

Germs of non-commercial relationships within the most modern capitalism

The aim of this text is to answer to Robin Good Fellow's (RGF): "Communism and the industrial revolution" (April 20, 2002). Like the latter it lies within the scope of the "work group" on the technological revolution whose constitution was announced at the last meeting of the French-speaking wing of the network. It tries to show that, contrary to what RGF implies, **the current technological progress can have historical consequences for the revolutionary project, as significant as those of the industrial revolution of the 19th century.**

Technological revolution or industrial revolution?

It would be a pity to waste time with false debates because we do not put the same contents in the terms we use. For me, as for the usual dictionaries, the term "technological" refers primarily to the techniques, to the machines and working tools; the term "industrial" more specifically relates to the general process of transformation of raw materials into goods for use. It is usually utilized in opposition to other sectors of the production: agriculture and services (1).

In that sense we can say that a true technological revolution (concerning the techniques and means of production) is one which leads to a revolution in industry, and even in the economic activities as a whole. There is an inevitable lapse of time for the generalization of the use of the new technologies. Between the technological revolution embodied by the development of the first steam-machines and the generalization of their use in industry and transport, decades passed.

Summarizing the contents of their text, RGF writes: "There is indeed an industrial revolution, which begins during the 18th century. This concept is part of Marxism. This is not a simple litany of inventions or a simple 'technological' revolution, it upsets the conditions of the production by creating, on one side, the class of the modern proletariat and the associated work, on the other side, the productive potential to lay the material basis of a classless society." It is not clear whether RGF regards the term of "technological revolution" as valid. But we understand that their insistence relates to the fact that one can speak of "revolution" in the field of the production only if the involved upheavals have revolutionary consequences. "Its arrival (of mechanization), writes RGF, poses the material basis of communism by allowing an unlimited development of the productivity, by allowing a permanent reduction of the necessary work, by posing the basis of a society of abundance. But, it is not all! Mechanization induces a process of work specific to the capitalist mode of production and in a permanent way creates associated social work. It creates the class of associated producers who must free themselves from the dictatorship of the capital to be able to complete the potential of mechanization, to bring to another level, higher, the degree of the productive forces of work." In other words, the industrial revolution of the 19th century created "the material basis of communism" and only an anti-capitalist revolution will allow the proletariat "to complete the potential of mechanization", to go qualitatively beyond. Under capitalism, if one understands well, there has been and there will be only one and single industrial revolution.

We can understand the concern for RGF to place themselves from the point of view of the proletariat and to note that even the automation of the production basically does not change the basic conditions of exploitation: "the integral automation of the process of production, writes Robin, is entirely included within the concept of industrial revolution. The insulated machine yields the place to the system of machines." But, unless we play with words, we can share neither the idea that "the material basis of communism" were given in the middle of the 19th century, nor the assertion that, since then, there cannot be, under capitalism, true qualitative changes in the development of these basis, be it on

the material level of the creation of the conditions of the abundance or on the level of the revolutionary capability of the proletariat.

The two elements quoted by RGF to affirm that the material basis of communism existed in the middle of the 19th century, namely generalization of mechanization and the appearance of the modern proletariat, constitute indeed essential basis for the realization of the communist project. But these elements were in their infancy. To deduct from it that the material conditions of abundance and communism were given, is like claiming that babies, because they have sexual organs, can make children. In spite of excessive historical optimism, an almost inevitable weakness in the majority of the revolutionaries that led sometimes Marx and Engels to affirm that the conditions of communism were given in their time, they often hesitated over this question and expressed opinions more than nuanced (2).

The problem of knowing which material development of the productive forces, including the proletariat, is necessary so that a communist society can start to be built, is a complex question. I do not intend to answer it here. But, independently from the answer which one brings to this question, we can't help noting that the present technological progress (primarily the generalization of the use of the microchips and the new techniques of communication), constitutes a qualitative step in the development of the two main conditions for communism: the "basis of a society of abundance", as RGF says, and the revolutionary capability of the proletariat.

