

ON AFRICA AND SELF-REPRODUCING AUTOMATA

by George Caffentzis

In the same way we may say that the imperialist states would make a great mistake and commit an unspeakable injustice if they contented themselves with withdrawing from our soil the military cohorts, and the administrative and managerial whose services function it was to discover the wealth of our country, to extract it and to send it off to the mother countries. We are not blinded by the moral reparation of national independence; nor are we fed by it. The wealth of the imperial countries is our wealth too.

-Franz Fanon

The basic principle of dealing with malfunctions in nature is to make their effect as unimportant as possible and to apply correctives, if they are necessary at all, at leisure. In dealing with artificial automata on the other hand, we require immediate diagnosis....The rationale of this difference is not far to seek. Natural organisms are sufficiently well conceived to be able to operate even when malfunctions have set in... Any malfunction, however, represents a considerable risk that some generally degenerating process has already set in within the machine. It is, therefore, necessary to intervene immediately, because a machine which has begun to malfunction has only rarely a tendency to restore itself, and will probably go from bad to worse.

-John von Neumann

The following chain of notes begins with a precise, but apparently theoretic or ideal, consideration: the proper Marxist characterization of self-reproducing automata before they actually have come into existence. This consideration, however, has politico-economic consequences which are immediately relevant to class struggle in general and to Africa in particular.

A. The factory system was capital's response to the stranglehold workers' skill as well as their control and appropriation of constant capital ("customary usages") had on Manufacture and Domestic Industry. But the factory system (the concrete essence of Modern Industry) itself was in turn held up by the power of the manufacturing workers who built the basic machines (steam engines, self-acting mules, etc.) of that system. Only when machines constructed machines, i.e. when the elements of the factory were themselves the products of factories, could the whole system self-reflexively achieve the relative autonomy from workers' antagonism it was designed for.

Automata are complex machines (heat-engines linked to an integrated array of "simple" machines) whose logical and computational operations are themselves mechanized. Thus an automata system (or subsystem) is a factory system (or subsystem) without the "supervisory attendance" of human workers. In response to factory system operatives' struggles in the post-WWII period, capital introduced automata systems and subsystems in assembly line and continuous-process plants. This strategy has been generalized and automata systems have been widely integrated in the circulatory and social accounting circuits of capital. Spot-welding robots, computerized billing

and genetically engineered cells excreting valuable chemicals are all widely recognized elements of automata systems or subsystems.

But automata are largely designed and built by skilled mental and manufacturing workers, as well as factory operatives who constitute a new antagonistic stranglehold and technical limit on production of and with automata systems. From the desperate strikes of Filipino women in computer-chip factories to computer programmers designing and releasing computational viruses "for the fun of it," the shadow of the "strife between workmen and machine" still disturbs capital's dream of workerless and struggle-less production.

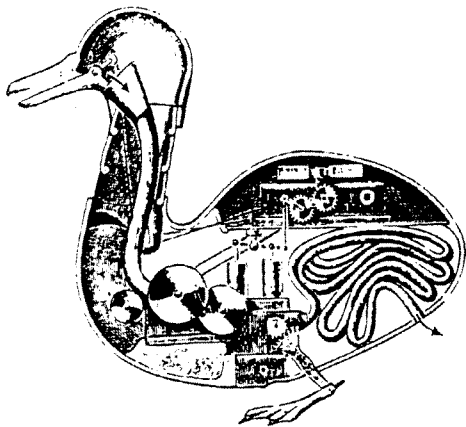
The logical escape from these strangleholds and limits is through self-reflexivity. Only when automata create automata, i.e., when the elements of automata systems become products of automata systems, can "post-modern industry" find its fitting foundation. The ideal type of such automata-creating automata is the self-reproducing automaton (SRA).

AA. Machines have been traditionally defined as "aids to labor," and as a consequence, the product of a worker-machine unit is of necessity less complex than the producing unit itself. For a worker-machine unit could, at best, produce another machine but not another worker. Given the contradictory volatility of workers, capitalist thinkers have always been intrigued by the possibility of creating machines that did not require direct human intervention in their operations, i.e., automata.

