012314003031/twtr-10k_20131231.htm

fixed-fee-per-day basis. We feature one Promoted Trend per day per geography, and recognize advertising revenue from a Promoted Trend when it is displayed on our platform.

As a second channel, Twitter generates revenue by licensing the data-set(s) to the third parties. Twitter implements this through:

- (i) *offering data licenses* that allow our data partners to access, search and analyze historical and real-time data on our platform, which data consists of public Tweets and their content, and (ii) providing mobile advertising exchange services. Our data partners generally purchase licenses to access all or a portion of our data for a fixed period, which is typically two years. We recognize data licensing revenue as the licensed data is made available to our data partners.

As a brief summary, Twitter, as a capitalist corporation, refrains itself from intervening in the organisation and surveillance of the production of user-generated content. The users of Twitter autonomously, willingly, and cooperatively engage in communicative, creative, cultural, artistic, cognitive, and technical labour and produce some forms of immaterial products in the forms of, for examples, ideas, knowledge(s), images, codes, etc. contained in the millions of tweets. The whole service, fixed constant capital, is precisely a gift of Twitter. Twitter logs the user-generated content, which we discerned above as commodity, and sells it to the clients. Firstly, the evident one, Twitter sells (or better to say rents) the fruits of biopolitical labour *directly* under the category of *data licences*. Once the client buys the data licences, it is provided right to absorb all the social wealth accumulated on the platform (the question of surveillance is another subject). In return, however, the producer (Twitter user) is not paid. Secondly, Twitter provides the user-generated content to the ad-clients which in turn, working in collaboration with Twitter, target their ads to the specific groups. The everyday producer is not paid in this case either. When one makes a search on Twitter for a subject, content, event, person, account, and so on Twitter lists the results on the service page. Twitter, however, 'manipulates the selection of Twitter search results, displayed accounts and trends. Not those tweets, accounts and trends that attain most attain are displayed, but preference is

given to tweets, accounts and trends defined by Twitter's advertising clients' (Fuchs, 2014: 198). Twitter expropriates *the common wealth at the level of social production and social practice*, and this represents the new structure in which the exploitation of labour, the new law of surplus-value, expresses itself openly.

A Brief Chapter Conclusion

Here, I need to be concise and precise as this has been somewhat a dense chapter. What does the tendency towards parasitic capitalism, attempted to be substantiated, indicate? It submits an idea in regards to the capitalist reaction concerning the contemporary state of affairs that labour-power is increasingly autonomous; it is no longer integrated in its entirety into capital as variable capital -typical of the model of Fordist industrial capitalism. Insofar as capitalist power is increasingly losing its pivotal role in configuring economic relations; losing its central role in arranging the means of cooperation, organisation, communication; losing its role in controlling the social mechanisms of reproduction of labour-power, or, approaching from the other angle now, insofar as labour-power is tendentially separating itself from the body of capital as an oppositional force, capital turns to present itself in the form of sheer command definable with its novel repute as parasitic capitalism: progressively extracting surplus-value, produced by the common within the common, without directly involving in the organisation and surveillance of production of that surplus-value.

Chapter Eight

Conclusion: On Political Opening

One day Monsieur le Capital, feeling ill, visits Doctor Subtilis and confesses that he is disturbed each night by a recurring dream ... In the dream, Monsieur le Capital explains, he is standing before a tree full of ripe fruit, glistening in the sun, but his arms are arthritic and he is unable to raise them high enough even to harvest the lower branches. He suffers hunger pangs but can only watch the delicious fruit in front of him. Finally, with great effort he somehow manages to grasp one of the fruits, but when he looks down at his hands, he sees, to his horror, that he is holding a withered human head! Doctor, please, what does it mean? Your problem, Doctor Subtilis responds, is not merely a disturbed consciousness but also a troubled body. In the era of biopolitical production, the traditional division between subjects and objects breaks down. No longer do subjects produce objects that subsequently reproduce subjects. There is a kind of short circuit whereby subjects simultaneously produce and reproduce subjects through the common. What you are trying to take in your hands, then, Monsieur le Capital, is subjectivity itself. But paradoxically, tragically, by laying your hands on the production of subjectivity, you destroy the common and corrupt the process, making productive forces wither. Monsieur le Capital, of course, is completely perplexed by this diagnosis but nonetheless presses the doctor for a cure. Well, Doctor Subtilis ... after much consideration, responds enigmatically, All I can tell you, Monsieur le Capital, is this: don't touch the fruit! (Hardt and Negri, 2009: 300)

(1)

We do not understand the concept of capital a sort of reified category or objective static *thing*. Instead, the concept of capital is understood in subjective terms as a *relationship*. More precisely, it is conceived as a category of antagonistic *interaction* between those who exploit and those who are exploited, those who subsume and those who are subsumed, those who command and those who are commanded. In the age of industrial capitalism, in the Fordist mode of development in particular, there established an organic composition of capital –the relationship between variable capital (waged labour force) and constant capital (dead labour in the form of machines, money, raw materials, and commodities)- whereby the labour-process was subsumed in *real* terms within the process of value creation. The command over social labour force was solid, potent, and compelling. Today, what we witness is a widening breach within capitalist relationship, or better to say *the decomposition of capital* such that variable capital in the form of

biopolitical labour-power increasingly emancipates itself from the command of constant capital. The becoming-autonomy of labour in its relation to capital stands on two key arguments that we attempted to reflect upon through the concepts of *excedence* and *the common* in the previous chapters.

Firstly, we have asserted that the capacities of biopolitical labour-power progressively *exceed* the bounds of waged-work configured and structured by capital. *The notion of excedence* has been approached from two interconnected perspectives. In cognitive capitalism, the production of value is more and more subordinated to the cognitive, entrepreneurial, and restructured-manual skills and capabilities of workers. These skills and capacities of diffuse/mass intellect and their revelations in labouring activities increasingly spread over work and spill over different terrains of life. One does not (and actually cannot) engage, as an illustration, in a cognitive activity or an artistic activity only because it is ordered by the waged-work that is structured by capital. These virtuosic activities and skills are better to be thought under the category of *irreversible-human-expression*, 'created out of a combination of the demands of capitalist production and the forms of self-valorisation that the struggle against work has produced' (Lazzarato, 1996: 133). Accordingly, they are hardly to be tied to a particular command or a particular place such as work office. In this regard, Negri writes that 'the product of [mass] intellect is always excedent' (Negri, 2008a: 175).

Second, capital cannot annihilate without trouble that of what one has accumulated and reserved within one's very repertoire which exists as a vital source of economic value from the perspective of capital. In industrial capitalism, workers, principally, sell their manual labour power, and whenever this physical labour power is transferred into labour process, it becomes depleted concurrently. In cognitive capitalism, workers, first and foremost, sell their 'invention-power' (Moulier-Boutang, 2011) (of course, manual labour-power too but in a restructured form) which cannot be drained instantaneously as it resides in the whole of mind and body. In effect, invention-power expands within the cooperative networks of social production through, for example, collective learning processes. The idea of excedence, in this regard, is one of the aspects characterising the *potenza* of biopolitical labour -as against capitalist *biopotere*.

Allow me to look at the notion of excedence a bit closer through empirical cases.

Lauren Kinney, one of my old colleagues and participant of this research, studies on her Ph.D. in computer science. At the same time, she works as a teaching assistant and part-time wage-worker in a business-consultancy firm. Her expertise comprises inferential statistical analyses and coding at various platforms (e.g. C++, Matlab, Python). In other words, the institutions, be it university or corporate, expects Lauren to activate and put her virtuosic faculties (e.g. cognitive, communicative, cooperative, manual) into salaried work. This is yet only one side of the story. She, at the same time, contributes, without remuneration, to the development and maintenance of *R Project*⁴⁰, which is ‘a free software environment for statistical computing and graphics’ and ‘is the result of a collaborative effort with contributions from all over the world’. She, in turn, *considers R Project* as a ‘school’, for, according to her, it is the quality of *collective learning process* characterising the project that develops and expands her capabilities and knowledge.

*The University of the People*⁴¹, a hundred percent tuition-free (and non-profit organisation), was launched in 2009 by Shai Reshef who states that ‘I wanted to create an alternative [system], to disrupt the current education system’⁴². The university, which was granted official accreditation from the U.S. Distance Education and Training Council (DETC), offers two degrees (computer science and business administration) to seven hundred students at present time (2014 Data). Yet the entrepreneur hopes that the numbers will have increased to five thousand by 2016. In fact, we are not stranger to the online free-courses, provided by platforms such as KhanAcademy, Coursera, Curriki, etc., where the instructors are salaried and the income is earned through sponsorships and corporate ads. However, *The University of the People* has a distinctive feature that all academicians, working in different education institutions as wage-workers, are teaching at this organisation without any remuneration. Shai Reshef reports that the university has now three thousand of academicians signed up from prestigious universities such as Yale, Oxford, and Columbia⁴³.

⁴⁰ <https://www.r-project.org/>

⁴¹ <http://www.uopeople.edu/>

⁴² <http://www.bbc.co.uk/news/technology-27117597>

⁴³ <http://www.bbc.co.uk/news/technology-27117597>

*Robin Hood Minor Asset Management*⁴⁴ Corporation is 'an activist hedge-fund'. The organisation utilises particular 'financial technologies to democratize finance, expand financial inclusion, and generate new economic space'. Their mission could be stated as follows: 'arbitrage the routes of wealth and distribute the loot as shared resources ... create and distribute surplus profits for all ... [towards] a more equitable world'. The net-profit of "Robin Hood" is exclusively invested in 'the production and protection of commons'. The organisation was set up and is being run by some social figures such as philosopher, data-analyst, artist, sociologist, and research associate. The project is advised and supported by scholars and activists without remuneration. An effortless closer look shows that the organisation is actually run by people who also perform waged-work in different institutions. However, what these subjects possess and do and what they can possess and do are not confined into four-walls of capitalist organisations. They oversteps the boundaries of classic work and create a new form of labour and life.

