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The Theory of the Collapse of Capitalism

The self-emancipation of the proletariat is the
collapse of capitalism

Anton Pannekoek

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The workers' movement has not to expect a final catastrophe, but many catastrophes, political — like wars, and economic — like the crises which repeatedly break out, sometimes regularly, sometimes irregularly, but which on the whole, with the growing size of capitalism, become more and more devastating. So the illusions and tendencies to tranquillity of the proletariat will repeatedly collapse, and sharp and deep class struggles will break out. It appears to be a contradiction that the present crisis, deeper and more devastating than any previous one, has not shown signs of the awakening of the proletarian revolution. But the removal of old illusions is its first great task: on the other hand, the illusion of making capitalism bearable by means of reforms obtained through Social Democratic parliamentary politics and trade union action and, on the other, the illusion that capitalism can be overthrown in assault under the leadership of a revolution-bringing Communist Party. The working class itself, as a whole, must conduct the struggle, but, while the bourgeoisie is already building up its power more and more solidly, the working class has yet to make itself familiar with the new forms of struggle. Severe struggles are bound to take place. And should the present crisis abate, new crises and new struggles will arise. In these struggles the working class will develop its strength to struggle, will discover its aims, will train itself, will make itself independent and learn to take into its hands its own destiny, viz., social production itself. In this process the destruction of capitalism is achieved. The self-emancipation of the proletariat is the collapse of capitalism.

The theory of the economic catastrophe is thus ready made for intellectuals who recognise the untenable character of capitalism and who want a planned economy to be built by capable economists and leaders. And it must be expected that many other such theories will come from these quarters or meet with approval there. The theory of the necessary collapse will also be able to exercise a certain attraction over revolutionary workers. They see the overwhelming majority of the proletarian masses still attached to the old organisations, the old leaders, the old methods, blind to the task which the new development imposes on them, passive and immobile, with no signs of revolutionary energy. The few revolutionaries who understand the new development might well wish on the stupefied masses a good economic catastrophe so that they finally come out of the slumber and enter into action. The theory according to which capitalism has today entered its final crisis also provides a decisive, and simple, refutation of reformism and all Party programmes which give priority to parliamentary work and trade union action — a demonstration of the necessity of revolutionary tactics which is so convenient that it must be greeted sympathetically by revolutionary groups. But the struggle is never so simple or convenient, not even the theoretical struggle for reasons and proofs.

Reformism was a false tactic, which weakened the working class, not only in crises but also in prosperity. Parliamentaryism and the trade union tactic did not have to await the present crisis to prove a failure; this has been shown for the last hundred years. It is not due to the economic collapse of capitalism but to the enormous development of its strength, to its expansion over all the Earth, to its exacerbation of political oppositions, to the violent reinforcement of its inner strength, that the proletariat must take mass action, summoning up the strength of the whole class. It is this shift in the relations of power that is the basis for the new direction for the workers' movement.

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“Here the objective limit of trade union action is given” (p. 599). However familiar this sounds, the basis is quite different. The powerlessness of trade union action, which has been evident for a long time, should not be attributed to an economic collapse, but to a shift in the balance of social power. everyone knows how the increased power of the employers’ combines of concentrated big capital has made the working class relatively powerless. To which is now added the effects of a severe crisis which depresses wages, as happened in every previous crisis.

The purely economic collapse of capitalism which Grossmann constructs does not involve a complete passivity by the proletariat. For, when the collapse takes place the working class must precisely prepare itself to re-establish production on a new basis.

Thus evolution pushes towards the development and exacerbation of the internal oppositions between capital and labour until the solution which can come only from the struggle between the two classes is brought about (p. 599).

This final struggle is linked also with the wages struggle because (as was already mentioned above) the catastrophe can be postponed by depressing wages or hastened by raising them. But it is the economic catastrophe that is for Grossmann the really essential factor, the new order being forcibly imposed on men. Certainly, the workers, as the mass of the population, are to supply the preponderant force of the revolution, just as in the bourgeois revolutions of the past where they formed the mass force for action; but, as in hunger revolts in general, this is independent of their revolutionary maturity, of their capacity to take power over society and to hold it. This means that a revolutionary group, a party with socialist aims, would have to appear as a new governing power in place of the old in order to introduce some kind of planned economy.

VII. The New Workers Movement

It is understandable that Grossmann's book should have been given some attention by the spokesmen of the new workers' movement since he attacks the same enemy as them. The new workers' movement has to attack Social Democracy and the Party Communism of the Third International, two branches of the same tree, because they accommodate the working class to capitalism. Grossmann attacks the theoreticians of these currents for having distorted and falsified Marx's teachings, and insists on the necessary collapse of capitalism. His conclusions sound similar to ours, but their sense and essence are completely different. We also are of the opinion that the Social Democratic theorists, good theoretical experts that they often were nevertheless distorted Marx's doctrine; but their mistake was historical, the theoretical precipitate of an early period of the struggle of the proletariat. Grossmann's mistake is that of a bourgeois economist who has never had practical experience of the struggle of the proletariat and who is consequently not in a position to understand the essence of Marxism.

An example of how his conclusions apparently agree with the views of the new workers' movement, but are in essence completely opposed, is to be found in his theory of wages. According to his schema, after 35 years, with the collapse, a rapidly climbing unemployment appears. As a result wages sink well below the value of labour-power, without an effective resistance being possible.

