The wealth of those societies in which the capitalist mode of production prevails, presents itself as "an immense accumulation of commodities," (1*) its unit being a single commodity. Our investigation must therefore begin with the analysis of a commodity.

A commodity is, in the first place, an object outside us, a thing that by its properties satisfies human wants of some sort or another. The nature of such wants, whether, for instance, they spring from the stomach or from fancy, makes no difference. (2*) Neither are we here concerned to know how the object satisfies these wants, whether directly as means of subsistence, or indirectly as means of production.

Every useful thing, as iron, paper, etc., may be looked at from the two points of view of quality and quantity. It is an assemblage of many properties, and may therefore be of use in various ways. To discover the various uses of things is the work of history. (3*) So also is the establishment of socially-recognised standards of measure for the quantities of these useful objects. The diversity of these measures has its origin partly in the diverse nature of the objects to be measured, partly in convention.

The utility of a thing makes it a use value. (4*) But this utility is not a thing of air. Being limited by the physical properties of the commodity, it has no existence apart from that commodity. A commodity, such as iron, corn, or a diamond, is therefore, so far as it is a material thing, a use value, something useful. This property of a commodity is independent of the amount of labour required to appropriate its useful qualities. When treating of use value, we always assume to be dealing with definite quantities, such as dozens of watches, yards of linen, or tons of iron. The use values of commodities furnish the material for a special study, that of the commercial knowledge of commodities. (5*)
Use values become a reality only by use or consumption they also constitute the substance of all wealth, whatever may be the social form of that wealth. In the form of society we are about to consider, they are, in addition, the material depositories of exchange-value.

Exchange-value, at first sight, presents itself as a quantitative relation, as the proportion in which values in use of one sort are exchanged for those of another sort, a relation constantly changing with time and place. Hence exchange value appears to be something accidental and purely relative, and consequently an intrinsic value, i.e., an exchange-value that is inseparably connected with, inherent in commodities, seems a contradiction in terms. Let us consider the matter a little more closely.

A given commodity, e.g., a quarter of wheat is exchanged for x blacking, y silk, or z gold, etc.—in short, for other commodities in the most different proportions. Instead of one exchange value, the wheat has, therefore, a great many. But since x blacking, y silk, or z gold, etc., each represent the exchange-value of one quarter of wheat, x blacking, y silk, z gold, etc., must, as exchange values, be replaceable by each other, or equal to each other. Therefore, first: the valid exchange-values of a given commodity express something equal; secondly, exchange-value, generally, is only the mode of expression, the phenomenal form, of something contained in it, yet distinguishable from it.

Let us take two commodities, e.g., corn and iron. The proportions in which they are exchangeable, whatever those proportions may be, can always be represented by an equation in which a given quantity of corn is equated to some quantity of iron: e.g., 1 quarter corn = x cwt. iron. What does this equation tell us? It tells us that in two different things—in 1 quarter of corn and x cwt. of iron, there exists in equal quantities something common to both. The two things must therefore be equal to a third, which in itself is neither the one nor the other. Each of them, so far as it is exchange-value, must therefore be reducible to this third.

A simple geometrical illustration will make this clear. In order to calculate and compare the areas of rectilinear figures, we decompose them into triangles. But the area of the triangle itself is expressed by something totally different from its visible figure, namely, by half the product of the base into the altitude. In the same way the exchange values of commodities must be capable of being expressed in terms of something common to them all, of which thing they represent a greater or less quantity.
This common "something" cannot be either a geometrical, a chemical, or any other natural property of commodities. Such properties claim our attention only in so far as they affect the utility of those commodities, make them use values. But the exchange of commodities is evidently an act characterised by a total abstraction from use-value. Then one use value is just as good as another, provided only it be present in sufficient quantity. Or, as old Barbon says, "one sort of wares are as good as another, if the values be equal. There is no difference or distinction in things of equal value... An hundred pounds' worth of lead or iron, is of as great value as one hundred pounds' worth of silver or gold."(8*) As use-values, commodities are, above all, of different qualities, but as exchange-values they are merely different quantities, and consequently do not contain an atom of use-value.