In my view, these examples ultimately enable us to uphold three interrelated arguments. Firstly, the abstract labour or restructured labour, on which the production of value increasingly rests now, manifests itself as an assemblage of virtuosic expressions (i.e. invention-power) of living labour, and this form of labour exceeds the classic definition of work and overruns different domains of life. The first argument, secondly, is connected to the state of labour condition that what the virtuosos put into work can hardly be drained and consumed in its entirety by capital as they reside in the repertoire (mind and body) of possessors. Thirdly, the invention-power can be defined as a sort of self-expanding social power inasmuch as it is the collective learning process occurring in the social and communicative networks that defines post-industrial labour, and it is the social communication and social relationship that constitutes it productive.

In the sequel, we have touched upon how the biopolitical labour-power, exceeding the bounds of conventional work, constantly refers to *the common*, which ultimately founds *the hypothesis of the becoming-autonomy of labour with respect to capital*. Writing on the expanding large-scale industry, Marx emphasised the brutal force of capital in *bringing* an army of labourers together, *providing* them the raw materials as well as the machines and apparatuses necessary for the transformation of raw materials, and *organising* them

⁴⁴ <http://www.robinhoodcoop.org/>

in a coordinative productive relationship. The figure of capitalist ascertains and maintains the coordination and cooperation spirit, acting in the vein of a conductor of orchestra. This is apparent in *Capital* volume I when Marx writes that:

The co-operation of wage-labourers is entirely brought about by the capital that employs them. Their unification into one single productive body, and the establishment of a connection between their individual functions, lies outside their competence. These things are not their own act, but the act of capital that brings them together and maintains them in that situation ... An industrial army of workers under the command of a capitalist requires, like a real army, officers (managers) and N.C.O.s (foremen, overseers), who command during the labour process in the name of capital. (1990: 449-450)

In biopolitical production, however, the worker, as we have attempted to discuss, tends to get direct access to the common where the raw materials of production reside (the common as presupposition of biopolitical production) and produce a new product which tends to accrue to the common constituting the common forms of wealth (the common as output of biopolitical production). Secondly, and perhaps more importantly, we have put that in biopolitical production, the labouring subjects are hardly in a need of a figure of capitalist or/and the state representative, or rather a sort of *outside*, in organising the production process, for the intellectual, communicative, entrepreneurial, and innovative means of cooperation are usually generated collectively throughout the encounters of production process. We have, then, concluded that biopolitical work force is ever more capable of self-organising the production process. The productive subjects or, borrowing Maurizio Lazzarato's (1996) expression, 'the children' of *mass intellectuality* performing in the epoch of general intellect, are ever increasingly able to set in motion 'the general powers of the human head' (Marx, 1993: 694) towards exodus.

Allow me to go on with some research findings concerning *the becoming-autonomy of living labour with respect to the command of capital*. In my research, there observed a common phenomenon that labour-force is indeed no longer in a need of an *outsider*, a sort of conductor, in the organisation of production processes. The functions of owners and managers seem to be reduced to specific terrains of sales (finding out the clients)

and internal/external business report or outcome announcements. At best, the manager acts precisely in the way a *facilitator* does.

Alan Smith, working in a hedge-fund as a research analyst, refers to the common while explaining the technical tool that has been produced by the colleagues in cooperation and is being utilised on a daily basis.

There is a common code base (C++ Library) or let me say common repository, which we [workers] refer to. For example, you implement the code for crude oil and upload the code to repository which can also be implemented for Vodafone stock or Turkish Lira with adjustment ... The thing that I should do is calling the function with different parameters for instance not with 6-1 but with 7-3 [Then he uploads the adjusted code to repository, and so forth] (A.S, Research Analyst)

On the chart, one cannot see the conventional categories of manager and supervisor as the 'company is really so flat, there is no bureaucratic structure'. The colleagues meet weekly for discussing their ideas and models, defined by an 'intellectual brainstorming' and 'interaction' but they can only come across the owner or CEO 'once in a month' in the 'update meetings', where the CEO provides information about performance in terms of sales and profit. That might ground the interviewee's statement that:

There exists collaboration and at the same time there exists ownership. This is my model, the model is mine. The money that I manage is my money ... I feel that I am like the owner of my own business. I have 200 million \$ and I manage it. This is my money, the money that I manage. If something goes, I will take the responsibility and I have to intervene in.

It, thus, becomes meaningful to learn that 'the barriers to entry for hedge fund works is very low [because] anyone who has knowledge and computer can do this work' as the working subject carries his/her capabilities and knowledge within his/her undepletable repertoire. (This reminds me my interview with a recruiter who 'carries her portfolio [i.e. repertoire] with her' and notes that she is no way technically attached to her company). Why, then, is Alan the tied to the corporate? 'Money. Only money'. He does

think that he cannot survive in this unstable and competitive work environment, for his job requires, above all, a network of people who can consign their accumulated wealth to his labour immediately.

The job of Can Bartu, working as a client consultant in a very well known financial services company, concerns finding the clients, technically advising them in terms of their future investments, and regularly updating them about his and his colleagues' collective and cooperative labour on the client's investment. Working for a decade in the sector now, he comments that on average fifty-one percent of clients become attracted to the name of financial service company, and other forty-nine percent become attracted to the performance of employees. Accordingly, it is further remarked that 'there is a good opportunity to be self-employed in this business [because] from technical side, I do not have any sort of attachment' even though he is under the supervision of a manager on the chart. Yet he comments on the managerial duties as follows: 'forwarding top priority emails, acting only as a bridge, waiting a reply from you ... It should not be like that'. He thinks that he is paid for, first and foremost, the social relationships (relationships of innovation, production, and consumption) he had accumulated during his career: 'he [the owners] is paying me in the first place because he is actually paying for my network and my relationships'. Companies hire people in the first place, he says, for they want to transfer the workers' social relationships. All in, the consumer portfolio is attached to him; the classic managerial functions are tendentially vanishing; what he puts into his job, which are stated as 'knowledge, experience, world-view, and social knowledge, cannot be separated from his self and subjectivity; and he believes that he is competent enough to declare his exit from the corporate. Then, why does he stay in a place of which he 'hates the culture' and where 'eighty percent of the people do the jobs that they don't want to do'? He reports that he has a wife and small baby to look after and puts that 'if I can save more money as a result of these [activities], I have some ideas in my mind and I might do something else'; for example, being a 'silversmith' is something that 'excites' him.

To sum up, what the research comes across is the real mutation of living labour. We are introduced a social labour power that is ever more autonomous in technical terms and that possesses distinct capabilities adequate to the organisation and control of its labour

and relations within the organisations with responsibility and self-motivation. In other words, 'the quality of this kind of labour power is thus defined not only by its professional capacities, but also by its ability to manage its own activity and act as the coordinator of the immaterial labour of others' (Lazzarato, 1996: 137). In turn, the barriers of exodus, according my research, seem to concern the following aspects: first, the immediate comfort of stable salary linked to the growing unstability of economy, and second, the increasing social blockage put by capital between labour and consumer.

(II)

We argue that there exists a growing tendency towards the autonomy of biopolitical labour with respect to capital. Then one may rightly direct the following question: is this the first instance of increasing disentanglement of labour from its relation to capital? If not, what is remarkable about the current state of affairs? We have mentioned that in the era of industrial capitalism, the integration of labour power (and hence the working class en masse) within capital was *real* (i.e. the real subsumption of *labour* under capital). This, of course, does not come to mean that working class was always performing in tune with the logic and priorities of capital. In retrospect, the mass worker of the factory has been within but also against capital; threatening, disrupting, and blocking its development through potent mass-strikes, movements, sabotages, etc. In this sense, the moments of insurgency might be interpreted as temporal moments indicating labour autonomy. Indeed, Mario Tronti, early in the 1960s, formulated that working class struggles against capital were to be conceived as the concrete manifestations of antagonism, and hence the moments of expression of labour autonomy regarding the subsuming brutal force of capital. That said, Tronti further argued that capital, in turn, always restructures itself so as to integrate the insurgent working class subjectivity into itself as a docile labour-power; however while doing this, it constitutes new conditions for social labour power which ultimately culminates in new activist movements and revolts and, in turn, new capitalist restructuring, and so on and so forth. So if capital and labour have eventually infused into one unity in the development of capitalism, how can we support the idea that the rupture at present times has come to be more than ever unmediatable?

We certainly take into account that capital has created novel mechanisms to exercise control and exploitation. However, as we shall discuss, first, these mechanisms imposed on the virtuosic powers of the new technical composition of labour reveal themselves as structural fetters on the expansion of social productive forces and survival -in Schumpeterian sense. Second, there is a tendency that capital increasingly refrains itself from the organisation and surveillance of labour process, from which it must extract value, in the valorisation process. This is another way of saying that capital, in effect, increasingly grants autonomy to labourers however the exploitation is still experienced -even at the level of 'hyperexploitation' (Lazzarato, 1996). Allow me explain why we, at present time, self-assuredly insist that 'capital ... works towards its own dissolution as the form dominating production' (Marx, 1993: 700).

