

Knowledge and Class in Informational Capitalism

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Abstract

Class still matters, the knowledge society is a class society, hence it might be better to speak of knowledge capitalism or informational capitalism in order to stress that capital accumulation with the help of knowledge is a stratifying, class-forming process. Drawing on the works of Erik Olin Wright, Michael Hardt/Antonio Negri, Marxist Feminism, and Philippe Van Parijs the paper outlines a hypothesis that might at first seem to be paradoxical: that knowledge labour is simultaneously a non-class and a class. Economic class is a relational economic category: An exploiting class deprives at least one exploited class of resources, excludes them from ownership, and appropriates resources produced by the exploited. Besides the appropriated of economic resources exploiters also make use of hierarchies and unequal distributions of power and skills. Knowledge labour is labour which produces information, communication, social relationships, affects, and information and communication technologies. Given this definition knowledge labour is not a separate class, but an economic production process that constitutes the vertical sector of the economy that can be termed the quaternary sector in which knowledge is produced, hence knowledge labour is a non-class. But if one considers knowledge not as a narrow, but a broad social category, then it becomes clear that knowledge is not only a sector-specific economic category, but also lies at the heart of class formation in informational capitalism. Knowledge forms part of the commons of society, it is a social product produced and consumed by all. The commons of society that are produced and consumed by all consist of nature, educational knowledge, entertainment knowledge, practical knowledge, technological knowledge, and public infrastructures (institutions in the areas of health, education, medical services, social services, culture, media, politics, etc.). All humans contribute unpaid labour to the production and reproduction of the commons, the capitalist the capitalist class is the only class in society that exploits and expropriates the commons, it is the only class that derives economic profit and accumulates capital with the help of the appropriation of the commons. All humans produce, reproduce, and consume the commons, but only the capitalist class exploits the commons economically. Hence this class shouldn't be considered as forming a part of the multitude. The multitude is an expanded Marxist class category that is used for describing the common labour class that produces the commons and is exploited by capital that appropriates the commons for free and subsumes them under capital in order to gain profit. In the expanded notion of the multitude besides regular manual and mental wage-labour also groups such as house- and reproductive workers, the unemployed, migrants, developing countries, retirees, students, precarious and informal workers are included as class fractions that live and produce under the rule of capital and are expropriated by capital.

Keywords: class, knowledge labour, informational capitalism, multitude, Marx, knowledge capitalism

1. Introduction

For the year 2003 the US Bureau of the Census (2004: 8) reports that the top quintile of the American population controlled 49,8% of the total income, whereas the bottom quintile received only 3.4%. This means that the top 20% had 14.6 times the income of the lowest 20%. In 2004 and 2005 the income before taxes and benefits of the top quintile of UK households was £ 66 300 and hence approximately 16 times larger than that of the bottom quintile which ranged at £ 4 300 (Office for National Statistics 2006). These data show exemplarily that there are income disparities; this is an indication that there are different economic classes controlling different amounts of wealth. Nonetheless there are approaches that claim that the class concept is obsolete and that there are no classes in contemporary society.

Ulrich Beck (1992) argues that contemporary society is a risk society in which risks and dangers such as radioactivity, harmful and noxious substances in the air, water, and food are not class-specific, but affect all humans. “Even the rich and powerful are not safe from them” (Beck 1992: 201). Risks would have an equalizing effect. “In this sense risk-societies are not class societies, nor can their conflicts be comprehended as class conflicts” (205). There would be a transition from class to risk-society (207). Beck announces the end of class, but he overlooks that the logic that has produced global risks that threaten the further survival of humankind as a whole is the modern logic of instrumental reason that treats humans and nature as mere exploitable resources for production processes and has for a long time largely ignored the effects of such modes of production. Instrumental reason is the very logic that modern class societies are built upon. Hence there is no end of class, but class societies today are high-risk class societies. The unequal distribution of wealth here still plays a role because those who are well-off can afford to purchase risk-avoiding strategies (e.g. moving to another country or continent after a nuclear event). So e.g. Michael Perelman (1998: 33) argues that the information society is a society with a hardening class system because “more and more wealth and income flows to the upper classes, leading to a scandalous distribution of income”.

In another work Beck (1983) argues that class locations have become detraditionalized by processes of individualization that have been caused by increased mobility, the rise of the welfare state, improved educational opportunities, more competitive social relationships, urbanization, and the expansion of wage-labour relationships. The effect would be the destruction of unified experiences and life-worlds of classes and the rise of individualized forms of existence in which people have to manage their lives all by themselves and hence also have to individually cope with risks that have become more likely to occur. He argues that individualization processes and class formation are reciprocally proportionally related. For Beck risk is a subjective category oriented on common life-world experiences and class solidarity. But that there is less class consciousness and class solidarity today than some decades ago doesn't mean that classes don't exist, because another logical possibility is that classes still exist objectively, but that they have been transformed and perceive themselves less as classes. Individualization is not the opposite of class formation, but an expression of class separation as an objective class formation process in the age of neoliberal capitalism. It is a typical move of neo-Weberians to conceive class in subjective terms linked to attitudes. Also Anthony Giddens (1980) argues that a class has a common awareness and acceptance of similar attitudes and beliefs linked to a common style of life. I find more convincing the position of representatives of Critical Theory such as Herbert Marcuse who argued that in contemporary capitalism we find classes without class consciousness because of

manipulation, ideology, the scientific-technological revolution, and increasing relative wealth. Under these circumstances the working class for Marcuse is “revolutionary class ‘in-itself’ but not ‘for-itself’, objectively but not subjectively” (Marcuse 1969: 54).

The aim of this paper is to discuss how classes have been transformed in the age of the internet and the knowledge society. The discussion wants to contribute to showing the topicality of the class concept.

The main research questions posed in this paper are:

- What is knowledge work?
- Which role does the class concept play in the knowledge society?
- Is knowledge labour a class and if so which type of class?

For dealing with these questions this paper has been structured into four parts. The introduction (section 1) is followed by a discussion of existing concepts of knowledge labour as class (section 2), my own approach on knowledge and class (section 3), and a discussion of the concept of knowledge labour (section 4).

The approach taken is oriented on Marxist thinking and hence stresses the concept of exploitation in objective class formation. The two main approaches on class in the social sciences are the Marxian and the Weberian concepts of class.

How did Marx and Engels conceive class? “By bourgeoisie is meant the class of modern capitalists, owners of the means of social production and employers of wage labour. By proletariat, the class of modern wage labourers who, having no means of production of their own, are reduced to selling their labour power in order to live”¹ (Marx/Engels 1848: 462, Fn*). In this footnote written by Engels in 1885 the proletariat is considered as the class of industrial wage labour and might not be suitable for defining the more expanded notion of the working class in the information age because it excludes non-manual and non-industrial labour. The traditional concept of the working class implies “productive or useful activity, which would leave all who were not working class unproductive and useless” (Williams 1985: 64). Using such a concept hence means to argue that reproductive workers, the unemployed, knowledge workers, etc. are useless and unproductive which under extreme political conditions can also imply that they are parasites that need to be annihilated.

But fortunately a more appropriate definition of class has been given by Marx: He argued that members of the exploited class are “free from, unencumbered by, any means of production of their own“, which would mean the “separation of the labourers from all property in the means by which they can realize their labour“ in a “process which takes away from the labourer the possession of his means of production; a process that transforms, on the one hand, the social means of subsistence and of production into capital, on the other, the immediate producers into wage-labourers“ (Marx 1867: 742). Here Marx argues that the exploited class can’t control its condition and means of production and that capital is exploitative. The exploited class is “double-free labour”, free from serfdom so that it can offer its labour power on the market and hence “he has no other commodity for sale, is short of everything necessary for the realisation of his labour-power” (Marx 1867: 183). For wage labour and self-employed labour this condition is true in the

¹ English translation of this and all subsequent Marx and Engels quotations obtained from <http://www.marxists.org>

sense that capital appropriates the produced goods, owns them, sells them on the market, and owns the resulting profit. Self-employed labour (that owns certain means of production by itself, doesn't hire labour, but sells its own labour to capital) also produces goods and value that is appropriated by capital. Self-employed labour just like wage-labour is "double-free", both "live only as long as they find work, and who find work only so long as their labour increases capital" (Marx/Engels 1848: 468). These two classes as well as the non-wage labour classes and the irregular labour class work under conditions under which capital takes away from them the fruits that they have produced, either (material or immaterial) goods if they are employed directly by capital or in any case the common goods that are produced by society, under indirect command of capital, appropriated by capital and transformed into profit. Marx in his analysis had to limit the class concept to wage labour under the conditions of 19th century industrialism, but his idea of the capitalist class separating, exploiting, and taking away factors of production and goods in order to achieve profit is still valid for an expanded model of classes that is appropriate for informational capitalism. Exploitation is a central notion to the Marxian concept of class, the category of exploitation is closely related to the one of surplus value in the Marxian theory. In informational capitalism the exploitation of non-wage and irregular labour as a necessary condition for the production of surplus value has become of high importance, exploitation, class, and surplus value have a more general societal character.