The development of the basis of a society of abundance

Quoting Marx, RGF, rightfully makes the development of the conditions of abundance to rely on the process that leads capital to "the elimination of man from the productive process. This exclusion of man from the productive process opens grandiose prospects for the productivity of labor." To increase the productivity of labor means to create the same product with less work, i.e. to replace men with machines. However, in this dynamics, the introduction of machines functioning with microchips makes it possible to replace the work of man at new levels, with capabilities which did not exist with the previous machines, which "exclude" even more men from the productive process. These machines can replace man 1) in the capability to take decisions according to parameters; 2) in the capability to perceive and acquire some of these parameters. Electronics today allow to equip the machines with beginnings of capabilities of perception which required before the presence of man, such as sight, hearing, touch, and even recently smell and the taste. It allows the machine to make decisions taking into account the results of its perceptions according to pre-established criteria. It is an enormous leap that includes qualitative aspects. Perhaps RGF will say that these are only "quantitative" developments in a process which started one century and half ago and whose fundamental basis have not really changed. But the most significant aspect in the current technological revolution is not there, or not only there.

What appears most qualitatively "new" and which makes possible to speak of "revolution" is the fact that these machines function using a good, the software, a new means of production, which has the characteristic to be able to practically escape scarcity once it has been created. Certain software, such as those which drive whole assembly lines of industrial production, may have required as many working hours as the construction of certain factories or the production of thousands of tons of coal. But they can be reproduced without limits at insignificant costs. It is as if a factory, once built, could be cloned indefinitely and free, as if coal, once produced, could burn eternally.

Robin recognizes this new reality. In his text of June 2001, concerning the 'technological revolution', he writes, commenting on my text "Notes on the technological revolution in progress": "Where Raoul raises an interesting problem, it is about software, because these are also instruments of production, insofar as they control technical devices in the companies. Their production cost is amazingly high, but their reproduction cost is quasi nil." Unfortunately, RGF does not say why this "problem" seems "interesting". Probably because they have not thought about it yet? Or perhaps because the answer is likely to contradict their thesis according to which there cannot be any more, under capitalism, true qualitative advances in the establishment of the material basis of a society of abundance.

Anyway, one can hardly deny that the emergence in the capitalist production process of a free reproducible means of production constitutes a qualitatively new and essential element for the realization of a society without scarcity. This is all the more important as the place of software in the capitalistic production can only expand, irreversibly.

But it is not only the software driving machine tools with numerical controls that new technologies allow to make free reproducible. It is also the case for other means of production and certain consumer goods. RGF, again in their text of June 2001, notes it partially: "When they are goods whose form can be digitalised (the sounds, therefore the music; alphabetical signs, therefore newspapers, books; images, therefore the photographs, the cinema, in short, all the goods that are a matter for 'cultural goods'), it is clear that the costs of reproduction are quasi null." Why does RGF limit these goods to the mere "cultural" field, ie which are not directly productive? The images of medical or metal radiographs, the statistics of all that is accounted for, the recording of the sounds of fish shoals for fishing or the books of technical instructions, to quote only some examples, are not particularly cultural goods. Still they are more and more digitalised and thus free reproducible.

New technologies in communication, of which Internet is one of the most significant products, confer also a new capacity to these digitalizable goods: to be transmissible at the speed of the light to the four corners of the planet, always at a negligible cost. And this gift of free quasi-ubiquity constitutes also a major and qualitative contribution to the establishment of the conditions of abundance.

Of course, all the goods for production and consumption are not digitalizable, far from there. But we can consider that their production can be almost completely digitalizable. There exist, for example, in Japan, plans for factory-greenhouses, able to cultivate plants on many stages, entirely automated. In the same way, it is possible to consider the automation of work in the extraction of minerals, etc.