We just make an effort to follow in Marx's footsteps. In his analysis of the transition from feudal mode of production to the capitalist mode of production, Marx and Engels discuss how the feudal relations could not contain in itself already developed productive forces and, thusly and inevitably, was superseded by a new relations of property, to wit by the capitalist relations of property. In *The Communist Manifesto*, Marx and Engels put that:

We see then: the means of production and of exchange, on whose foundations the bourgeoisie built itself up, were generated in feudal society. At a certain stage in the development of these means of production and exchange, the conditions under which feudal society produced and exchanged, the feudal organisation of agriculture and manufacturing industry, in one word, the feudal relations of property became no longer compatible with the already developed *productive forces*; they became so many fetters. They had to be burst asunder; they were burst asunder. (2004: 9-10, emphasis added)

We are convinced to bring forward that the mechanisms and apparatuses of capitalist control and exploitation in cognitive capitalism manifest themselves as structural fetters on the expansion and development of the emerging *social* productive forces.

What is required for the expansion of social productive forces in the biopolitical context is, first and foremost, *freedom*. This freedom might be approached from different angles.

A first freedom concerns *movement*, that is, labouring subjects have to be free in their spatial flows. The creativity of biopolitical labour rests on one's engagement in inspiring and productive social encounters blossoming within the circuits of social networks and, accordingly, *exodus* from the destructive ones. Therefore, one must be *free* to flow (or, of course, stay in) to a circuit which is perceived more fulfilling.

A second freedom pertains to the *control of time*, more specifically, being free in terms of the organisation of work-time and life-time. Immaterial products such as knowledge, ideas, relationships, language, codes, images, words can undoubtedly be produced in a supply-demand relationship, accompanied by a rigorous time-schedule (e.g. nine to five, five days in a week). In this case, nevertheless, these products, most of the time, would be produced in a mechanical and uncreative way, and the production would indeed manifest itself as a burden on the shoulders of producers. The common quality cutting across immaterial outputs seems, to my mind, that their production necessitates the freedom of producers in terms of deciding when to start production process and when to engage in self-developing activities (e.g. creative and collective learning, reflection, experimentation) that nurtures, stimulates and initiates the very creation/production process in the first place. Concisely, the producers must be provided freedom as well assurance in regards to determination of when to act and when to accumulate real wealth.

A third freedom concerns the freedom of *the common*. In this work, the common has been one fundamental concept in our attempt to understand biopolitical production. We have argued that the common is contained by a tendency of becoming the central and vital aspect of economic life and, more significantly, economic growth. We have put that biopolitical labour performs productively only within a form of, what one may call, *open and directly accessible* cycle of the common. In a somewhat caricaturised depiction, biopolitical production begins with an access to the common resources and, at the end of the process, it yields enhanced common forms of wealth which in turn must be open and directly accessible to reveal itself as the base of a new cycle of biopolitical production, that is, expanded production. In this regard, economic growth is accompanied by the accumulation of the common, more precisely, by the development and growth of social productive forces. *By biopolitical production -hence by the accumulation of the common-*

it is meant not only quantitative enlargement of our forces –more codes, more information, etc.-- but also, above all, that ‘our powers and senses increase: our powers to think, to feel, to see, to relate to one another, to love’ (Hardt and Negri, 2009: 283); that is, in one word, our creative and productive qualities and capabilities.

The latter hinges upon two distinguishing features of biopolitical production. First, as we have noted earlier, biopolitical labour stands against the logic of scarcity. More precisely, what is put into work as raw material (i.e. the general powers of human head) from which wealth is produced is not simply destroyed or depleted in the production process. Second, the articles of the biopolitical labour process are not exclusive. More precisely, it means that when one produces, for instance, knowledge as an outcome and shares this knowledge with other people, one’s preliminary capacity that allowed him/her to produce that knowledge in the first place will be expanded, for the very act of exchange of knowledge is a stimulating and fostering factor in increasing our capacities and capabilities. ‘He who receives an idea from me,’ Thomas Jefferson puts elegantly, ‘receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me’ (1905: 333).

To sum up, the expansion of social productive forces, that is to say the development of our capabilities and potentials within biopolitical context primarily depends on *freedom of movement, freedom of time, and freedom of the common*. Now, could one confirm that capitalist relations of property are successful in developing the *social productive forces*?

Let me commence with the most evident one: *the freedom of movement*. Capital erects geographical and social barriers or reinforces the existing ones, usually accompanied by fear and anxiety diffused over societies by various channels, and which are usually constructed at the state level. It does not merely concern blocking (or making it virtually unattainable) the transition across national borders, which is easily discernible, for instance, to many overseas attempting to migrate to and live in Europe, Canada, United States, etc. It also concerns abstracting “illegal” migrants from the dynamics of social life through segmenting the “legal” population and obstructing the free-flow of singularities, ultimately resulting in the thwart of cultural and social hybridity. Whereas ‘biopolitical production needs not only control over its movements but also constant interactions

with others, with those who are culturally and socially different' (Hardt and Negri, 2009: 148), what we have the enclosure of the space as a continuing process, hampering the development of social forces.

In order to make better sense of the barrier of freedom of movement, I inquired into the experience of an academician (through an interview), which I later discovered as a common experience to many. Baris Deniz, who is a Turkish citizen, holds a Ph.D. in economics from an east-European university and works as an assistant professor in Turkey. His research interest (spatial economics), ongoing research, and publications meet well with the research interests of an academician working in London. 'My particular research interest actually concerns a sort of niche area. He [the professor] was also working on this area. I thought that that would be a great opportunity for my academic development ... You know, publications, conferences, seminars, group discussions'. Baris decides to move to London with his partner and starts working in the research group as a visiting fellow. He says that 'the academic atmosphere in the university was exceptional'. When the question of 'in what sense it was exceptional' is posed, he speaks of the 'public lectures, departmental presentations ... enormous resources, collaboration with colleagues ... the academic life in London', and he mentions the number of publications they had produced in a year. He eventually finds the whole experience 'very productive and inspiring'.

When the contract period ends, Baris Deniz gets an invitation from the professor to stay in the university. However, he finds out that the invitation comes with the condition of work and residence permit in the country, as the school does not provide sponsorship (for Tier 2 Visa) for him. After months of trying, he discovers that this is not unique case concerning that school. He wants to apply for academic positions in other schools, yet 'I even could not get registered. You try to create an account, the system asks work permit, and if you say no, it does not allow you to create an account in the first place'. This short interview was conducted after he had left the country back to Turkey with 'anger and frustration'. I finally ask him how he is doing now in his academic life. He reports that:

This is a strange feeling. Before going to [XYZ] university [in London], I was even thinking of quitting my job and entering a [private] research sector. I was not

happy ... Now I think that I started to enjoy what I have been doing for years at XYZ. It was really a joyful and productive experience, I mean, in terms of my research ... Now, [in Turkey] I rarely go to the school; teaching two courses, office hours, that is all ... I really do not want to , I do not have a kind of enthusiasm here ... I am trying to find some ways for going back [to United Kingdom]. (B.D, Academician)

Allow me turn to the second form of freedom that concerns the autonomy concerning the organisation of time. We noted before that there is an increasing subsumption of life-time under work-time. Capital seems to recognise the distinctive quality of immaterial outputs that their production cannot be confined into a specific portion of day. Capital, by imposing the managerial discourse of flexible-work, connects the labour performance (hence the remuneration) to the -profit-making- execution of virtuosic faculties (e.g. inventiveness), which certainly spread over day and night. The worker is demanded to be, for instance, creative and to produce an original idea while resting at home, airport lounge, café, etc. as the monetary compensation (e.g. salary, bonus, promotion) rests on it (i.e. income blackmailing).

Interviewer: How do owners monitor and control your performance?

Interviewee: It totally depends on the type of work you are performing. Our job is at the one extreme and the job of bricklayer is at the other extreme. He lays bricks. It is very easy to monitor and evaluate his output because you could count the number of bricks he laid in a given time. But, in our profession, I mean our work is very creative, it is not possible to do the same thing. I feel that the owners of our company place emphasis on creativeness ... You are even not in the office and come up with a great idea at home, it would definitely impact your bonus. I mean there is no correlation between the hours you spend in the office and your bonus. (A.S, Quantitative Research Analyst)

When we say that the work is no longer confined into a portion of time, we do not mean , of course, that wage-workers are enjoying freedom in terms of controlling their times, understood as a free arrangement of *the time of labour* and *the time of experimentation in general intellect*, that is, the time for accumulating *real* social wealth. Conversely, it is

the work-time that invests and redefines the wage-workers' life-time. At the expense of reiteration:

I am with it [work] days and nights. I wish I could fill up less but when you start at 8 and finish at 6, you still have it in your head afterwards ... I mean it all comes and goes in my head ... I continue in my head ... I don't work on the weekends but that thoughts related to job in my head ... (F.A, Senior Recruiter)

Wage-workers are hardly able to escape from the subsuming power of capital to engage in self-valorising activities, which would culminate in the enhancement and expansion of their productive forces and a way through which agents might enjoy different forms of living.

