NEW PHASE OF DEVELOPMENT AND KNOWLEDGE CAPITALISM: GRAMSCI'S HISTORICAL REVENGE?

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Introduction

Gramsci's contribution to Marxism is based on the understanding of the historicity of capitalism, not only as a mode of production that prepares the historical-material conditions for scientific socialism (which is Marx's contribution), but as changing (historical) unities between economy, politics, ideology, and culture that represent historical phases of development within the mode of production. It is, in fact, this understanding that distinguishes Gramsci from the rest of the early Marxist theoreticians after Marx.

In this sense, the problem that Gramsci poses in Prison Notebooks is how to explain, based on the Marxist theoretical framework, the emergence and decline of the historical phases of development of capitalism, without the (historical) crises that intervene in this transition resulting in a process of social revolution that leads to the scientific socialism foreseen by Marx. This unfolding of these developments was already evident at the time in which the Notebooks were written with the emergence of americanism and fascism.

This article argues that the tremendous timeliness of Gramscian thought resides in the appreciation that, at the current time, just as in the 1930s, the transition to a new phase of the development of capitalism, for which the term knowledge capitalism is proposed, is verifiable, for which the technological-productive fundamentals have thus far been developed without its projection having yet taken place in the superstructure. From this flows a double historical revenge of Gramscian thought, since, on the one hand, it provides a valuable theoretical instrument for understanding and taking advantage of historical change, and, on the other, it offers major political strategic principles that at the current time, based on forms of production and autonomous social organization of the subaltern groups and classes within knowledge capitalism, have the historical-social space to contribute to the construction of an alternative hegemony characteristic of these classes and groups.
To delve into this question, the article has been divided in three sections. The first section presents Gramscian theoretical tools for understanding historical change; the second synthetically explains the distinctive features of the new phase of development and characterizes the moment of its current unfolding in light of the previously mentioned theoretical instruments, and the third section discusses post-capitalist forms of production and social organization that could lead to the formation of alternative hegemonic social blocs in the framework of the emergence of the new phase of development that is becoming a historical epoch.

1. The Gramscian theoretical tools for understanding and taking advantage of current historical change

Gramsci's contribution consists of the formulation of a series of articulated concepts that can be considered methodological mediation concepts in a double sense: 1) in between the dual historical dimension of capitalism, either understood as a mode of production, or as a succession of historical phases of development; and 2) in that perspective, in between the economic structure and classes and social groups and their possibilities of engaging in action. These concepts are hegemony, passive revolution, historical bloc, system of hegemony of states, and others that are derived from them, with hegemony being the fundamental concept, since the others are the result of elaborations constructed and based on the concept of hegemony. We will now develop these general concepts in light of the transition from one historical phase of development to another, based on the previously explained reasons.

Historical crisis of capitalism are understood as the moments in which, with insurmountable contradictions having arisen in the economy, the political forces that operate in favor of the latter's preservation attempt to resolve such contradictions within the limits of its current configuration, while other forces organize, seeking to demonstrate (with their own victory) that the necessary and sufficient conditions already exist to provide for their solution in a new phase of the development of capitalism (Gramsci, 1930-1932, N.4: 455 and N.13: 1578. The quotes from Gramsci referred to here are from a critical Italian edition of the Prison Notebooks of V. Gerratana [1977]: " N.4" indicates that it is notebook no. 4). That is, within a new combination between economy, politics, ideology and culture. With this, the progressive political forces promote the transition from one historical phase of capitalism to another.

If we consider that, according to Marx, the fundamental contradiction of capitalism (which determines its historical character as a mode of production) is between the development of the productive forces and the social relations of production - a contradiction which implies that an increasingly private appropriation of the (social) product goes hand in hand with the increasingly social character of production- the solution to a historical crisis poses for capitalism the need to take a further step toward the socialization of production, which would allow for the subsequent development of the productive forces, even conserving the private character of the appropriation of the product. In this sense, the historical mission of capitalism is to incorporate technological progress in its development, which represents the indispensable condition so that the progressive dominant groups and classes can constitute a new hegemony over the subordinate classes and groups, that is, they can continue exercising a capacity for domination (through means of coercion) over them, playing, at the same time, a leading historical role, by means of consensus or the capacity to convince others of their historical aims. This implies the ability of creating a new social commun and integrating philosophical conception of reality according to the solution of the precedent contradictions, with a corresponding new form of social acting by the individual subject, which includes a new commun sense. Dialectically (but not historically) the hegemonic function arises from the productive structure, and, particularly, from the leading role of the hegemonic group or class in

the production process, and subsequently, this is extended and generalized in the complex superstructures, thus sealing a unity in the concrete historical construction, among economics, politics, ideology, and culture (Donzelli, 1981: LXXXI-LXXXII).