If then we leave out of consideration the use-value of commodities, they have only one common property left, that of being products of labour. But even the product of labour itself has undergone a change in our hands. If we make abstraction from its use-value, we make abstraction at the same time from the material elements and shapes that make the product a use-value; we see in it no longer a table, a house, yarn, or any other useful thing. Its existence as a material thing is put out of sight. Neither can it any longer be regarded as the product of the labour of the joiner, the mason, the spinner, or of any other definite kind of productive labour. Along with the useful qualities of the products themselves, we put out of sight both the useful character of the various kinds of labour embodied in them, and the concrete forms of that labour; there is nothing left but what is common to them all; all are reduced to one and the same sort of labour, human labour in the abstract.

Let us now consider the residue of each of these products; it consists of the same unsubstantial reality in each, a mere congelation of homogeneous human labour, of labour-power expended without regard to the mode of its expenditure. All that these things no tell us is, that human labour-power has been expended in their production, that human labour is embodied in them. When looked at as crystals of this social substance, common to them all, they are -- Values.

We have seen that when commodities are exchange, their exchange-value manifests itself as something totally independent of their use value. But if we abstract from their use-vale, there remains their Value as defined above. Therefore, the common substance that manifests itself in the exchange-value of commodities, whenever they are exchanged, is their value. The progress of our investigation will show that exchange-value is
the only form in which the value of commodities can manifest itself or be expressed. For the present, however, we have to consider the nature of value independently of this, its form.

A use-value, or useful article, therefore, has value only because human labour in the abstract has been embodied or materialised in it. How, then, is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labour, contained in the article. The quantity of labour, however, is measured by its duration, and labour-time in its turn finds its standard in weeks, days, and hours.

Some people might think that if the value of a commodity is determined by the quantity of labour spent on it, the more idle and unskilful the labourer, the more valuable would his commodity be, because more time would be required in its production. The labour, however, that forms the substance of value, is homogeneous human labour, expenditure of one uniform labour-power. The total labour-power of society, which is embodied in the sum total of the values of all commodities produced by that society, counts here as one homogeneous mass of human labour-power, composed though it be of innumerable individual units. Each of these units is the same as any other, so far as it has the character of the average labour power of society, and takes effect as such; that is, so far as it requires for producing a commodity, no more time than is needed on an average, no more than is socially necessary. The labour time socially necessary is that required to produce an article under the normal conditions of production, and with the average degree of skill and intensity prevalent at the time. The introduction of powerlooms into England probably reduced by one half the labour required to weave a given quantity of yarn into cloth. The handloom weavers, as a matter of fact, continued to require the same time as before; but for all that, the product of one hour of their labour represented after the change only half an hour’s social labour, and consequently fell to one-half its former value.

We see then that that which determines the magnitude of the value of any article is the amount of labour socially necessary, or the labour-time socially necessary for its production. Each individual commodity, in this connection, is to be considered as an average sample of its class. Commodities, therefore, in which equal quantities of labour are embodied, or which can be produced in the same time, have the same value. The value of one commodity is to the value of any other, as the labour time necessary for the production of the one is to that necessary for the production of the other. "As values, all commodities are only definite masses of congealed
labour-time."(11*)

The value of a commodity would therefore remain constant, if the labour time required for its production also remained constant. But the latter changes with every variation in the productiveness of labour. This productiveness is determined by various circumstances, amongst others, by the average amount of skill of the workmen, the state of science, and the degree of its practical application, the social organisation of production, the extent and capabilities of the means of production, and by physical conditions. For example, the same amount of labour in favourable seasons is embodied in 8 bushels of corn, and in unfavourable, only in four. The same labour extracts from rich mines more metal than from poor mines. Diamonds are of very rare occurrence on the earth’s surface, and hence their discovery costs, on an average, a great deal of labour time. Consequently much labour is represented in a small compass. Jacob doubts whether gold has ever been paid for at its full value. This applies still more to diamonds. According to Eschwege, the total produce of the Brazilian diamond mines for the eighty years, ending in 1823, had not realised the price of one-and-a-half years’ average produce of the sugar and coffee plantations of the same country, although the diamonds cost much more labour, and therefore represented more value. With richer mines, the same quantity of labour would embody itself in more diamonds, and their value would fall. If we could succeed at a small expenditure of labour, in converting carbon into diamonds, their value might fall below that of bricks. In general, the greater the productiveness of labour, the less is the labour time required for the production of an article, the less is the amount of labour crystallised in that article, and the less is its value; and vice versa, the less the productiveness of labour, the greater is the labour time required for the production of an article, and the greater is its value. The value of a commodity, therefore, varies directly as the quantity, and inversely as the productiveness, of the labour incorporated in it.