Within this context, one of the disciplinary mechanisms is discerned as the imposition of precarity (Fumagalli, 2005; Morini, 2007; Fumagalli and Morini, 2013). More than half a century ago, Michal Kalecki (1943) wrote an excellent essay entitled as *The Political Aspects of Full Employment*. In this essay, Kalecki questions why the industrial leaders are unwilling to back full-employment. Herein, he puts forward that:

Under a regime of permanent full employment, the 'sack' would cease to play its role as a disciplinary measure. The social position of the boss would be undermined, and the self-assurance and class-consciousness of the working class would grow. Strikes for wage increases and improvements in conditions of work would create political tension. It is true that profits would be higher under a regime of full employment than they are on the average under laissez-faire ... But 'discipline in the factories' and 'political stability' are more appreciated than profits by business leaders. Their class instinct tells them ... that unemployment is an integral part of the 'normal' capitalist system. (Kalecki, 1943: 326)

When the concept of industrial reserve army comes to mind, one might recollect the idea that the existence of unemployment functions as a weapon to flake the working class bargaining power.

Things have surely changed since Kalecki's industrial capitalism of the 1940s. Yet his idea has remained quite solid: capital must establish some modalities of discipline so as to keep the labourers under its control as disciplined subjects. The precarity trap, the confinement in a vicious circle of work due to the imposed costs of escaping, sweeps away the producer's autonomous organisation of time. 'Precarity is a mechanism of control that determines the temporality of workers ... requiring workers ... to be constantly available for work' (Hardt and Negri, 2009: 146). When one enters into the trap, she or he finds herself in insecure and contingent economic affairs, which bring temporal poverty in terms of self-valorisation.

Lastly, allow me to consider *the freedom of the common*. In chapter six, we attempted to discuss the way in which capital approaches *the common*, whose role is more and more central to the economic production. The major strategy of capital comes to the forefront as the *enclosure* of common forms of wealth. Capital's attempt to annihilate the common bases of production (e.g. privatisation of education) is discernible in the transformation from welfare-state into workfare-state. We noted that what was more remarkable was the increasing imposition of Intellectual Property Rights as a form of commodification of the common wealth.

There exists ownership. I receive inputs from my colleagues for my models but this is my model, the model is mine. The money that I manage is my money. I feel that I am like the owner of my own business ... Absolutely ownership. [However] There is nothing as personal intellectual property whatsoever, I mean at least on my contract. The algorithm that I code is certainly the intellectual property of the company. Definitely, it is not mine. (A.S, Quantitative Research Analyst)

Another analyst report that in the case of sharing her ideas with people or opening them as common resources:

[That would] attract attention of regulators immediately and they come to investigate you. It might be FBI ... compliance department of FBI. They come to investigate you. And there is also FCA. These are like agents; they investigate inside out. They investigate all your close family members and friends ... Very

very strict. Ever year, we go to compliance training and they give us the case studies. They told us last year how many people went to prison and what happened exactly. So you know, it is very serious. (L.M, Equity Analyst)

In the case of quitting your job and opening the circulation of common:

Non-compete clause. If I resign, I will not be allowed to perform a similar job [above all, the production of ideas and knowledge] in a similar company for the following twelve months. And I signed the contract. So I accepted the written clauses. (A.S, Quantitative Research Analyst)

I am still in the non-compete period. It is six months. You cannot get in touch neither with clients nor your colleagues in that period. Non-compete period ... to stop someone transferring the relationships you have created [he defines his job as the production of social relationships] into your new organisation. (C.B, Client Advisor)

Capital seems very determined to punish those who want to nurture the common forms of wealth. However, one needs to consider that⁴⁵ :

Economic value relies upon ... pollination by human activity. Collective intelligence innovation need new free spaces where human bees can pollinate, they need new commons. Human pollination to develop itself must have its disposal platforms. A too hasty merchandizing of these platforms will threaten participation and interaction of the multitude. The tremendous difference between industrial capitalism and cognitive capitalism lies in the fact that the former needed to destroy the ancient commons in order to transform the independent worker into proletariat whereas the later requires disclosure and constitution of a new kind of commons. (Moulier-Boutang, 2013: 90-1)

The theorist elucidates in *Cognitive Capitalism* that:

⁴⁵ In my view capital has somewhat realised the following. Most of the high-tech businesses (e.g. Google Corporation) provide their services to *the common* as gifts.

It becomes absolutely necessary for cognitive capitalism to allow spontaneous cooperation to create itself unhindered. Without the richness of the multitudes who 'pollinate' society through the wings of the digital [common], the honey harvest weakens; but then, above all, we can bid farewell to the profit opportunities offered by the knowledge society. (2011: 108)

The enclosure of the common, or putting a barrier to the accumulation of the common is, in fact, a fetter not only on economic profitability -as capital increasingly needs to disclose to capture the positive externalities- but also, more significantly, on the development and expansion of social productive powers. In this regard, Hardt and Negri argue that:

The biopolitical circuit is really all contained in the production of the common, which is also simultaneously the production of subjectivity and social life. The process can be understood as both, depending on one's perspective, the production of subjectivity through the common and the production of common through subjectivity ... [a blockage in the common] should be understood, then, as a blockage in the production of subjectivity. (2009: 299-300)

A fetter on the freedom of the common, in a nutshell, disrupts the very circuit where *'l'homme produit l'homme'*, defining the contemporary period of biopolitical production.

A second way capital approaches the common can be associated with the argument that there is a tendency that capital refrains itself from the organisation and surveillance of labour process, from which it must always extract value, in the process of valorisation. The production of monetary value now comes to be a matter of seizing the rent linked to the productive cooperation external to the company grounds, that is to say a matter of drawing surplus value without having any real function in the production process. Profit, accordingly, stems from 'collecting a part of the generated value from a position that is external to production process' (Vercellone, 2010: 104, emphasis added). In other words, 'capital captures and expropriates value ... that is produced, in some sense, *externally* to it' (Hardt and Negri, 2009: 141). As noted before, the exploitation of

biopolitical labour, in this context, takes the form of expropriation of the common forms of wealth produced in cooperation at the societal level. Therefore, capital, in some sense, seems to discern the growing autonomy of labour force and, in turn, increasingly recede from strictly engaging in the organisation and surveillance of production, and embark on the value accrued in the common in the form of rent by setting financial mechanisms in motion. The way in which capital begins to approach the common rationalises the hypothesis that capitalism is in the process of transformation from *vampiric form* to *parasitic form*.

In conclusion, the current state of economic affairs offers us an insight that the capitalist control and discipline mechanisms imposed on the social powers of virtuosos manifest themselves as barriers on the expansion of social productive forces and hence economic health. By the economic health, we do not understand the quantitative performance of an economy identified by a list of quantitative parameters (e.g. deficit, inflation-rate, the relative value of currency). According to Schumpeter, 'capitalist performance *is not even relevant* for prognosis' of capitalism's future (2010: 115, emphasis added). In tune with Schumpeter, in evaluating the health of economy, the theorists of *operaismo* and post-*operaismo* distinguish between objective indicators (i.e. the classic numeric measures of performance) and subjective indicators. They prioritise the latter in evaluating the well-being of an economy and pose the essential question on which one needs to reflect: to what extent the social productive forces release themselves in the ways of actualising human potentiality in the relations of social production. In this part, we tried to disclose empirically the ways in which the mechanisms of capitalist control and discipline indeed engender a structural contradiction regarding the well-being of today's economic life in subjective terms. Finally, we stressed the mutation of capitalism into a sort of parasitic form, appropriating now a portion or all of the economic value without organising and surveilling the restructured labour process that is progressively based on the common.

(III)

What we witness is the progression of a *subjective crisis* traversing the capitalist mode of production. The mechanisms of capitalist control, notwithstanding their originality, yield a structural contradiction concerning the productivity and development of social forces. Capital is increasingly mutating itself, as recognising the increasing autonomy of labour, into a parasitic form. It attempts to expropriate the common forms of wealth by launching and advancing external mechanisms of invasion and absorption. In cognitive capitalism, the functions and responsibilities associated with *capital ownership* and *functionary capital* are in the process of vanishing from the production process as superfluous. There appears a widening breach within capital relation revealing itself as a political opening, or *kairos* (i.e. the opportune moment of breaking the chronological time of repetitiveness). The momentous *kairos* forces us to think of the ultimate project of *exodus*, to wit 'the process of *subtraction* from the relationship with capital by means of actualising the potential autonomy of labour-power ... a refusal of the increasingly restrictive fetters placed on its productive capacities by capital ... transforming the relationships of production and mode of social organisation under which we live' (Hardt and Negri, 2009: 152-3).

Who can organise the project of *exodus* in the direction of the desire that is nothing but human liberation? Reflecting the -harsh- realities of the period, the major streams of the twentieth-century communist movement argued that only a vanguard subject and party could lead the rest of society towards revolutionary political action. Lenin, for instance, asserts that 'we want the ... revolution with human nature as it is now, with human nature that cannot do without subordination, control, and 'manager'' ([1943] 2012: 307). Russian people or human beings in general, Lenin puts there, were imposed such a high-level of subordination in the work processes that their capacity to act without a hegemonic external force was divested of. Therefore, there was a necessity of a leader in the politics as in the economic production. Trotsky, in the same vein, argued for the need of a 'conspiracy' of revolutionary leadership, which would lead mass insurrection with the capacities of organising and decision-making.