AB. But the early machines were not complete automata because an enormous amount of skilled labor went into their production, while their repair and "regeneration" required

further labor. Was it possible to create a total automaton, i.e., one which would—after the first unit—produce itself out of pure “raw materials,” as well as repair and regenerate itself, all without human labor inputs? Let us call such total automata “self-reproducing automata” (SRA).

AC. This new ideal of a machine had von Neumann as one of its primitive conceptualizers in the early post-WWII era. No immediate, widely-known model of such automata was available to him, such as the coo-coo clocks and other mechanical “toys,” that were the inspiration of so much early capitalist thought. However, as he was working on the mathematical and engineering problems attendant to the production of nuclear weapons, he materially coaxed and theorized the construction of some of the first operational electronic computers. The computers appeared to him as prototypes of SRA for two reasons. First, it was possible to envisage and mathematically describe a computer (called “a universal Turing machine”) that literally could “re-create” the operation of any arbitrary computer (including itself). Second, it was even then possible to design computers that would be self-correcting, i.e., capable of diagnosing their own errors and malfunctions and repairing them (within limits).



Vaucanson's Ente, 1738

AD. Von Neumann argued that SRA required four components: (1) raw material, which he called “cells”; (2) a program of instructions; (3) a “factory” that arranges the “cells” according to the program with the proviso that the program is copied in the product itself; (4) a “supervisor” that might receive new “instructions” from the “outside,” copies them and transmits them to the “factory.” Although at the time of their conceptualization these SRA appeared as “science fiction,” the last generation has seen a tendency in capital to approach this ideal in a number of different production environments. Increasingly, computers are used to produce computers, diagnose their errors and repair themselves in assembly lines, satellites and missiles, as well as in “artificially intelligent” robots. Thus the automatization of automation has taken an enormous leap forward. Further, when we consider the petroleum-internal combustion energy cycle (e.g., the increasing automatization of the drilling, transporting and refining of petroleum) as well as the uranium-electricity cycle (e.g., in the recycling of plutonium) we see the increasing automatization extending its tendrils into the “raw

materials” stage.

ADA. Von Neumann described the process of self-reproduction in the following words: “There is no great difficulty in giving a complete axiomatic account of how to describe any conceivable automaton in a binary code. Any such description can then be represented by a chain of rigid elements [a program]...Given any automaton X, let $f(X)$ designate the chain which represents X. Once you have done this, you can design a universal machine tool A which, when furnished with such a chain $f(X)$, will take it and gradually consume it, at the same time building up the automaton X from the parts floating around freely in the surrounding milieu. All this design is laborious, but it is not difficult in principle, for it is a succession of steps in formal logic. It is not qualitatively different from the type of argumentation with which Turing constructed his universal automaton.” Once one has machine tool A, self-reproduction is an easy next step. For A must have its description, $f(A)$, and $f(A)$ can be fed into A and another A will be produced...without paradox, contradiction or circularity.

AE. Perhaps the most profound exemplar of von Neumann’s SRA model is in “genetic engineering.” Here all the elements of the SRA are immediately available. Indeed, the merging of automata studies with bio-genetic research points to the possible practical total realization of sra. For the very mechanism of the genetic process (that, according to von Neumann, produces “natural” automata) can itself be mechanized to create specially designed products that replicate themselves.

AF. Thus the SRA is slowly making its way from the “heaven” of the capitalist imagination to the “hell” of the production process. For they seem to fulfill capital’s dream of a perpetuum mobile: production *sans* workers and therefore profits without the class struggle. But whose nightmare is this dream?

B. Dreams and nightmares, apocalypses and utopias, they are the poles of a spectrum of social possibility...but whose possibility? Capital, by identifying wealth with value, restricts the logical field of social intercourse to work and its management. From psalm singing in its heaven to furnace stoking in its hell...labor is all it can imagine. Indeed, imagination is labor for it. Are SRA the long awaited evolutionary leap to a labor-less Cockagne or the seventh seal of a millennium of work for work’s sake?