But to the extent that the process implies taking a step toward the socialization of production that facilitates a subsequent development of the productive forces, the dominant groups and classes need to develop and integrate as their own other outside and even opposing historical-political-cultural elements, but that are necessary for incorporating technological development and preserving their hegemony. That is, they must sustain their hegemony in a process of passive revolution or restoration-revolution that makes it possible that it is only these dominant groups and classes that are able to develop all their possibilities for action, so as not to allow themselves to be overtaken historically by the subordinate classes (Gramsci, 1933, N. 15: 1768). Consequently, through passive revolution, the dominant groups and classes, either directly or through the state –with the latter being the most common variant- assume the historical requirements of social development and other and even contrary elements, pertaining to the subordinate groups and classes, within their own historical project.

In conclusion, in order for the passive revolution and the hegemonic project as a whole to triumph, the dominant groups and classes that seek to demonstrate the need for a new historical unity of capitalism should recognize and base themselves on effective innovations in the field of production and, in addition, be able to project themselves in a new proactive social utopia or "catharsis", capable of unleashing the political energy of society (Gramsci, 1932-1935, N.10: 1221).

The concrete historical unity is synthesized in the concept of historical bloc, which represents an organic unity between the political-economic structure and the complex superstructures, this is, the elaborate series of theoretical-practical activities of the classes and social groups, as well as individuals, around a common historical project that implies, therefore, a unity of contrary and diverse elements (Gramsci [1931-1932], N.8: 182, [1932-1935] N.10: 1237-1238 and 1337-1338 and [1932-1934] N.13::: 1569-1570) with the political-economic structure being the reference point and dialectical origin of the superstructures. This implies that politics and the rest of the superstructures have their specificity and an active function in historical change, not being limited to being a mere reflection of the economic structure (Gramsci, 1932-1934, N.13: 1577-1578).

But if the historical bloc consists of the diverse and complex series of social and individual theoretical-practical activities (political, cultural, ideological, etc) around a common historical project, the institutions represent the crystallization of these theoretical-practical activities in formal and informal organizations, which become, in turn, reference points for new social and individual actions. Consequently, the character of agglutination and cohesion of the social action of the institutions is related to their role in the realization of this common historical project, and, therefore, in the more or less direct realization of the hegemonic function that sustains it.

In the building of institutions, as well as the historical bloc as a whole, the role of intellectuals is key, since, based on their technical-formative and leadership capacity, they differ from "simple" individuals of their social group or class, and they have the possibility to generalize and project the interests and theoretical-practical actions characteristic of that class or social group, and, in that sense, contribute to generating a class or social group identity. In a historical-social perspective, intellectuals represent the "glue" that articulates the different classes and social groups -as well as their institutions- that converge in the historical bloc, being, therefore, the "officials" in charge of exercising the hegemonic function (Gramsci, 1932-1935, N.12: 1518-1519).

In this perspective, it is possible to distinguish between different degrees of contribution to the realization of the hegemonic function and the scope of the capacity of agglutination and cohesion of social and individual action on the part of the institutions that correspond to the different types of intellectuals due to the scope and dimension of their activity, with, in this sense, the state being the most developed institution: 1) the institutions that bring together and cohere a social class with other classes and social groups around the historical bloc, to which the organizational and connective action of organic intellectuals correspond; 2) the institutions that agglutinate and cohere a social class around itself; and 3) the institutions that agglutinate and cohere a social group, beyond the determining factors of class of the individuals that comprise it, with the organizational and connective action of traditional intellectuals' corresponding to points 2 and 3. Organic intellectuals being those capable of projecting the interests and activities of a class or social group in a historical project that articulates the class or social group to the rest of society from a hegemonic position, thus, they can belong even by their material conditions of living and/or ideologically to either of the antagonistic classes only, meanwhile traditional intellectuals are those that generalize and project the interests and activities of a class or social group, contributing to the creation of a specific identity (Gramsci, 1932-1935, N. 12: 1513-14, 1550-51).

