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Freeman, Alan

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The Poverty of Nations

Alan Freeman

The University of Greenwich

www.iwgv.org

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ABSTRACT

This paper assesses two linked problems. First: why, despite unceasing technical advance, do growing poverty and misery reign in most of the world? Second, why did the entry of the USSR and other Eastern countries into the market produce a catastrophic collapse in standards of living and welfare, and an unparalleled crisis in all aspects of production and political life?

The paper explains the role played by productivity differentials between different parts of the world, and how they are sustained dynamically. This is a positive feedback process. The surplus profit arising from these productivity differentials is re-invested in the higher productivity countries, permitting them to maintain and extend this gain, resulting in a secular rise in differences between national output capacities, over a very long period of time.

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The Poverty of Nations

Technical Change and Accumulation in the Modern Global Market

Alan Freeman November 1995

'Bourgeois society reproduces in its own form everything against which it had fought in feudal or absolutist form' – Marx, *Theories of Surplus Value I*, p175

TECHNICAL PROGRESS AND SOCIAL REGRESSION: THE PROBLEM POSED

The world today confronts two vast and indissolubly-linked problems. First: why, despite unceasing technical advance, do growing poverty and misery reign in most of the world? Second, why has the entry of the USSR and other Eastern countries into the market, contrary to what the experts predicted, led to a catastrophic collapse in standards of living and welfare, and an unparalleled crisis in all aspects of production and political life?

These two problems, whose solution concerns all beings on the planet, reduce to the following: how is it that technical progress, which for the first time makes it *physically* possible to liberate human beings from subjection to Nature, not only maintains but produces and reproduces *social* regression and deprivation?

A FIRST STEP IN THE SOLUTION

Consider two firms making the same good, the second using a more efficient, and hence less costly technique. Neither marxism nor the most prejudiced orthodoxy can deny that it makes more profit than the first, because it pays less to produce a good which sells for the same price.

Hence if new producers arrive on the market, raise the volume of goods found there, and so cause prices to fall, then existing producers will experience a loss, a diminution of their own profits in comparison with earlier times. However prices do not fall so low as they would in the absence of the older, less productive firms, and so the new producers realise a higher than average profit which they experience as a gain.

The first beneficiaries of a new technology always realise a higher profit, which persists as long as there are both backward and advanced producers of the same good in the same market. This, they experience as a temporary gain or windfall – a surplus profit.

Moreover the losses are indissociable from the gains. One could not take place without the other. There exists, therefore, at least empirical justification for speaking of a transfer from one to the other. Where we find systematic, unilateral transfers we find also the material basis for inequality. If, moreover, we find that this system of transfers – losses by one party and gains by the other – is neither transitory nor accidental but endemic and self-perpetuating, then we should surely ask if this chronic condition is an aspect of a global market.

Orthodox political economy does not speak of such transfers and does not even have the words to do so. Its justification is as characteristic as peculiar: it declares that they cannot exist. It excludes them from the rational world, and ends up demonising them. Convinced that the market incarnates perfection, besotted by the idea that perfection is equilibrium, it must designate a situation of disequilibrium – such as the coexistence of two technologies or two profit rates – as either transitory and hence marginal, or an anomaly imposed by exceptional, exogenous and probably malign circumstance. If one rummages in the literature, this discussion is found buried alongside rent, monopoly, externalities, 'income effects', adjustment processes, and so on; anywhere but so-called 'perfect competition'.

This implies that the 'cause' of inequality, of any kind, is never the market as such, but always a violation of its divine law. The real world acquires the fantastic aspect of a never-ending journey towards an undefined destiny which is proclaimed the true reality. This brings orthodoxy to the grotesque, manifestly false and quasi-religious idea that the poverty of billions of people, of mass death, of a planet made up of two worlds, is never part of the sacred plans of the Gods of the market, but the result of unforeseen imperfections: either historical 'backwardness' or 'underdevelopment', or outside interference – by communists, tyrants, drug barons, fundamentalists, trades unions – or indeed because of the historical and genetic incompetence of certain peoples.

Faced with the terminal failure of economics to explain a level of inequality and poverty in the world which defies imagination, ideas of this last type are queueing at the door of respectable science; 'genetic' explanations of psychology, of deprivation, of educational attainment and poverty. Why are people rich? because they are

gifted. Why do others die? because they were born to. This eugenics in modern dress leads directly to the old 'scientific' conceptions of the Nazis.

Pioneers such as Amin, Gunder-Frank, Emmanuel and Palloix have pointed the way to the alternative explanation that the market itself generates inequality and poverty. However the subject of most such work is historical, concerning a world already divided into apparently advanced and apparently backward countries. Their contribution has been to show how capitalism perpetuates such inequality. We propose one small further step; to prove that capitalism creates the inequality *regardless* of historical circumstance. The latter determines *who* is rich and *who* is poor just as accidents of birth determine who is a worker and who is a capitalist; but history is no longer the primary cause poverty itself, just as birth is not the primary cause of workers.

When Marx speaks of rent or money, which exist in both archaic and modern forms, it is striking that he initially abstracts from the survivals of former periods of history, and takes as his initial assumption a world completely dominated by capitalism, in which commodity production is universal. There is good reason for this; he rightly seeks to avoid attributing any effect of the market itself to external or non-market phenomena.

We will apply the same method to technical change; this article studies not the movement from precapitalist to capitalist economies but the effects of technical change in a *pure* capitalist economy; a world which, in fact, more closely resembles the world of today than any previous phase of society, namely a global capitalist economy.

This is required. The most tragic illusion of recent times is the idea that the market is the antidote to inequality, poverty and war. And if indeed the cause of inequality is external to the market, then the solution is to remove the external disturbance, not the market. But the market itself is the *cause* of inequality. To show this, though many other factors play a role, we first abstract from them. By showing that, even assuming no external disturbance, *nevertheless* growing inequality is a necessary product of technical advance in a market economy, we show most clearly both its root cause, and the necessary treatment.