BA. At first sight the SRA is a worker’s nightmare. For the immediate impact of such SRA is the excision of the power of refusal in the production process, given that SRA continue to be capitalistically controlled means of production. How can you strike against a “factory” that you never stepped foot in and against an employer that employs no one? Thus an SRA industry would appear to have managed a perfect “lock-out.”

BAA. Approximations of the SRA “super-lockout” are to be found in many of the recent confrontations of the industrial proletariat with a capital that takes on a dream-like quality, ever receding either spatially to low wage sectors or temporally to higher organically-composed forms of production. The historic collapse of strike activity in the U.S. during the last decade is only one among many omens portending the sra’s slouching to capital’s Bethlehem to be born. Against such monsters of

technical ingenuity the usual tactics of workers' struggle seem impotent.

BB. But appearances, by definition, deceive. For on analyzing these SRA in the light of traditional Marxist theory we see that they have a number of paradoxical qualities. For example, the value of a product and the organic composition of the system producing it are elementary concepts of analysis. Eschewing refinements, the value of a product is the socially necessary labor-time required for its production as a commodity, while the organic composition of a production system is the ratio of constant to variable capital, i.e., the ratio of the value of the "machinery" to the value of the labor-power employed. In brief, the organic composition of an SRA industry would be infinite while the value of its products tends to zero.

BC. The organic composition of the SRA industry is infinite because by definition SRA produce themselves and thus do not require any labor power in their production, i.e., the variable capital of SRA is zero, and any number divided by zero is infinite (or, perhaps, undefined). The value of SRA tends to zero since the "original capital" of the "parent" SRA gets slowly distributed over the potentially infinite series of its "off spring." Further, the surplus value generated by a commodity (again broadly speaking) is the difference between the value added to the commodity in the production process and the value of the labor-power expended in the production process (added to the product). But again a strange result follows: the surplus value of SRA is zero simply because no labor-power is absorbed in the production of the sra. Already the dream of capital—production and profit without a struggle—begins to invert itself, for such SRA production does not, apparently, produce the surplus value that is essential to capital.

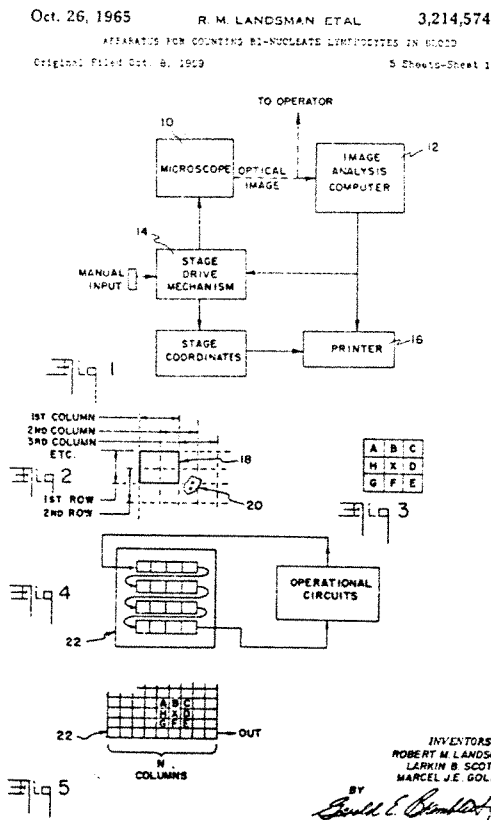
BD. This curious combination of infinity and zero opens a threatening anomaly in the system of capitalist production that must be probed. However, we should not be led astray by the blatant "extremism" of sra. They are, after all, only machines. And the reasons for their introduction are quite explicable in a capitalist society. As the succinct writer of "Prologue to the Use of Machines" puts it: "a worker is replaced by a machine when the cost per unit product of the work is greater than for the machine." Let us take a classical case: moving weights over distances. If it costs \$1 to move a 100 lb. weight one mile by machine (on average) then any wage higher than \$1 will make the worker "replaceable." Hence the use of the machine as a capitalist weapon in the wage struggle, since it appears to put an absolute and objective limit on wage demands. Two corollaries to this principle in the SRA case are obvious, though they might sound strange: (1) SRA will be produced as commodities by other SRA if and only if the cost of the sra's self-reproduction is less than the wages that must be paid for workers to produce sra; (2) SRA will be used to produce commodity X if and only if the cost of X's SRA production is less than its cost when wage labor is employed.