The historical bloc crystallizes in the state, which is the entity that synthesizes the political relations of society. Such an entity should allow for the maximum development and maximum expansion of the hegemonic group, presenting it as the development and expansion of society as a whole.

The concepts that have thus far been developed are limited to the realm of political organization in the nation-state. However, in order that hegemony can emerge in a historical epoch, its crystallization in a national historical bloc is not sufficient. Also necessary is the international projection of the bloc in a system of hegemony of states. So that this can occur, it is necessary that the national historical bloc be constituted in a country with the sufficient international drawing power and influence, that is, sufficient capacity to direct and dominate other nations in terms of the international and national objectives that it proposes. In this sense, a great power is a hegemonic power, as head and guide of a more or less extended system of alliances and agreements among states (Gramsci, 1932-1934, N.13: 1598), which comprises a system of hegemony of states.

However, the development of a hegemonic system in an international sense should take place, and can only do so, on the basis of specifically national premises (Donzelli, 1981: XLIV-XLVIII). There should, therefore, be a unity and a correspondence between the historical bloc of the state transformed into a great power (hegemonic) and its system of international hegemony (or of states), which should allow for the full realization of the former, and satisfy the interests of the leading groups of the states that decisively converge in the system.
The form of independence or national sovereignty, implicit or explicit in the system, determines the relationships among the states, which is decisive for the position and the possibilities of development of the medium and small powers (Gramsci, 1932-1939, N. 13: 1562).

2. Knowledge capitalism: new historical phase of development?

A phase of capitalist development occurs when a technological revolution translates into a new productive base and a new form of production, which is accompanied by the emergence of new products, services and, branches of activity, which become the sectors that tend to articulate the rest of the economic activity and to dynamize its growth.

However, according to the Gramscian contribution, this process cannot be consummated if the transformations underway in the economy do not culminate in a new organic unity that articulates the economy with politics, ideology, and culture, a process in which, even though the changes begin in the economy (specifically in the form of production) and, therefore, precede the others, they cannot be concluded without the transformations in politics, ideology, and culture that have their own conditioning factors and might not be concretized, historically aborting the entire process (Gramsci 1932-1934, N.13: 1569-1570 and Ordóñez, 2004: 5).

Knowledge capitalism has been developed in its key technological-productive aspects, without the emergence on a world scale of the "model of society" or the organic correspondence between changes in the economy with politics, ideology, and culture that transforms the new phase of development of capitalism into a new historical phase of development.

The distinctive theoretical elements characteristic of knowledge capitalism can be synthesized as follows. The new phase of development arises from a new articulation between the scientific-educational sector and social production as a whole. Therefore, the production, circulation, and accumulation of knowledge tends to affect and involve all the spheres of economic and social reproduction, which transcends the scientific-educational institutions and firms and includes new de facto formal and informal socio-economic institutions, such as epistemic communities.

The secular trend of capitalism to apply science and knowledge in social production took a qualitative leap forward with the technological revolution of informatics and communications (Foray, 2000: 18-19), particularly with software as a new form of knowledge existence consisting of codified knowledge which has been objectified in a programm, permiting knowledge immediate application. This thus facilitates the

immediate and interactive articulation of the scientific-educational sector with the economy, which translates into the emergence of a new productive force, based on the narrowing of the links between science and knowledge on the one hand, and social production on the other.

Simultaneously, the unfolding of the technological revolution of informatics and communications, and its conversion into a new technological-productive base, is articulated with Toyotism, as a new form of leadership and organization of the work process that incorporates quality in the productive processes and in the social product, and, through it, knowledge, particularly the tacit knowledge of the workers. Thus, Toyotism pursues objectives that are at odds with Fordism, since it aims to produce small series of differentiated and varied products, incorporating proposals of improvement of the work process and the product on the part of the workers (Coriat, 1991: 19).