This translation and the introduction first appeared in *Capital & Class* Number 1. (Spring 1977). The translator is a member of the *Socialist Party of Great Britain* and writes regularly for their paper *Socialist Standard*. Some articles by him can be found on the *World Socialist Movement* website. With John Crump he wrote *State Capitalism : The Wages System Under New Management*, London, 1986

Pannekoek's article is a critique of Henryk Grossman's book *Das Akkumulations — und Zusammenbruchsgesetz des Kapitalistischen Systems*. At the time this translation was first published this book had not been translated into English. An abridged version now has been — *The Accumulation of Capital and the Breakdown of the Capitalist System*, Pluto Press, London, 1992

Translators Introduction (1977) by Adam Buick

The following article originally appeared in German in 1934 as an unsigned article in *Ratekorrespondenz* (No. I, June 1934) and was published in Holland by the *Groups of International Communists*.¹ It was in fact written by Anton Pannekoek (1873–1960), then world renowned Professor of Astronomy at the University of Amsterdam. Pannekoek was a life-long Marxist (and in fact wrote a book applying the materialist conception of history to the history of astronomy²) and at an earlier period had been a very active member of the Social Democratic and Left Communist movements in both Germany and his native Holland. As a scientist he was interested in dialectical materialism as a theory of science and his two writings known in the English-speaking world before the first world war were his 1902 introduction to Joseph Dietzgen's *The Positive Outcome of Philosophy* and his very popular pamphlet *Marxism and Darwinism* (1909). His later criticism of Lenin's distortions of dialectical materialism, *Lenin As Philosopher* (1938), has recently been republished in English.³

Pannekoek placed himself on the left wing of the Social Democratic movement, being an opponent not only of revisionism but also of the 'orthodox' centre represented by

¹ Republished in *Gruppe Internationaler Kommunisten Hollands*, Rowohlt, Reinbek-Hamburg, 1971, and in *Die Zusammenbruchstheorie des Kapitalismus der Revolutionares Subjekt*, Karin Kramer, Berlin, 1973.

² *A History of Astronomy*, London, 1961; originally published in Dutch in 1951.

³ *Lenin as Philosopher*, Merlin Press, London 1975. John Gray

The collapse of capitalism in Marx does depend on the act of will of the working class; but this will is not a free choice, but is itself determined by economic development. The contradictions of the capitalist economy, which repeatedly emerge in unemployment, crises, wars, class struggles, repeatedly determine the will to revolution of the proletariat. Socialism comes not because capitalism collapses economically and men, workers and others, are forced by necessity to create a new organisation, but because capitalism, as it lives and grows, becomes more and more unbearable for the workers and repeatedly pushes them to struggle until the will and strength to overthrow the domination of capitalism and establish a new organisation grows in them, and then capitalism collapses. The working class is not pushed to act because the unbearableness of capitalism is demonstrated to them from the outside, but because they feel it generated within them. Marx's theory, as economics, shows how the above phenomena irresistibly reappear with greater and greater force and, as historical materialism, how they necessarily give rise to the revolutionary will and the revolutionary act.

necessary for the labourer is practically known (*Capital*. Vol. I, p. 171);

but Grossmann has unfortunately once again overlooked that in Marx this passage is immediately preceded by:

In contradiction therefore to the case of other commodities, there enters into the determination of the value of labour-power a historical and moral element.

Starting from his bourgeois way of thinking Grossmann states in his criticism of various Social Democratic views:

We see: the collapse of capitalism is either denied or based, in a voluntarist way, on extra-economic, political factors. The economic proof of the necessity of the collapse of capitalism has never been produced (pp. 58–59).

And he cites with approval an opinion of Tugan-Baranovsky that, in order to prove the necessity for the transformation of capitalism into its opposite, a rigid proof of the impossibility for capitalism to continue existing must first be produced. Tugan himself denies this impossibility and wishes to give socialism an ethical basis. But that Grossmann chooses to call as witness this Russian liberal economist who, as is known, was always completely alien to Marxism, shows to what degree their basic way of thinking is related, despite their opposed practical points of view (see also Grossmann, p. 108). The Marxian view that the collapse of capitalism will be the act of the working class and thus a political act (in the widest sense of this word: general social, which is inseparable from the take-over of economic power) Grossmann can only understand as ‘voluntarist’, i.e., that it is something that is, governed by men’s choice, by free will.

Kautsky. Even before the first world war he had come to see the futility of the traditional Social Democratic policy of merely trying to win an electoral majority on the basis of promises to reform capitalism, favouring instead conscious mass action by the working class as a whole. He was thus ready to support the appeals of the Bolsheviks after the Russian revolution to split from the Social Democrats and form separate Communist Parties. He had been a founding member of the Social Democratic Party in Holland, a breakaway from the orthodox Social Democrats there in 1909 which became in 1918 the Communist Party of Holland. His views, however, were never those of orthodox Bolshevism. He took their talk about there having been a ‘soviet’ (= workers’ council) revolution in Russia literally and urged the working class to have nothing at all to do with parliament or trade unions and to organise instead into autonomous workers’ councils in order to establish Socialism, a view he maintained for the rest of his life.⁴

People with such views were one of the constituent groups of the Communist Parties in most countries, but they were in a minority and were soon overwhelmed by the most important of the other constituent groups, the radicalised Social Democrats who brought with them some of their reformist illusions. In the disputes which broke out between those two groups over the attitude the new parties should take towards parliament and the trade unions, Lenin and the Bolshevik leadership backed the latter group and in 1920 ‘Left Communists’ like Pannekoek were singled out for attack by Lenin in a special pamphlet *Left wing Communism: An Infantile Disorder* (Pannekoek is the ‘K. Horner’ frequently criticised by Lenin). The Left Communists replied by accusing Lenin of opportunism

⁴ See his *Workers Councils* (1946), first published in English in Australia in 1948; republished in America in 1970 by Root and Branch, Cambridge, Mass. John Gray

and began to realise the state capitalist nature of the Bolshevik regime which they soon ceased to support.

Pannekoek was associated with the ‘opposition movement’ of the KAPD – *Kommunistische Arbeiterpartei Deutschlands*, the ‘Communist Workers Party of Germany’ – he mentions it in the opening paragraph of his article and it was very active in Germany in the early twenties (it is said that at one time it had some 50,000 members). When the post-war working class revolt and discontent in Germany abated, Pannekoek settled down to an academic career as an astronomer. But he remained a Marxist and continued to identify himself with the Left Communist tradition, as represented by such journals as *Ratekorrespondenz*, and its Dutch and English language equivalents and successors, to which he contributed the occasional article like the present one. Pannekoek refers in the final section of his article to this tradition as “the new workers’ movement”, i.e., those who were opposed to both reformist Social Democracy and state capitalist Bolshevism (somewhat grandiose terminology, since by the 1930s it only consisted of a few hundred individuals). They also called themselves ‘Council Communists’ as opposed to the ‘Party Communism’ represented by Stalin and Trotsky.