BE. But there is an allied principle of machine introduction in capitalism that does seem to be violated by sra, viz., the desire to increase relative surplus value. Historically, a great impetus to the introduction of machinery has been working class struggle that achieved reductions in the workday and improvements in working conditions. The immediate impact of such reduction and improvement was a reduction in absolute

surplus value, for the boss literally was able to expropriate less labor time when an effective legislative limit was put on, say, the working day. Such reductions in the working day stimulated capitalists to introduce machinery into production that would make labor more productive or intensive or both. The result of such machinery on the system as a whole, especially in producing the means of subsistence, thereby lowering the value the worker consumes, was a reduction of the "necessary" part of the working day (i.e., the labor time involved in creating the value necessary for the reproduction of the worker or, in short, the real wage). If this introduction of machinery succeeds, then the ratio between surplus labor-time and necessary labor-time can increase quite dramatically, even with a reduction in the length of the working day.

The introduction of SRA would appear to violate this principle since their surplus value production is zero and hence their relative surplus value is zero as well. Thus they would appear useless in the accumulation process unless they contribute to the total expanded reproduction of aggregate capital values.

BF. Even if the cost of their self reproduction is less than human production and they do actually increase the general rate of profit, SRA remain paradoxical objects in a capitalistic space. They are like "black holes" or "spacetime singularities" in the manifold of work processes, for they appear to absorb



Golay (1969), along with Landsman and Scott of Perkin-Elmer, was the first to patent a cellular logic machine. This machine, reduced to practice as CELLSCAN (Preston, 1961), performed iterative operations on a bilevel image array using a 3x3 kernel. It was capable of performing a connected components analysis and generating the residue histogram.

value but produce none in return. So an SRA industry would be the exact opposite of appearances, instead of being infinitely efficient or productive, it would turn out to be totally "unproductive."

BG. A bit of logic is necessary here. There is a world of difference between "nothing" and "zero." A "nothing" is not a member of a continuum, series or aggregate, but zero definitely is, i.e., it is the precise starting point of the said continuum, series or aggregate. Thus while Marx's "yellow logarithm" is not a number at all, zero certainly is. We cannot conclude that processes producing zero value are unproductive. One might be tempted to put SRA into that miscellaneous closet of "luxury" commodities or "incidental expenses of production," the golden bathtubs and cruise misses of our age. But SRA would not be "incidental" to social production, they might even prove to be "basic commodities" that enter the production cycle of every commodity. Yet, unlike luxury goods that embody surplus value, they would not add one iota of new value.

BH. The logical differentiation of zero from nothing might seem abstract and "semantic," but it goes to the heart of traditional Marxist debates concerning "productive" versus "unproductive" labor. Labor-power that has, or tends to have, zero value (i.e., it is wageless) can be enormously productive of surplus value through the total cycle of value production, while labor power that might appear to have high value might very well prove entirely "unproductive"—contribute nothing to surplus value production. You can no more determine productive labor by paychecks than you can determine value by stopwatches.

BI. There is a further connection of SRA and Marxist theory. For in some of his most crucial revolutionary passages, Marx was preoccupied with the stage of production that would usher in sra. Consider those passages in the *Grundrisse* and *Capital* where Marx envisages the limit of the relative surplus value generation process driven by working class struggle and implementing the sciences directly in production. At this limit Marx sees not a nightmare for the workers but a catastrophe for capital itself. In this marxist analysis, von Neumann's SRA embody the exact limits of the accumulation process where the whole system of value production "explodes." Now we come to a dichotomy: are first impressions right and SRA will be a worker's nightmare, or is Marx right in claiming that the nightmare will be one for the nightmare owner?