Therefore, the formation of a cycle of knowledge (production, circulation, and accumulation) occurs involving the scientific-educational sector and social production, circulation, and consumption, in which the great historical challenge is the valorisation of knowledge (creation of new value based on knowledge), which presupposes a dilation and autonomization of the activities of the conception and design of the social product in relation to manufacturing activities. This, in turn, allows for a differentiation in the composition of the costs of production between both activities, in the following terms: a) the phase of conception and design is intensive in variable capital and not very intensive in constant capital, with variable capital consisting in highly skilled complex intellectual work; and b) the manufacturing phase tends to involve a greater percentage of constant capital in relation to variable capital (as well as the composition of capital as a whole), even when the specific proportion of each depends on the specific type of product and its place within its respective chain of value.

The cost composition specific to the conception and design phase is accompanied by its process of reproduction being carried out in a specific fashion, because: a) it presupposes major production costs, derived from a highly intensive process of the creation of knowledge due to the highly skilled intellectual work and its objectification in the first unit of the product; and b) its reproduction costs are minimum, since once the knowledge is objectified in the first unit of the product, the successive costs only consist in the reproduction of the material aspects of the product or in the production of successive copies of the first unit of the product, in which knowledge has already been objectified.

This implies that the specific cost composition of products intensive in knowledge, or products partially derived from the conception and design phase, represent a specific capital composition that counteracts the increase in the organic composition of capital –by being intensive in variable capital and not very intensive in constant capital- and therefore the valorisation of knowledge constitutes a new counter-trend to the tendency for the rate of profit to fall, based on the increase in the organic composition of capital. In complementarily fashion, from the point of view of circulation, we are dealing with products whose production presupposes a profit or

growing gains on the scale of production, since by concentrating the substantial part of the investment in the first unit of the product, the more copies that are sold, the greater will be the profits. This represents the other side of the coin of the valorisation of knowledge as a counter-trend to the decline in the rate of profit.

At the same time, products that are not very intensive in knowledge or products partially based on the manufacturing phase, are not characterized for being the result of highly skilled intellectual labor, and therefore their costs of production are comparable with their costs of reproduction, which translates into declining profits or returns due to their output scale.

In general, the law on the tendency of the rate of profit to decline continues operating, but with a new counter-trend that will have effects on the division of labor among firms in the context of the chains of value, and on a new international division of labor based on knowledge processes (Ordóñez, 2009A: 394-395).

On a macroeconomic level, the unfolding of the informatics and communications revolution brings along with it the integration of a new technological-productive complex, formed by industrial and service activities as a whole articulated by the basic integrated circuit technologies, software, digitization, which will be known as the informatics-electronics sector (Dabat and Ordóñez, 2009: 29-44).

The informatics-electronics sector becomes the new articulation and dynamizing nucleus of production, growth, and world trade, replacing the auto-metal/steel-petrochemical complex, characteristic of the Fordist-Keynesian phase of development. This translates into a new economic dynamism or industrial cycle, with longer expansive phases marked by higher growth and less pronounced and shorter recessive phases. The informatics-electronics sector energized the expansive phase of the 1990s, determined the world crisis of 2001 and 2002, and drove the subsequent recovery.

But at the present time, the transition from the merely economic moment of the process to the complex elaboration of the superstructure that provides historical viability to the new phase of development has still not been verified. This represents, in the final analysis, the fundamental cause of the current global financial crisis, to the extent that its essential determining factors reside in the autonomization and the extreme growth of financial capital in comparison with productive capital, which is very close related to the informatization and the resulting automatization and unprecedented growth in the velocity at which money circulates. This leads to the existence of an enormous plethora of global financial capital, the result, to a large extent, of the expansion of the sphere of financial valorisation that has brought along with it the diversification and the more complex character of the new financial agents and instruments, which implies an enormous spread of financial risk without the agents, particularly individual investors, having enough information to face the situation (Ordóñez, 2009: 60-62).