Despite the fact that the KAPD and most of ‘the new workers’ movement’ adhered to the view that capitalism would one day break down economically, Pannekoek himself always opposed this view. He was one of the first to criticise (in the *Bremer Burger-Zeitung* of 29 and 30 January 1913) the theory of economic collapse put forward by Rosa Luxemburg in her book *The Accumulation of Capital* (1912). He repeats his 1913 criticism of Luxemburg in this article, but the bulk of it is devoted to a criticism of the rival theory of collapse put forward in 1929 by Henry Grossmann.⁵ Whereas Luxemburg held that

⁵ *Das Akkumulations – und Zusammenbruchsgesetz des Kapitalistischen Systems*, Leipzig, 1929; republished in 1967 in *Archiv Sozialistischer*

all the skills of leaders, all attempts at revolution; all these have appeared ridiculous in the face of its immense strength. But, on the other hand, terrible crises at the same time reveal its internal weakness. Whoever now takes up Marx and studies him is deeply impressed by the irresistible, law-governed nature of the collapse and welcomes these ideas with enthusiasm.

But if his basic way of thinking is bourgeois he cannot conceive this necessity other than as an external force acting on men. Capitalism is for him a mechanical system in which men participate as economic persons, capitalists, buyers, sellers, wage-workers, etc., but otherwise must submit in a purely passive way to what this mechanism imposes on them in view of its internal structure.

This mechanistic conception can also be recognised in Grossmann’s statements on wages when he violently attacks Rosa Luxemburg –

Everywhere one comes across an incredible, barbarous mutilation of the Marxian theory of wages (p. 585).

– precisely where she quite correctly treats the value of labour-power as a quantity that can be expanded on the basis of the standard of living attained. For Grossmann the value of labour-power is “not an elastic, but a fixed quantity” (p. 586). Acts of human choice such as the workers’ struggles can have no influence on it; the only way in which wages can rise is through a higher intensity of labour obliging the replacement of the greater quantity of labour-power expended.

Here it is the same mechanistic view: the mechanism determines economic quantities while struggling and acting men stand outside this relation. Grossmann appeals again to Marx for this, where the latter writes of the value of labour-power:

Nevertheless, in a given country, at a given period, the average quantity of the means of subsistence

essary norms of right. Conformity to law does not reside solely in the action of competition which fixes prices and profits and concentrates capital, but also in the establishment of free competition, of free production by bourgeois revolutions; not only in the movement of wages, in the expansion and contraction of production in prosperity and crisis, in the closing of factories and the laying off of workers, but also in the revolt, the struggle of the workers, the conquest by them of power over society and production in order to establish new norms of right. Economics, as the totality of men working and striving to satisfy their subsistence needs, and politics (in its widest sense), as the action and struggle of these men as classes to satisfy these needs, form a single unified domain of law-governed development. The accumulation of capital, crises, pauperisation, the proletarian revolution, the seizure of power by the working class form together, acting like a natural law, an indivisible unity, the collapse of capitalism.

The bourgeois way of thinking, which does not understand that this is a unity, has always played a great role not only outside but also within the workers' movement. In the old radical Social Democracy the fatalist view was current, understandable in view of the historical circumstances, that the revolution would one day come as a natural necessity and that in the meantime the workers should not try anything dangerous. Reformism questioned the need for a 'violent' revolution and believed that the intelligence of statesmen and leaders would tame capitalism by reform and organisation. Others believed that the proletariat had to be educated to revolutionary virtue by moral preaching. The consciousness was always lacking that this virtue only found its natural necessity through economic forces, and that the revolution only found its natural necessity through economic forces, and that the revolution only found its natural necessity through the mental forces of men. Other views have now appeared. On the one hand capitalism has proved itself strong and unassailable against all reformism,

capitalism must eventually break down through a lack of markets, Grossman held that the cause of capitalism's inevitable economic break-down would be a lack of profits.

These opposing views still divide those who consider themselves Marxists. Pannekoek, however, had a third, almost unique,⁶ and rarely heard, point of view: both Luxemburg and Grossmann were wrong; capitalism would never collapse for purely economic reasons; capitalism would only come to an end — 'collapse' if you like — through the conscious action of the working class. Pannekoek's view, which is here translated into English for the first time,⁷ is thus still pertinent today when, as in the 1930s, there are many who treat Marxian economics as a separate academic discipline quite independent of the activity of the working class or who, as Pannekoek points out, only see working class activity as a battering ram to displace the present ruling class and install in their place a vanguard party, whose economic experts would attempt to plan the economy in accordance with the reproduction schema they had invented.

It can also be added that, as astronomy is essentially a theoretical science involving mathematical computations, Pannekoek writes here not just as a Marxist but as a Marxist who has at the same time a profound knowledge of mathematics. (which in fact he also taught at the University of Amsterdam).

The quotations from Grossmann are translated from Pannekoek's article and the references are to the original 1929

Literatur, Frankfurt. Not yet translated into English. John Gray note : Since this introduction was written an English translation of Grossman's book has been published in English — *The Accumulation of Capital and the Breakdown Theory*, Pluto Press, London, 1992

⁶ The only others to put forward a similar theory were the SPGB in Britain in their pamphlet *Why Capitalism Will Not Collapse*, published in 1932.

⁷ A French translation is published as an appendix to *La Gauche Communiste en Allemagne (1918–1921)*, by Denis Authier and Jean Barrot, Payot, Paris, 1976.

Leipzig edition which he used. The quotations from Volumes I and III of Marx's Capital are from the Moscow FLPH editions of 1961 and 1959 respectively.

VI. Historical Materialism

The question which in the end merits attention is how can an economist who believes he is correctly reconstructing Marx's views, and who further states with naive self-assurance that he is the first to give a correct interpretation of them, be so completely mistaken and find himself in complete contradiction with Marx. The reason lies in the lack of a historical materialist understanding. For you will not understand Marxian economics at all unless you have made the historical materialist way of thinking your own.