To measure the importance of the historical consequences of such a reality, it is useful to recall that capitalism is founded on the law of value, on commercial exchange, which rests on scarcity in so far as it constitutes the most effective way to manage it. Commercial exchange is not the malefic product of the will of the wealthy classes. It is the result of the pressing need for the circulation of goods in a society developed enough but subject to scarcity. This is why exchange can truly disappear only for goods that become sufficiently abundant so that all the needs are largely satisfied, as for the air we breathe (at least for the moment?). The voluntaristic attempts to eliminate or reduce the exchange of goods by force and the recourse to rationing by the State, as did, for example, the European countries during the two world wars, the Bolsheviks in the first years after 1917 or certain Stalinist countries, were always accompanied by the uncontrolled blooming of the commercial laws in their wildest form: black market.

Capitalism is the most sophisticated form of commercial society, and as such, its existence relies on scarcity. The current technical advancements, while allowing the appearance and the beginning of the generalization of productive forces which have the capacity to escape the constraints of scarcity, bring, in the center of capitalism, in its most modern sectors, the material basis for a non commercial, anti-capitalist logic. In this sense, they are revolutionary.

The development of the revolutionary capability of the proletariat

Vis-a-vis this free reproducibility of certain goods, contradictory with the same basis of the commercial economy, we can distinguish three types of reactions.

The *first* attitude, adopted by commercial producers of software and other digitalized products, consists in countering the free exercise of this capability. For that they have recourse to technical and official means. On the technical level, on the one hand, they introduce protections, sometimes very expensive, in the body of the products they work out, intended to prevent their free reproduction. In addition, they take profit of the obsolescence caused by the fast evolution of the software and the power of the processors, by multiplying the problems of incompatibility which make the old software

unusable. Capitalism creates voluntarily and artificially scarcity. On the official level, new laws and specialized forces of police are created to prohibit and repress the unauthorized reproduction of the digitalized products. The lawsuit and the prohibition of the Napster site, which allowed to obtain free copies of musical recordings from any place in the world, became a famous example of the struggle of capital to try to prevent that new distributive quality of the products which it creates do not turn over against its own logic.

The *second* attitude, symmetrical with the first, consists in making profit from illegal copy. It is not so much the case of the million teenagers who take from Internet their preferred musical pieces or of the private individuals who use "pirat" copies of Windows, but mainly the case of more and more numerous companies living of the sale of illegal copies of any kind of digitalized products.

The *third* attitude is that of the creators of "free software". Contrary to the preceding attitudes, it takes voluntarily its stand apart from the commercial relationships, endeavoring to get the most useful and creative profit from the enormous possibilities that are offered by the new technologies. It is an attitude which develops at the beginning in the research atmosphere of universities, aiming at a better efficiency. New technologies allow the immediate and free pooling of the products of the work of every one and the practice of new methods of co-operation for investigation and creation, among which the production of open and free software, better adapted and more powerful than those found in the market.

Some historians explain the emergence of this noncommercial state of mind by the influence of the student movements of the 1970s (period which saw the development the first networks of free software) especially in the United States, influenced by the opposition to the Vietnam war and by the opening to the anti-capitalist, community, libertarian ideas that developed in the campuses. This factor played certainly a role at the beginning, but it cannot explain the perseverance and the development of this attitude in the two following decades. Its vitality is rather explained by requirements of utility and effectiveness, founded on the daily observation that the possibilities of new technologies can be fully used only while turning the back on the commercial, national and hierarchical logic of capitalism.

At the beginning of the 1990s, the initial version of Linux appears, the first free software which was to know a significant diffusion. Shortly after the collapse of the USSR, whereas Western propaganda claims the final victory of the commercial laws ("the end of History", they say) a team of "hackers" (3) around the young Finnish Linus Torvalds, shows in practice that the greatest co-operation and economic creative effectiveness can be obtained without commercial laws, nor control of the State. Admittedly, Linux is for the moment one of the only free software which starts to be known and whose use spreads, but it is significant that the main commercial software which it is able to replace is Microsoft Windows, the most widespread software in the world, produced by the society created by the person who became, thanks to it, "the richest man of the planet".