Marx highlights exploitation as the fundamental aspect of class in another passage where he says that "the end and aim of capitalist production" is "to exploit labour-power to the greatest possible extent" (Marx 1867: 350). From exploitation antagonistic class relations would arise: "The control exercised by the capitalist is not only a special function, due to the nature of the social labour-process, and peculiar to that process, but it is, at the same time, a function of the exploitation of a social labour-process, and is consequently rooted in the unavoidable antagonism between the exploiter and the living and labouring raw material he exploits" (Marx 1867: 350). The living and labouring raw material that is exploited by capital is of a more general nature today, it is the whole socially productive multitude that includes besides regular wage-labour also self-employed labour, non-wage labour, and irregular labour.

The stress on exploitation distinguishes the Marxian class-concept from the Weberian concept in which a class is understood as a group of people who have in common certain life chances in the market; these chances would have to do with the possession of goods and opportunities for income and would be represented under the conditions of the commodity or labour market (Weber 1978: 926). A class for Weber is made up of "all persons in the same class situation", i.e. those who share "a typical probability of 1. Procuring goods, 2. Gaining a position in life and 3. Finding inner satisfaction" (Weber 1978: 302). Weber tends to see the kind of services offered and the type of goods produced as important characteristics of class. Exploitation and the different conditions generated by it are not considered as important factors of class. The most well-known neo-Weberian class model is the one of John H. Goldthorpe (2000) who distinguishes a total of eleven classes. The criteria for drawing distinctions in this model are the type of employment relationship (labour contract or service relationship) that allows different extents of monitoring difficulty and the asset-specificity concerning skills. Goldthorpe's class model on the one hand distinguishes different occupations (farmers, self-employed, small employers, non-manual employees, service employees, manual workers) and on the other hand different skills (upper skills, semi-skills, unskilled). Who appropriates and controls capital and profit is no explicit criterion, hence it is not surprising that capitalists are missing in the scheme, Goldthorpe's neo-Weberian model might be more appropriate for distinguishing different types

of occupation, but it fails to grasp exploitation, contradictions, and struggles as important moments of class. In this model there is a service class and a manual class, hence a sharp distinction is drawn based not on the position in the relations of production and towards the means of production, but based on the type of output one produces. Another neo-Weberian model is the one of Anthony Giddens (1980) who distinguishes classes according to which type of market capacity they control: the upper class (property in the means of production), the middle class (educational or technical qualifications), and the working class (manual labour-power). Just like Weber who distinguishes in his model of four social classes besides the petty bourgeoisie and classes privileged through property and education between the working class and the propertyless intelligentsia and specialists, Giddens distinguishes manual labour and white-collar labour as two different classes. Here we can see the typical characteristic of Weberian approaches to distinguish classes by the types of occupation and products or services that they produce. But the question is if today the class position of e.g. an unskilled blue-collar-assembly-line worker in a car factory is so different from the one of e.g. an unskilled white-collar-call centre agent – both have to sell their labour power, have rather low wages, hardly any authority, and low skills.

2. Existing Approaches on Knowledge and Class

If class is still of some relevance, then the question is how the class structure has changed in informational capitalism: Have new classes emerged? Which role does knowledge labour play in the contemporary class structure? For discussing this question some existing approaches are discussed in this section. The discussion will show that the existing assessments of knowledge and class are very diverse. On the one hand there are models that see knowledge producers as exploited class: There are approaches that consider all internet users as an exploited new class, there are those who see knowledge labour as a whole as a new class or even revolutionary class, those who consider parts of knowledge labour as forming a new class. On the other hand there are models that consider knowledge producers as dominant class, either as petty bourgeoisie or as a unity of capital and labour in knowledge-producing industries.

Seven approaches on knowledge and class in the information society are identified:

1. Internet users as a new class
2. Knowledge labour as a new class
3. Knowledge labour as revolutionary class
4. Precarious knowledge labour as new class
5. Knowledge labour as unproductive subsumed labour class
6. Knowledge Labour and knowledge capital as one new class
7. Knowledge Labour as Petty Bourgeoisie

2.1. Internet Users as a New Class

Tiziana Terranova (2000) describes the rise of a class that works for free in the “social fabric” of the internet: “Simultaneously voluntarily given and unwaged, enjoyed and exploited, free labour on the Net includes the activity of building Web sites, modifying software packages, reading and participating in mailing lists, and building virtual spaces on MUDs and MOOs” (Terranova 2000: 74). Such activities would be an expression of the collective productive capacities of immaterial labour. The concept of free labour has become of particular importance with the rise of web 2.0 in which capital is accumulated by providing free access. Accumulation here is dependent on the number of users and the content they provide. They are not paid for the content, but the more

content and the more users join the more profit can be made by advertisements. Hence the users are exploited – they produce digital content for free in non-wage labour relationships. Terranova’s concept of free labour points out that in the gift economy that is subsumed under capital consumers become producers of value and capital. An example of how free labour struggles was when in 1999 seven people who acted as volunteer administrators in AOL chatrooms without receiving payment sued AOL for maintaining what has been described as “cyber-sweatshop” (Margonelli 1999).

2.2. Knowledge Labour as a New Class

Ursula Huws (2003: 161sq) sees as information-processing workers content-designers, clerks, managers, supervisors, jobs in the area of circulation such as in banking and financial services, reproductive work, and civil servants. The computer would produce a convergence of activities in large parts of the workforce. Upskilling and deskilling are two tendencies in information-processing work, but as the number of data workers who have standardized activities would grow rapidly the second tendency would be the predominant one. Many information-processing jobs would be delocalizable and hence economic globalization and outsourcing would put downward pressures on such jobs. Deskilling and delocalization would result in the emergence of a new class of information-processing workers – the cybertariat.

McKenzie Wark (2004) defines the “hacker class” as a group of e.g. “programmers, [...] artists or writers or scientists or musicians” that produces information which would be an abstraction. The vectoral class would dispossess the hacker class of their intellectual property by patents and copyrights. By such moves information would no longer be a social property belonging to all.

Franco Berardi (2003) argues that in the 1990ies immaterial labour organized itself as capital in order to found companies. With the dotcom crash at the end of the 1990s cognitive labour would have separated itself from capital and would have started to see itself as cognitariat, a “new consciousness of cognitive workers” (Berardi 2003: 4) would emerge that is a foundation for “building institutions of knowledge, of creation, of care, of invention and of education that are autonomous from capital” (Berardi 2003: 5). For Berardi a class is subjective, conscious, and struggling.

Manuel Castells (2000) identifies based on median weekly earnings four classes in the information society: the upper class (managers and professionals), the middle class (technicians and craft workers), the lower middle class (sales workers, clerical workers, and operators), and the lower class (service occupations and agricultural workers). The upper class and the lower class would be increasing in the USA, the other classes shrinking, in reference to the growth of the lower class and the lower middle class Castells speaks of “the formation of a ‘white collar proletariat’, made up of clerical and sales workers” (Castells 2000: 244). In Castells’ approach the increasing group of low-paid service workers is considered as a new class.

2.3. Knowledge Labour as Revolutionary Class

Michael Hardt und Toni Negri argue that the industrial working class has lost its hegemonic status in capitalism to immaterial labour and that hence a new open inclusive class concept is needed (Hardt/Negri 2005: xiv). The multitude would produce knowledge in networks, it would be “embedded in cooperative and communicative networks” (Ibib.: xv). Immaterial labour would

be labour “that creates immaterial products, such as knowledge, information, communication, a relationship, or an emotional response” (Hardt/Negri 2005: 108; cf. also 2000: 280-303), or services, cultural products, knowledge (Hardt/Negri 2000: 290). There would be two forms: intellectual labour that produces ideas, symbols, codes, texts, linguistic figures, images, etc.; and affective labour that produces and manipulates affects such as a feeling of ease, well-being, satisfaction, excitement, passion, joy, sadness, etc. (Ibid.). Labour would have a networked character today – “each of us produces in collaboration with innumerable others” (Hardt/Negri 2005: 144), “labour power has become increasingly collective and social; [...] labour cannot be individualized and measured” (Hardt/Negri 2005: 403). The basic idea here is that if profit and value production are increasingly based on knowledge work then one can no longer argue that surplus value is only produced by industrial labour which forms the exploited proletariat. Maurizio Lazzarato (1996) sees immaterial labour as the contemporary working class, it would be an abstract activity that involves the application of subjectivity and produces the informational and cultural content of the commodity.

For Negri and Hardt labour and exploitation have become more general, hence they argue for an expanded notion of the proletariat. Before coining the term multitude Negri used the term “social worker” for arguing that there is a broadening of the proletariat that is “now extended throughout the entire span of production and reproduction” (Negri 1982: 209). Relationships, communication, and knowledge would be goods that are produced in common, but appropriated by capital for economic ends. Hence exploitation today would be “the expropriation of the common” (Hardt/Negri 2005: 150). Exploitation would today be the exploitation of human creative capacities. The multitude or proletariat would today be “all those who labour and produce under the rule of capital” (2005: 106), “all those whose labour is directly or indirectly exploited by and subjected to capitalist norms of production and reproduction” (2000: 52), the “entire cooperating multitude” (2000: 402). The industrial working class would have no political priority among the forms of labour: “all forms of labour are today socially productive, they produce in common and share too a common potential to resist the domination of capital” (2005: 106sq). One problem of this concept of class is that it fetishizes subjectivity and neglects the influence of objective structures on classes, groups, and individuals. Hence Hardt and Negri argue that classes are defined by “the lines of collective struggle” and determined by class struggle (2005: 104). They neglect that classes can exist objectively without class struggles which can be forestalled by ideological structures that separate classes and alienate their consciousness.