For Marx the development of human society, and so also the economic development of capitalism, is determined by a firm necessity like a law of nature. But this development is at the same time the work of men who play their role in it and where each person determines his own acts with consciousness and purpose — though not with a consciousness of the social whole. To the bourgeois way of seeing things, there is a contradiction here; either what happens depends on human free choice or, if it is governed by fixed laws, then these act as an external, mechanical constraint on men. For Marx all social necessity is accomplished by men; this means that a man's thinking, wanting and acting although appearing as a free choice in his consciousness — are completely determined by the action of the environment; it is only through the totality of these human acts, determined mainly by social forces, that conformity to laws is achieved in social development.

The social forces which determine development are thus not only purely economic acts, but also the general-political acts determined by them, which provide production with the nec-

Thus the exact opposite to the onset of the collapse invented by Grossmann. In the following pages this is repeated yet more often; the whole of Chapter 13 consists of a presentation of

the law that a fall in the rate of profit due to the development of productiveness is accompanied by an increase in the mass of profit... (Vol. III, p. 221).

So there can remain not the slightest doubt that Marx wanted to say precisely what was printed there and that he had not made a slip of the pen. And when Grossmann writes:

The collapse cannot therefore result from the fall in the rate of profit. How could a percentage proportion, such as the rate of profit, a pure number, bring about the collapse of a real economic system! (p. 196).

he thereby shows yet again that he has understood nothing of Marx and that his collapse is in complete contradiction with Marx.

Here is the point at which he could have convinced himself of the instability of his construction. But if he had allowed himself to be taught by Marx here, then his whole theory would have fallen and his book would not have been written.

The fairest way of describing Grossmann's book is as a patchwork of quotations from Marx, incorrectly applied and stuck together by means of a fabricated theory. Each time a proof is required, a quotation from Marx, which does not deal with the point in question, is introduced, and it is the correctness of Marx's words which is supposed to give the reader the impression that the theory is correct.

I. The Theory of the Collapse of Capitalism

The idea that capitalism was in a final, its mortal, crisis dominated the first years after the Russian revolution. When the revolutionary workers' movement in Western Europe abated, the Third International gave up this theory, but it was maintained by the opposition movement, the KAPD, which adopted the theory of the mortal crisis of capitalism as the distinguishing feature between the revolutionary and reformist points of view. The question of the necessity and the inevitability of the collapse of capitalism, and the way in which this is to be understood, is the most important of all questions for the working class and its understanding and tactics. Rosa Luxemburg had already dealt with it in 1912 in her book *The Accumulation of Capital*, where she came to the conclusion that in a pure, closed capitalist system the surplus value needed for accumulation could not be realised and that therefore the constant expansion of capitalism through the trade with non-capitalist countries was necessary. This means that capitalism would collapse, that it would not be able to continue to exist any longer as an economic system, when this expansion was no longer possible. It is this theory, which was challenged as soon as the book was published from different sides, which the KAPD has often referred to. A quite different theory was developed in 1929 by Henryk Grossmann in his work *Das Akkumulations und Zusammenbruchsgesetz des Kapitalistischen Systems* (The Law of Accumulation and Collapse of the Capitalist System). Grossman here deduces that capitalism must collapse

for purely economic reasons in the sense that, independently of human intervention, revolutions, etc., it would be impossible for it to continue to exist as an economic system. The severe and lasting crisis which began in 1930 has certainly prepared people's minds for such a theory of mortal crisis. The recently published manifesto of the United Workers of America makes Grossman's theory the theoretical basis for a new direction for the workers' movement. It is therefore necessary to examine it critically. But to do this a preliminary explanation of Marx's position on this question and the past discussions connected with it cannot be avoided.

So this is what the reconstruction of Marx's theory looks like! Another quotation is given in a note which says:

In the words in brackets. Engels or Marx himself made a slip of the pen; it should read correctly and at the same time a mass of profit which falls in relative value. (Translators note: Grossmann refers to the passage on p. 214 of Vol. III which reads: "Hence, the same laws produce for the social capital a growing absolute mass of profit, and a falling rate of profit").

So now it is Marx himself who makes mistakes. And here it concerns a passage where the sense, as given in the text of *Capital*, is unambiguously clear. Marx's whole analysis, which ends with the passage Grossmann finds necessary to change, is a continuation of a passage where Marx explains:

...the mass of the surplus value produced by it, and therefore the absolute mass of the profit produced by it, can, consequently, increase, and increase progressively, in spite of the progressive drop in the rate of profit. And this not only can be so. Aside from temporary fluctuations it must be so, on the basis of capitalist production (Vol. III, p. 213).

Marx then sets out the reasons why the mass of profit must increase and says once again:

As the process of production and accumulation advances therefore, the mass of available and appropriated surplus labour, and hence the absolute mass of profit appropriated by the social capital must grow (Vol. III, p. 214).

the number of workers, the mass of surplus value produced decreases and capitalism sinks still deeper into catastrophe. Has not Grossmann seen the contradiction here with Marx? Indeed he has. Thus, after some introductory remarks, he sets to work in the chapter entitled “The Causes of the Misunderstanding of the Marxian Theory of Accumulation and Collapse”:

The time is not ripe for a reconstruction of the Marxian theory of collapse (p. 195). The fact that the third chapter of Volume III is, as Engels says in the preface, presented, “as a series of uncompleted mathematical calculations” must be given as an external reason for the misunderstanding.

Engels was helped in his editing by his friend, the mathematician Samuel Moore:

But Moore was not an economist...The mode of origin of this part of the work therefore makes it probable even in advance that many opportunities for misunderstanding and error exist here and that these errors could then easily have been carried over also into the chapter dealing with the tendency of the rate of profit to fall...

(NB: these chapters had already been written by Marx!)

The probability of error becomes almost certain when we consider that it is a question here of a single word which, unfortunately, completely distorts the whole sense of the analysis: the inevitable end of capitalism is attributed to the relative fall in the rate instead of in the mass of profit. Engels or Moore had certainly made a slip of the pen (p. 195).