SURPLUS VALUE, SURPLUS PROFIT AND THE ROOTS OF INEQUALITY

Any change in price, in a society where money functions as a universal means of purchase, implies a system of gains and losses. If I buy cotton for \$10 and you buy wool for \$10, and if my cotton falls to \$5 while yours rises to \$15, then I have lost \$5 and you have gained the same amount. The market has transferred \$5 from me to you as surely as if we both began with \$10 in money and you violently deprived me of half my treasure. The first step in understanding is to quantify these gains and losses.

VALUE

When there is a price change, what exactly passes from one hand to another? Normally it is *not* simply money, and nor is it goods or services – 'use values' as Marx terms them. In the case discussed above, no actual trading takes place. My loss is provoked entirely by a fall in price, just like losses on the Stock Exchange. What is lost or gained is an abstract purchasing power, a capacity to benefit from the creations of humans in general by buying them. This 'something' is value.

In fact no economist denies this. It is a hidden truth, a horrible professional secret not discussed in front of children. Every economist admits that *behind* prices lurks something frightful: 'reality'. The statisticians calculate indexes to explain that the purchasing power of money has changed with inflation, and carefully instruct us that the 'real value' of the dollar or the point is what it buys. One of the most rigorous foundational works of modern economic thought, by Gerard Debreu, is simply called 'The Theory of Value'. The basis of all subsequent polemics against Marx, by the German economist Böhm-Bawerk, was entitled 'Value and Price'. In spite of the chill which the very idea of Value provokes in the heart of the orthodox economists, none of them can deny it exists or they would be like physicists deprived of the concepts of space and time, or biologists deprived of Life.

The debate between economists does not concern the existence of value but its origin and magnitude. There is no need to go further except for one sole reasonable point, which goes to the heart of the matter. I propose only that if \$1 represents a certain quantity of value, then \$2 represents twice as much: that is, that money functions

at any given moment as a *measure* of value.¹ If this is accepted we can measure the transfers provoked by a system of exchanges in money terms.²

Although I do not share the view that money is a *sufficient* measure of value, I prefer to leave this point here, on the one hand because it does suffice to uncover the vital part of the truth which concerns us, and on the other because it serves to establish the ideological character of the orthodox vision. There is wide acceptance of money as a measure at least of distribution; what conclusions flow from this agreement?

SURPLUS VALUE AND SURPLUS PROFIT

To fix our ideas more clearly, consider two entrepreneurs making computers of essentially the same power and functionality, which serve to represent a technically advanced product. Suppose that producer P1 pays \$10,000 for raw materials and \$4,000 in wages, and suppose she produces 10 computers. Suppose that producer P2 could, with the same amounts of money, produce 20 computers. But suppose that having a limited capital, he makes only 5 computers with \$2,500 in raw materials, spending \$1,000 in wages. There are now 15 computers on the market, which we assume sell for a total of \$22,500. Finally suppose wages are the same everywhere to avoid secondary complications.

Let us now compare the situation before and after production. Before, there was \$10,000 in raw materials in P1's hands, and \$2,500 in P2's hands: a total of \$12,500. After production, there are only computers and they are worth \$22,500. Thanks to the workers' activities, total value has risen by \$10,000: that is, they have *added* this value. If orthodoxy wishes to deny this, could it please stop charging us Tax on this Value Added.

The workers received \$5,000. So for each \$1 received by an average worker, she or he creates a sum of value worth \$2. The workers' average capacity for creating value, which Marx calls the 'value-product' (*Wertprodukt*) is hence \$2 for each \$1 in wages, so that for each \$1 in wages a further \$1 – \$5,000 in all – is available for the producers. Marx terms this surplus value.

This can, if we choose, be expressed in time instead of dollars. If \$10 is the average cost of an hour's work then each such hour creates \$20. Or, the value of money remaining constant, each average hour costs an amount of value which could have been created with half-an-hour of average labour.

I do not deny the importance of this, but I won't dwell on it, both to avoid irrelevant objections and because the same argument can be put – as Marx generally does – as easily with value measured in money as with value measured in time.

Whether in money or time, the proportion of this new value which each producer appropriates is different. Each computer sells for the same, average, price. Since there are a total of 15 computers this comes to \$22,500/15 = \$1,500 per computer. Producer P1, who sells ten of them, receives \$15,000 of the gross revenue and P2 receives the rest, namely \$7,500. Since P2's raw material costs were \$2,500 it appears that the P2 workers added \$5,000. P1's raw material costs were \$10,000 so it appears that the P1 workers – who are four times as numerous, let us remember – also added \$5,000. Apparently, therefore, each P2 worker produces four times as much value as each P1 worker. Moreover the owner of the more efficient technique realises a profit of \$4,000, four times higher than his rival who secures a miserable \$1,000.

The reality is that P2 enjoys a *surplus profit*, a technological rent, due to his temporary monopoly in a new technology. His ownership of a part of human knowledge, incarnated in his machines, lets him seize a disproportionate share of the value created elsewhere, and concentrate it in his hands. Moreover his gain is linked to the other's loss. The same process which enriches him, augmenting his capital and with it the use of the new technique, deprives the others in the same sector of the same benefits. Progress trails poverty in its wake or, to put it the other way round, poverty nourishes progress.

From the point of view of the individual producers, it seems as if the poor P1 workers are four times as productive as those of the fortunate P2. This calculation obscures the reality that the difference is not the responsibility of P1's lax workers but the old machines they work on. It is a consequence of *distribution*, not *production*. No question here of complex versus simple, or skilled versus unskilled labour; this is the same work carried out by the same workers with the same level of skill and the same intelligence. The *only*

¹ See Freeman (1995), Freeman and Carchedi (1995). My debt to Rodriguez (1995) cannot be overstated. See also Salama, de Brunhoff, Duménil, Lipietz and Foley.

² There is however no general agreement on the changes in distribution provoked by monetary inflation or deflation, that is, changes in the value of money. I will not deal here with this important question and will assume (with Marx) that the value of money remains constant.

difference is the technology. Nor does the organic composition of capital, which is the same in the two cases, or even the neoclassical ratio between 'quantity of capital' and 'quantity of labour' enter the matter. The differences result from the different productivities of the two sets of machines; end of story.

This reality impedes neither P1's efforts to cut her workers' wages to recover the same profit rate as her rivals, nor the efforts of the theoreticians to explain that the *workers* must redouble their efforts to emulate their sisters and brothers if they wish to reverse their misfortune.