Hardt and Negri want to express that other groups than wage labour such as reproductive workers in the household, the growing mass of the unemployed, migrants, students, and the informal and precarious workers are necessary aspects of the existence and accumulation of capital in contemporary society. Hence they argue that all of these groups produce the societal conditions of the reproduction of capital that are consumed by the latter for free, hence are exploited and form a class. What they are missing is that this overall class is itself segmented and antagonistic, e.g. workers might support the existence of racist relations of production in which migrant workers are extremely exploited by receiving very low wages in order to assure for themselves a higher portion of property in the form of wages; wage labourers frequently consume the housework, affective, educational, sexual, and social care labour of their wives or husbands that reproduces their labour power for free, etc. Certain class fractions of the multitude exploit other fractions or participate in and support such exploitation in order to improve and reproduce their own material class position.

Michael Hardt and Toni Negri (2000) argue that in order to remain productive and profitable, capitalism has transformed itself into a global network structure that they call “empire”. Production in the empire would be based on intellectual, immaterial and communicative labour. The three aspects of immaterial labour would be communication, interactivity in using symbols/solving problems and manipulation of affects. Immaterial labour produces services, cultural products, knowledge or communication. Transnational corporations produce communicative networks and a new type of sovereignty that weakens the power of the nation state. The diffusion of computer-, information- and communication technologies is part of the social restructurations that have resulted in the empire. The process of industrial modernization would have reached its limits, hence postmodern capitalistic production based on informatization and the rise of service industries would have emerged during the last decades. Computer technology would homogenize the labour processes in the sense that it becomes the universal tool of production. Affective labour would be another aspect of immaterial labour besides computerized labour. Negri and Hardt say that all three aspects of immaterial labour (communication, symbolic analysis, affective labour) are immanently co-operative. Productivity, wealth and creation would today have the form of co-operative interaction that makes use of linguistic, communicative and affective networks. Labour in the information sector would be what they call abstract co-operation: Production is co-ordinated by information-technologies and hence the workers don’t have to be co-present at one place.

The analysis of Negri and Hardt is important because it shows that the development of the productive forces has reached a stage where capitalism is based on co-operative economic, political and cultural networks. There are high degrees of productivity and socialization which are both material preconditions of a fully participatory, democratic and co-operative society where socialization permeates all areas of public life including ownership of the means of production that are today still treated as private property although with the increased importance of information as a social, collective and historical product the concept of private ownership no longer seems to make sense. We today find the objective, material conditions for a free society, but at the same time the culminating antagonisms of society produce global problems and false consciousness. The new technologies are also for advancing the forestalment of social change by control and manipulation. Negri and Hardt are too optimistic concerning already achieved progress, it sometimes seems like they consider immaterial workers as automatically revolutionary. They speak of “revolutionary subjectivity”, “social workers” and the “multitude” in order to characterize emancipatory subjectivity of co-operating individuals. However, technologies that are based on and foster co-operation don’t automatically mean that their users have liberating consciousness and practices that question capitalism. The newly emerging progressive social movements can be considered as a type of liberating subjectivity, but the immaterial workers in software companies, the IT-branch and the New Economy hardly can be seen as revolutionary subjects. Well-qualified employees tend to reproduce the existing ideologies of competition, achievement, career and productivity. One has e.g., hardly heard about strikes or unionising in the New Economy. Negri and Hardt overlook that participatory and co-operative management is an ideology that successfully integrates workers and forestalls liberating subjectivity. An objective potential for progression exists today due to the high degree of productivity and networking of the economical and technological productive forces, but this potential still has to be realized by human subjects in order to achieve real human progress.

Human labour finds itself within conditions that can indeed be described as prerequisites of a fully co-operative society. But it is not determined whether revolutionary subjectivity can arise

and organize itself to such an extent that the material conditions can gain subjective and objective truth. This depends on the outcome of existing struggles, at this moment of time it doesn't at all look like enough subjective power can be mobilized, rather manipulation and control flourish and produce a high degree of false consciousness. Participatory management has an ideological character. The material foundations for a society in which individuals co-operate with a high degree of solidarity and where they have a new degree of self-realization and well-rounded development exist. But change of the existing direction of progress would mean fundamental change, but social change presupposes that there are vital needs for it as well as the experience of intolerable relationships. In the society we live in, these needs and experiences are forestalled by an apparatus of manipulation. The establishment of a sustainable and self-organized society needs self-organizing subjects who develop critical consciousness and make use of it in social struggles. It is not certain whether or not this consciousness can be developed and what outcome struggles that result from it will have. The productive forces that are entangled into the existing antagonisms are ready for a higher type of existence. The outcome depends on the conditions of social struggles and of consciousness that develops itself in these struggles. This would also have to encompass subjects who have understood the reasons for their slavery, want liberation and have realized ways towards it. The new social movements are a type of slight revolt, if self-organized, decentralized forms of protest spread out, one will have all reason to assume that there can be change for the better.

That Hardt and Negri consider all changes as effects of the spontaneous militancy of workers and neglect the influence of objective structures on change and continuity of society is also due to the influence of Spinozian thought. Spinoza focuses on the affects love, joy, and love that are oriented against hate, death and sadness. The stress on affects constitutes Spinoza's subjectivism. For Spinoza love is a productive potential (potentia), it would be eternal, intellectual love; love of the mind would be salvation, freedom and liberation. Negri (2004) argues that Hegelian philosophy focuses on change and dialectics and that Hegel hence is a modern thinker and that Spinoza focuses on singularity, presence, and immediacy and hence is an anti-modern thinker, Spinozism would be a philosophy of immanence that focuses on "praxis without teleology" (Negri 2004: 90). In contrast Hegelian dialectics would be deterministic, a "schematism of reason and transcendentalism" and "reformist teleology" (Negri 2004: 84). Negri reads Spinoza's subjectivism as an "ethics of struggle" (Negri 1991: 181). Hardt and Negri oppose dialectical thinking, they argue that contemporary society is a result of "proletarian internationalism" and "mass struggles" – "there is nothing dialectical or teleological" (Hardt/Negri 2000: 51). Liberation would be an immanent process "with no possibility of any even utopian outside" (Hardt/Negri 2000: 65). Hardt and Negri obviously misunderstand Hegelian dialectics when they argue that dialectical thinking requires an "alternative between the One and the Many" (Hardt/Negri 2005: 225). The logic of "both and neither" that Hardt and Negri prefer is the very essence of dialectics: "the One is being-for-itself and related to itself, but this relationship only exist in relationship to others (being-for-another) and hence it is one of the Many and repulses itself. But the Many are one the same as another: each is One, or even one of the Many; they are consequently one and the same. As those to which the One is related in its act of repulsion are ones, it is in them thrown into relation with itself and hence repulsion also means attraction" (Hegel 1874: §§ 97, 98). "Dialectics, which likewise knows no hard and fast lines, no unconditional, universally valid 'either...or' which bridges the fixed metaphysical differences, and besides 'either...or' recognises also in the right place 'both this – and that' and reconciles the opposites, is the sole method of thought appropriate in the highest degree to this stage" (Engels 1886: 482).

The critique of dialectics of Hardt and Negri holds true for vulgar dialectical thinking such as the one of Stalin and Mao in which the development of society has been conceived as based on deterministic natural laws so that human practice could be considered as unimportant and the Soviet and Chinese systems could ideologically be legitimated as free societies because according to dialectical materialism socialism would as a natural law have to follow after capitalism. That these regimes were indeed highly repressive was ideologically concealed by a deterministic interpretation of Hegelian dialectics. Hence the subjective turn of Hardt and Negri can be read as a critique of vulgar dialectics. But it is a premature conclusion to oppose all dialectical thinking. In the case of Hardt and Negri this results on the one hand in a neglect of structural influences such as ideology on human consciousness and practice. On the other hand the main argument of Hardt and Negri that the logic of networks produces both the Empire as a reconfiguration of domination and the multitude as a movement that makes use of the immanent systemic logic in order to anticipate a free society is a dialectical and a topical reformulation of the dialectical antagonism of the productive forces and the relations of production in the network society. Hardt and Negri fetishize the human subject, for them all activity is revolting, their theory lacks the component of structural influences that condition, i.e. enable and constrain, human practices.