II. Marx and Rosa Luxemburg

In the second part of *Capital* Marx dealt with the general conditions of capitalist production as a whole. In the abstract case of pure capitalist production all production is carried on for the market, all products are bought and sold as commodities. The value of the means of production is passed on to the product and a new value is added by labour. This new value is broken down into two parts: the value of the labour power, which is paid as wages and used by the workers to buy means of subsistence, and the remainder, the surplus value, which goes to the capitalist. Where the surplus value is used for means of subsistence and luxury goods then there is simple reproduction; where a part of it is accumulated as new capital there is reproduction on an extended scale.

For the capitalists to find on the market the means of production they need and for the workers to likewise find the means of subsistence they need, a given proportion must exist between the various branches of production. A mathematician would easily express this in algebraic formulae. Marx gives instead numerical examples to express these proportions, making up cases with selected figures, to serve as illustrations. He distinguishes two spheres, two main departments of production: the means of production department (I) and the means of consumption department (II). In each of these departments a given value of the means of production used is transferred to the product without undergoing any change (constant capital, c); a given part of the newly added value is used to pay for labour-power

(variable capital, v), the other part being the surplus value (s). If it is assumed for the numerical example that the constant capital is four times greater than the variable capital (a figure which rises with technical progress) and that the surplus value is equal to the variable capital (this ratio is determined by the rate of exploitation), then, in the case of simple reproduction, the following figures satisfy these conditions:

$$\text{I } 4000c + 1000v + 1000s = 6000 \text{ (product)}$$

$$\text{II } 2000c + 500v + 500s = 3000 \text{ (product)}$$

Each of these lines satisfies the conditions. Since $v+s$, which are used as means of consumption, are together equal to a half of c , the value of the means of production, Department II must produce a value equal to a half the value produced in Department I. Then the exact proportion is found: the means of production produced (6000) are just the amount needed for the next turnover period: 4000 c for Department I and 2000 c for Department II; and the means of subsistence produced in Department II (3000) are exactly what must be supplied for the workers (1000+500) and the capitalists (1000+500).

To illustrate in a similar way the case of capital accumulation the part of surplus value going to accumulation must be indicated; this part is added to the capital in the following year (for reasons of simplicity a production period of a year is assumed each time) so that a larger capital is then employed in each department. We will assume in our example that half the surplus value is accumulated (and so used for new c and new v) and that the other half is consumed (consumption, k). The calculation of the proportion between Department I and Department II becomes a little more complicated but can of course still be found. It turns out that, on the assumptions given, this proportion is 11 : 4, as is shown in the following figures:

$$\text{I } 4400c + 1100v + 1100s (= 550k + 550acc (= 440c + 110v)) = 6600$$

ported...but because there exists the prospect of a higher profit abroad (quoted by Grossmann, p. 498).

Grossmann attacks this view as incorrect and un-Marxist:

It is not the higher profit abroad, but the lack of investment opportunities at home that is the ultimate reason for the export of capital (p. 561).

He then introduces numerous quotations from Marx about overaccumulation and refers to his schema, in which after 35 years the growing mass of capital can no longer be employed at home and so must be exported.

Let us recall that according to the schema, however, there was too little capital in existence for the existing population and that his capital surplus was only an error of calculation. Further, in all the quotations from Marx, Grossmann has forgotten to cite the one where Marx himself speaks of the export of capital:

If capital is sent abroad, this is not done because it absolutely could not be applied at home, but because it can be employed at a higher rate of profit in a foreign country (Vol. III, p. 251).

The fall in the rate of profit is one of the most important parts of Marx's theory of capital; he was the first to state and prove that this tendency to fall, which expresses itself periodically in crises, was the embodiment of the transitory nature of capitalism. With Grossmann it is another phenomenon which comes to the fore: after the 35th year workers are laid off en masse and capital is at the same time created in excess. As a result the deficit of surplus value in the following year is more serious, so that yet more labour and capital are left idle; with the fall in

laying off of workers, the formation of the reserve army, which Marx speaks of in the chapter on the accumulation of capital (Chapter 23) is not caused – as has been completely ignored until now in the literature – by the technical fact of the introduction of machines, but by the lack of investment opportunities...(p. 130).

This amounts basically to saying: if the sparrows fly away, it is not because of the gunshot but because of their timidity. The workers are eliminated by machines; the expansion of production allows them in part to find work again; in this coming and going some of them are passed by or remain outside. Must the fact that they have not yet been re-engaged be regarded as the cause of their unemployment? If Chapter 23 of *Capital* Vol. I is read, it is always elimination by machines that is treated as the cause of the reserve army, which is partially reabsorbed or released anew and reproduces itself as overpopulation, according to the economic situation. Grossmann worries himself for several pages over the proof that it is the economic relation $c:v$ that operates here, and not the technical relation means of production: labour power; in fact the two are identical. But this formation of the reserve army, which according to Marx occurs everywhere and always from the commencement of capitalism, and in which workers are replaced by machines, is not identical to the alleged formation of the reserve army according to Grossmann, which starts as a consequence of accumulation after 34 years of technical progress.

It is the same with the export of capital. In long explanations all the Marxist writers – Varga, Bukharin, Nachimson, Hilferding, Otto Bauer, Rosa Luxemburg – are one after the other demolished because they all state the view that the export of capital takes place for a higher profit. As Varga says:

It is not because it is absolutely impossible to accumulate capital at home that capital is ex-

$$\text{II } 1600c + 400v + 400s (= 200k + 200acc (= 160c + 40v)) = 2400$$

The capitalists need $4400+1600$ for the renewal and $440+160$ for the extension of their means of production, and in fact they find 6600 means of production on the market. The capitalists need $550+200$ for their consumption, the original workers need $1100+400$ and the newly engaged workers $110+40$ as means of subsistence; which together is equal to the 2400 in fact produced as means of subsistence. In the following year all the figures are increased by 10 per cent:

$$\text{I } 4840c + 1210v + 1210s (= 605k + 484c + 121v) = 7260$$

$$\text{II } 1760c + 440v + 440s (= 220k + 176c + 44v) = 2640$$

Production can thus continue increasing each year in the same proportion. This is of course a grossly oversimplified example. It could be made more complicated, and thus nearer to reality, if it is assumed that there are different compositions of capital (the ratio $c:v$) in the two departments, or different rates of accumulation or if the ratio $c:v$ is made to grow gradually, so changing the proportion between Department I and Department II each year. In all these cases the calculation becomes more complicated, but it can always be done, since an unknown figure – the proportion of Department I to Department II – can always be calculated to satisfy the condition that demand and supply coincide.