C. Let us say a particular object or condition is useful to someone, or even more strongly, let us say it is essential to human species existence. Surely that object or condition is an aspect of human wealth but this fact does not confer value on it. An SRA industry could be extremely useful to some and it might begin an epochal process of inter-species evolution...BUT

for individual capitalists qua embodiments of capital the matter of usefulness or species existence is beside the point. For them the SRA riddle is simply put: can SRA "make money" for the SRA owners?

CA. To answer this question we must first adjust von Neumann's vision, for it contains a hidden presupposition: SRA are (or would be) commodities. But that presupposition is debatable. Surely if SRA are commodities, then the SRA industry becomes part of the total commodity production "tree," i.e., the SRA "branch." If, however, these SRA remain outside the logic of commodities and become something like a new "bio-mechanical" species that can be used by anyone without exchange, then why should capitalists own or produce them at all? Clearly if SRA are not commodities then the riddle would solve itself, so let us assume that SRA become commodities at some stage in the process of capitalist development.

CB. If SRA are commodities then they must have a price, i.e., they must be bought and sold for some exchange value. But how can they have a definitive price when in the long run they have virtually zero value? Again we confront an apparent paradox, but one that is easily resolved. For capitalism is exactly the system where price generally does not equal value in the first place; in fact, it is only in very rare circumstances that price is identical to value. In most situations values must be "transformed" into prices in order for the total capitalist system of production to reproduce itself, either simply or on an expanded scale. Many commentators on Marxist theory take the "transformation of values into prices of production" as a "problem" because Marx was not able to elegantly carry

out the mathematics of the transformation in the simple models that he presented in *Capital* vol. III. They seem to forget that the concept of "transformation" Marx uses is a special case of a general and profound feature of life in capitalist society, where nothing is left literally "as is." One of the great fascinations (and terrors) of the system is its need for a continual interchange, flow, appearance and disappearance of its components. The transformation of values into prices is one vital aspect of capital's appearance-disappearance process. It is this transformation that can help us explain how a capitalist can make a profit from a commodity that embodies no surplus value.

CC. In the process of the transformation of values into prices, commodities produced in high organic composition industries have prices greater than their values while commodities produced in low organic composition industries have prices less than their values. This trick is accomplished by the transposition (in the market or by "administered" prices) of surplus value "generated" in the "low" industries into the "high" industries. The capitalists of the SRA industry (the top-most

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branch of the tree of production) would get their profit sustenance from the tree's gnarled, earth-pressed roots. Thus profits can and must be expropriated without exploiting any workers directly if the SRA industry is to exist.

CD. Let us put the point concerning the profitability of an SRA industry in a more precise form. The value of a commodity is the sum of its constant capital (c), variable capital (v) and its surplus value (s), but the price of production is determined by c, v, and r, the average rate of profit which acts as a cybernetic stabilizer for the total capitalistic system in its reproduction. The value, L, of a commodity is therefore:

$$L=c+v+s,$$

while the price of production, P, of a commodity is

$$P=c+v+r(c+v).$$

The "extremism" of SRA lie in that for them $v=s=0$, $L=c$, and $P=c+rc$. Clearly P cannot equal L, indeed $P-L=rc$, but where does this "rc" come from? Since machines cannot produce value per se the profit in an SRA industry must ultimately come from the famous "sweat and toil" in the "lower" branches and "roots" of the production tree. Hence it is a "pure" profit that derives from the perverse logic of capitalist "justice" requiring that all investment in capital get a "fair" return. This justice simply becomes almost divine in the case of SRA.

CE. What a situation! A branch of capitalist industry that produces no surplus value but absorbs a potentially huge profit. This is only paradoxical to those who think that profits accrue to those who directly exploit. But this is no more true than the presumption that workers who produce the most surplus value get the highest wages. If anything, the exact opposite holds.

CF. Perhaps one might classify SRA capitalists as pure "rentiers," but no, for their industry "produces" something and their return is not based upon some naturally given scarcity. They are no more rentiers than capitalists who control a hypothetical industry producing and selling dirt. Indeed, by its "self-reproducing" status the industry's products are continually growing in mass.