A thing can be a use-value, without having value. This is the case whenever its utility to man is not due to labour. Such are air, virgin soil, natural meadows, etc. A thing can be useful, and the product of human labour, without being a commodity. Whoever directly satisfies his wants with the produce of his own labour, creates, indeed, use-values, but not commodities. In order to produce the latter, he must not only produce use values, but use values for others, social use values. (And not only for others, without more. The medieval peasant produced quit-rent-corn for his feudal lord and tithe-corn for his parson. But neither the quit-rent corn nor the tithe-corn became
commodities by reason of the fact that they had been produced for others. To become a commodity a product must be transferred to another, whom it will serve as a use-value, by means of an exchange.) Lastly nothing can have value, without being an object of utility. If the thing is useless, so is the labour contained in it; the labour does not count as labour, and therefore creates no value.

Section 2 -- The Two Fold Character of the Labour Embodied in Commodities

At first sight a commodity presented itself to us as a complex of two things -- use-value and exchange-value. Later on, we saw also that labour, too, possesses the same twofold nature; for, so far as it finds expression in value, it does not possess the same characteristics that belong to it as a creator of use-values. I was the first to point out and to examine critically this two-fold nature of the labour contained in commodities. As this point is the pivot on which a clear comprehension of Political Economy turns, we must go more into detail.

Let us take two commodities such as a coat and 10 yards of linen, and let the former be double the value of the latter, so that, if 10 yards of linen = W, the coat = 2W.

The coat is a use value that satisfies a particular want. Its existence is the result of a special sort of productive activity, the nature of which is determined by its aim, mode of operation, subject, means, and result. The labour, whose utility is thus represented by the value in use of its product, or which manifests itself by making its product a use value, we call useful labour. In this connection we consider only its useful effect.

As the coat and the linen are two qualitatively different use values, so also are the two forms of labour that produce them, tailoring and weaving. Were these two objects not qualitatively different, not produced respectively by labour of different quality, they could not stand to each other in the relation of commodities. Coats are not exchanged for coats, one use-value is not exchanged for another of the same kind.

To all the different varieties of values in use there correspond as many different kinds of useful labour, classified according to order, genus, species, and variety to which they belong in the social division of labour. This division of labour is a necessary condition for the production of commodities, but it does not follow, conversely, that the production of commodities is a necessary condition for the division of labour. In the primitive Indian community there is social division of
labour, without production of commodities. Or, to take an example nearer home, in every factory the labour is divided according to a system, but this division is not brought about by the operatives mutually exchanging their individual products. Only such products can become commodities with regard to each other, as result from different kinds of labour, each kind being carried on independently and for the account of private individuals.

To resume, then: In the use-value of each commodity there is contained useful labour, i.e., productive activity of a definite kind and exercised with a definite aim. Use values cannot confront each other as commodities, unless the useful labour embodied in them is qualitatively different in each of them. In a community, the produce of which in general takes the form of commodities, i.e., in a community of commodity producers, this qualitative difference between the useful forms of labour that are carried on independently by individual producers, each on their own account, develops into a complex system, a social division of labour.

Anyhow, whether the coat be worn by the tailor or by his customer, in either case it operates as a use value. Nor is the relation between the coat and the labour that produced it altered by the circumstance that tailoring may have become a special trade, an independent branch of the social division of labour. Wherever the want of clothing forced them to it, the human race made clothes for thousands of years, without a single man becoming a tailor. But coats and linen, like every other element of material wealth that is not the spontaneous produce of Nature, must invariably owe their existence to a special productive activity, exercised with a definite aim, an activity that appropriates particular nature given materials to particular human wants. So far therefore as labour is a creator of use value, is useful labour, it is a necessary condition, independent of all forms of society, for the existence of the human race; it is an eternal nature-imposed necessity, without which there can be no material exchanges between man and Nature, and therefore no life.