We must also touch briefly upon a second major stream of thought that divorces, at the outset, the economic realm from the realm of politics, or economic production from political action. Hannah Arendt, a key figure within this stream, conceptualises politics around plurality and freedom and, in turn, she conceptualises political action around the communicative, cooperative, and collaborative practices of singularities traversing the realm of common. The economic domain or economic production, for Arendt, is instrumentally oriented towards producing *an end product*, and the precise qualities defining politics are exhausted in the very process. She writes that ‘the strength of the production process is entirely absorbed in and exhausted by the end product’. On the other side, she continues, ‘the strength of the [political] action process is never exhausted in a single deed but, on the contrary, can grow while its consequences multiply; what endures in the realm of human affairs are [only] these processes’ (Arendt, 1998: 233). Concisely, for Arendt, the capacities of living labour are independent of the qualities characterising the realm of politics, such as action, speech, communication, creativity, and autonomy.

In this work, we have tried to reveal and defend that *the virtuosos*, the active subjects of mass/diffuse intellectuality engaging in production in cognitive capitalism, come to the forefront as paradigmatic figures who are more and more adequate for the organisation and advancement of the project of *exodus*. Arendt is certainly accurate in her analysis when we mull over the technical composition of labour traversing early industrial capitalism or scientific production processes. However, the form of production in cognitive capitalism is quite different, for it has biopolitical nature.

It might be read as bio-POLITICAL in the sense that the qualities, capacities, abilities of the *virtuosos* and the activities these subjects perform in the process of production (e.g. the cooperation, collaboration, and communication of singularities in the common) are immediately political -as Arendt understands. On this aspect, Hardt and Negri state that:

In the biopolitical context ... the production of ideas, images, codes, languages, knowledges, affects, and the like, through horizontal networks of communication and cooperation, tends toward the autonomous production of the common, which is to say, the production and reproduction of forms of life. And the

production and reproduction of forms of life is a very precise definition of political action. (2009: 364)

It is, on the other side, understood as BIO-political in the sense that what is produced, at a certain level of abstraction, is not objects for subjects but forms of life; the subjectivity; the *bios* which is not quite separable from the political realm. The productive activity in biopolitical context, therefore, might be conceptualised as 'a political act of self-making' (2009: 175).

Lastly, allow me to consider the prerequisite of vanguard political formation in terms of revolutionary political action, of decision-making process in particular. We must first recognise that Lenin's and Trotsky's teachings were indeed realistic insofar as they were addressing the actualities of a particular period of capitalist development. In industrial capitalism, the means of cooperation, be it vertical or hierarchical, are provided by the owners of means of production; labour is subsumed under capital in *real* terms; labour was non-autonomous. In biopolitical production, on the other hand, labour is in charge of creating cooperative encounters; it is increasingly more autonomous from capital as we attempted to discuss; and the networks of cooperation is rather horizontal. These are only some relevant aspects of economic production that precisely provide us the insight that today human-nature, in contrast to Lenin's thought, can actually do without the governance and control of managers; they do by using their own means of collaboration, communication, cooperation, etc. Therefore, the new technical composition of labour in cognitive capitalism conveys an idea that the subjects of mass/diffuse intellectuality acting in biopolitical context have the capacities for political democratic decision-making which would transform 'the parallel struggles of identities to ... a revolutionary event' (Hardt and Negri, 2009: 249), that is, a political action.

What we witness is a political opening in the present-day capital relation. The capacities expressed by *the children of mass/diffuse intellectuality* via today's economic production are increasingly adequate for organising the political project of *exodus*. However, we must always bear in mind that the politic opening is just signalling the possibility of a new process of political composition of labour. The democratic and political potentiality of biopolitical labour force does -no way- culminate in the organisation of *exodus* in an

abrupt manner. *In potentia*, often resting latent, has to be transformed *in actu* by the means of -this is paramount- *political action and organisation*. The ultimate desire is human liberation; *exodus*, a process of subtraction from capital in the way of re-appropriating the means of production and reproduction. *Exodus*, in cognitive capitalism, is before our eyes but it is promising *only in the protection the common and only by the means of political action and organisation*.

Bibliography

- Aglietta M (1979) *A Theory Of Capitalist Regulation: The U.S. Experience*. London: Verso Books.
- Aglietta M (2008) *La Crise: Comment en Est-on Arrivé là, Comment en Sortir*. Paris: Michalon.
- Allen JP (2004) Redefining the network: Enrolment strategies in the PDA industry. *Information Technology & People*, 17(2), 171–185.
- Alquati R (1975) *Sulla FIAT e Altri Scritti*. Milan: Feltrinelli.
- Althusser L (1970) *For Marx*. New York: Vintage Books.
- Althusser L and Balibar E (1970) *Reading Capital*. London: New Left Books.
- Arendt H (1973) *The Origins of Totalitarianism*. New York: Harcourt, Brace & World.
- Arendt H (1998) *The Human Condition*. Chicago: University of Chicago Press.
- Arrighi G (1994) *The Long Twentieth Century*. London: Verso
- Barbrook R (1997) The digital economy. *Nettime [Online]*, Available from: <http://www.nettime.org/Lists-Archives/nettime-l-9706/msg00143.html> (accessed 19 June 2015).
- Barbrook R (1999) The high-tech gift economy. In: Bosma et al. J (ed.), *ReadMe! ASCII Culture and the Revenge of Knowledge*, New York: Autonomedia, pp. 132–138.
- Barry A and Slater D (2002) Technology, politics and the market: An interview with Michel Callon. *Economy and Society*, 31(2), 285–306.
- Bauman Z (2005) *Liquid Life*. Cambridge: Polity.
- Beck U and Ritter M (1992) *Risk Society: Towards a New Modernity*. London: Sage.
- Beck U (2000) *The Brave New World of Work*. Cambridge: Polity Press.
- Bell D (1956) *Work and Its Discontents*. Boston: Beacon Press.
- Bologna S (1987) The theory and history of the mass worker in Italy. *Common Sense*, 11/12, Available from: <https://libcom.org/library/theory-history-mass-worker-italy-sergio-bologna> (accessed 2 June 2015).
- Bonefeld W (2001) The permanence of primitive accumulation: Commodity fetishism and social constitution. *The Commoner*, September (2), 1–3.
- Bonefeld W (2002) History and social constitution: Primitive accumulation is not primitive. *The Commoner*, Section on Debate on Primitive Accumulation, 1–7, Available from: <http://www.commoner.org.uk/02bonefeld.pdf> (accessed 3 June 2015).

- Bowring F (2004) From the mass worker to the multitude. *Capital & Class*, 28(2), 101–132.
- Boyer R (1990) *The Regulation School: A Critical Introduction*. New York: Columbia University Press.
- Boyer R (2002) *La Croissance, Début de Siècle*. Paris: Albin Michel.
- Boyer R and Saillard Y (2002) A summary of regulation theory. In: Boyer R and Saillard Y (eds), *Regulation Theory: The State of the Art*, London: Routledge, pp. 36–44.
- Braudel F (1979) *Civilization & Capitalism 15th-18th Century*. New York: Harper and Row.
- Brenner R and Glick M (1991) The regulation school: Theory and history. *New Left Review*, 1(188), 45-119.
- Caffentzis G (2011) A critique of ‘cognitive capitalism’. In: Peters MA and Bulut E (eds), *Cognitive Capitalism, Education and Digital Labor*, United States: Peter Lang Publishing, pp. 23–57.
- Callinicos A (2006) *The Resources of Critique*. Cambridge: Polity Press.
- Callon M (1986) Some elements of a sociology of translation: Domestication of the scallops and the fishermen of saint Briec Bay. In: Law J (ed.), *Power, Action, and Belief: A New Sociology of Knowledge?*, London: Routledge & Kegan Paul, pp. 196–233.
- Callon M (1998) *The Laws of the Markets*. Oxford: Blackwell Publishers.
- Callon M (2005) Why virtualism paves the way to political impotence: A reply to Daniel Miller’s critique of the Laws of the Markets. *Economic Sociology: European Electronic Newsletter*, 6(2), 3–20.
- Callon M and Latour B (1981) Unscrewing the Big Leviathan: how actors macrostructure reality and how sociologists help them to do so. In: Knorr-Cetina K. and Cicourel A. (eds), *Advances in Social Theory and Methodology: Toward an Integration of Micro- And Macro-Sociologies*, Boston: Routledge & Kegan Paul, pp. 277–303.
- Callon M and Muniesa F (2005) Peripheral vision: Economic markets as calculative collective devices. *Organization Studies*, 26(8), 1229–1250.
- Camfield D (2007) The multitude and the kangaroo: A critique of Hardt and Negri’s theory of immaterial labour. *Historical Materialism*, 15(2), 21–52.
- Casarino C and Negri A (2008) *In Praise of the Common: A Conversation on Philosophy and Politics*. Minneapolis: University of Minnesota Press.
- Castells M (1996) *The Rise of the Network Society: The Information Age: v.1: Economy, Society and Culture*. 1st ed. Oxford: Blackwell Publishing.
- Castree N (2000) The information age: Economy, society and culture (3 vols.) Manuel Castells. *Historical Materialism*, 7(1), 241–256.