CG. How big is their profit? It is proportional (more or less) to the on-going average profit rate and the size of c, the part of the constant capital in the SRA industry which is used in the construction of an SRA unit, which might not be trifling. On the contrary, the investment required to actually reach this "ideal" machine industry is enormous, perhaps astronomical. Any reasonable attempt to imagine such an enterprise in actuality must result in a titanic expenditure. Therefore the industry's existence presupposes an enormous absorption of surplus value at whatever the on-going profit rate. Indeed, if the capitalist system is compelled into creating such an industry, it would be like a gambler staking all his/her "chips" on a rather

risky bet.

CGA. The move into atomic power plants in the post-WWII can give a hint of such "risks." In response to the struggles of the coal miners of the US and the nationalist movements in the oil-producing countries the capitalist system viewed the production of extremely high organic composition forms of energy production requiring enormous investment as an acceptable "risk." The result has been the devaluation of hundreds of billions of dollars of investment when the gamble proved unprofitable.

D. The introduction of an SRA industry will require a immense re-structuring of the international form of commodity production, requiring an ever greater "economic" distance between the "bottom" and "top" branches of the world's value production tree. This re-structuring will not happen "naturally." Rather, a fatal violence whose proportions are hard now to reckon is on the capitalist agenda. Whenever fatality on these dimensions is proposed, the riskiness of the bet is evident.

DA. But this "bet" is not made in an instant. There is an ap-

proximate approach, both in terms of investment and conditions of return, in the tendential growth of organic composition in the branches of production tending to the SRA limit. The way this approximate approach first forces itself into recognition is in a radical change in the price structure of commodities. For any large-scale leap in the organic composition of an industry or the system as a whole, especially one that tends to infinity, must "drain" more from the lower branches and roots of the tree (where by "roots" I mean those branches of production where c and v tend to zero). The mechanism of this "draining" and "sapping" is the

transformation of prices into values.

DB. This transformation of relative prices must be such that the low or zero organic composition branches and roots will discover low and lower relative prices, while the sra-tending branches will experience high and higher relative prices. For other things being equal, if the organic composition of one industry increases while the organic composition of the other remains the same, the price of the first will increase with respect to the price of the second. This is just a mathematical constraint on a system whose aim is the accumulation of value.

DC. This widespread disturbance of relative prices and an ever more excruciating sapping of the surplus value extracted at the "bottom" of the tree of production is, I believe, what Marx was referring to in his "explosion" remarks in the *Grundrisse*. He worked out many of the details in *Capital* to the point that the mechanism is simplicity itself. As the "cost" of labor-power in "real wages" is increased and the working day reduced through working class struggle, the dominant capitalist response is a dramatic "restructuring" of production. But where is the capital for this investment in higher organic composition

Parameters for return on investment example			
Investment in robot and accessories	I = \$55,000	Number of working days per year	= 250
Annual depreciation, eight years, straight line	= \$ 6,875	Robot replaces one human operator	
Hourly cost of robot upkeep	= \$ 1.3	Return on investment (ROI) =	$\frac{S \times 100}{I}$ per cent
Annual savings resulting from robot	= \$ S		
		8 hours per day operation	16 hours per day operation
A Robot costs	\$	\$	\$
Annual depreciation	6,875	6,875	6,875
Annual upkeep	2,600	5,200	5,200
Total annual robot costs	9,475	12,075	12,075
B Corresponding labor costs			
Wages, including fringes, at:			
\$ 8 per hour	16,000	32,000	32,000
10 per hour	20,000	40,000	40,000
12 per hour	24,000	48,000	48,000
15 per hour	30,000	60,000	60,000
C Annual cost savings and ROI			
\$ 8 per hour	6,525	ROI = 11.9%	19,925
10 per hour	10,525	19.1%	27,925
12 per hour	14,525	26.4%	35,925
15 per hour	20,525	37.3%	47,925
			ROI = 36.2%
			50.6%
			65.3%
			87.1%

Example of Return on Investment Calculation

industries to come from? Clearly in the transformation of relative prices and the ever-widening and deepening absorption of surplus value throughout the world. For workers at the bottom, or kicked to the bottom, this means in most cases increased exploitation in an absolute sense (e.g., increased work day) and decreased wages, since the "profits" of the "low" capitalist might have to come from the necessary labor-time of the worker.