The approach of the free creators of software, even if it is still extremely small in its achievements, constitutes a first example of noncommercial behavior within capitalism.

As a matter of fact, the revolutionary faculty of the proletariat, just like the bourgeoisie's in its time, depends on the capability to foresee the contours of what the new society could be.

Marx speaks about the need that the productive forces "are developed enough in the bourgeoisie itself to allow a glimpse of the necessary material conditions for the emancipation of the proletariat and the formation of a new society." (4) And in the famous Foreword to the Critic of political economy, he writes: "never higher relationships of production are set up before the material conditions of their existence were hatched within the old society. This is why humanity never proposes but the tasks that it can fill: with better considering the things, one will always see that the task emerges where the material conditions of its realization are already formed or are in the process of being created." (5) Marx is cautious while specifying: "or are in the process of being created", rightfully so, since, as we mentioned before, he had doubts about the degree of maturity of the historical conditions in his own time. But, he is right to emphasize the need, for the development of the revolutionary class-

consciousness, for the capability of "humanity" to try to build a noncommercial society, that it can consider in the reality the possibility of its realization.

Since Marx, the history of capitalism has multiplied in front of the eyes of humanity, and, first of all, of the exploited classes, the practical demonstrations of the *need* for going beyond this mode of production capable of Auschwitz, Hiroshima or Rwanda. But, on the other hand, it has provided only few elements showing the *possibility* of this upheaval, which would make possible to make a good use of the gigantic productive forces created by mad capitalism. The example of the Stalinist countries and the generalized lie, which qualified them as communists, has been harmful to the conscience of this possibility, during their existence and after their collapse.

This is why, the example provided by the free software, this germ of noncommercial economy at the heart of the most modern capitalism, even if it is still microscopic today, constitute and will constitute an element of force in the development of the proletariat's revolutionary conscience and capability. It is the same for the perspectives opened to «associated work» (considered by RGF, with reason, as one of the conditions of the possibility of communism), by the generalization of Internet, which makes possible a society able to function consciously, universally and instantaneously associated.

Free software and capitalism

What are the chances of development of free software?

The development of free software poses new problems to capital. First, there are the difficulties for the producer-salesmen of software, confronted with a competition impossible to fight neither on the level of prices, nor on the level of quality (6).

There is then the impossibility of legally repressing the development of this software since they escape the commercial legal framework... except prohibiting Internet.

Lastly, there is the problem arising from the fall of costs which their use implies for the companies which have recourse to and which are thus favored vis-a-vis their competitors. One can then witness the strange dialectics that leads the merchants to resort to the product of the opposite logic to be more powerful merchants.

Thus for example, IBM manufactures and sells host computers especially designed to function with the free software Linux, and makes even an advertising argument of it: "the software costs almost nothing". In the same way, part of the French public administration decided to generalize the recourse to Linux for its data-processing installations.

Analogies can be found with aspects of the historical periods when the development of a new mode of production took place within the old society. In the last centuries of the Roman Empire, primarily based on the slave mode of production, one could assist to the development of the colonus-system [colonat, in French], an early form of feudalism: an increasing part of the ruling class, of which the State itself, frees its slaves and places them on its lands as tenant farmers. Even if these new "free" men remain attached to the land they work on and are sold with it, they become exploited according to new social relationships, different and opposed to old ones. The relations between the two modes of production were not always easy, in particular at the level of tax collection, but the ruling class was irreversibly forced to resort more and more to the colonus-system, so much the labor productivity of the coloni was higher than that of the slaves. The relations between incipient capitalism and feudalism, within which it developed, knew also dialectics made of wars and of co-operation during centuries, until the bourgeois political revolutions marked the final triumph of capitalism, carried by the enormous increase in the labor productivity that its form of organization involved.