The dialectic of society must be based on the dialectic of human subjectivity and societal objects in order to be truly dialectical and non-deterministic. Such a reading of dialectics can be found in the philosophical writings of Marx and was for the first time explicitly formulated against deterministic interpretations by Herbert Marcuse. Marcuse argues that capitalism is based on structural antagonisms that cause crises, the tendency of crises would be an aspect of objective dialectics: "Capitalist society is a union of contradictions. It gets freedom through exploitation, wealth through impoverishment, advances in production through restriction of consumption. The very structure of capitalism is a dialectical one: every form and institution of the economic process begets its determinate negation, and the crisis is the extreme form in which the contradictions are expressed" (Marcuse 1999: 311sq). Marcuse wanted to avoid a deterministic understanding of dialectics; he wanted to accomplish a turn from structuralism towards human practice in Marxism. For doing so he first turned to Heidegger's phenomenology, but Heidegger's Fascist ideology and the publication of Marx's "Economic-Philosophic Manuscripts" in 1930 made him aware that there is a line of thought immanent in Marxian and Hegel's works that allows the accomplishment of a turn towards practice in Marxism. Capitalism would be dialectically negative by its very own antagonistic structure, but the negation of the negativity could only be achieved by human practice: "The negativity and its negation are two different phases of the same historical process, straddled by man's historical action. The 'new' state is the truth of the old, but that truth does not steadily and automatically grow out of the earlier state; it can be set free only by an autonomous act on the part of men, that will cancel the whole of the existing negative state" (Marcuse 1999: 315). "Not the slightest natural necessity or automatic inevitability guarantees the transition from capitalism to socialism. [...] The realization of freedom and reason requires the free rationality of those who achieve it. Marxian theory is, then, incompatible with fatalistic determinism" (Marcuse 1999: 318sq).

Subjective practices are conditioned, i.e. enabled and constrained, by objective antagonisms, vice versa objective reality is a result of the subjective realization of certain objective potentials. For Marcuse dialectics is dialectics of subject and object, freedom and necessity, a unity of subjective dialectics and objective dialectics. Applying Marcusean dialectics to the phenomena of the

Empire and the multitude means that the rise of networks in capitalism has produced an objective dialectic so that the networked forms of production and life come into antagonism with the individual control of property and power and anticipate a co-operative society. This objective dialectic is grasped by Hardt and Negri, but they interpret it as a purely subjective process. If a co-operative society will emerge is decided in social struggles of the network society and is not predetermined. Here subjective dialectics is dialectically connected to the objective dialectical structure of contemporary society. There are networked forms of power, manipulation, and control that can very well forestall the rise of networked revolutionary consciousness. The argument of Hardt and Negri ends in a fatalistic subjective determinism.

2.4. Precarious Knowledge Labour as New Class

In Italy Operaist thinkers have coined the term “social worker“ in order to describe a new working class consisting of workers that produce information, communication, social relationships, and affects. Michael Hardt and Antonio Negri have termed this class multitude. The boundary between wage-labour and non-wage labour would be blurred, also houseworkers, immigrants, the unemployed, students, etc. would be integrated into an expanded production and reproduction process of capital. Nick Dyer-Witheford points out that this new class is internally divided into a sector of highly skilled, well-paid service workers who may even identify with their work, and a sector of “poorly paid, insecure, untrained, deskilled“ (Dyer-Witheford 1999: 88) service workers. The first would be predominantly white and male, the second of colour, female, and young. Hence race, gender, and age would further stratify the class of knowledge workers. These disorganized, dispersed, and divided service workers would constitute the “new high-technology proletariat“ (Dyer-Witheford 1999: 96)/“virtual proletariat“ (Ibid.: 123). Hence the difference between Hardt/Negri and Dyer-Witheford is that the first consider all services workers as revolutionary and as new proletariat, whereas the latter sees a precarious class of service workers as new proletariat. Dyer-Witheford (2006) uses the Marxian concept of species-being for describing the importance of the commons that result from social co-operation in high-technology capitalism. He argues that it is not immaterial labour that generates spontaneous insurgencies, but the class of “immiserated labour” that forms species-being movements that struggle against the appropriation of the commons by capital predominantly in developing countries.

Nelson Peery (1997) argues that the unemployed and precarious workers form a new working class not characterized by lack of ownership and operation of new equipment (such as ICTs). They would be throwaway workers with few benefits and no job security created by the new means of production. The same argument had been made earlier by André Gorz who sees those expelled from production by automation and computerisation, the underemployed, probationary, contracted, casual, temporary, and part-time labour as “post-industrial neo-proletariat” (Gorz 1980: 69).

2.5. Knowledge Labour as Unproductive Subsumed Labour Class

Hardt and Negri go beyond orthodox Marxist class concepts that distinguish between productive labour that produces surplus value and physical goods in employment relationships and unproductive labour. But orthodox class concepts are still around. E.g. Stephen A. Resnick and Richard D. Wolff (1987) distinguish between fundamental class processes in which surplus value is directly produced and appropriated and subsumed class processes in which already

appropriated surplus value or its products are distributed. Although they first argue that there is no hierarchy of importance of fundamental and subsumed class processes (Resnick/Wolff 1987: 118), the diction and their later comments show that this distinction is framed by value choices. Subsumed classes would be unproductive and include e.g. merchants, moneylenders, landlords, managers, owners, shareholders, bookkeepers, supervisors, bank employees, sales personnel, and public servants. Resnick and Wolff tend to classify service jobs as unproductive. The consequence of such arguments is that parts of the labour force are considered as not being exploited. With the rise of service jobs in contemporary society the theoretical implication of “post-industrialism“ for such a concept of class is that there is a tendency towards an end of exploitation. To argue that e.g. a salesperson working under precarious conditions is unproductive is also problematic due to the fact that labour is highly networked and it hence becomes almost impossible to judge for a single labour relationship if it is productive or unproductive. The rise of precarious service and information jobs and the increase of unemployment in many developed countries require a revision of orthodox class concepts.

2.6. Knowledge Labour and Knowledge Capital as One New Class

Richard Florida (2002) speaks of the rise of a “creative class” that is made up of a super-creative core that he defines “to include people in science and engineering, architecture and design, education, arts, music and entertainment, whose economic function is to create new ideas, new technology and/or creative content” (Florida 2002: 8) and of a “broader group of creative professionals in business and finance, law, health care and related fields” who “engage in complex problem solving that involves a great deal of independent judgement and requires high levels of education or human capital” (Ibid.). For Florida the “new class” is defined not as in the Marxian concept of class by the control of the capital produced in the production process, but by the form of the end-product (knowledge). He doesn’t distinguish between capital and labour, doesn’t see antagonistic interests, the “boundaries of this new class” are “drawn so widely” (Barbrook 2006: 32) in this approach so that Florida downplays “the divide between employers and employees within the Creative Class” (Barbrook 2006: 41).

For Arthur Kroker and Michael Weinstein (1994) the “virtual class” consists of visionary capitalists and business capitalists of the “new economy”, but also of “the perhaps visionary, perhaps skill-oriented, perhaps indifferent technointelligentsia of cognitive scientists, engineers, computer scientists, video game developers, and all the other communication specialists, ranged in hierarchies, but all dependent for their economic support on the drive to virtualization” (Kroker/Weinstein 1994: 15). The interest of the virtual class would be the “absolute control over intellectual property by means of war-like strategies of communication, control, and command” (Kroker/Weinstein 1994: 3). It would have a strict capitalist determination, would advance cyber-authoritarianism, and “subordinate digital reality to the will of capitalism” (Kroker/Weinstein 1994: 18). Kroker and Weinstein merge representatives of capital and labour in an overall concept of the virtual class that is defined by activities that contribute to the rise of virtuality. By this move also the Marxian criterion of exploitation as defining characteristic of class is lost.

2.7. Knowledge Labour as Petty Bourgeoisie

Nicos Poulantzas argues that knowledge labour is part of the service industries that don’t produce surplus value, but contribute to its circulation and realization. Hence they would be unproductive labour. In his class model he locates these workers as part of the petty bourgeoisies and describes

them as “the ‘new’ petty bourgeoisie composed of non-productive wage earners” (Poulantzas 1973: 106).

For Mike Wayne (2003) the crucial feature of the middle class is that its members are knowledge workers and have a higher remuneration than the working class, cultural privileges, and relative workplace independence. Intellectuals would be contradictory located between capital and labour and the petit bourgeoisie.

3. An Alternative Approach: Knowledge Labour as Non-Class and Class

As we have seen in the previous section the understandings of the class-character of knowledge producers is very diverse ranging from the option revolutionary to the one of bourgeoisie. In this section I will present my own approach which is different from those presented thus far. What at first must seem to be a rather paradoxical statement shall become clear during this section: that knowledge labour is both a non-class and a class of informational capitalism.

3.1. Knowledge Labour as Non-Class

So what then are knowledge workers? Are they a new class? What does class in the information society mean? I don't think so because knowledge work is quite heterogeneous. Think e.g. of a manager who exerts command and control in a company, which are primarily informational and communicative activities, and compare this job to the one of a call-center agent who is low-paid, low-skilled, and has hardly any authority. Or compare the call-center agent to a software engineer who receives a high wage, is highly-skilled, and has a medium-level of authority in the team he works in. Although all of these workers produce knowledge, they have different levels of wages, skills, and authority. Hence I think that economic class is a category that describes groups that have comparable amounts of economic (property, income), political (authority, power), and cultural capital (skills) in economic production processes. Related to this category is the formation of different classes and the phenomena of economic exploitation, organizational exploitation, and skills exploitation.

Given such circumstances knowledge labour is not a class category, but a category that can be applied at the vertical dimension of the economy, at the level of describing which types of goods or services are produced in different sectors of the economy. In all of the sectors of the economy one finds classes, classes and class fractions are made up of workers (capitalists) that stem from different economic sectors, class is a category that spans over several economic sectors.