- Castree N (2002) False antitheses? Marxism, nature and actor-networks. *Antipode*, 34(1), 111–146.
- Chandler AD (1977) *The Visible Hand the Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press.
- Chevalier JM (1977) *Economie Industrielle en Question*. Paris: Calmann-Lévy.
- Cleaver H (1991) Introduction. In: Negri A *Marx Beyond Marx: Lessons on the Grundrisse*, New York / London: Autonomedia / Pluto.
- Cleaver H (1992) The inversion of class perspective in Marxian theory: From valorization to self-valorization. In: Bonefeld W, Gunn R, and Psychopedis K (eds), *Open Marxism: vol ii. Theory and Practice*, London: Pluto, pp. 104 – 146.
- Cleaver H (2000) *Reading Capital Politically*. 2nd ed. Edinburgh: AK Press.
- Cleaver H (2003) A response to Aufheben's 'review' of Steve Wright's Storming Heaven (2002) and Harry Cleaver's Reading Capital Politically (2000). Available from: <http://la.utexas.edu/users/hcleaver/AufhebenResponse.html> (accessed 27 May 2015).
- Cleaver H and Bell P (1982) Marx's theory of crisis as a theory of class struggle. *Research in Political Economy*, 5, 189–261.
- Corsani A and Lazzarato M (2008) *Intermittents et Précaires*. Paris: Éditions Amsterdam.
- Corsani A et al. (2001) Le Capitalisme cognitif comme sortie de la crise du capitalisme industriel. Un programme de recherche. In: *Forum de la Régulation*, Paris, Available from: http://webcom.upmfgrenoble.fr/regulation/Forum/Forum_2001/Forumpdf/01_CORSA_NI_et_alii.pdf (accessed 29 May 2015).
- Crotty J and Epstein G (2008) *Proposals for effectively regulating the U.S. financial system to avoid yet another meltdown*. University of Massachusetts: Economics Department Working Paper Series. Paper 17., Available from: http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1016&context=econ_workingpaper (accessed 19 June 2015).
- David P. and Foray D (2002) An introduction to the economy of knowledge society. *International Social Science Journal*, 54(171), 9–23.
- De Angelis M (1999) Marx's theory of primitive accumulation: A suggested reinterpretation. Available from: <http://homepages.uel.ac.uk/M.DeAngelis/PRIMACCA.htm> (accessed 3 June 2015).
- De Angelis M (2001) Marx and primitive accumulation: The continuous character of capital's 'enclosures'. *The Commoner*, September (2), 1–22.
- De Angelis M (2004) Separating the doing and the deed: capital and the continuous character of enclosures. *Historical Materialism*, 12(2), 57–87.
- Deleuze G (1988) *Foucault*. Minneapolis: University of Minnesota Press.

- Deleuze G (1997) Control and becoming (interviewed by A Negri). In: *Negotiations, 1972-1990*, New York: Columbia University Press, pp. 169–177.
- Devine J (1983) Underconsumption, over-investment, and the origins of the great depression. *Review of Radical Political Economics*, 15(2), 1-27.
- Dieuaide P, Paulré B and Vercellone C (2003) Le capitalisme cognitif: Un nouveau système historique d'accumulation. In: *Journées d'étude MATISSE*, Université de Paris 1.
- Dobb M (1963) *Studies in the Development of Capitalism*. London: Routledge.
- Duménil G and Lévy D (2004) *Capital Resurgent: Roots of the Neoliberal Revolution*. Cambridge: Harvard University Press.
- Duménil G and Lévy D (2011) *The Crisis of Neoliberalism*. Cambridge: Harvard University Press.
- Duménil G and Lévy D (2013) Managers in the dynamics of social change [Online Paper]. Available from: <http://www.jourdan.ens.fr/levy/dle2013c.htm> (accessed 14 June 2015).
- Dyer-Witheford N (1999) *Cyber-Marx: Cycles and Circuits of Struggle in High-Technology Capitalism*. Illinois: University of Illinois Press.
- Engels F (1891) Introduction to Karl Marx's wage labour and capital. Available from: <https://www.marxists.org/archive/marx/works/1847/wage-labour/intro.htm> (accessed 28 May 2015).
- Epstein GA (2005) Introduction: Financialisation and the world economy. In: Epstein GA (ed.), *Financialization and the World Economy*, Cheltenham: Edward Elgar Publishing, pp. 3–17.
- Fine B (2002) What's eating actor-network theory? The case for political economy in agro-food studies. [Unpublished Paper] Available from: <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=D85E190B3E8A38D69E0D53C2F0340A39?doi=10.1.1.201.3063&rep=rep1&type=pdf> (accessed 14 June 2015).
- Fine B (2003) Callonistics: a disentanglement. *Economy and Society*, 32(3), 478–484.
- Fine B (2005) From actor-network theory to political economy. *Capitalism, Nature, Socialism*, 16(4), 478–84.
- Fine B (2012) Exploitation and surplus value. In: Fine B and Saad-Filho A (eds), *The Elgar Companion to Marxist Economics*, Cheltenham: Edward Elgar Publishing, pp. 118–125.
- Fine B and Saad-Filho A (2004) *Marx's Capital*. London: Pluto Press.
- Foray D (2006) *The Economics of Knowledge*. Cambridge: MIT Press.
- Foray D and Lundvall B-A (1996) The knowledge-based economy: From the economics of knowledge to the learning economy. In: OECD (ed.), *Employment and Growth in the Knowledge-based Economy: Conference Papers, Copenhagen, November 1994*, Paris: OECD.

- Foucault M (1990) *The History of Sexuality, Vol. 1: An Introduction*. New York: Vintage Books.
- Foucault M (1991) *Discipline and Punish: The Birth of the Prison*. Harmondsworth: Penguin.
- Fraser I (1998) *Hegel and Marx: The Concept of Need*. Edinburgh: Edinburgh University Press.
- Friedman TL (2005) *The World Is Flat: A Brief History of the Twenty-first Century*. New York: Picador/Farrar, Straus and Giroux.
- Fuchs C (2010) Labor in informational capitalism and on the Internet. *The Information Society*, 26(3), 179–196.
- Fuchs C (2012) Dallas Smythe today: the audience commodity, the digital labour debate, Marxist political economy and critical theory. Prolegomena to a digital labour theory of value. *tripleC: Open Access Journal for a Global Sustainable Information Society*, 10(2), 692–740.
- Fuchs C (2013) Digital prosumption labour on social media in the context of the capitalist regime of time. *Time & Society*, 23(1), 97–123.
- Fuchs C (2014) *Social Media: A Critical Introduction*. London: SAGE.
- Fumagalli A (2005) Bioeconomics, labour flexibility and cognitive work: Why not basic income? In: Standing G (ed.), *Promoting Income Security as a Right. Europe and North America*, London: Anthem Press, pp. 337–350.
- Fumagalli A (2011) Twenty theses on contemporary capitalism (cognitive biocapitalism). *Angelaki*, 16(3), 7–17.
- Fumagalli A and Lucarelli S (2011) Valorization and financialisation in cognitive biocapitalism. *Investment Management and Financial Innovation*, 8(1), 88–103.
- Fumagalli A and Morini C (2013) Cognitive bio-capitalism, social (re)production and the precarity trap: Why not basic income. *Knowledge Cultures*, 1(4), 106–127.
- Garcia M-F (1986) La construction sociale d'un marché parfait. *Actes de la Recherche en Sciences Sociales*, 65(1), 2–13.
- Gill R and Pratt A (2008) In the social factory?: Immaterial labour, precariousness and cultural work. *Theory, Culture & Society*, 25(7-8), 1–30.
- Gorz A (1997) *Miseres du Present, Richesses du Possible*. Paris: Galilee.
- Gray J (2005) The world is round. *The New York Review of Books*, 52, No:13, Available from: <http://www.nybooks.com/articles/archives/2005/aug/11/the-world-is-round/> (accessed 19 June 2015).
- Hardt M and Negri A (1994) *Labor of Dionysus: A Critique of The State-Form*. Minneapolis: University of Minnesota Press.
- Hardt M and Negri A (2000) *Empire*. Cambridge, MA: Harvard University Press.

- Hardt M and Negri A (2004) *Multitude: War and Democracy in the Age of Empire*. New York: Penguin.
- Hardt M and Negri A (2009) *Commonwealth*. Cambridge, MA: Harvard University Press.
- Harvey D (2003) *The New Imperialism*. Oxford: Oxford University Press.
- Harvey D (2005) *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- Harvey D (2006) *The Limits to Capital*. London: Verso
- Harvey D (2010) *A Companion to Marx's Capital*. London: Verso
- Hay C (2001) Regulation theory. In: Jones RJB (ed.), *Routledge Encyclopedia of International Political Economy*, London: Routledge, pp. 1332–1336.
- Hippel E von (1998) *The Sources of Innovation*. Oxford: Oxford University Press.
- Huws U (2003) *The Making of a Cybertariat: Virtual Work in a Real World*. New York: Monthly Review Press.
- Jefferson T (1905) *The Writings of Thomas Jefferson*. Lipscomb A and Bergh A (eds), Washington, D.C.: Thomas Jefferson Memorial Association.
- Jessop B (1990) Regulation theories in retrospect and prospect. *Economy and Society*, 19(2), 153–216.
- Jessop B and Sum NL (2006) *Beyond the Regulation Approach: Putting Capitalist Economies in Their Place*. Cheltenham: Edward Elgar Publishing.
- Kalecki M (1943) Political aspects of full employment. *Political Quarterly*, 14(4), 322–330.
- Kennedy PM (1987) *The Rise and Fall of the Great Powers 1500 - 2000: Economic Change and Military Control from 1500-2000*. New York: Random House USA.
- Keynes JM (2006) *The General Theory of Employment, Interest and Money*. New Delhi: Atlantic Publishers & Distributors.
- Kindleberger CP (1996) *Manias, Panics and Crashes: A History of Financial Crises*. 3rd ed. London: Palgrave Macmillan.
- Kucklich J (2005) Precarious playbour: Modders and the digital games industry. *The Fibreculture Journal*, (5), Available from: <http://five.fibreculturejournal.org/fcj-025-precarious-playbour-modders-and-the-digital-games-industry/> (accessed 19 June 2015).
- Laibman D (1984) Modes of production and theories of transition. *Science and Society*, 48(3), 257–294.
- Latour B (1987) *Science in Action: How to Follow Scientists and Engineers Through Society*. Milton Keynes: Open University Press.