In this framework, the current global financial crisis determines the exhaustion of a first stage of the unfolding of the new phase of development, dominated by

international financial capital. This stage has been marked by the most important and far reaching superstructural development thus far achieved, neoliberalism. As superstructural development, neoliberalism seeks to provide an outlet for the unfolding of the technological-productive foundations of the new phase of development and to restore the dominance of the ruling classes that had been strongly questioned toward the end of the 1970s (Harvey, 2005: 39-63). At the same time, it seeks to essentially avoid the complex and extremely dangerous problem of the passive revolution as a foundation of a new hegemony over subaltern classes and groups, based on the following political-economic guidelines of superstructural scope: 1) the "end of history" as ideological and class struggle, and the victory of capitalism and political liberalism with the collapse of the Soviet Union and the Warsaw Pact, as a system of international hegemony and competitor in the bipolar world order of the post-World War II period; 2) the quest for recognition and individualism due to liberalism, which can occur because of the free market, (private) property rights, and the material prosperity that reciprocally strengthen each other with a universal culture of consumption; 3) a transfer toward civil society of the state's traditional responsibility to attend to the basic needs of survival of the marginalized sectors through providing social services and investment in infrastructure; 4) subjugation of politics to the democracy of the market and property rights, and the emergence of community survival networks to address the social needs that previously were the responsibility of the state (Bueno-Hansen, undated: 61-67); and 5) basically containing the entire superstructural projection on the internal institutional-social framework inherited from countries' preceding phase of development, even when reformed in terms of the reduction of the role of the state as "neutral" guarantor of socio-economic reproduction -without active interventionism-, and, in the international framework, contained on the system of hegemony of states formed at the end of the Second World War, that emerged triumphant after the fall of the Berlin Wall and hegemonized by the United States.

Neoliberalism has tended to become articulated with postmodernism as an ideological-cultural principle of representation of the subject's reality and action in the world that views it as a (multiple) reality(ies) in constant change and that is fragmentary (without interrelation among its constituent parts), which does not follow a line of continuity with the past, breaking, therefore, with the idea of (historical) progress. It involves, therefore, an indefinite reality in which every all-encompassing philosophy that pursues a change in reality as a whole is unviable and open to criticism, with specific individual or group praxis being the only variant possible, strongly determined by local contexts and of a necessarily pragmatic character (Harvey, 1990: 39-65).

In the framework of the "American" system of states' hegemony, neoliberalism has coexisted with two major categories of experiences of an alternative superstructural nature. Even when they had some features in common, of a much more limited scope, they have tended to be articulated in their ideological-cultural dimension with postmodernism, and in them the hegemonic function has been used, alternatively and predominantly, either in its consensual dimension, such as in the Scandinavian countries, or in its coercive facet, such as in Southeast Asia, with some exceptions.

The specificity of the Scandinavian countries at the present time consists of having reconciled their integration in globalization and the development of knowledge capitalism, which has translated into growth that is above the average for the Euro-zone and OECD nations, with the continued and permanent existence of the "welfare state", albeit reformed to adapt to the new economic reality in the following terms: 1) deregulation of the financial markets; 2) decentralization of the tripartite negotiation (government, business, unions) toward the regional and local level; 3) orientating unemployment compensation toward the promotion of training and labor mobility, with an active policy in the labor market being one of the main instruments of state interventionism; and 4) introduction of market mechanisms in government enterprises and the privatization of some firms (Stephens, 1995: 24-26).

This is a group of countries that have managed to catch up in the international division of labor based on knowledge (Ordóñez, 2009A: 394-405), underpinned by a re-adjustment of their historical postwar bloc toward integration in globalization and the development of knowledge capitalism, based on an important process of the development of civil society, social inclusion in the knowledge processes, broad social protection for the subaltern groups and classes, and a series of experiences in which the most important case is that of Finland, due to its character as a late comer and its rapid rise.