This is a fetishism, and a very powerful one. It *appears* that differences between factories, regions and nations are due to the differences between the intrinsic productive capacity of their workers. But without changing a single attribute of the labour force, a redistribution of capital and technology would change everything. Now capital and technology are human products. Therefore, if the different workforces display different productivities, the original cause is the different distribution of these human products, not a pre-existing difference in gifts of Nature such as intelligence or will. And if we wish to change the human condition, it is hence to the distribution of human products, not human characteristics, that we must look. Otherwise we will see everything as the reverse of what it really is.

Though there may be differences between young and old workers, women and men, strong and weak, one can only understand the source of inequality in the receipt of the benefits of human activity on the basis of the assumption that, to borrow a phrase 'all humans are created equal'. One must make abstraction, as do both Ricardo and Marx, from these differences, assuming that their impact is already accounted for *before* they reach the market by the process of value formation, by the very fact that the entrepreneur has a free choice between these different people. It is not possible for an entrepreneur to acquire a permanent monopoly in a particularly strong, active or gifted type of person for the simple reason that her or his rivals have the same purchasing power on the same labour market and can simply buy their own equivalents. But it *is*, as we shall show, possible for a definite group of entrepreneurs to acquire a permanent monopoly in the advantages of particular techniques.³

To put it in its simplest form: explaining *inequality* requires a prior definition of what is *equal*. Just as one needs a unit of equal measure to distinguish between long and short, just as one needs units of equal weight to distinguish heavy from light, one must first state what is equal between humans at the outset in order even to describe, let alone measure, what is unequal between them at the finish.⁴ In a world where anyone can make anything by pushing a button, inequality is not a function of the length of the finger but the distance to the button.

THE WINGS OF THE OWL OF MINERVA: SUPERPROFIT AND INTELLECTUAL PROPERTY

There is, however, a problem. Apparently P1 can easily change the situation: all she needs is capital and technology. On this basis orthodox theory, rooted in equilibrium, ignores the problem we have raised. New technology is treated as diffusing so rapidly that such differences can be ignored or treated as temporary. How can it then be that certain producers, and certain workers – in fact the great majority on the planet – *never* seem to overcome this inequality?

³ Hence, if there are differences in skills or specialisation between workers of different countries, they are the *a posteriori* result of the distribution of the sums of value which bought the education which produces these differences, and do not reflect any intrinsic difference prior to this education. If an employer pays \$1,000 to train a worker on a machine and as a result makes her twice as productive, it is exactly as if the employer invested in software to the same effect. The only difference is that the worker carries this knowledge with her when she leaves the factory; capitalism has not yet separated the worker from the *mental* means of production. But as we shall see, this is changing.

⁴ 'The basis of value is the fact that human beings relate to each other's labour as equal, and general, and in this form social, labour. This is an abstraction, like all human thought, and social relations exist among human beings only to the extent that they think, and possess this power of abstraction from sensuous individuality and contingency. The kind of political economist who attacks the determination of value by labour time on the ground that the work performed by 2 individuals during the same time is not *absolutely equal* (although in the same trade), doesn't yet know what distinguishes human social relations from relations between animals. He is a beast. As beasts, the same fellows then also have no difficulty in overlooking the fact that no two use values are absolutely identical...and even less difficulty in judging use values, which have no common measure whatsoever, as exchange values according to their degree of utility.' Marx (1988) p 232.

Recall that the differences in question result from the distribution of two human products – capital and technology. At first sight there is no limit on the diffusion of technology since it is, at root, a form of knowledge, and once known to even one person should in principle be rapidly learned by others. But we should never forget that to become a force of production, a new technique must first be incarnated in a machine. Technique only exists, in the modern market, in the form of capital, where it is imprisoned like a half-formed Michelangelo.⁵

But the production of capital certainly *is* limited, not least by the quantity of capital goods produced in a given period of time, and above all by the quantity of new labour required to produce these goods. Moreover the *use* of capital is limited to its owners. The unequal distribution of technology cannot, therefore, be dissociated from the unequal distribution of capital.

The proof lies in a kind of revolution unfolding before our eyes; the universal introduction of intellectual property. For the first time, forms of knowledge exist such as software and genetic engineering which have escaped the physical limits of this or that particular machine. In a certain sense these forms of knowledge can replicate themselves unaided, in that their cost of reproduction is almost nothing. Their association with money and hence capital has been stretched to breaking point.

The response has been in my view profoundly reactionary. I know the software industry is full of nice guys who want to help the world, that missiles are only boys' toys, and so on. But what counts is the logic of the games they play. For the first time since Metternich, it is a crime to share information. There are associations and crack police teams who can enter any house or company in search of forbidden information and jail people for having it. In negotiations on 'free' trade, point number one is the *restriction* of information flow. Cryptology, the key to all this, has become a *military* secret. In France it is a crime against the state to pass it on. The US creator of one of the best shareware privacy schemes in existence had the guts to distribute it free throughout the world just before the US government ruled it a crime to do so. Now pursued retrospectively, he faces ten years in jail for passing out free information.

The object of this arsenal of laws is to tear the wings from the owl of Minerva. Its function is to maintain by social means the entrepreneur's hitherto physically-guaranteed monopoly of special technology, which had reached the point of taking the air on its own.

Why? To maintain the pre-existing relation between knowledge and capital, through which the introduction of a new technology itself furnishes a source of surplus profit – a larger-than-normal proportion of surplus value and hence human labour – which in turn provides the basis for the advance of the new technology, in step with and inseparable from the growth of the capital which deploys it.

Here lies the key to the entire movement. If the process of technological diffusion *itself* deprives the 'backward' countries of the capital they require to deploy the new technology, or at least slows their acquisition of it to the point where it is always bypassed by yet newer technology before they have reaped its benefits, then these countries will *never* catch up.

RELATIVE SURPLUS VALUE, INTELLECTUAL PROPERTY, AND PERMANENT SUPERPROFIT

Two fundamental obstacles prevent us understanding how this process can become society's normal law of motion.