DD. There is a temporal aspect to this relative price transformation as well, which is seen most starkly in our SRA industry. As was pointed out previously the value of SRA units tends to zero. This is just the mathematical conclusion from the following premises: the series of SRA is potentially infinite while the "initial" capital, C , is finite (though C can be quite large). But

$$C/n \longrightarrow >0$$

as

$$n \longrightarrow > \infty,$$

where n is the number of SRA produced.

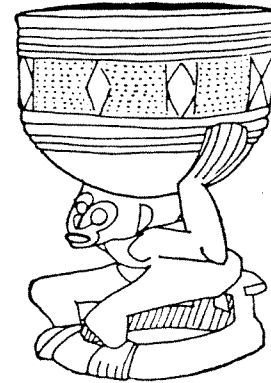
The capitalist, however, does not live in mathematical eternity. He will not be content to have human, even capitalist, posterity accrue "his" return. He will want a return on his investment, with "fair profit" of course, within a reasonable period of time. But the turnover time of his constant capital is literally infinite. There must therefore be a temporal dilation in the period of return, for instead of getting back his $C+rC$ in an infinite time he will need to get it back in a finite, indeed, a relatively short time, or he will not make the investment. Let us say that given the conditions of turnover throughout the system investment will not be made in an SRA industry unless the return takes place in a century. Let us say, however, that only ten SRA are allowed to be produced "profitably" every year. Then the price of the SRA must average $C+rC/1000$, which will be quite large compared to the real value in them. This "guaranteeing" of profits within a fixed period of time will further intensify the pressure of expropriation on the "bottom."

DE. This situation, presaging and stepping into the period of the sra, is an "extreme" version of the average response of capitalism to a threat to its current average rate of profit. However, the radicality of the present period lies in the "extremism" of capital's approach and in the breadth and depth of the wage reduction it requires, on the one side, while on the other, the working class possesses an enormous actual and potential knowledge of struggle which can accelerate the circulation of struggle to an unprecedented extent.

DF. This leap of capital's organic composition is therefore



exceptionally crucial for Africa (because it generally is at the bottom of the accumulation hierarchy) and is reminiscent of the situation a century before: for the Berlin conference of 1885, which organized the rules of the game of the exploitation of Africa, was an essential step in the formation of Tayloristic production. Since Africa is at the bottom of the wage scale and at the top of the absolute exploitation index, it becomes central to capital's adventures in this period. If capital cannot intensify its wage reduction and absolute exploitation here, it cannot escape a level of catastrophic confrontation in the "higher branches" of production (with all due qualifications).



DG. The "debt crisis," the U.S. budget deficit, the ever "worsening" terms of trade for Third World commodities beginning in the 1970s and intensifying in the 1980s, all reveal symptoms of the strains and imperatives of transformation. The infamous IMF conditionalities and austerity programs simply spell out the role Africa is to play in the transformation.

DH. Thus for Africa "the consensus" is that wages are too high, that the urbanization of the African proletariat has led to a concentration of class power that was and is too dangerous for a system which is not "productive enough." Knowing the conditions of Lagos, one might be amazed at the perversity of those who would argue that the Lagosian's average wage is "high." Yet "high" is a relative term, relative to a standard, and the standard is relative to a perceived sense of proportion. For the IMF, Keynes' world-historical contribution to the sphere of capitalist institutions, the "highness" of African wages is obvious. Thus the "back to the land" programs, the threats and realities of starvation, the high food and "commodity prices, the appeals to a "self-reliant" poverty, and a return to the notion of an "appropriate technology" of the neolithic period (at best).

DI. Capital must repropose, therefore, a ferocious period of original accumulation for Africa, with the final expropriation of the remaining communal lands from Ethiopia across to Nigeria and down to Zimbabwe.