Here is an overview of a four sector model of the economy:

1. Primary sector:

Here natural products are produced in agriculture and mining.

2. Secondary sector:

Here industrial/physical products are manufactured in branches such as utilities, construction, metal, wood, machinery, electrical equipment, vehicles, furniture, food, drinks, tobacco, textiles, or chemicals.

3. Tertiary sector:

In this sector we find labour that produces services that don't belong to agriculture, manufacturing industries, or knowledge services/manufacturing. These are activities in the areas of trade, transportation, warehousing, real estate, rental, leasing, finance, insurance,

accommodation, food, waste management. One can say that these are services for distributing, managing and taking care of manufactured products and money.

4. Quaternary sector:

Here knowledge goods and services are produced by knowledge labour. Knowledge labour is labour which produces information, communication, social relationships, affects, and information and communication technologies. This involves on the one hand the manufacturing of information- and communication technologies (computers, computer equipment, paper, printing), information and communication goods and services (music industry, motion picture industry, software industry, publishing industry, broadcasting, telecommunications), scientific services, technological services, legal services (legal affairs are primarily communicational and informational activities), management and administration (these are primarily cognitive and communicative tasks of command and control, including governmental administration except military and government enterprises), educational services (these are activities that help individuals in developing skills and producing knowledge), arts and entertainment (both art and entertainment are forms of cultural knowledge), and health and social care. I have hesitated to include health care in the knowledge sector because it is about regenerating body and mind and the body is traditionally considered as external to knowledge. But I have come to the conclusion that health and social care are primarily about aid that experts provide for individuals not primarily due to instrumental economic reasons, but due to more altruistic motives. Aid, altruism, and co-operation are an expression of emotional care and lie at the very heart of society and social action. Hence I consider health and social care as knowledge work.

In comparison to the distinction of traditional transformative labour, traditional services and post-industrial services provided by Erik Olin Wright (1997: 138) I haven't included finance and insurance in the post-industrial sector because I think that handling money hasn't so much to do with knowledge because money is a very traditional medium of circulation. Other than Wright I consider entertainment as part of the knowledge sector because it is oriented on recreating the mind.

The next two tables show the distribution of wage-labour in the four sectors of the US economy in 2005. Due to statistical reasons that don't allow an exact sector matching the statistics here are limited to employees and don't include the self-employed. The economic structure has been modelled for the following calculations according to the definitions of the four economic sectors given above.

		Full and part time (in 1000)	Full time (in 1000)	Part time (in 1000)
		2005	2005	2005
Agriculture, forestry, fishing, and hunting	Primary	1473	1279	194
Mining	Primary	564	557	7
TOTAL PRIMARY		2037	1836	201
Utilities	Secondary	554	545	9
Construction	Secondary	7567	7315	252
Manufacturing				
Durable goods				
Wood products	Secondary	579	564	15
Nonmetallic mineral products	Secondary	508	496	12

Primary metals	Secondary	465	459	6
Fabricated metal products	Secondary	1525	1504	21
Machinery	Secondary	1166	1148	18
Electrical equipment, appliances, and components	Secondary	436	429	7
Motor vehicles, bodies and trailers, and parts	Secondary	1100	1093	7
Other transportation equipment	Secondary	673	669	4
Furniture and related products	Secondary	569	556	13
Miscellaneous manufacturing	Secondary	670	651	19
Nondurable goods				
Food and beverage and tobacco products	Secondary	1687	1627	60
Textile mills and textile product mills	Secondary	389	376	13
Apparel and leather and allied products	Secondary	312	301	11
Petroleum and coal products	Secondary	111	109	2
Chemical products	Secondary	876	862	14
Plastics and rubber products	Secondary	802	791	11
TOTAL SECONDARY		19989	19495	494
Wholesale trade	Tertiary	5850	5652	198
Retail trade	Tertiary	15763	13723	2040
Transportation and warehousing				
Air transportation	Tertiary	500	475	25
Rail transportation	Tertiary	198	188	10
Water transportation	Tertiary	60	57	3
Truck transportation	Tertiary	1420	1350	70
Transit and ground passenger transportation	Tertiary	417	397	20
Pipeline transportation	Tertiary	38	36	2
Other transportation and support activities	Tertiary	1159	1102	57
Warehousing and storage	Tertiary	586	557	29
Real estate and rental and leasing				
Real estate	Tertiary	1535	1410	125
Rental and leasing services and lessors of intangible assets	Tertiary	673	601	72
Finance and insurance				
Federal Reserve banks, credit intermediation, and related activities	Tertiary	2899	2783	116
Securities, commodity contracts, and investments	Tertiary	822	789	33
Insurance carriers and related activities	Tertiary	2291	2203	88
Funds, trusts, and other financial vehicles	Tertiary	89	86	3
Accommodation and food services				
Accommodation	Tertiary	1837	1684	153
Food services and drinking places	Tertiary	9190	7274	1916
Other services, except government	Tertiary	6901	5839	1062
Administrative and waste management services				
Waste management and remediation services	Tertiary	339	325	14
Government				
Federal				
General government				
Military	Tertiary	2250	1550	700
Government enterprises	Tertiary	883	726	157
State and local				
General government				
Government enterprises	Tertiary	1060	1033	27

TOTAL TERTIARY		56760	49840	6920
Manufacturing, Durable goods:				
Computer and electronic products	Quaternary	1311	1296	15
Manufacturing, Nondurable goods:				
Paper products	Quaternary	484	469	15
Printing and related support activities	Quaternary	664	644	20
Information				
Publishing industries (includes software)	Quaternary	939	849	90
Motion picture and sound recording industries	Quaternary	382	323	59
Broadcasting and telecommunications	Quaternary	1323	1292	31
Information and data processing services	Quaternary	436	401	35
Professional, scientific, and technical services				
Legal services	Quaternary	1331	1255	76
Computer systems design and related services	Quaternary	1201	1132	69
Miscellaneous professional, scientific, and technical services	Quaternary	4964	4680	284
Management of companies and enterprises\6\	Quaternary	1748	1724	24
Administrative and waste management services				
Administrative and support services	Quaternary	7800	7140	660
Educational services	Quaternary	2911	2582	329
Health care and social assistance				
Ambulatory health care services	Quaternary	5245	4722	523
Hospitals	Quaternary	4331	4040	291
Nursing and residential care facilities	Quaternary	2850	2566	284
Social assistance	Quaternary	2595	2238	357
Arts, entertainment, and recreation				
Performing arts, spectator sports, museums, and related activities	Quaternary	500	418	82
Amusements, gambling, and recreation industries	Quaternary	1481	1237	244
Government				
Federal				
General government				
Civilian	Quaternary	1958	1815	143
State and local				
General government				
Education	Quaternary	9915	7906	2009
Other	Quaternary	8062	6964	1098
TOTAL QUARTARY		62431	55693	6738

Table 1: Distribution of labour in different sectors of the US economy, Source: Bureau of Economic Analysis Statistics (<http://www.bea.gov>)

	Full- and Part Time	Full Time	Part Time
PRIMARY	1,44%	1,45%	1,40%
SECONDARY	14,15%	15,37%	3,44%
TERTIARY	40,19%	39,29%	48,21%
QUARTARY	44,21%	43,90%	46,94%

Table 2: Overall distribution of labour in the four sectors of the US economy

The analysis shows that in 2005, 44,21% of US wage-labour was employed in the knowledge sector, 40,19% in the traditional service sector, 14,15% in the secondary sector, and 1,44% in the

primary sector. There was a total of approximately 141 217 000 part- and full-time workers, of which 89,8% were full-time workers and 10,2% part-time workers. It is interesting to see that the share of part time-workers in the tertiary and quaternary sector is significantly higher than in the primary and secondary sector. Hence knowledge-work and traditional service-work seem to be predestined for irregular employment relations.

3.2. Knowledge Labour as Class

In order to develop my own model of class I first have to outline some foundations of class theories that I consider as important. The most important neo-Marxist concept of economic class on which the theoretical model outlined here is based is the one of Erik Olin Wright (1997: 10, 2005b: 23) who defines three aspects of exploitation and hence class formation:

1. Inverse interdependent welfare: The material welfare of one group of people causally depends on the material deprivations of another.
2. Exclusion: The exploited are asymmetrically excluded from access to certain productive resources (frequently by force and with property rights)
3. Appropriation: The fruits of labour of the exploited are appropriated by those who control the productive resources.

If only the first and the second criteria are given Wright speaks of non-exploitative economic oppression. For Wright groups such as the unemployed, retirees, the permanently disabled, students, people on welfare, and houseworkers form underclasses that are not exploited, but excluded and hence economically oppressed by capital (Wright 1997: 26-28). This idea doesn't take into account that the "economically oppressed" are growing in number and hence can't be seen as a side-effect of economic exploitation. Wright limits his concept of economic class to wage labour and capital (as well as contradictory class positions).