1) Although the introduction of a new technique in any given sector impoverishes the other producers in the same sector, this cannot be the case for their clients. Consider a third producer P3, who buys computers and makes, let us say for simplicity, silicon. Suppose moreover that this requires 10 computers. When there was no P2, assuming the value-creating capacity of an average worker to be the same, P1 produced all 10 of these computers for a total of \$18,000 and this was what P3 paid for them each year. But once P2 arrives, the price

⁵ 'Just as machinery is described here as the "master's machinery", and its function is described as *his* function in the *production process* (the business of production), so equally is this true for the *scientific knowledge* which is embodied in this machinery, or in the methods of producing, chemical processes, etc. Science appears as a *potentially alien* to labour, *hostile* to it and *dominant* over it, and its application – on the one hand concentration and on the other hand the development into a science of the knowledge, observation and craft secrets obtained by experience and handed down traditionally, for the purpose of analyzing the production process to allow the application of the natural sciences to the material production process – this, the application of science, rests entirely on the separation of the intellectual potentialities of the process from the knowledge, understanding and skill of the individual worker.' Marx (1994) p34

(and value) falls to \$15,000. This is as if P3 had herself installed a kind of new technology, and without having to lift a finger. Can she not reap the benefits? This is the process which Marx describes as the *production of relative surplus value*, an entire stage of history in which the capitalist class takes over and organises the whole of society, including science, accumulating at ever-higher rates by raising productivity through a succession of technical revolutions. This is normally presented as wholly progressive,⁶ because it seems to reduce without limit the human effort necessary to create any given use value.

2) Once the new technique is installed, P2 is himself compelled to use technology which now begins aging. The door is open to his competitors to do to him what he just did to them. His claim on a piece of human knowledge congealed in steel and concrete, his competitive advantage ebbs away as other and better rivals steal their own march on him. In other words his advantage is temporary; it is limited in time, unlike the permanent monopoly which derives for example from the ownership of the earth.

We will deal with the first point later. But first consider the second objection. The error is as follows: just as a species does not vanish when particular individuals die, nor rivers run dry because their water passes into the sea, the existence of superprofit in general does not depend on any particular source of it. Although the possession of a particular new process is temporary, it is perfectly possible to renew the source of superprofit provided the innovator can always introduce the next innovation before his or her rivals. This is the secret of Microsoft's billions. Superprofit *in general* exists as long as there is technical progress, just as rivers last as long as there is rain. The real question is: where does this superprofit accumulate? Where does it go and how is it used? Where are its wellsprings, its falls and its lakes? What is its general law of motion in a global market economy?

If there were an unlimited supply of capital, the whole world could immediately adopt each new technique the moment it entered the general pool of human knowledge. But as we have already noted, the diffusion of technology is limited by the diffusion of capital. Hence there will *always* be old and new technology side by side, because new techniques can only advance as quickly as the factories which use them are produced.

But this means an 'exceptional' proportion of surplus value will always be appropriated by innovators properly organised, and the rest will always be correspondingly deprived. It is neither the fault of P1's workers, who do not have the machines to produce like P2's, nor even the owner herself. It is the fault of the universe. It is the fault of reality, or to be precise, market reality. Progress itself, with its continuous revolutions in productivity, is in a global market the root of a permanent source of superprofit. The question is to understand how it can be that the beneficiaries are always the same group of people.

UNEQUAL EXCHANGE IN THE MODERN WORLD

Is there empirically, in reality, a visible permanent monopoly of the means of technical progress? The accumulated evidence of two centuries of 'progress' is absolutely clear. The existence of a group of nations with exclusive disposition of all the most advanced technology is almost beyond dispute – the most powerful symbols being nuclear weapons and air power and the most decisive indicators being means of communication and information technology. On the world scale, it is clear that the almost unthinkable differences between the life and well-being of the different peoples of the world reflect equally immense divergences between the technologies they dispose of.

A grotesque social experiment has in effect been conducted. We have lived through a century which has tested to completion the theory that the differences between nations are due solely to historic and cultural differences, that each nation has the same chance of escaping poverty and that it is only by chance are there rich and poor in the world. By the 1950s it was already clear that the *technical* means to feed, clothe and house the people of the whole world to a decent and human standard existed; that the only true obstacle to universal liberation from the tyranny of Nature was humans themselves. Forty years later this is doubly, trebly, probably quadruply so. There is almost no question that growth in productivity has outstripped the growth in population. If, then, the problem was merely technical the end of history would indeed be in sight and we would truly be on the verge of a garden of Eden of our own manufacture.

But this is not so. Indeed the latest act of this process is neither discreet nor peaceful. We see that almost the only countries which escaped the process of impoverishment are those which to a greater or lesser extent escaped for a time the world market, namely the USSR, China, Eastern Europe, and Cuba.

⁶ Though not by Marx

China is the exception that proves the rule. The one country that has decisively *rejected* the IMF globalisation plan has undergone the most startling growth. Whatever its *political régime*, China's *economic* policy is a very long distance from simply appending itself to the global market. State property remains at 53%, collective property amounts to 36%, and with foreign investment at 5.7% individually-owned capitalist enterprises cover only 5% of the total. Price controls were used to maintain both a strong internal market and accumulation in the countryside, and state-monitored joint venture policy was directed to ensuring a technology transfer into, instead of out of, the country. Vietnam, which is effectively applying the Chinese model, now has a growth rate of 8% with a growing state sector. And the Cuban economic reform has provided a vital breathing space for its people. These temporary measures do not eliminate the political and social strains caused by an opening to the world market – this was never an option anyway – but they provide a graphic counterexample to the globalisation thesis.

For the rest the effect of a return to the world market has been a violent leap backwards. The possibility for Russia to develop in the world market does not exist. What we see now is simply an attempt by military and economic violence to deprive these peoples of every possibility they have acquired outside the market to end the misery into which the Third World has been plunged.

As for the Third World itself, the facts are the following: the nations which entered the century as economic victors are almost the same as those that entered it, with no losses and the sole addition of Japan and a number of peripheral countries of Europe and Asia, significant economically but in population terms a tiny minority. As for the rest: according to the World Bank by 1987 the poorest country in the world (Mozambique) was already 141 times poorer than the USA. That is to say – and the phenomenon is perfectly general – inequality is much larger by a factor of between 2 and 3, than under the Victorians.⁷ We now see that the proportion of the world population living in the so-called 'advanced' countries is smaller than at the beginning of the century.