It might seem hazardous to make a parallel between these historical transitions and the current situation between capitalism and the microscopic noncommercial sector that develops within it. What is here at stake is not a relation between two modes of exploitation, but between the most accomplished mode of exploitation and the end of exploitation. However, in this case, as in the past, there is a phenomenon which sees the ruling class of the old system being forced to have recourse to products of a mode of production which is antagonistic to its own.

Technical progress and class struggle

RGF writes: *"It would be an error to think that technique will bring, by itself, radical social changes. It does nothing but create an increasingly higher level of labor productivity. To go beyond, as Bordiga said it: 'another social war is necessary, led by the material force of men fighting against other men, classes fighting against other classes' "*

It is useless to oppose in an exclusive way the will of men and the evolution of their techniques. The men who discovered fire and those who use computers are not the same ones.

Even if they are powerful, software are never but instruments used by men. Their influence on the forms of social life depends primarily on the men who create them and use them. What one can foresee is, first, that the place in the economic and social life of these freely reproducible goods can only go increasing; second, that this development will constitute a practical challenge, a new contradiction in the kingdom of the commercial, capitalist laws (7). It is the revolt of the productive forces against the relationships of production that generated them. But, this revolt will succeed and become effective only by the action of the main productive force, the social class which does not benefit from the commercial relationships but undergoes them in the form of exploitation and of alienation, the proletariat. The technological revolution in progress, as it will induce an industrial revolution, will bring new weapons to him.

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Notes

1. The word industry is more and more used today to speak about the activity of sectors considered in theory as services: industry of tourism, of restoration, of communications, which translates the "massification" of these and the proletarianization of their trades.

2. In a letter to Engels of October 8, 1858, Marx expresses his doubts: "The true mission of the bourgeois society, is to create the world market, at least in its broad outline, as well as a production conditioned by the world market. As the world is round, this mission seems completed since the colonization of California and Australia and the opening of Japan and China. For us the difficult question is this: on the continent, the revolution is imminent and will take a socialist character immediately, but won't it be inevitably choked in this small corner, since, on a much larger ground, the movement of the bourgeois society is still in its ascending phase?" ["Translated' by me from French]. Thirty-seven years later, Engels, in the introduction to the Class Struggles in France, wrote: "History showed that we were wrong, we and those who thought in a similar way. It showed clearly that the state of the economic development on the continent was then far away from being mature for the abolition of the capitalist production; it was proved by the economic revolution which, since 1848, gained all the continent and which, only at this time [1895!], truly allowed the existence of large-scale industry in France, in Austria, in Hungary, in Poland and lately in Russia, and really made of Germany an industrialized country of first order - all that was made on a capitalist basis, i.e. very capable of extension in 1848." ["Translated' from French].

3. The word "hacker" is often incorrectly used to designate only the programmers who enter through Internet into the processing systems of large companies or institutions to scuttle or taunt them. Actually, in the language of this milieu, the latter are «crackers», «hacker» being a term much more general indicating all those of the programmers impassioned by the creation of software and the most thorough use of the data-processing potentialities. See The Hacker Ethics and the Spirit of the Era of Information, by Pekka Himanen.

4. Misery of Philosophy, chapter II.

6. The development of free software based on the world-wide co-operation of voluntary programmers, simply eager to contribute their share to a collective task useful for the community (and probably to be recognized by their peers), leads to technical results of an exceptional quality. Linux is becoming a masterpiece of data processing, in perpetual improvement.

7. The increase in productivity, induced by the integration of new technologies to the production process, exacerbates the main contradictions which characterize capitalism: the difficulty of generating the solvent outlets necessary to the always increasing flow of production, allowed by the developing labor productivity; the downward trend of the rate of profit, caused by the reduction, in the production process, of the share of alive work, only source of surplus-value, at the expense of the share of the machines and other means of production.