On the other extreme are the Southeast Asian countries, which have taken advantage of the legacy of authoritarian states with strong government intervention in the economy and control over civil society, to promote the formation of development-oriented states that have managed to channel, through the use of coercion, social energy for the processes of innovation, technological learning, and production of knowledge, creating selective mechanisms of social protection simultaneously for specific groups. In this perspective, the most important cases are those of South Korea and Taiwan, since after the 1997-1998 crisis, which functioned as a catalyst for processes that had been initiated previously, the mechanisms of social protection were extended from workers employed by large firms to broad and disadvantaged social groups, in a dual dynamic that combines the increased use of processes more intensive in knowledge and added value, and, therefore less dependent on industrial labor costs, with the social effects of the crisis as such and the subsequent growth in relocating production, particularly in the case of Taiwan (Huck-ju Kwon, 2005: 12).
Finally, there are other groups of countries such as the Eastern European nations, whose capacity for state-institutional efforts at social welfare policies are significantly reduced in relation to the preceding experiences, resulting from the processes of democratization, privatization, and political breakup that followed the fall of the Soviet Union and the Warsaw Pact, or the Latin American countries, which in actively adhering to the neoliberal project have only been able to form regional social blocs for innovation, which have led to the emergence of local industrial complexes and very specific activities of successful integration in globalization and the development of knowledge capitalism, but always inscribed in a pronounced process of social exclusion.

The main limitation of neoliberalism in providing historical viability to the new phase of development has been the lack of a process of passive revolution as a

foundation of a new hegemony, as well as international integration processes inclusive of the developing countries. This has translated into an intensification of the socio-economic inequalities between the dominant classes and the subaltern groups and classes, and between regions, within countries, as well as between states on an international level (with the exception of the Asian countries), a problem that has been coupled with the recurring eruption of financial-productive crisis, among which the current crisis has reached global dimensions never seen previously (Ordóñez, 2009: 68).

Therefore, the current global financial crisis reflects the exhaustion of neoliberalism and its resolution passes through the transition to a second stage of the unfolding of knowledge capitalism dominated by productive capital, which will tend to imply deep-going political-institutional reforms, which, inevitably, will tend to raise the question of the passive revolution as a foundation for a new hegemony over subaltern classes and groups, as well as integration projects inclusive of the developing countries in the international sphere, in the broader context of a relative weakening of the economic-political and military hegemony of the United States in favor of multi-polarity, with Asia being the most important emergent region, but with a new greater specific weight of other emerging economies in the world.
Consequently, based on the structural changes in process, the historical-social space is open to superstructural-hegemonic projects that come not only from the dominant groups and classes, but also from the subaltern groups and classes, and thus to processes of alternative hegemony that represent the basis of a second dimension of Gramsci's (historical) revenge, as will be seen in the later section of this article.

3. Toward an inclusive and participatory knowledge society?

Within the organic movements that are alternatives to the current course of the development of knowledge capitalism, directed by subaltern groups and with the aim of providing an inclusive and participatory character to the new emerging superstructure, there is the production of free software and to a certain extent open-source software, in its part based on the community of developers. This is so in the sense that both consist of a higher historical-social form of production and circulation of knowledge without a valorisation process of it –in the case of open-source software without its immediate valorisation- that, therefore, resolves the essential contradiction of capitalism, and, specifically, of its current phase of development, between the social nature of production and the social-accumulative character of knowledge, on the one hand, and the private character of their appropriation, on the other, because in this form of production, to the social nature of production and the social-accumulative character of knowledge corresponds a social character of the appropriation of the (social) product, limited exclusively by the necessary knowledge to access it.

This also involves a social form of production and organization that implies a social economy of use value and abundance, contrary to an economy of value change and scarcity, to the extent that software, as a form of the existence of knowledge, is not produced because of its abstract nature as undifferentiated knowledge -as proprietary software is-, but due to its concrete usefulness, whose costs of reproduction are, furthermore, infinitesimal, thus it is abundant; which translates into a situation in

which the programmer-user provides the community with a copy of his or her product that can be reproduced innumerable times at minimum costs, with multiple copies resulting, in exchange for a copy of other pieces of software in order to introduce new modifications to the code, or perhaps for its use based on modifications made by others.

Furthermore, worldwide free/open source software investment is bigger than proprietary software (the former representing around 20% of the whole software investment versus 17% of the latter), and is clairly growing faster since 2000, which goes hand in hand with the increasing importance of Internet as a mediating space for social reproduction, Internet consisting mainly of free/open source software, and with its technical and social advantages comparing to proprietary software, consisting of a major rate of innovation, shorter reacting times, greater stability as operating system and less vulnerability to viruses attacs, inferior buying, maintenance and support costs, greater productivity by firms using it as an input, etc (UNU-MERIT, 2006).