E. This chain of notes from SRA to Africa, from the ideal limiting top of contemporary capitalist production to its real sustaining bottom, poses a deep riddle of strategy for the African proletariat. A riddle intensified by the peculiar "convergence" of Left and Right in this period. Both are agreed that the expectations of African youth are too high, that the level of "indiscipline," "petit-bourgeois behavior," "laziness," "backwardness," "anti-sociality" of the average African urban worker

and peasant is too contradictory with "historical and economic reality." Of course one speaks of "lack of class consciousness" while the other of "lack of achievement motivation" and when one speaks of "autarky" the other recommends "domestic inputs." However, both conclude that Africa must wait out this century and a good deal of the next until it is ready either for "true capitalism" or "true socialism." Understanding this agreement of perspective makes it clear that much of what might appear as a "sell-out" by a left- (right-) winger to say, the IMF (Soviet Union), can make much sense from the logic of Left's (Right's) position per se. As a consequence, much political analysis of Africa remains on the level of "moralism," for if one cannot change values then the natural course is to idealize them.

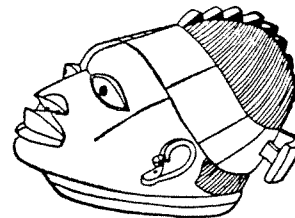
EA. Yet to accept such assumptions and strategies, even from a "well meaning" perspective that wishes to do "right by the people," is to collaborate in the condemnation of the African proletariat to the deprivation of the possibilities that objectively exist for a level of production and social intercourse that is unprecedented in human history. For these assumptions and strategies of the Left and Right functionalize and ration these possibilities only to the most select social sectors of "comrades" or "good old boys." One can only presume that the



"instability" of governments of both the Left and Right in Africa, and the often inchoate political violence (frequently dismissed as "tribal," "ethnic" or "religious") that characterizes the continent at present, has a clear and rational base in the mass perception that these objective possibilities of production and intercourse are being repressed across the ideological spectrum.

EB. It should be obvious that the logic of these notes point to a totally different direction. It should also not be surprising that this direction is parallel not with the "scientific socialist realists'" strategies but with the arguments of Fanon. For in Fanon one finds simultaneously a total rejection of capitalist values (which in the mystified form are aggregated into "Western Civilization") with an equally uncompromising strategy of reappropriation. Fanon's argument is simply a forceful application of a Marxist truism, viz., the accumulated wealth, both cultural and physical, of the "advanced capitalist world" is simply the transformation of the labor of Africans which must be returned by, as Malcolm X used to say, any means necessary. As Silvia Federici explained in her essay "Journey to the Native Land," for Fanon much of the "true history" of Africa is in

Europe and the Americas (as, indeed, most of the "true history" of Europe and America is scarred in Africa). It is only by the reappropriation of that wealth and "true history" that Africans can escape the toil, misery and wretchedness that is now programmed for them.



EC. This is neither the place nor the hour to discuss the mechanisms of reappropriation but only its logic and consequences. Thus we argue that without an enormous return of social technique and wealth into the African continent and on Africans' terms, all efforts at "self-help," "self-reliance," "autarky," "living within our means," "substituting domestic inputs," etc., will lead to a further isolation of the African proletariat from the rest of the planet in a period when the very need for world accumulation based upon the most "primitive" forms of exploitation is reaching a peak. "A "self-reliance" strategy plus SRA creates a disastrous conjuncture, to say the least, and not only for the African.

ED. The ability to decrease African wages and increase absolute exploitation in Africa is a necessary condition for the success of capital's project of renewal in this period. This project, provoked by the international wage "explosion" and profits "crisis" of the late 1960s and early 1970s, and put into motion in 1973, has been extraordinarily successful (except for a few set-backs in 1979-80). At the moment, resistance to this project at the "higher branches" of production seems muted at best. Attention turns to the "roots" of the tree, for as any logician will tell you, the failure of a necessary condition of a project is a sufficient condition of the failure of the project.

Endnotes

The original "Notes" (1986) comprised all those paragraphs beginning with two capital letters. The ones beginning with one or three capital letters were added in 1989.

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