The use values, coat, linen, etc., i.e., the bodies of commodities, are combinations of two elements -- matter and labour. If we take away the useful labour expended upon them, a material substratum is always left, which is furnished by Nature without the help of man. The latter can work only as Nature does, that is by changing the form of matter. Nay more, in this work of changing the form he is constantly helped by natural forces. We see, then, that labour is not the only source of material wealth, of use-values produced by labour. As William Petty puts it, labour is its father and the earth its mother.
Let us no pass from the commodity considered as a use-value to the value of commodities.

By our assumption, the coat is worth twice as much as the linen. But this is a mere quantitative difference, which for the present does not concern us. We bear in mind, however, that if the value of the coat is double that of 10 yds. of linen, 20 yds. of linen must have the same value as one coat. So far as they are values, the coat and the linen are things of a like substance, objective expressions of essentially identical labour. But tailoring and weaving are, qualitatively, different kinds of labour. There are, however, states of society in which one and the same man does tailoring and weaving alternately, in which case these two forms of labour are mere modifications of the labour of the same individual, and no special and fixed functions of different persons: just as the coat which our tailor makes one day, and the trousers which he makes another day, imply only a variations in the labour of one and the same individual. Moreover, we see at a glance that in our capitalist society, a given portion of human labour is, in accordance with the varying demand, at one time supplied in the form of tailoring, at another in the form of weaving. This change may possibly not take place without friction, but take it must.

Productive activity, if we leave out of sight its special form, viz., the useful character of the labour, is nothing but the expenditure of human labour-power. Tailoring and weaving, though qualitatively different productive activities, are each a productive expenditure of human brains, nerves, and muscles, and in this sense are human labour. They are but two different modes of expending human labour-power. Of course, this labour-power, which remains the same under all its modifications, must have attained a certain pitch of development before it can be expended in a multiplicity of modes. But the value of a commodity represents human labour in the abstract, the expenditure of human labour in general. And just as in society, a general or a banker plays a great part, but mere man, on the other hand, a very shabby part, so here with mere human labour. It is the expenditure of simple labour power, i.e., of the labour-power which, on an average, apart from any special development, exists in the organism of every ordinary individual. Simple average labour, it is true, varies in character in different countries and at different times, but in a particular society it is given. Skilled labour counts only as simple labour intensified, or rather, as multiplied simple labour, a given quantity of skilled being considered equal to a greater quantity of simple labour. Experience shows that this reduction is constantly being made. A commodity may be the product of the most skilled labour, but its
value. by equating it to the product of simple unskilled labour, represents a definite quantity of the latter labour alone. (14*) The different proportions in which different sorts of labour are reduced to unskilled labour as their standard, are established by a social process that goes on behind the backs of the producers, and, consequently, appear to be fixed by custom. For simplicity's sake we shall henceforth account every kind of labour to be unskilled, simple labour; by this we do no more than save ourselves the trouble of making the reduction.

Just as, therefore, in viewing the coat and linen as values, we abstract from their different use values, so it is with the labour represented by those values; we disregard the difference between its useful forms, weaving and tailoring. As the use-values, coat and linen, are combinations of special productive activities with cloth and yarn, while the values, coat and linen, are, on the other hand, mere homogeneous congelations of undifferentiated labour, so the labour embodied in these latter values does not count by virtue of its productive relation to cloth and yarn, but only as being expenditure of human labour-power. Tailoring and weaving are necessary factors in the creation of the use-values, coat and linen, precisely because these two kinds of labour are of different qualities; but only in so far as abstraction is made from their special qualities, only in so far as both possess the same quality of being human labour, do tailoring and weaving form the substance of the values of the same articles.

Coats and linen, however, are not merely values, but values of definite magnitude, and according to our assumption, the coat is worth twice as much as the ten yards of linen. Whence this difference in their values? It is owing to the fact that the linen contains only half as much labour as the coat, and consequently, that in the production of the latter, labour-power must have been expended during twice the time necessary for the production of the former.