We now see, for the first time in history, the systematic massacre of entire peoples by hunger provoked not by Nature but by the Market.⁸

We now see such inventions as corn which cannot reproduce, whose genetically-manipulated seeds must be reconstituted annually in the laboratories of the North. This would turn every country that fails to cover its costs into an immense concentration camp whose inhabitants have nothing left but to die under the sign 'here lie those who could not pay'. There is no technical justification for this. This seed was created solely to secure for its producers their 'just returns': their technological rent. Leave aside the indescribable prospect of a harvest failure in the very small number of countries producing this seed, even if the thing works it must surely count as the ultimate negation of Nature; a world which can no longer reproduce itself.

And finally we now see a return to 1914: the systematic use of the military power of the rich nations to impose their divine right to rule. Everywhere air power, accompanied by the missile – the most powerful known combination of intelligence and machine – has become the only actual law. It is only a question of time before nuclear weapons become an 'acceptable' arm of progress. The sun is coming to earth; welcome to the third millennium of Jesus Christ.

What is the essence of this new division of the world in the making, this New World Order of the third millennium? It is no longer a division between those who have attained the market and those who have not. It is no longer possible to speak of a division between 'civilised' and 'barbaric' peoples. Now we have only civilised barbarism or barbaric civilisation. We face a division between those who possess advanced technology – that is, capital – and those who do not. Today not History but Technocapital – the fearsome marriage of money and knowledge – is the difference between rich and poor, oppressor and oppressed, master and slave, victor and vanquished. It has become the fifth horseman of the apocalypse.

And this leads to our central question: are these technological and social divisions an *exception* to the globalisation of the market, a historical drag imposed by the backwardness of most of the world, which has

⁷ See particularly *The Rise of World Poverty*, Socialist Economic Bulletin #3, December 1990, available from Ken Livingstone, MP, House of Commons, Westminster, London SW1.

⁸ With one exception. Between 1840 and 1850 one third of the Irish population disappeared. 'The Hunger' lives on today in the memory of a people whose only crime was to live next to the world's first capitalist power, a power whose wealth would have sufficed to feed them twice times over without significant hardship. Ireland's president was the only Western head of state to visit Somalia, though the civilised nations were only too anxious to send their soldiers.

only to await passively for progress to reach it? Or are they the *product*, a decisive component, of the process of technical change under a global market?

AN OLD QUESTION IN NEW BOTTLES: TIME AND FIXED CAPITAL

As far as I know, unequal exchange has been discussed until now as a simultaneous, synchronic process, a transfer between producers at two points in space but one point in time.⁹ Above we spoke of two producers making the *same* computer at the *same* time. But let us pose the following question. What happens if P1 makes her computers *before* P2? That is to say, can there be a diachronic, non-simultaneous process of unequal exchange?

From the point of view of an integrated market, there is no operational difference between a computer made today and the same computer made yesterday. If, for example, P1's ten costly computers are made in 1994 and P2's five cheaper computers in 1995, but all are sold at the same time in 1995, then nothing essential changes in the analysis and there will be a unified total price of \$22,500 of which producer P1 receives \$15,000 and P2 \$7,500 as before. The same relations of distribution hold.

This means, as Marx suggests in chapter 6 of the third Volume of *Capital*, that *stocks* of any good count in circulation as if they were produced at the same time as currently-manufactured goods. Indeed, circulation cannot discriminate between old and new goods as long as they are of the same type. Frozen beef from last year's larders, and frozen beef from newly-killed cattle, are both just dead meat and fetch the same price at the supermarkets. Even more so copper is just copper, steel is just steel, and so on; they do not carry their date of birth stamped on their atoms.

This holds whether the goods concerned remain unsold, so that the money is in the hands of the buyer and the product in the hands of the seller, or sold, so that the money is in the hands of the seller and the product in the hands of the buyer. If, for example, I buy ten tons of copper (or ten computers) for \$10,000 today and tomorrow their market price falls to \$5,000 then unless I have managed to use them up and sell the results, I suffer a loss of \$5,000. It makes no difference that I do not intend to resell them. They are still commodities in my possession and both the price of them and the value in them is still determined by the average price and value of all similar goods in existence.¹⁰ It is therefore pertinent to ask what happens if P1 succeeds in selling her computers *before* their price falls.

We are thus drawn to a development of value theory, suggested by the above, which other researchers and I consider key. We must ask how the existence of *fixed* capital, capital which lasts and is not immediately consumed, changes the analysis of superprofit and above all its distribution.

This leads us back to question 2 above. What relation is there between the *producers* of the technically-advanced products and their *clients*? Is this in fact as symmetrical as it seems at first sight? Do the benefits of technical progress pass equally to the producers and the consumers of advanced products? Let us deal with poor P3 under the assumption that she uses her computers up over two years. They hence form part of her fixed capital, half of which is replaced annually.

In this case, producer P1 realises all the value added by her workers, selling them to P3 before the fall in price (and value). Who then suffers the fall in value (and price)? It is P3. She pays P1 the price which reigns before P2 arrives, namely \$18,000. She begins production with ten computers, each worth (and costing) \$1,800. Half their value passes into the silicon and she finds herself with more silicon and less computer.

Now account for the fact that they have lost half their value through normal wear and tear. We could assume for simplicity that five computers break down through use, and that the others are in mint condition and are hence worth \$9,000. Or we could equally assume that there all ten remain but use half their usefulness and hence do as much work as five new computers of the same type; the argument is the same.

⁹ Space does not let me properly cite the small group of authors who have given some consideration to the issues discussed in this section, many informally or in unpublished comments. Geoff Kay in particular made an early published attempt to integrate the turnover time of capital into the relation between core and periphery. Carchedi also has paid special attention to this and Devine, Ernst, Kliman, Levy, and Perelman among others have looked at it also.