In informational capitalism the brain has become an important productive force. Many precarious workers – which are characteristic for service jobs and knowledge labour – work as free lancers, one-man companies, hence formally they are self-employed and they own and control their means of production (brain, computer, etc.), but they are forced to permanently sell their own labour power per contracts to capitalist corporations that outsource or subcontract labour power. This class of self-employed workers that owns its own means of production, doesn't hire others, but sells its own labour power, has been characterized by Wright and Pierre Bourdieu as the petty bourgeoisie. I don't think that such a term is suitable because it implies that this class is more part of the capitalist class than of the proletariat. I don't think that this is the case because many in this class struggle to survive and have very low earnings. Hence I would more precisely describe this class as self-employed labour class. This class is a characteristic expression of capital's move under neoliberal conditions to outsource labour (which means not having to take care of labour rights, ancillary wage costs, technology, etc.) in order to reduce variable costs. Knowledge labour requires little physical capital and hence is predestined for new forms of employment and exploitation (Wright 1997: 130, 135). Self-employed labour in informational capitalism is highly likely to be precarious labour, it is not a fixed, but a dynamic category as many of these individuals shift from self-employment to temporary labour, unpaid labour, and back again, etc.

Wright argues that under contemporary conditions a more complex economic class model is appropriate, and hence besides the relation to the means of production he adds authority (or political capital in Bourdieuan terms) and skills/knowledge (or cultural capital in Bourdieuan terms) as defining characteristics of class position. Based on this distinction he arrives at a class

model that is based on twelve different class locations (cf. figure 1). There are similarities between Wright's and Bourdieu's class-model, one can see Wright's class concept as an expanded Marxist model of economic class that takes into consideration the two structural aspects of political/social capital and cultural capital that have been stressed by Bourdieu as important aspects of class formation besides economic capital. For Wright skills exploitation means that higher-skilled workers "receive incomes above the costs of producing those skills" (Wright et al. 1989: 12), they have some extra remuneration due to their position. "For a skill to be the basis of exploitation, therefore, it has to be in some sense scarce relative to its demand, and there must be a mechanism through which individual owners of scarce skills are able to translate that scarcity into higher incomes" (Wright et al. 1989: 21). The same would be true for organizational assets/authority which would allow managers to "extort wages out of proportion to the costs of producing managerial labour power" (Wright et al. 1989: 201). Wright here speaks of organizational exploitation.

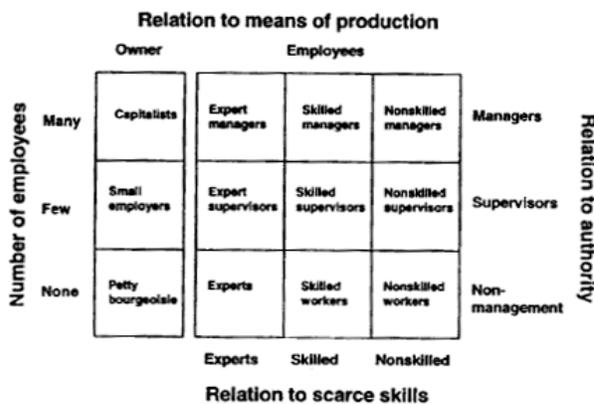


Figure 1: Erik Olin Wright's Class Model (reproduced from Wright 1997: 25)

Philippe Van Parijs sees jobs as scarce assets in advanced capitalism, hence he argues that there is an "unequal distribution of job assets among the employed" (Van Parijs 1989: 235) and an exploitation of the unemployed by wage labour. He speaks of a "job exploiter" as "someone who would be worse off if job assets were equally distributed", and sees a job exploited as someone who would be better off under these conditions (Van Parijs 1989: 233). It is a courageous move of Van Parijs to leave behind the orthodoxy of considering the unemployed as an unorganized and hence for class struggle unimportant group (as expressed by the Marxian term "Lumpenproletariat") and to define it as part of the exploited multitude that is itself antagonistically constituted by exploiting and exploited classes and class fractions. Based on these concepts Van Parijs has developed the concept of asset-based inequality and external endowments for arguing that humans have a right for a universal guaranteed basic income (Van Parijs 1995).

The argument in this paper has thus far been that knowledge labour isn't a class, but forms an economic sector. This argument will now shift and it will be shown that knowledge can be considered as the foundation of a broad exploitation process in informational capitalism. If one defines economic exploitation as the existence of a exploiting class that deprives at least one exploited class of resources, excludes them from ownership, and appropriates resources produced by the exploited, one stays within a Marxist framework of class, but must not necessarily exclude the "underclasses" from this concepts if one considers knowledge labour as central to

contemporary society. Knowledge labour is labour which produces information, communication, social relationships, affects, and information and communication technologies. It is a direct and indirect aspect of the accumulation of capital in informational capitalism: There are direct knowledge workers (either employed as wage labour in firms or as outsourced, self-employed labour) that produce knowledge goods and services that are sold as commodities on the market (e.g. software, data, statistics, expertise, consultancy, advertisements, media content, films, music, etc.) and indirect knowledge workers that produce and reproduce the social conditions of the existence of capital and wage-labour such as education, social relationships, affects, social relationships, communication, sex, housework, common knowledge in every life, natural resources, nurture, care, etc. These are forms of unpaid labour that are necessary for the existence of society, they are performed not exclusively, but to a certain extent by those who don't have regular wage labour – houseworkers, the unemployed, retirees, students, precarious and informal workers, underpaid workers in temporal or part-time jobs, and migrants. This unpaid labour is reproductive in the sense that it reproduces and enables the existence of capital and wage-labour that consumes the goods and services of unpaid reproductive workers for free, hence both capital and wage-labour exploit reproductive workers – which is just another term for indirect knowledge workers. Capital couldn't be accumulated without a common societal infrastructure in the areas of education, spare time, health and social care, natural resources, culture, art, sexuality, friendships, science, media, morals, sports, housework, etc. that it takes for granted and doesn't pay for (in the form of shares of its profit). Wage-labour is reproduced, i.e. it consumes the reproductive and public goods and services in order to restore its labour power, it exploits reproductive workers in order to be able to be exploited by capital. Hence we can define the multitude as the class of those who produce material or knowledge goods and services directly or indirectly for capital and are deprived and disappropriated of resources by capital. Such exploited resources are consumed by capital for free. Here the arguments of Tiziana Terranova and Toni Negri and Michael Hardt presented above are important: In informational capitalism knowledge has become a productive force, but knowledge is not only produced in corporations in the form of knowledge goods, but also in everyday life by e.g. parents who educate their children, citizens who engage in everyday politics, consumers of media who produce social meaning and hence are prosumers, users of MySpace, YouTube, Facebook, etc. who produce informational content that is appropriated by capital, radio listeners and television viewers who call in live on air in order to discuss with studio guests and convey their ideas that are instantly commodified in the real-time economy, etc. Hence the production process of knowledge is a social, common process, but knowledge is appropriated by capital, and by this appropriation the producers of knowledge become just like traditional industrial labour an exploited class that can with reference to Negri and Hardt be termed the multitude. The multitude is an expanded notion of class that goes beyond manual wage-labour and takes into account that labour has become more common.

The multitude as the class of all those who are in some sense exploited consists of the following class fractions:

1. Traditional industrial workers that produce physical goods in wage-relationships. Capital appropriates the physical goods of these workers and the surplus value contained in them.
2. Knowledge workers that produce knowledge goods and services in wage-relationships or self-employed labour relations. Capital appropriates the knowledge goods and services of these workers and the surplus value contained in them.
3. Houseworkers: These workers – who are still predominantly female – produce knowledge in the broad sense of communication, affects, sexuality, domestic goods and services that are not

sold as commodities, but consumed by capitalists and wage labourers for free in order to reproduce manpower.

4. The unemployed: This class is deprived of job assets by capital and wage labour. It is the result of the tendency of the organic composition of capital to rise which is due to technological progress. The unemployed are just like houseworkers involved in unpaid reproductive knowledge labour that is a necessary condition of the existence of capital. Furthermore the unemployed are frequently forced to take on very low-paid precarious or illegal jobs and hence are also subjected to extreme economic appropriation. Increasingly unemployed persons are forced by the state to perform extremely low paid compulsory over-exploited work.
5. Migrants and workers in developing countries: Migrants are frequently subjected to extreme economic exploitation in racist relations of production as illegal over-exploited workers. They are exploited by capital and this exploitation is ideologically supported by a certain share of wage labour that hopes to increase its wages and to reach better positions if migrants can be forced to do unpaid or extremely low-paid unskilled work. Developing countries are either completely excluded from exploitation or they are considered as a sphere of cheap, unskilled wage labour that is over-exploited by capital by paying extremely low wages and ignoring labour rights and standards.
6. Retirees: Retirees are exploited to the extent that they act as unpaid reproductive workers in spheres such as the family, social care, home care, and education.
7. Students: Students are exploited in the sense they produce and reproduce intellectual knowledge and skills that is appropriated by capital for free as part of the commons. Students are furthermore frequently over-exploited as precarious workers, a phenomenon for which terms such as “precariat”, “generation internship” or “praktikariat” (from the German term “Praktikum” which means internship combined with the term “precariat”) can be employed.
8. Precarious and informal workers: Part-time workers, temporary workers, the fractionally employed, contract labour, bogus self-employment, etc. are work relations that are temporary, insecure, and low paid. Hence these workers are over-exploited by capital in the sense that such jobs would cost capital much more if they were done by regularly employed wage-labour (the same is true for racist labour relations and compulsory work done by unemployed persons).
9. Self-employed persons who don't employ others themselves are forced to sell their own labour power by contracts, they control their means of production, but produce surplus for others who control capital and use the appropriated labour for achieving profit.