What follows is a detailed explaination of these revolutionary aspects of the production of free software and partially of open-source software, which in their currently developed form consists of a worldwide virtual factory, interconnected by the Internet, in which groups of self-designated workers, among whom there is an informal relationship, but are tight together by a cultural framework oriented towards carefully doing and interaction, work in parallel fashion -and not in unison- in separate copies of the code and they send proposals for its modification to a central assembly point, in which strict quality control is applied. The self-organized nature of production coincides, therefore, with a strict hierarchical discipline, a relationship in which the commitment voluntarily assumed by the programmers to introduce innovations into a software product, which will contribute resolving own problems, brings together the individual objectives with the general production goals as a whole, while the constant revision on the part of the peer-to-peer groups (work groups that operate in parallel fashion that are in charge of the development of other software pieces, with the idea that piece A can be integrated in order to perform an integral complex functionality) ensures maximum performance and quality (Chopra and Dexter, undated: 8-11).

Contrary to products intensive in knowledge or of the immaterial part of social production that enters into the knowledge valorisation circuit, the following aspects are specific to the production of free software: 1) it is undertaken by (live) complex intellectual labor that is not subject to a salary relationship; 2) the product is not earmarked for exchange, but rather is produced as a use value; and 3) the product is not subject to the regime of intellectual property or ownership rights, or rather it is submitted to a General Public License, which is intended to be the opposite of a copyright regime (a copyleft one), as it assures a never ending social domain over the product. In becoming a model of social organization and production existing in the confines between the production of knowledge for its immediate use and production for the purpose of generating value, that is, between the community of self-organized developers and production for the market, open-source software is governed by the same principles previously described in the part of the form of

organization sustained in the community of software developers, but by opposite principles in the part that is based on the market, that is: 1) it is undertaken by (live) complex intellectual labor that is subject to a salary relationship; 2) the product is immediately earmarked for sale; and 3) the product is subject to some regime of intellectual property or ownership rights, as will be immediately explained.

The work that gives rise to free software and the part based on the community of developers of open-source software is highly skilled complex intellectual labor that does not have an antagonistic relationship with their means of production (computer equipment, specialized software, etc.) but rather possess them, as well as the deployed labor force. Specifically, open-source software is based on this type of labor and, in addition, can be sustained by salaried labor in an antagonistic relationship with its means of production such as in the case of open-source software firms, in which the figure of the developer can assume two basic social hybrid modalities: a) the "traditional" developer with tasks in the community; and b) community developer with a salary. The former writes software, participates in the firm's relationship with the market and contributes to community forums, having a system of control of the source code, which is periodically made public to the community. Meanwhile, the latter is a full-time community programmer that the firm ends up hiring, a situation in which the source code is placed at the disposal in a public server in real time (Dixon, 2007: 27). This working modality could be understood as a new form of work at home in which the community programmer is subsumed by capital.

Concerning the product, in free software it is produced as use value, that is, the objective of production is determined by the usefulness that the product can provide to the user-developer. This implies that its value is not measured by the (abstract) labor-knowledge contained in it, but by the useful capacity inherent to its concrete characteristics for resolving a computer problem involving functionality or application. This implies that production is immediately for consumption -without the intermediation of the market-, and that the circulation of the product is only limited by the knowledge to access and use it, with this taking place preferably over the Internet, even when its entry into the value circuit is possible through its being marketed by firms that distribute it and provide specialized and customer support services.

In the case of open-source software, production is geared for the market but also immediately for consumption. This implies that the software can enter the value circuit through its customization and sale to the end user by a firm (the firm that, in addition, can provide technical specialized and support services). Another possibility in this regard is a software program produced in the community of developers to be subsequently integrated as a module in the development of a broader proprietary software -which, therefore, has been produced under a salary relationship- and as a result it enters the knowledge valorisation circuit through the sale of the integrated product in the market. This translates into the generation of a profit for the owner of the integrated software, that is, the open-source software firm. That is why firms such as IBM and Sun Microsystems provide considerable resources for the development of the Linux operating system (through 2006, IBM had invested

US$100 million or 20% of the estimated cost of developing Linux) in order to, based on the proprietary software schema, develop specific tools and applications based on that platform, mainly for the corporate software and ISP market (IBM, 2006)

Finally, free software is subject to a reverse of any regime of intellectual property rights, to the extent that its production, distribution, and use are governed by a General Public License which stipulates that the product is in the public domain for perpetuity, that is, the developed software can be freely used, copied, modified through manipulating its source code, and new versions must be freely distributed for the whole society.