¹⁰ 'The definition of constant capital given above by no means excludes the possibility of a change of value in its elements. Suppose the price of cotton to be one day sixpence a pound, and the next day, in consequence of a failure of the cotton crop, a shilling a pound. Each pound of the cotton bought at sixpence, and worked up after the rise in value, transfers to the product a value of one shilling.' Marx (1970) p209

Suddenly P2 arrives with his cheap machines. What is the new situation? The number of computers on the market is again ten, that is the five in P3's hands and P2's five new computers. P3's computers do not cease having a price, and do not cease weighing on the market, just because they are currently engaged in production. If for example P3 went bankrupt, they would be sold second-hand, that is for a price which reflects the amount of use they have suffered, namely half the price of the original stock.

The quantity of *value* in the hands of the two parties is as follows: P3's computers are worth half what she paid, namely \$9,000, and P2's are worth their production price of \$4,500 (raw materials plus value added). But the market equalises out these two prices. The average value (price) of a computer is now $\$13,500/10 = \$1,350$. Hence just as when both sets of computers were newly produced – and from the point of view of the market there is no difference – the unit price of each computer falls to \$1,350. There has been a general devaluation of computers, to which there is no exception.

P3's stock *loses value*. P2's computers *gain value*. But as we have ascertained at the outset, if a single price change works to secure a gain for one party and a loss for another, then it effects a *transfer of value*, just as if P3 had produced the computers herself. Her computers were worth \$9,000 before the cursed P2 arrived and are now worth \$6,700, a loss of \$2,250. On the other hand P2 sells for \$6,700 computers whose total individual value is \$4,500, making a windfall profit of \$2,250. And there we have it. The process of technical change has transferred \$2,250 from P3 to P1.

But this is not the end of the matter. Suppose, which is in fact the case, that the producers P1 and P2 are not two separate firms but the *same* firm steadily raising its productivity. From the moment that the product persists in the hands of the purchaser in the form of fixed capital *there will be a systematic and unilateral transfer of the value produced by the purchasers towards the producers of advanced technological goods, to the extent and as long as productivity in the manufacture of these goods is rising and their value and price is therefore falling.*

But cannot P3 regain this lost surplus profit, since her raw materials, namely computers, are cheaper? Here we can see the essential asymmetry of the exchange and also the distinctive role which labour plays and the apologetic nature of the orthodox presentation. There are two sources of asymmetry. In the first place P3's costs have diminished, but because this is only constant capital (raw materials and machines), the value and price of her product also falls. The productivity of her labour force has not altered. The same number of workers make the same amount of silicon. She cannot secure any excess profit because she enjoys no technical advantage over either her rivals or her past incarnations. For P1, her secret identity as P2 unmasked, it is the productivity of labour which has changed. In the second place P1/P2 specialises in *fixed capital* goods which last longer, so that the relative weight of unused products in the hands of the purchasers is far greater and leads to a far greater volume in the transfer of value. The world falls into the hands of those who possess a monopoly of the means for augmenting the use-value productivity of labour, above all in the production of means of production and particularly fixed capital goods. But this is precisely the characteristic of the specialisation between North and South that we see in front of us today.

MORAL AND PHYSICAL DEPRECIATION

The social and human facts bear witness to the mechanism we have just described. But where is the economic evidence? Unequal exchange does not appear in the accounts. Is it imaginary? No, but we have to rummage around in the figures to find it.

What is depreciation? The US Magazine 'PC' recently carried the following advert: 'for sale, Cray computer. Price when new \$12,000,000. Will accept \$30,000 or nearest offer.' What does this mean: that it calculates 400 times slower than when it was new? No; physically it is probably almost the same computer. It has lost its *exchange value* faster than its *use value*. Its price has fallen, not its physical functionality. To put it the other way round, the fall in price does not measure physical exhaustion. Two facts lie abed between the same account sheets.

Marx makes a distinction between 'normal' depreciation, that is a loss of use value, and 'moral' depreciation (*Moralische Verschleiss*). Moral depreciation is the value lost by a good due to obsolescence, the replacement of the good on the market by other, cheaper goods of the same general type. This depreciation does not express any intrinsic loss of usefulness but the social results of an external process – technical progress.

Accountants normally assume that any productive good loses a proportion of its value each year. The life of a machine, estimated in this way, is typically five to seven years. But many machines last longer than seven years. This figure does not represent even the average physical life of a machine. It is the result of an

assessment of the impact of progress on value. Like the average rate of profit, this assessment enters general consciousness and is taken for an objective fact.

I submit this is a fetishism. Let us interrogate the accounts of the ungrateful P3 under the assumption that during the first year she pays her workers \$3,600. During this year half her ten computers stop functioning. Hence the value of the silicon she produces is the sum of this physically destroyed value, namely \$9,000, and the value added by the workers, namely \$7,200. The silicon is hence worth \$16,200 and we can suppose P3 sells it for this price (probably to P2) Her profit should surely be $\$16,200 - (\$9,000 + \$3,600) = \$3,600$. A little Volume I-style dialogue shows where the loss creeps in.

'You've forgotten something,' says the accountant, 'because you estimated your remaining computers in the accounts as if they were new. But they have depreciated by \$2,250 and you must make provision for this. Therefore your true profits are not \$3,600 because you must deduct this provision from them.'

'But they *are* new!' protests P3. 'They are still in their boxes! I already allowed for depreciation when I wrote off the five new machines I just binned.'

'Prudence,' says the accountant, as always. 'If you took these new machines to the market tomorrow you would only get \$6,750 for them. This is the cost of progress.'

'Let the others pay for their progress!' exclaims the enraged P3. "I have no intention of taking my computers to market. Your calculations have cut my profits to \$1,350!"

'Depreciation is the same for everyone,' explains the lugubrious accountant. 'You would be advised, if you wish to save the firm, to cut your salaries to stay competitive. If not I shall be obliged to tell the shareholders since if you go bankrupt it is they, not you, who will be standing in the market place with your computers.'

'They can screw themselves!'

'My dear, it is not my job to give political advice. But play with revolution and you risk losing *everything*. Calm down and I will pass you the name of a very accommodating arms merchant who just might be able to help you...'