I have used the term over-exploitation here several times. By over-exploitation capital can gain extra surplus-value, extra surplus-value is a term employed by Marx for describing relations of production in which goods are produced so that the “individual value of these articles is now below their social value“ (Marx 1867: 336). By employing illegal migrants, unemployed compulsory or illegal workers, students, precarious and informal workers capital can produce goods at a value that is lower than the average social value because it pays less wages than in a regular employment relationship, hence the commodities produced contain less variable capital, but are nonetheless sold at regular prices so that an extra profit can be obtained. The total value of a commodity is $V = c + v + s$ (constant capital + variable capital + surplus value). By over-exploitation variable capital and the total value of the commodity are lowered, the commodity can be sold at regular market prices and extra profit can be achieved.

Very influential for developing expanded conceptions of class have been the contributions of Marxist Feminism that questioned the mechanical treatment of patriarchy as superstructural phenomenon (Ehrenreich 1997: 68). The most important insight of Marxist Feminism is that reproductive labour is necessary for the reproduction of manpower and the existence of capital. Reproductive workers don't receive a wage; they either work for free or receive a small share of the family income. Capital isn't able to pay for all labour that is necessary for its accumulation – hence there is the phenomenon of unpaid labour that is indirectly consumed by capital. Double free wage labour – that is “free“ of ownership of capital and “free“ to offer its labour power on the market – is free in a threefold sense because it is also free of the reproductive labour that is accomplished by reproductive workers (who are predominantly female). For accumulating capital the latter is in need of colonies such as housework, nature, and developing countries.

Rosa Luxemburg (1913) argued that the process of primitive accumulation is not finished, but that capital generates milieus and spheres of unpaid labour that are exploited by violent means: “capital feeds on the ruins of such organisations, and, although this non-capitalist milieu is indispensable for accumulation, the latter proceeds, at the cost of this medium nevertheless, by eating it up“ (Luxemburg 1913: 363)². This idea was used for explaining the existence of colonies of imperialism by Luxemburg and was applied by Marxist Feminism in order to argue that unpaid reproductive labour can be considered as an inner colony and milieu of primitive accumulation of capitalism (Bennholdt-Thomsen/Mies/Werlhof 1992, Mies 1996, Werlhof 1991).

In Postfordist capitalism the inner colonies of capitalism are expanded so that profits rise by generating milieus of low-paid and unpaid labour. This phenomenon has been termed “housewifization“ (Bennholdt-Thomsen/Mies/Werlhof 1992, Mies 1996), more and more people live and work under precarious conditions that have traditionally been characteristic for patriarchal relations. People working under such conditions are like housewives a source of uncontrolled and unlimited exploitation. The economic logic underlying housewifization is oriented on the reduction of variable capital. Identifying inner colonies of capitalism as classes means to argue like Negri and Hardt that class relationships have become generalized and that the production of value and hence exploitation are not limited to wage-labour, but reach society as a whole. Hence beside wage labour also houseworkers, the unemployed, migrants and developing countries, retirees working in reproduction, students, precarious and informal workers should be considered as exploited classes that form part of the multitude that is antagonistic in character and traversed by inner lines of exploitation, oppression, and domination that segment the multitude and create inner classes and class fractions. Nonetheless the multitude is objectively united by the fact that it consists of all those individuals and groups that are exploited by capital, live and produce directly and indirectly for capital that expropriates and appropriates resources (commodities, labour power, the commons, knowledge, nature, public infrastructures and services) that are produced and reproduced by the multitude in common.

Based on influences by Negri/Hardt, Marxist Feminism, and Philippe Van Parijs it is possible to expand Wright's class model so that the growing number of those who produce the commons and are exploited outside of regular wage-relationships are included as exploited classes (cf. figure 2). The model presented here is based on Erik Olin Wright's class model, but adds some aspects relevant for considering the production and exploitation of the commons. Note that an individual can be positioned in more than one class location at one time and that there are individuals that

² English Translation from <http://www.marxists.org>

the class positions are not fixed, but dynamic, i.e. in informational capitalism people have a fluid and transit class status. So e.g. female workers are frequently at the same time houseworkers, many students are also precarious workers, many precarious workers form a type of self-employed labour, etc. That class positions are antagonistic also means that there is no clear-cut separation between the multitude and the capitalist class, so e.g. managers can be considered to have a contradictory class position: they work for a wage, but at the same time execute the command over workers in the name of capital.

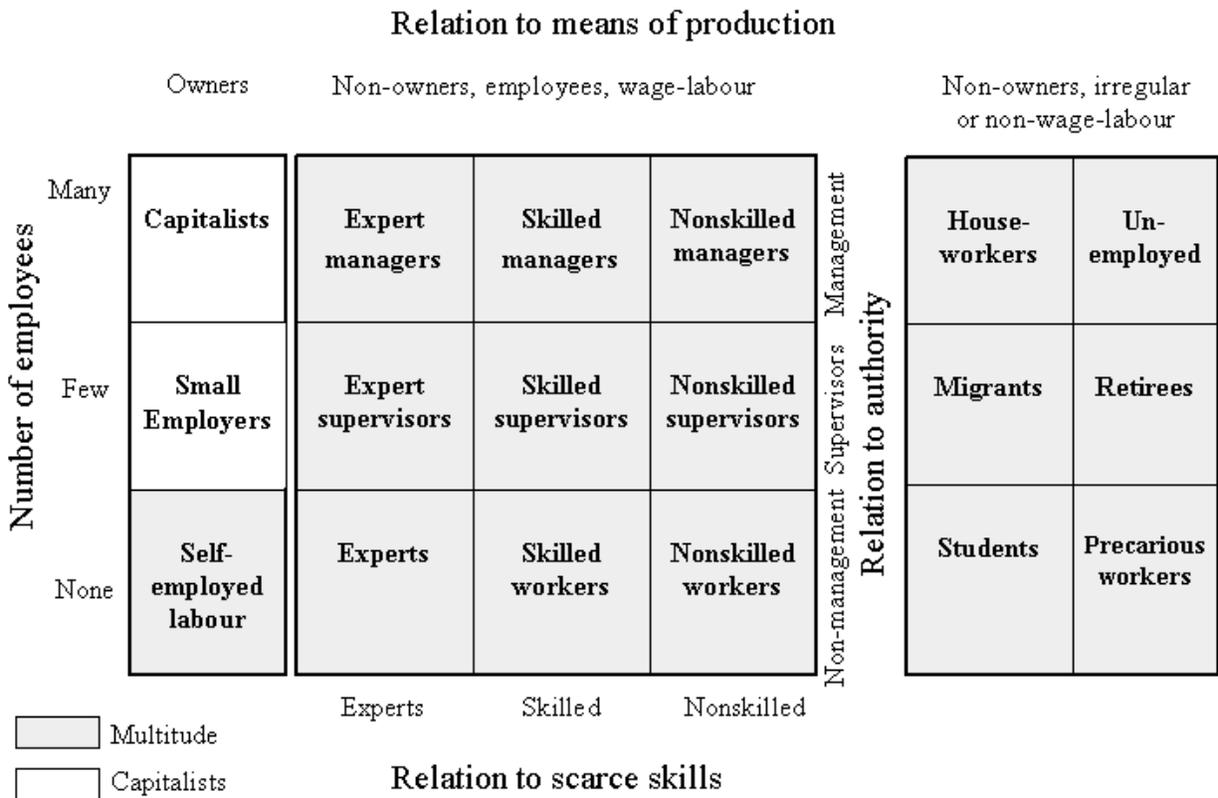


Figure 2: An expanded class model

Knowledge is a social and historical product; new knowledge emerges from the historical heritage of knowledge in society and is in many cases produced co-operatively. Hence Marx argued that knowledge “depends partly on the co-operation of the living, and partly on the utilisation of the labours of those who have gone before” (Marx 1894: 114). Nature, knowledge and societal infrastructures are due to their collective or natural form of production common property, they are not produced and controlled by single individuals, knowledge and infrastructures can only exist due to the collective activities of many, nature produces itself and is transformed into resources by metabolic processes organized by many. Knowledge, nature, and infrastructures are collective goods that cost nothing for capital, but these are goods that are a necessary condition for capital accumulation, enter production processes and from which capital

profits. Capital consumes the commons for free, it exploits the results of societal and natural production processes such as education, science, health, reproductive labour, etc. The Essence of the commons is its social character, in capitalism the commons are individually appropriated as proprietary goods by capital. In categories of the Hegelian logic one can argue that Essence and Existence of knowledge and the commons are non-identical, exploitation alienates the Existence of the commons from their Essence and their Truth, Reason, and Reality.