- Latour B (1993) *We Have Never Been Modern*. Hemel Hempstead: Harvester.
- Latour B (1994) Pragmatogonies: a mythical account of how humans and nonhumans swap properties. *American Behavioral Scientist*, 37(6), 791–808.
- Law J (1997) Traduction/Trahison: notes on ANT. Department of Sociology. Lancaster University, Available from: <http://www.comp.lancs.ac.uk/sociology/stslaw2.html> (accessed 14 June 2015).
- Law J (1999) After ANT: Topology, naming and complexity. In: Law J and Hassard J (eds), *Actor Network Theory and After*, Oxford: Blackwell Publishers, pp. 1–14.
- Law J and Hetherington K (2000) Materialities, Spatialities, Globalities. In: Bryson J (ed.), *Knowledge, Space, Economy*, London: Routledge, pp. 34–50.
- Lazzarato M (1996) Immaterial labour. In: Virno P and Hardt M (eds), *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minneapolis Press, pp. 133–151.
- Lebert D and Vercellone C (2004) L'économie de la connaissance et de l'immatériel, entre théorie et histoire: du capitalisme industriel au capitalisme cognitif. *Cahiers Lillois d'économie et de Sociologie*, No: 43, 17–39.
- Lee N and Brown S (1994) Otherness and the actor network: the undiscovered continent. *American Behavioral Scientist*, 37(6), 772–790.
- Lemke T (2011) *Biopolitics: An Advanced Introduction*. New York: New York University Press.
- Lenin VI (2012) *Essential Works of Lenin: What Is to Be Done? and Other Writings*, Christman H (ed.), New York: Dover Publications.
- Levy M and Jouyet J (2006) L'économie de l'immatériel: la croissance de demain. Ministre de l'Économie, des Finances et de l'Industrie, Paris. Available from: http://www.iesf.fr/upload/pdf/economie_de_l_immatériel.pdf (accessed 2 June 2015).
- Lipietz A (1987) *Mirages and Miracles: The Crises of Global Fordism*. London: Verso.
- Lovink G (2011) *Networks Without a Cause: A Critique of Social Media*. Cambridge: Polity.
- Lucarelli S and Fumagalli A (2008) Basic income and productivity in cognitive capitalism. *Review of Social Economy*, 66(1), 71–92.
- Lucarelli S and Vercellone C (2013) The thesis of cognitive capitalism. New research perspectives. An introduction. *Knowledge Cultures*, 1(4), 15–28.
- Lundvall B-A (1998) Innovation as an interactive process: From user producer interaction to the national system of innovation. In: Dosi G et al. (eds), *Technical Change and Economic Theory*, London: Pinter Publishers, Bloomsbury Academic, pp. 349–369.
- Luxemburg R (2003) *The Accumulation of Capital*. New York: Routledge.
- MacKenzie D (2006) *An Engine, Not a Camera: How Financial Models Shape Markets*. Cambridge: MIT Press.

- MacKenzie DA (2008) *Material Markets: How Economic Agents Are Constructed*. New York: Oxford University Press.
- Machlup F (1962) *The Production and Distribution of Knowledge in the United States*. Princeton: Princeton University Press.
- Magdoff H and Sweezy P (1987) *Stagnation and the Financial Explosion*. New York: Monthly Review Press.
- Mandarini M (2013) Translator's introduction. In Negri A. *Time For Revolution*, London: Bloomsbury Academic.
- Mandiberg M (2012) *The Social Media Reader*. New York: New York University Press.
- Marazzi C (2005) Capitalismo digitale e modello antropogenetico del lavoro. L'ammortamento del corpo macchina. In: Laville JL et al. (eds), *Reinventare il Lavoro*, Roma: Sapere 2000.
- Marazzi C (2010) The violence of financial capitalism. In: Fumagalli A and Mezzadra S (eds), *Crisis in the Global Economy: Financial Markets, Social Struggles, and New Political Scenarios*, Los Angeles: Semiotext (E), pp. 17–61.
- Marazzi C (2011) *The Violence of Financial Capitalism*. Los Angeles: Semiotext (e).
- Marcuse H (1972) *Counterrevolution and Revolt*. Boston: Beacon Press.
- Marx K (1970) *A Contribution to the Critique of Political Economy*. New York: International Publishers.
- Marx K (1971) *Theories of Surplus Value, Volume 3*. Moscow: Progress Publishers.
- Marx K (1990) *Capital: A Critique of Political Economy, v. 1*. London: Penguin Books.
- Marx K (1992a) *Capital: A Critique of Political Economy, Vol. 3*. London: Penguin Books.
- Marx K (1992b) Economic and philosophic manuscripts of 1844. in Marx K. In: *Early Writings*, London: Penguin Books.
- Marx K (1993) *Grundrisse: Foundations of the Critique of Political Economy*. London: Penguin Books.
- Marx K (1995) *The Poverty of Philosophy*. New York: Prometheus.
- Marx K and Engels F (2004) *The Communist Manifesto*. London: Penguin.
- Mavroudeas S (2012) The regulation approach. In: Fine B and Saad-Filho A (eds), *The Elgar Companion to Marxist Economics*, Cheltenham: Edward Elgar Publishing, pp. 304–310.
- Mcfall L (2009) Devices and desires: How useful is the 'new' new economic sociology for understanding market attachment? *Sociology Compass*, 3(2), 267–282.
- Mezzadra S (2008) La «cosiddetta» accumulazione originaria. In: *Lessico Marxiano*, Roma: Manifestolibri, pp. 23–53.

Mezzadra S (2009) Italy, operaism and post-operaism. Ness I (ed.), *International Encyclopaedia of Revolution and Protest*, Oxford: Blackwell Publishing.

Mezzadra S (2011) The topicality of prehistory: A new reading of Marx's analysis of 'so-called primitive accumulation'. *Rethinking Marxism: A Journal of Economics, Culture & Society*, 23(3), 302–321.

Midnight Notes Collective (1992) *Midnight Oil: Work, Energy, War, 1973-1992*. New York: Autonomedia.

Morini C (2007) The feminisation of labour in cognitive capitalism. *Feminist Review*, 87, 40–59.

Morini C and Fumagalli A (2010) Life put to work: Towards a life theory of value. *Ephemera*, 10(3/4), 234–252.

Moulier-Boutang Y (1989) Introduction. In Negri A. *The Politics of Subversion*, Cambridge: Polity.

Moulier-Boutang Y (2011) *Cognitive Capitalism*. Cambridge: Polity.

Moulier-Boutang Y (2013) Is the cup of struggle on the battle of intellectual property rights half full or half void? A question of method and some concrete consequences. *Knowledge Cultures*, 1(4), 84–98.

Muniesa F, Millo Y and Callon M (2007) An introduction to market devices. In: Callon M, Millo Y, and Muniesa F (eds), *Market Devices*, Oxford: Blackwell, pp. 1-13.

Negri A (1988) *Revolution Retrieved: Writings on Marx, Keynes, Capitalist Crisis and New Social Subjects (1967-83)*. London: Red Notes.

Negri A (1989) *The Politics of Subversion: A Manifesto for the Twenty-First Century*. Cambridge: Polity Press.

Negri A (1991) *Marx Beyond Marx: Lessons on the Grundrisse*. New York / London: Autonomedia / Pluto.

Negri A (1992) Valeur-travail: crise et problèmes de reconstruction dans le postmoderne. *Futur Antérieur*, 10, 30–36.

Negri A (1997) Reappropriations of public Space. *Common Sense*, 21, 31-40.

Negri A (2008a) *Reflections on Empire*. Cambridge: Polity.

Negri A (2008b) *Empire and Beyond*. Cambridge: Polity.

Negri A (2008) The political monster: Power and naked life. In: Negri A and Casarino C, *Praise of the Common: A Conversation on Philosophy and Politics*, Minneapolis: University of Minneapolis Press.

Negri A et al. (1996) Do you remember revolution. In: Virno P and Hardt M (eds), *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

Nonaka I and Hirotaka T (1995) *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.

OECD (1996) The knowledge based economy. Paris: OECD, Available from: <http://www.oecd.org/sti/sci-tech/1913021.pdf> (accessed 10 June 2014).

OECD (2005) OECD glossary of statistical terms: knowledge-based economy. Available from: <https://stats.oecd.org/glossary/detail.asp?ID=6864> (accessed 14 June 2015).

Orléan A (1994) Vers un modèle général de la coordination économique par les conventions. In: Orléan A (ed.), *Analyse Economique des Conventions*, Paris: Presses Universitaires de France, pp. 9–40.

Orléan A (2006) The cognitive turning point in economics: social beliefs and conventions. In: Arena R and Festre A (eds), *Knowledge, Beliefs and Economics*, Cheltenham: Edward Elgar Publishing, pp. 181–203.

Orléan A (2012) Knowledge in finance: objective value versus convention. In: Arena R, Festr A, and Lazaric N (eds), *Handbook of Knowledge and Economics*, Cheltenham: Edward Elgar Publishing, pp. 313–339.