But moral depreciation is not the same for everyone. There are always sectors in which the productivity of labour is advancing by leaps and bounds, and others which are stagnating. And these two types of sector occupy two geographically distinct locations. In the exchange between them the entrepreneurs of the 'slow-tech' sectors lose value more quickly than their rivals. This loss of value is quite simply disguised as a cost, which makes it appear as if the value added by the workers is less than it really is.

Hence P3's accounts should read like this:

Revenue (sales of silicon)	\$16,200
<i>less</i> Physical depreciation (loss of used computers)	\$9,000
= Value added	\$7,200
<i>less</i> wages	\$3,600
= Profit (=surplus value)	\$3,600
<i>less</i> Moral depreciation (transferred value)	\$2,250
= retained profit	\$1,350

But instead they read thus:

Revenue (sales of silicon)	\$16,200
<i>less</i> Physical depreciation (loss of used computers)	\$9,000
<i>less</i> Moral depreciation (transferred value)	\$2,250
= Value added	\$4,950
<i>less</i> wages	\$3,600
= Profit	\$1,350

It does not even call for Marxist terminology to explain what has happened. Moral depreciation is, in reality, a charge levied on the profits of P3 just like a tax. It is presented as a *cost*, as an extra cost of production. It is not a real cost of production but the social cost of progress.¹¹

THE EVIDENCE

There is ample empirical evidence. The countries of the third world and now of the East – not to mention the countless other countries forced to swallow the neoliberal pill – are falling into a bottomless pit. They confront a terrible choice because no sacrifice suffices to produce the advanced goods they need at competitive prices.

If they open the door to the world market – or if, as is increasingly the case, the door is violently kicked open – then the vital force of their country, that is the labour of its people, is bled without limit. Their labour, it seems, counts on the world market as twenty, ten, or five percent of the labour of the advanced countries. But the reality is that the world market drains them of eighty, ninety or ninety-five percent of their efforts. And in so doing it removes from them the sole means available to escape the permanent catastrophe which is the world market. Hence dependence, marginalisation, and misery.

But if they do not buy from abroad, both their producers and their consumers experience constant pressure from the world market since they are forced to expend more labour to obtain the same goods, driving parts of the population to use the nation's money to buy foreign goods, that is to exchange the labour of their sisters and brothers against a far lower quantity of foreign labour. If they cannot do this legally, they seek whatever outlet they can find. Hence comprador parties and even regions, collaborationists, Mafiosi, corruption and all the bureaucratic phenomena which accompany black market operations in a controlled market. It is on this economic lever that the political weight of the imperialist powers is applied to prize apart the political structure of nations resisting the onset of the market, and indeed even the nations themselves.

The characteristic political consequence of the economic advance of advanced capital is thus the political disintegration of communities scrabbling for a tiny share of the pitifully inadequate crumbs from the table of the great powers. This is always portrayed as a consequence of backwardness: 'tribalism', 'communalism', 'religious fundamentalism' or 'ethnicity'; but it is in fact the political consequence of globalisation. From Arabia to Africa to South America to China, from Russia to India to Yugoslavia, the history of capital penetration has always been a history of political disintegration provoked by assiduously-cultivated regional conflicts. The *economic* basis for these conflicts, as the most recent chapter of imperialism shows, is not the historical backwardness of the peoples involved but the law of motion of capital's most advanced product, technocapital. Equally characteristic of technocapital is thus the racist account of its own effects which blames the victims for the disease. This ideology is the stinking waste product of capital's own rear end, recycled by the imperialist labour movements as homely common sense.

The specific case of East Germany shows most starkly how the market, and not the intrinsic capabilities of a people or their machines, determines the outcome of accumulation. Entry into the world market was accomplished at a stroke when the rate of exchange of East for West Marks was fixed at one. The accumulated labour of its people was suddenly reduced to the level allowed by the world market. It was as if a huge P1 had suddenly risen from the dead, only to greet the West German dawn and crumble back to dust. More than half its industry became uncompetitive overnight. The labour it represented was instantly reduced on the world market to a quarter of what it once represented. Bled of its life force, the corpse was buried without further ceremony.

But East German industry, dirty and old though it was, was not *physically* useless. The wheels turned, the trains ran and the electricity flowed. The use value still existed. It was the exchange value that was destroyed, or rather drained and consumed by Chronos, god of progress. East German industry was far from a model of health but it did not die: it was killed.

This analysis also corresponds to the actions of the advanced countries. With an instinct more acute than the predictions of their theorists, faced with the opening to the East the rich nations did not spill vast sums of capital on the barren soil of post-Communist Europe. On the contrary they chose to exploit its *markets*; they

¹¹ This does not appear in equilibrium or 'comparative static' formulations because it is a product of the motion of capital itself, which is why not only neoclassical theory but much of what passes for Marxism has ignored it. It has an analogy in the Coriolis force, which generates the trade winds because the planet spins. If one believe the world stands still and flat, then hurricanes have no explanation except divine intervention. Equally if one believes that the effect of technical change can be ignored, then crisis and mass poverty must be inventions of the devil.

sold mountains of Mercedes, videos, Coca-Cola – that is, consumer products. In short, they eliminated the competition. In cases such as East German agriculture which was probably genuinely more competitive, they resorted to the cruder techniques of shorting out its circuits of distribution. Secondly, they sought to introduce new technology in the form of machines which *they themselves produced*, to re-enforce their own sources of raw materials such as oil, minerals and the like. And thirdly they took heavy crowbars to the scientific coffers which they found there: Soviet science in space and new materials, German experience in optics, and so on. Not to help the people there profit from this treasure but to *reconcentrate in their own hands all the means to advance the productivity of labour*.

PROGRESS AS PILLAGE: THE MODERN SYSTEM OF STATES

There is not enough space fully to discuss the role of the state in the process I have just described. Nevertheless four things have to be stressed.

Firstly, though the process of development as outlined above distributes superprofit – the means of accumulation – with increasing unevenness, a specific type of state is necessary to defend and distribute this superprofit according to the collective needs of an entire national bourgeoisie. This specific state, the *techno-military-financial state*, is the characteristic type of the Twentieth-Century imperialist nation, whose definitive aspect is its external role, its ability to defend a global market in which its bourgeoisie can operate without resistance. Without a world market through which technically advanced capital can exploit the labour of others, its source of superprofit and hence the base of its mode of accumulation would not exist.