Examples of this can be found in the literature. In the real world, of course, complete equilibrium over a period is never found; commodities are sold for money and money is only used later to buy something else so that hoards are formed which act as a buffer and a reserve. And commodities remain unsold; and there is trade with non-capitalist areas. But the essential, important point is seen clearly from these reproduction schemes:

for production to expand and steadily progress given proportions must exist between the productive sectors; in practice these proportions are approximately realised; they depend on the following factors: the organic composition of capital, the rate of exploitation, and the proportion of surplus value which is accumulated.

Marx did not have the chance to provide a carefully prepared presentation of these examples (see Engels' introduction to the second volume of *Capital*). This is no doubt why Rosa Luxemburg believed that she had discovered an omission here, a problem which Marx had overlooked and so left unsolved and whose solution she had worked out in her book *The Accumulation of Capital* (1912). The problem which seemed to have been left open was who was to buy from each other more and more means of production and means of subsistence this would be a pointless circular movement from which nothing would result. The solution would lie in the appearance of buyers situated outside capitalism, foreign overseas markets whose conquest would therefore be a vital question for capitalism. This would be the economic basis of imperialism.

But from what we have said before it is clear that Rosa Luxemburg has herself made a mistake here. In the schema used as the example it can be clearly seen that all the products are sold within capitalism itself. Not only the part of the value transmitted (4400+1600) but also the 440+160 which contain the surplus value accumulated are brought, in the physical form of means of production, by the capitalists who wish to start the following year with in total 6600 means of production. In the same way, the 110+40 from surplus value is in fact bought by the additional workers. Nor is it pointless: to produce, to sell products to each other, to consume, to produce more is the whole essence of capitalism and so of men's life in this mode of production. There is no unsolved problem here which Marx overlooked.

V. Grossmann Versus Marx

Grossmann prides himself for having for the first time correctly reconstructed Marx's theory in the face of the distortions of the Social Democrats.

One of these new additions to knowledge, (he proudly says at the beginning of the introduction), is the theory of collapse, set out below, which represents the portal column of Marx's system of economic thought.

We have seen how little what Grossmann considers to be a theory of collapse has to do with Marx. Nevertheless, on his own personal interpretation, he could well believe himself to be in agreement with Marx. But there are other points where this does not hold. Because he sees his schema as a correct representation of capitalist development, Grossman deduces from it in various places explanations which, as he himself had partly noticed, contradict the views developed in *Capital*.

This is so, first of all, for the industrial reserve army. According to Grossmann's schema, from the 35th year a certain number of workers become unemployed and a reserve army forms.

The formation of the reserve army, viz., the laying off of workers, which we are discussing, must be rigorously distinguished from the laying off of workers due to machines. The elimination of workers by machines which Marx describes in the empirical part of the first volume of *Capital* (Chapter 13) is a technical fact ... (pp. 128–9) ... but the

increases by leaps and bounds; but this growth has nothing at all to do with technical progress. Indeed, in these periods variable capital too increases rapidly by leaps. But why there must be a collapse after 5 or 7 years remains obscure. In other words, the real causes which produce the rapid rise and then the collapse of economic activity are of a quite different nature from what is set out in Grossmann's reproduction schema.

Marx speaks of over-accumulation precipitating a crisis, of there being too much accumulated surplus value which is not invested and which depresses profits. But Grossmann's collapse comes about through there being too little accumulated surplus value.

The simultaneous surplus of unused capital and unemployed workers is a typical feature of crises; Grossmann's schema leads to a lack of sufficient capital, which he can only transform into a surplus by committing the mistake mentioned above. So Grossmann's schema cannot demonstrate a final collapse, nor does it correspond to the real phenomena of collapse, crises.

It can also be added that his schema, in conformity with its origin, suffers from the same defect as Bauer's: the real, impetuous pushing forward of capitalism over the world which brings more and more peoples under its domination is here represented by a calm and regular population growth of 5 per cent a year, as if capitalism was confined in a closed national economy.

III. Rosa Luxemburg and Otto Bauer

Soon after Rosa Luxemburg's book was published it was criticised from different sides. Thus Otto Bauer wrote a criticism in an article in the *Neue Zeit* (7–14 March 1913). As in all the other criticisms Bauer showed that production and sales do correspond. But his criticism had the special feature that it linked accumulation to population growth. Otto Bauer first assumes a socialist society in which the population grows each year by five per cent; the production of means of subsistence must therefore grow in the same proportion and the means of production must increase, because of technical progress, at a faster rate. The same has to happen under capitalism but here this expansion does not take place through planned regulation, but through the accumulation of capital. Otto Bauer provides as a numerical example a schema which satisfies these conditions in the simplest way: an annual growth of variable capital of five per cent and of constant capital of ten per cent and a rate of exploitation of 100 per cent ($s = v$). These conditions themselves determine the share of surplus value which is consumed and the share which must be accumulated in order to produce the posited growth of capital. No difficult calculations are needed to draw up a schema which produces the exact growth from year to year:

$$\text{Year 1 } 200,000c + 100,000v + 100,000s (= 20,000c + 5,000v + 75,000k)$$

Year 2 220,000c + 105,000c + 105,000s (= 22,000c + 5,250v + 77,750k)

Year 3 242,000c + 110,250v + 110,250s (= 24,200c + 5,512v + 80,538k)