Meanwhile, open-source software is regulated by Open Source Definition, which allows the software to be redistributed in the terms of the General Public License without doing so being obligatory (Weber, 2000: 10), thus opening up the possibility that a piece of software produced by the community of developers can be incorporated in a broader integrated proprietary software that is, in fact, governed by intellectual property rights and that, therefore, results in a monopolistic profit linked to its distribution through exclusive use licenses. There are other licenses such as the Berkeley Standard Distribution in which a programmer is authorized to introduce modifications to an open code and subsequently to sell it as a closed code, without the original "proprietor" having access to the closed code or being able to modify it (Chopra and Dexter, undated: 11).

The cultural principle of conceiving reality and acting upon it corresponding to this form of production and social organization consists of gift culture, which creates a specific identity that solidifies the community around values based on carefully doing, reciprocity and interaction. This is based on the principle that the development of the abilities and means of production of others increases the community's capacity to return what has been provided by the donating individual (Hyde, 1983). Therefore, social status depends more on what is given than on what one possesses, which is sustained in the idea of property as a "possession" of what is being worked on and not as a property of the product of that activity (Weber, 2000: 23).

This knowledge production and circulation form has become the productive, organizational and ideological-cultural referent and "model" of the broad free knowledge creation and circulation online social movement, including, very importantly, the free artistic movement, which is been produced and circulated under the Free Art License and the Creative Commons License Systems (Miranda y Wolf [2010] y Pagola [2010]). This is too the inspiring source of the broad "apps" model of social online participation into creating new software applications for cellphones, which is extending to the hardware industry, mainly the telecommunication network industry and computing.

Therefore, this form of production and social organization presupposes, in terms of the Marxist theory of socialism, a state of development in which men begin to dominate their conditions of production and their products, instead of being

dominated by them, and, potentially, this facilitates the transition to a historical situation with two unprecedented characteristics in mankind's history, that is: 1) the development of the productive forces of society becoming an end in itself, beyond its character as a necessity, identifying it as the "epitome of freedom" (Marx, 1894: 958-959); and 2) control of the social conditions of life by the "collective intellect" and transformation of these social conditions in accordance with it. (Marx, 1857-1858, Volume II: 227-241)

In this historical perspective, the production of free software represents a seed within capitalism, and, specifically, in its current phase of development, of a higher communist society whose possibilities of development go hand-in-hand with current technological development, in the sense that the content in knowledge of social production tends to increase, which presupposes the growing use of software, as a new form of existence of knowledge, as an input in social production as a whole.

However, this seed of communism tends to be contained by the development of open-source software, in the sense that indirectly it incorporates the community of developers in the knowledge valorisation circuit and transforms it into a (post) modern form of work at home -in which the software developers inserted in a post-capitalist form of production are subsumed by capital, under different modalities-, but, paradoxically, with it, open-source software simultaneously nurtures the very development of the community of developers, and, consequently, the form of social organization that sustains free software.

This points to a historical crossroad in the entrails of knowledge capitalism at the dawn of the global financial crisis, in which its neoliberal predominant modality of development based on proprietary software has been exhausted by the crises, giving rise to a new open socio-historical situation characterized by the emergence of a seed of a modality of alternative and postcapitalist social development based on free software form of economic and social organization, which tends to be simultaneously contained and stimulated by the rising of a new capitalistic modality with greater social participation overcoming neoliberalism, represented by open-source software form of economic and social organisation.

It is an open question if free software form of production and social organization might be adopted by subaltern groups and classes as their autonomous way of incorporating to the social production and circulation of knowledge -both on and offline- required by countries competition in knowledge capitalism. But its possible achievement would imply Gramsci's historical revenge, not only by providing a theoretical framework to understand the current historical change from a marxian perspective -which is already taking place as this article states it-, but by inspiring the political strategy to drive that change in an alternative hegemony prospective of subaltern groups and classes.

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