Philippe Van Parijs (1995) argues that the right for a universal basic income guarantee can be derived from the share of collective resources that each person is entitled to. He speaks of external endowments as wealth that is available without human activity and that must not be earned and is available due to e.g. the appropriation of nature, inheritance or privileged economic positions (Howard 2002). “There is a non-arbitrary and generally positive legitimate level of basic income that is determined by the per capita value of society’s external assets and must be entirely financed by those who appropriate these assets. [...] External endowments, in other words, include whatever usable external object in the broadest sense individuals receive access to. Such material objects as factories and stamp collections, private houses and public bridges, such immaterial objects as nursery rhymes and computer programmes, the work ethic and nuclear technology constitute external assets on a par with beaches, pumpkins, and parrots. The relevant pool coincides with the external wealth with which people are endowed. [...] Many of the technologies we use are incorporated in an age-old wisdom that has become common knowledge [...] Even in a world of equal talents, legally unprotected technologies are not equally available to all. Many technologies can be used only by those who possess the amount and the type of physical capital on which they can be used. Whenever there is such a restriction, the technologies enhance the competitive value of the material goods that confer upon their possessors the ability to use them“ (Van Parijs 1995: 99, 101, 104, 105sq).

Van Parijs argues that there is an unequal access to external assets, in order to attenuate this inequality a universal basic income guarantee should be available to all. Knowledge can be considered as an external asset in Van Parijs’ understanding. Knowledge and skills are produced in processes of education and in everyday life, it is an input to production that is consumed for free by capital in the form of technology and the skills of workers. Knowledge is not produced once, but continuously and it is reproduced permanently by parents, teachers, children, pupils, scientists, students, schools, universities, the cultural system, etc. (Gorz 2004, 2001). For capital it is a gratis resource that it subsumes and exploits.

Nature is consumed by all humans in forms such as water, air, meadows, food, etc. in order to survive. Corporations as a general rule consume much more natural resources and produce more environmental impact in form of the waste generated by production than private individuals and households. They consume a relatively high share of the collective resource nature and make use of it in order to produce economic profit.

All humans benefit from knowledge in society that was produced in the past (inherited, historical knowledge) in the form of organizations that allow the development of skills (educational knowledge), cultural goods (music, theatre performances, literature, books, films, artworks, philosophy, etc.) that contribute to mental reproduction (entertainment knowledge), and in the form of traditional practices as aspect of education and socialization (practical knowledge). These three forms of knowledge are handed down to future generations and enriched by present generations during the course of the development of society, all humans contribute and benefit.

Another form of knowledge is technological knowledge, i.e. knowledge that is objectified in machines and practices that function as means for reaching identified means so that labour processes are accelerated and the amount of externalized labour power can be reduced. Not all humans and groups benefit to the same extent from these four types of knowledge, especially corporations consume an over-average high share: educational, entertainment, and practical knowledge are aspects of the reproduction of manpower, these processes are performed to a large extent outside of firms and labour time by individuals and society. Technological progress helps corporations in increasing productivity, i.e. the ability of capital to produce ever more profit in ever less time. Technological knowledge doesn't enter the production process indirectly as the other three forms of knowledge, it is directly employed by capital in the production process. Technological knowledge is produced by society, but individually appropriated by capital as a means of production. One argument here is that corporations pay for technological progress in the form of machines, software, hardware, etc. that they buy as fixed capital. But the value produced by labour with the help of technology is much larger than the value of technology as such and each individual technology is based on the whole history of technology and engineering that enters the product for free. Another argument is that technological knowledge and progress are created in technology-producing industries and in the research departments of corporations. This argument is deficient because a certain part of knowledge is produced in public research institutions and universities and each technological innovation is based on the whole state of the art of science for which one doesn't have to pay, but is consumed by research departments and technology-producing corporations for free as an external resource.

The result of this discussion is that corporations consume the commons of society that consist of nature, educational knowledge, entertainment knowledge, practical knowledge, technological knowledge, and public infrastructures (institutions in the areas of health, education, medical services, social services, culture, media, politics, etc.) for free. Hence one important form of exploitation in the knowledge society is the exploitation of the commons by capital which is also exploitation of the multitude and of society as a whole. But aren't capitalists and small employers also part of the multitude in the sense that they also contribute to the production and reproduction of the commons in everyday life? There is no doubt that all humans contribute certain shares of unpaid labour to the production and reproduction of nature, knowledge, and public services, etc. But the capitalist class is the only class in society that exploits and expropriates the commons, it is the only class that derives economic profit and accumulates capital with the help of the appropriation of the commons. All humans produce, reproduce, and consume the commons, but only the capitalist class exploits the commons economically. Hence this class shouldn't be considered as forming a part of the multitude.

4. Conclusion

This paper has dealt with the role of class in the knowledge society. One important result is that class still matters, the knowledge society is a class society, hence it might be better to speak of knowledge capitalism or informational capitalism in order to stress that capital accumulation with the help of knowledge is a stratifying, class-forming process.

It has been argued that knowledge labour is simultaneously a non-class and a class. Economic class is a relational economic category: An exploiting class deprives at least one exploited class of resources, excludes them from ownership, and appropriates resources produced by the exploited. Besides the appropriated of economic resources exploiters also make use of hierarchies and unequal distributions of power and skills. Knowledge labour is labour which produces

information, communication, social relationships, affects, and information and communication technologies. Given this definition knowledge labour is not a separate class, but an economic production process that constitutes the vertical sector of the economy that can be termed the quaternary sector in which knowledge is produced, hence knowledge labour is a non-class.

But if one considers knowledge not as a narrow, but a broad social category, then it becomes clear that knowledge is not only a sector-specific economic category, but also lies at the heart of class formation in informational capitalism. Knowledge forms part of the commons of society, it is a social product produced and consumed by all. The commons of society that are produced and consumed by all consist of nature, educational knowledge, entertainment knowledge, practical knowledge, technological knowledge, and public infrastructures (institutions in the areas of health, education, medical services, social services, culture, media, politics, etc.). All humans contribute unpaid labour to the production and reproduction of the commons, the capitalist the capitalist class is the only class in society that exploits and expropriates the commons, it is the only class that derives economic profit and accumulates capital with the help of the appropriation of the commons. All humans produce, reproduce, and consume the commons, but only the capitalist class exploits the commons economically. Hence this class shouldn't be considered as forming a part of the multitude. The multitude is an expanded Marxist class category that is used for describing the common labour class that produces the commons and is exploited by capital that appropriates the commons for free and subsumes them under capital in order to gain profit. In the expanded notion of the multitude besides regular manual and mental wage-labour also groups such as house- and reproductive workers, the unemployed, migrants, developing countries, retirees, students, precarious and informal workers are included as class fractions that live and produce under the rule of capital and are expropriated by capital. One political implication of the exploitation of the commons and the multitude by capital is that one can argue that everyone should have the right to receive a guaranteed basic income that guarantees a living and is financed by taxation of capital. The argument underlying these political implications is that nobody is unproductive, but a productive worker producing and reproducing the commons of society that are appropriated by capital which in return has to give something back to society in the form of taxes that are used for compensating society and its members for the theft of the commons by installing the common form of a guaranteed basic income.

Knowledge as part of the commons is not only an aspect of class formation, but also of class struggle. Property struggles in the information society take on the form of conflicts on the public or proprietary character of knowledge (Fuchs 2006a). Informational networks are at the core of the productive forces of informational capitalism. Due to the characteristics of information and networks (global diffusion, intangibility, connectivity) the classical Marxian antagonism of the productive forces and the relations of production takes on a new form: Information in the internet economy is on the one hand a commodity that is controlled with the help of intellectual property rights, on the other hand the informational productive forces point towards the alternative economic model of a gift economy because information is an open, societal good (Fuchs 2006a). Hence the informational productive forces collide with the capitalist relations of information production which results in class struggles in which the open or proprietary character of information is contested. The gift economy advanced by the internet (consider models such as Wikipedia, open source software, peer-to-peer filesharing systems such as Napster or Kazaa) enables the free sharing of knowledge and hence undercuts the closed control of knowledge as a commodity economy that is secured by intellectual property rights. The gift economy hence questions the instrumental logic of commodity selling and profit generation, but at the same time

there are also business models (such as in the case of Google, YouTube or MySpace) that aim at accumulating capital by exploiting free labour of internet users and providing gifts in order to drive up the user rates so that high advertisement fees can be achieved, i.e. the knowledge gift economy is not simply the opposite of the knowledge commodity economy, both models are antagonistically entangled and there is also a capitalist gift economy (Fuchs 2006a). This antagonism shows that the networked productive forces of informational capitalism on the one hand are subsumed under the capitalist relations of production and contribute to the accumulation of capital, but on the other hand negate the individual appropriation of knowledge because networks are open, expansive, enable sharing, and create connections (Fuchs 2006b). The antagonism of productive forces and relations of production is centred on knowledge and knowledge networks in informational capitalism (Fuchs 2007, 2006b). This antagonism is characterized by the antagonistic class relationship of capital and the multitude that produces and reproduces the commons. The commons are at the material foundation of exploitation in informational capitalism, these exploitation processes generate struggles that have undetermined results: the future could either be a society totally controlled by political-economic monopolies which could very well result in a new totalitarianism or fascism, or a co-operative society in which the common production processes of the multitude become the determining societal force so that self-determination, and participatory democracy can flourish.

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