Bauer continues his schema for four years and also calculates the separate figures for Departments I and II. This was sufficient for the purpose of showing that no problem in Rosa Luxemburg's sense existed. But the character of this criticism was itself bound to call forth criticism. Its basic idea is well brought out by Bauer's introduction of population growth in a socialist society. Capitalism thereby appears as an unplanned socialism, as a wild and kicking foal that has not yet been broken in and which only needs to be tamed by the hands of the socialist trainer. Accumulation here serves only to enlarge production as required by population growth, just as capitalism has the general function of providing mankind with means of subsistence; but, because of the lack of planning, both these functions are carried out badly and erratically, sometimes providing too much, sometimes too little, and causing catastrophes. A gentle growth of population of 5 per cent a year might well suit a socialist society in which all mankind was neatly lined up. But for capitalism, as it is and was, this is an inappropriate example. Capitalism's whole history has been a rush forward, a violent expansion far beyond the limits of population growth. The driving force has been the urge to accumulation; the greatest possible amount of surplus value has been invested as new capital and, to set it in motion, more and more sections of the population have been drawn into the process. There was even, and there still is, a large surplus of workers who remain outside or half outside as a reserve, kept ready to serve the need to set in motion the accumulated capital, being drawn in or rejected as required by this need. This essential and basic feature of capitalism was completely ignored in Bauer's analysis.

tralisising effect alongside the centripetal one (*Capital*, Vol. II, p. 241).

As Grossmann correctly emphasises, these counteracting tendencies refer to "soon" so that with them the process only takes place more slowly. But was Marx talking here of a purely economic collapse? Let us read the passage which precedes in Marx:

It is this same severance of the conditions of production, on the one hand, from the producers, on the other, that forms the conception of capital. It begins with primitive accumulation, appears as a permanent process in the accumulation and concentration of capital, and expresses itself finally as centralisation of existing capitals in a few hands and a deprivation of many of their capital (to which expropriation is now changed).

It is clear that the collapse which thus results is, as so often in Marx, the ending of capitalism by socialism. So there is nothing in the quotations from Marx: a final economic catastrophe can be as little read from them as it can be concluded from the reproduction schema. But can the schema serve to analyse and explain periodic crises? Grossmann seeks to join the two together: "The Marxian theory of collapse is at the same time a theory of crises" — so reads the beginning of Chapter 8 (p. 137). But as proof he only provides a diagram (p. 141) in which a steeply rising 'accumulation line' is divided after 35 years; but here a crisis occurs every 5 or 7 years when in the schema everything is going smoothly. If a more rapid collapse is desired it would be obtained if the annual rate of growth of constant capital was not 10 per cent but much greater. In the ascendant period of the economic cycle there is in fact a much more rapid growth of capital; the volume of production

But how can someone attribute this alleged collapse to Marx and produce, chapter after chapter, dozens of quotations from Marx? All these quotations in fact relate to economic crises, to the alternating cycle of prosperity and depression. While the schema has to serve to show a predetermined final economic collapse after 35 years, we read two pages further on of “the Marxian theory of the economic cycle expounded here” (p. 123).

Grossmann is only able to give the impression that he is presenting a theory of Marx’s by continually scattering in this way throughout his own statements comments which Marx made on periodic crises. But nothing at all is to be found in Marx about a final collapse in line with Grossmann’s schema. It is true that Grossmann quotes a couple of passages which do not deal with crises. Thus he writes on page 263:

It appears that “capitalist production meets in the development of its productive forces a barrier..”
(Marx, *Capital*, Vol. III, p. 237).

But if we open Volume III of *Capital* at page 237 we read there:

But the main thing about their (i.e., Ricardo and other economists) horror of the falling rate of profit is the feeling that capitalist production meets in the development of its productive forces a barrier...

which is something quite different. And on page 79 Grossmann gives this quotation from Marx as proof that even the word “collapse” comes from Marx:

This process would soon bring about the collapse of capitalist production if it were not for counter-acting tendencies, which have continuous decen-

It was obvious that Rosa Luxemburg would take this as the target for her anti-critique. In answer to the proof that there was no problem of omission in Marx’s schemas, she could bring forward nothing much else than the scoffing declaration that everything can be made to work beautifully in artificial examples. But making population growth the regulator of accumulation was so contrary to the spirit of Marxian teaching that the sub-title of her anti-critique “What the Epigones have done to Marxian Theory” was this time quite suitable. It was not a question here (as it was in Rosa Luxemburg’s own case) of a simple scientific mistake; Bauer’s mistake reflected the practical political point of view of the Social Democrats of that time. They felt themselves to be the future statesmen who would take over from the current ruling politicians and carry through the organisation of production; they therefore did not see capitalism as the complete opposite to the proletarian dictatorship to be established by revolution, but rather as a mode of producing means of subsistence that could be improved and had not yet been brought under control.

IV. Grossmann's Reproduction Schema

Henryk Grossman linked his reproduction schema to that set out by Otto Bauer. He noticed that it is not possible to continue it indefinitely without it in time coming up against contradictions. This is very easy to see. Otto Bauer assumes a constant capital of 200,000 which grows each year by 10 per cent and a variable capital of 100,000 which grows each year by 5 per cent, with the rate of surplus value being assumed to be 100 per cent, i.e., the surplus value each year is equal to the variable capital. In accordance with the laws of mathematics, a sum which increases each year by 10 per cent doubles itself after 7 years, quadruples itself after 14 years, increases ten times after 23 years and a hundred times after 46 years. Thus the variable capital and the surplus value which in the first year were each equal to half the constant capital are after 46 years only equal to a twentieth of a constant capital which has grown enormously over the same period. The surplus value is therefore far from enough to ensure the 10 per cent annual growth of constant capital.

This does not result just from the rates of growth of 10 and 5 percent chosen by Bauer. For in fact under capitalism surplus value increases less rapidly than capital. It is a well-known fact that, because of this, the rate of profit must continually fall with the development of capitalism. Marx devoted many chapters to this fall in the rate of profit. If the rate of profit falls to 5 per cent the capital can no longer be increased by 10 per cent, for the increase in capital out of accumulated surplus value is

needed for the purchase of means of production. If a population of 551,584 uses a constant capital of 5,616,200, then a population of 540,075 would use a constant capital of only 5,499,015. There, therefore, remains an excess capital of 117,185 without an investment outlet. Thus the schema shows a perfect example of the situation Marx had in mind when he gave the corresponding part of the third volume of *Capital* the title "Excess Capital and Excess Population" (p. 116).