Second, there is a *division of labour* between the imperialist countries, based on the fundamental irreconcilability of the technical, military and financial functions of the modern imperialist state. Imperialist hegemony requires a power that can simultaneously maintain industrial leadership, military superiority and financial dominance. But to the extent that a nation develops a military and financial capacity - particularly in world market operations - it simultaneously drains its own resources for industrial accumulation and drives its rivals to specialise in these same resources. Conversely powers such as Japan and Germany whose technical superiority affords them a lion's share of profit derived from trade, are systematically outmanoeuvred and defeated by the military and financial clout of the USA and the alliances it can construct with their aid. The great powers therefore divide up the work of maintaining their collective dominance and the economic, political and cultural structure of each is determined by its insertion into this division of labour.

The most conclusive expression of any 'advanced' nation's monopoly of technology is therefore advanced armaments, above all nuclear.

Thirdly, however, the resulting imbalance is not self-equilibrating. Technology, military force, and financial-commercial power are the three pillars of the modern imperialist state, but each specific state rests on at most two of them. The result is *inter-imperialist competition*, an inherently unstable struggle for the division and redivision of the territory and labour of the rest of the world. I see no reason to modify Lenin's analysis of this.

The outcome of the second world war established a specific political balance of power which is incompatible with the new world distribution of the means of accumulation. The USSR stood in the way of an open contest around this balance of power. In step with its weakening, open inter-imperialist rivalry comes more clearly to the fore. Each local conflict, be it the Malvinas, Somalia, Rwanda, or Yugoslavia, becomes a theatre in which this unstable balance of power is put to the test as the great powers crush resistance to their world domination - but at the same time test out the relation of forces between them.

Fourthly, for any people, class or country that wishes to defend itself against this pillage by the market requires a specific form of state, which gives it the power to regulate the exchange of its labour with the rest of the world. It has to prevent the systematic destruction of those means of production which have been created with its own labour and which suffice to sustain a steadily rising living standard of its population and above all its workforce, its only real and defensible guarantee that it can acquire the means of life. It must therefore have the power to suspend or offset the normal operation of the market above all in its relations with the outside world, as well as the systematic attempts by violence to reassert this relation which is the normal mode of operation of imperialist domination.

CONCLUSION

The socialist tradition is based on two truths which, in my opinion, form its definition. First, bourgeois revolutions and bourgeois counter-revolutions alike are based at root on a lie: that money offers the means for the liberation of all. Liberty, fraternity and equality: these are the prizes which money offers but never delivers. Secondly: the freedom and well-being of all peoples of the world – in effect, the provision of what capitalism

promises – can only advance with the working class. Only those humans who produce the conditions for human life can finally arrange things so that humans can profit from them.

There is a tragically erroneous, but almost universal interpretation of the means which capitalism offers: it holds in effect that it is possible to separate the *techniques* which the market unleashes from their process which produces them and the forms in which the market organises them. According to this view, workers do not require their *own* specific forms of organisation, production and distribution, nor their own specific states, to benefit from progress and defend themselves against its malign side-effects. Workers, it is felt, need only appeal to the morality of capital and the good faith of its leaders. And if there are accidents, if there is the odd misfortune, a few million dead here or a minor genocide there, then this is nothing but the cost of progress. Eventually, if we wait long enough and show enough patience, progress will provide for us all: everything is for the best in the best of all possible worlds.

This illusion currently takes two forms: on the one hand the futile hope that this or that backward or former communist state can secure enough capital to admit it to the magic circle of nations favoured by the market. On the other hand there is the fatalistic illusion that the capitalists, having conquered all, have before them the possibilities for rebuilding the world anew, perhaps a bit distorted but at the end of the day acceptable, and in any case impossible to prevent.

This is an illusion whose two forms are equally catastrophic. The first leads directly to what we have seen in Yugoslavia. Next comes the turn of the Caucasus, of the Russian republics, not to mention the India subcontinent and China: futile and fratricidal competition in the service of this or that great power which has only its own interests to defend. In the last analysis, this is the road back to 1914, but this time round with nuclear weapons.

The second illusion is – if possible – worse still. The historical judgment which any honest person must make of capitalism is that it is *incapable* of running the world. The question is therefore not whether we can expect a better or worse world from the global market, but whether we can expect a world at all. The real meaning of the 'end of history' is already in sight: mass famine, mass death, and a new imperialist division of the world and its peoples. The most profound contradiction of capitalism is not that it is incapable of progress. This would be an absurd thing to maintain. It is that the *destructive* forces unleashed by capitalist progress are far stronger than its *constructive* forces, and that the two are indissolubly linked; it has never been, and never will be possible, to separate them.

Hence the reconquest by the market, and above all by money capital, of any section from which it has been excluded by any process whatsoever, is not just a minor setback and a prelude to a new advance. To say the least, the market does not provide a solution to the peoples of the former USSR; for the world their resubjection to the market would be a historical catastrophe without parallel.

POSTFACE

In 1914 the marxists divided in two camps. the first camp, no matter how extensive the differences between its Connollys and its Luxemburgs, its Lenins and its Serges, understood that the working class stood to gain nothing from the victory of any imperialist power in any corner of the world and against anyone, even another imperialist power. The others, the great majority of socialists, decided for reasons lost in obscurity – to serve democracy, for small nations, to stand up to the atrocities of the other side, to stay legal – that they had to side with the most progressive imperialist power. But there is no such thing as a progressive imperialist power. With this choice they left the camp of human progress and at a stroke ceased to be socialists. However humane their beliefs or pure their motives, history now knows them as renegades and traitors. History is harsh, cruel and impersonal. But it is the only final judge; what other verdict can be delivered against a man or woman who freely throws a hundred million lives in the scale against a whim of fate?

Today the choice is of the same character. If the world market finishes with the experience of the Russian revolution, there is nothing 'perhaps better' waiting round the corner. There is only 'civilised' barbarism. It was once written that the philosophers have only interpreted the world and that the task is to change it. This remains true. But it was also written that those who learn nothing from history, are doomed to repeat it.

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