Panzieri R (1976) Surplus value and planning: Notes on the reading of 'Capital'. In: CSE (ed.), *The Labour Process & Class Strategies*, London: Stage 1.

Panzieri R (1980) The capitalist use of machinery: Marx versus the "objectivists". In: Slater P (ed.), *Outlines of a Critique of Technology*, Trowbridge: Ink Links.

Panzieri R (1994) *Spontaneità e Organizzazione: Gli Anni del 'Quaderni Rossi', 1959-1964*. Pisa: Biblioteca Framco Serantini.

Paulré B (2000) De la 'new economy' au capitalisme cognitif. *Multitudes*, 2(2), 25–42.

Paulré B (2009) Introduction au capitalisme cognitif. In: *Semizdat Online Conference*, Available from: <http://seminaire.samizdat.net/spip.php?article84> (accessed 27 May 2015).

Pollin R (2007) The resurrection of the rentier. *New Left Review*, 46 July - August, 140–153.

Rabinow P and Rose N (2003) Thoughts on the concept of biopower today. [Unpublished]. Available from: <http://www.lse.ac.uk/sociology/pdf/RabinowandRose-BiopowerToday03.pdf> (accessed 29 May 2015).

Revel J (2002) *Dictionnaire Foucault*. Paris: Ellipses.

Ritzer G and Jurgenson N (2010) Production, consumption, presumption: The nature of capitalism in the age of the digital 'prosumer'. *Journal of Consumer Culture*, 10(1), 13–36.

Rosenberg N (1982) *Inside the Black Box: Technology and Economics*. Cambridge: Cambridge University Press.

Rullani E (2000) Le capitalisme cognitif : du déjà vu ? *Multitudes*, 2(2), 87–94.

Rullani E and Romano L (1998) *Il Postfordismo. Idee per il Capitalismo Prossimo Venturo*. Milan: Libri.

- Schumpeter JA (2010) *Capitalism, Socialism and Democracy*. London: Routledge.
- Sennett R (1998) *The Corrosion of Character: The Personal Consequences of Work in the New Capitalism*. 1st ed. New York: WW Norton & Co.
- Sennett R (2006) *The Culture of the New Capitalism*. New Haven: Yale University Press.
- Slater D (2002) From calculation to alienation: disentangling economic abstractions. *Economy and Society*, 31(2), 234–249.
- Smith A (1982) *The Wealth of Nations: Books I-III*. Skinner A (ed.), London: Penguin.
- Smith T (2013) The ‘general intellect’ in the Grundrisse and beyond. *Historical Materialism*, 21(4), 235–255.
- Stockhammer E (2004) Financialisation and the slowdown of accumulation. *Cambridge Journal of Economics*, 28(5), 719–741.
- Sweezy P (1986) Feudalism to capitalism revisited. *Science and Society*, 50(1), 81–95.
- Sweezy P (1997) More (or Less) on Globalization. *Monthly Review*, 49(4), 3–4.
- Taylor FW (1911) *The Principles of Scientific Management*. New York: Harper & Brothers.
- Terranova T (2004) *Network Culture: Politics for the Information Age*. London: Pluto.
- Terranova T (2010) New economy, financialisation and social production in the Web 2.0. In: Fumagalli A and Mezzadra S (eds), *Crisis in the Global Economy: Financial Markets, Social Struggles, and New Political Scenarios*, Los Angeles: Semiotext (e).
- Terranova T and Donovan J (2013) Occupy social networks: The paradoxes of using corporate social media in networked movements. In: Lovink G and Rasch M (eds), *Unlike us reader: social media monopolies and their alternatives*, Amsterdam: Institute of Network Cultures, pp. 296–311.
- Thoburn N (2001) Autonomous production?: On Negri’s ‘new synthesis’. *Theory, Culture & Society*, 18(5), 75–96.
- Thoburn N (2003) *Deleuze, Marx and Politics*. London: Routledge.
- Thrift N (2011) Foreword to Cognitive Capitalism. In Moulner-Boutang Y. *Cognitive Capitalism*, Cambridge: Polity.
- Toffler A (1980) *Third Wave*. New York: Bantam Books.
- Tonkiss F (2006) *Contemporary Economic Sociology: Globalisation, Production, Inequality*. Oxon: Routledge.
- Toscano A (2007) Always already only now: Negri and the biopolitical. In: Murphy TS and Mustapha A-K (eds), *The Philosophy of Antonio Negri: v. 2: Revolution in Theory*, London: Pluto Press, pp. 109–129.

Toscano A (2009) Chronicles of insurrection: Tronti, Negri and the subject of antagonism. *Cosmos and History: The Journal of Natural and Social Philosophy*, 5(1), 76–91.

Toscano A (2012) Sociology. In: Fine B and Saad-Filho A (eds), *The Elgar Companion to Marxist Economics*, Cheltenham: Edward Elgar Publishing, pp. 327–333.

Tronti M (1973) Social capital. *Telos*, 17, 98–121.

Tronti M (1979) Lenin in England. In: Rosser B (ed.), *Working Class Autonomy and the Crisis: Italian Marxist Texts of the Theory and Practice of a Class Movement, 1964-79*, London: Red Notes.

Tronti M (1980) The strategy of refusal. In: Lotringer S and Marazzi C (eds), *Autonomia: Post-Political Politics*, Los Angeles, CA: Semiotext(e), pp. 28–36.

Tronti M (2006) *Operai e Capital*. 3rd ed. Roma: Derive Approdi.

Turchetto M (2008) From ‘mass worker’ to ‘empire’: The disconcerting trajectory of Italian operaismo. In: Bidet J and Kouvelakis S (eds), *Critical Companion to Contemporary Marxism (Historical Materialism Book Series)*, Leiden-Boston: Brill Academic Publishers, pp. 285–308.

UNESCO (2005) *World Report: Towards Knowledge Societies*. Paris: UNESCO, Available from:

<http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/towards-knowledge-societies-unesco-world-report/> (accessed 17 June 2015).

Van Dijck J (2013) *The Culture of Connectivity*. Oxford: Oxford University Press.

Vercellone C (1999) Accumulation Primitive du Capital, Industrialisation et Rapport Salarial: une Application au Cas Italien (1961-1980). Thèse de 3ème cycle, Paris: Université de Paris 8.

Vercellone C (2005) The hypothesis of cognitive capitalism. In: *Historical Materialism Annual Conference*, Available from:

https://hal-paris1.archives-ouvertes.fr/file/index/docid/273641/filename/The_hypothesis_of_Cognitive_Capitalismhall.pdf

Vercellone C (2007) From formal subsumption to general intellect: Elements for a Marxist reading of the thesis of cognitive capitalism. *Historical Materialism*, 15(1), 13–36.

Vercellone C (2008) La these du capitalisme cognitif: Une mise en perspective historique et theorique. In: Colletis G and Paulré P (eds), *Les Nouveaux Horizons du Capitalisme*, Paris: Economica, pp. 71–95.

Vercellone C (2008b) The new articulation of wages, rent and profit in cognitive capitalism. In: *A Conference on The Art of Rent Queen Marry University, London*, pp. 1–6.

Vercellone C (2010) The crisis of the law of value and the becoming-rent of profit. In: Fumagalli A and Mezzadra S (eds), *Crisis in the Global Economy: Financial Markets, Social Struggles, and New Political Scenarios*, Los Angeles: Semiotext (e), pp. 85–119.

Vercellone C (2013) From the mass-worker to cognitive labour: Historical and theoretical considerations. In: Linder M and Roth KH (eds), *Beyond Marx: Theorising the Global Labour Relations of the Twenty-First Century*, Leiden: Koninklijke Brill NV, pp. 417–445.

Virno P (1996a) Do you remember counterrevolution? In: Virno P and Hardt M (eds), *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press, pp. 241–261.

Virno P (1996b) Notes on the ‘general intellect’. In: Makdisi S, Casarino C, and Karl R (eds), *Marxism Beyond Marxism*, London: Routledge, pp. 265–273.

Virno P (1996c) The ambivalence of disenchantment. In: Virno P and Hardt M (eds), *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press, pp. 13–37.

Virno P (1996d) Virtuosity and revolution: The political theory of exodus. In: Virno P and Hardt M (eds), *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press, pp. 189–213.

Virno P (2007) General intellect. *Historical Materialism*, 15(3), 3–8.

Weeks K (2005) The refusal of work as demand and perspective. In: Murphy T. and Mustapha A-K (eds), *The Philosophy of Antonio Negri: Resistance in Practice Vol. 1*, London: Pluto Press, pp. 109–136.

World Bank (1994) *Higher Education: The Lessons of Experience. Development in Practice*. Washington, D.C.: World Bank.

World Bank (2002) *Constructing Knowledge Societies: New Challenges for Tertiary Education*. Washington, D.C.: World Bank.

Wright S (2002) *Storming Heaven: Class Composition and Struggle in Italian Autonomist Marxism*. London: Pluto Press.

Zanini A (2010) On the ‘philosophical foundations’ of Italian workerism: A conceptual approach. *Historical Materialism*, 18(4), 39–63.

Zarembka P (2002) Primitive accumulation in Marxism, historical or trans-historical separation from means of production? *The Commoner*, 02 March Issue, 1–9.

Žižek S (2012) The revolt of the salaried bourgeoisie. *London Review of Books [Online]*, 34(2), Available from: <http://www.lrb.co.uk/v34/n02/slavoj-zizek/the-revolt-of-the-salaried-bourgeoisie> (accessed 3 June 2015).