Grossmann has clearly not noticed that these 11,000 become unemployed only because, in a complete arbitrary fashion and without giving any reason, he makes the variable capital bear the whole deficit, while letting the constant capital calmly grow by 10 percent as if nothing was wrong; but when he realises that there are no workers for all these machines, or more correctly that there is no money to pay their wages, he prefers not to install them and so has to let the capital lie unused. It is only through this mistake that he arrives at a "perfect example" of a phenomenon which appears during ordinary capitalist crises. In fact the entrepreneurs can only expand their production to the extent that their capital is enough for both machinery and wages combined. If the total surplus value is too small, this will be divided, in accordance with the assumed technical constraint, proportionately between the elements of capital; the calculation shows that of the 525,319 surplus value, 500,409 must be added to constant capital and 24,910 to variable capital in order to arrive at the correct proportion corresponding to technical progress. Not 11,000 but 1,326 workers are set free and there is no question of excess capital. If the schemes is continued in this correct way, instead of a catastrophic eruption there is an extremely slow increase in the number of workers laid off.

Let us consider a little closer the basis of this collapse. On what is the necessary growth of constant capital by 10 per cent each time based? In the quotation given above it was stated that technical progress (the rate of population growth being given) prescribes a given annual growth of constant capital. So it could then be said, without the detour of the production schema: when the rate of profit becomes less than the rate of growth demanded by technical progress then capitalism must break down. Leaving aside the fact that this has nothing to do with Marx, what is this growth of capital demanded by technology? Technical improvements are introduced, in the context of mutual competition, in order to obtain an extra profit (relative surplus value); the introduction of technical improvements is however limited by the financial resources available. And everybody knows that dozens of inventions and technical improvements are not introduced and are often deliberately suppressed by the entrepreneurs so as not to devalue the existing technical apparatus. The necessity of technical progress does not act as an external force; it works through men, and for them necessity is not valid beyond possibility.

But let us admit that this is correct and that, as a result of technical progress, constant capital has to have a varying proportion, as in the schema: in the 30th year 3170:412, in the 34th year 4641:500, in the 35th year 5106:525, and in the 36th, 5616:551. In the 35th year the surplus value is only 525,000 and is not enough for 510,000 to be added to constant capital and 26,000 to variable capital. Grossmann lets the constant capital grow by 510,000 and retains only 15,000 as the increase in variable capital – 11,000 too little! He says of this:

11,509 workers (out of 551,000) remain unemployed; the reserve army begins to form. And because the whole of the working population does not enter the process of production, the whole amount of extra constant capital (510,563) is not

necessarily smaller than the surplus value itself. The rate of accumulation evidently thus has the rate of profit as its higher limit (see Marx, *Capital*, Volume III, p. 236, where it is stated that “the rate of accumulation falls with the rate of profit”). The use of a fixed figure – 10 percent which was acceptable for a period of a few years as in Bauer, becomes unacceptable when the reproduction schema are continued over a long period.

Yet Grossman, unconcerned, continues Bauer’s schema year by year and believes that he is thereby reproducing real capitalism. He then finds the following figures for constant and variable capital, surplus value, the necessary accumulation and the amount remaining for the consumption of the capitalists (the figures have been rounded to the nearest thousand):

	c	v	s	accumulation	consumption
Commencement	100	100	100	20+5=25	75
After 20 years	1222	253	253	122+13=135	118
After 30 years	3170	412	412	317+21=338	374
After 34 years	4641	500	500	464+25=489	481
After 35 years	5106	525	525	510+26=536	1

After 21 years the share of surplus value remaining for consumption begins to diminish; in the 34th it almost disappears and in the 35th it is even negative; the Shylock of constant capital pitilessly demands its pound of flesh, it wants to grow at 10

per cent, while the poor capitalists go hungry and keep nothing for their own consumption.

From the 35th year therefore accumulation — on the basis of the existing technical progress — cannot keep up with the pace of population growth. Accumulation would be too small and there would necessarily arise a reserve army which would have to grow each year (Grossmann, p. 126).

In such circumstances the capitalists do not think of continuing production. Or if they do, they don't do so; for, in view of the deficit of 11 in capital accumulation they would have to reduce production. (In fact they would have had to have done so before in view of their consumption expenses). A part of the workers therefore become unemployed; then a part of the capital becomes unused and the surplus value produced decreases; the mass of surplus value falls and a still greater deficit appears in accumulation, with a still greater increase in unemployment. This, then, is the economic collapse of capitalism. Capitalism becomes economically impossible. Thus does Grossmann solve the problem which he had set on page 79:

How, in what way, can accumulation lead to the collapse of capitalism?

Here we find presented what in the older Marxist literature was always treated as a stupid misunderstanding of opponents, for which the name 'the big crash' was current. Without there being a revolutionary class to overcome and dispossess the bourgeoisie, the end of capitalism comes for purely economic reasons; the machine no longer works, it clogs up, production has become impossible. In Grossmann's words:

...with the progress of capital accumulation the whole mechanism, despite periodic interruptions,

necessarily approaches nearer and nearer to its end...The tendency to collapse then wins the upper hand and makes itself felt absolutely as 'the final crisis' (p. 140).

and, in a later passage:

...from our analysis it is clear that, although on our assumptions objectively necessary and although the moment when it will occur can be precisely calculated, the collapse of capitalism need not therefore result automatically by itself at the awaited moment and therefore need not be waited for purely passively (p. 601).

In this passage, where it might be thought for a moment that it is going to be a question of the active role of the proletariat as agent of the revolution, Grossmann has in mind only changes in wages and working time which upset the numerical assumptions and the results of the calculation. It is in this sense that he continues:

It thus appears that the idea of a necessary collapse for objective reasons is not at all in contradiction to the class struggle; that, on the contrary, the collapse, despite its objectively given necessity, can be widely influenced by the living forces of classes in struggle and leaves a certain margin of play for the active intervention of classes. It is for this precise reason that in Marx the whole analysis of the process of reproduction leads to the class struggle (p.602).

The "it is for this precise reason" is rich, as if the class struggle meant for Marx only the struggle over wage claims and hours of work.