While, therefore, with reference to use-value, the labour contained in a commodity counts only qualitatively, with reference to value it counts only quantitatively, and must first be reduced to human labour pure and simple. In the former case, it is a question of How and What, in the latter of How much? How long a time? Since the magnitude of the value of a commodity represents only the quantity of labour embodied in it, it follows that all commodities, when taken in certain proportions, must be equal in value.

If the productive power of all the different sorts of useful labour required for the production of a coat remains unchanged, the sum of the values of the coats produced increases with their
number. If one coat represents $x$ days’ labour, two coats represent $2x$ days’ labour, and so on. But assume that the duration of the labour necessary for the production of a coat becomes doubled or halved. In the first case, one coat is worth as much as two coats were before; in the second case, two coats are only worth as much as one was before, although in both cases one coat renders the same service as before, and the useful labour embodied in it remains of the same quality. But the quantity of labour spent on its production has altered.

An increase in the quantity of use-values is an increase of material wealth. With two coats two men can be clothed, with one coat only one man. Nevertheless, an increased quantity of material wealth may correspond to a simultaneous fall in the magnitude of its value. This antagonistic movement has its origin in the two-fold character of labour. Productive power has reference, of course, only to labour of some useful concrete form; the efficacy of any special productive activity during a given time being dependent on its productiveness. Useful labour becomes, therefore, a more or less abundant source of products, in proportion to the rise or fall of its productiveness. On the other hand, no change in this productiveness affects the labour represented by value. Since productive power is an attribute of the concrete useful forms of labour, of course it can no longer have any bearing on that labour, so soon as we make abstraction from those concrete useful forms. However then productive power may vary, the same labour, exercised during equal periods of time, always yields equal amounts of value. But it will yield, during equal periods of time, different quantities of values in use; more, if the productive power rise, fewer, if it fall. The same change in productive power, which increases the fruitfulness of labour, and, in consequence, the quantity of use-values produced by that labour, will diminish the total value of this increased quantity of use-values, provided such change shorten the total labour-time necessary for their production; and vice versa.

On the one hand all labour is, speaking physiologically, an expenditure of human labour power, and in its character of identical abstract human labour, it creates and forms the value of commodities. On the other hand, all labour is the expenditure of human labour-power in a special form and with a definite aim, and in this, its character of concrete useful labour, it produces use-values.(15*)

NOTES:

2. "Desire implies want; it is the appetite of the mind, and as natural as hunger in the body... The greater number of things have their value from supplying the wants of the mind." Nicolas Barbon: "A Discourse on coining the new money lighter, in answer to Mr. Locke's Considerations" etc. London, 1696, p. 2, 3.

3. "Things have an intrinsick virtue" (this is Barbon's special term for value in use) "which in all places have the same virtue; as the loadstone to attract iron." (l.c. p. 6). the property which the magnet possesses of attracting iron, became of use only after by means of that property the polarity of the magnet had been discovered.

4. "The natural worth of anything consists in its fitness to supply the necessities, or serve the conveniences of human life." (John Locke, "Some Considerations on the consequences of the lowering of interest, 1691," in Works Edit. London, 1777. Vol. II, p. 28.) In English writers of the 17th century we frequently find "worth" in the sense of value in use, and "value" in the sense of exchange value. This is quite in accordance with the spirit of a language that likes to use a Teutonic word for the actual thing, and a Romance word for its reflexion.

5. In bourgeois societies the economical fictio juris prevails, that every one, as a buyer, possesses an encyclopaedic knowledge of commodities.


7. "Nothing can have an intrinsick value." (N. Barbon, l.c., p. 6) or as Butler says --
   "The value of a thing
   Is just as much as it will bring."

8. N. Barbon, l.c., p. 53 and 7.

9. "The value of them (the necessaries of life), when they are exchanged the one for another, is regulated by the quantity of labour necessarily required, and commonly taken in producing them." (Some Thoughts on the Interest of Money in general and
particularly in the Publick Funds, etc., London, p. 36) This remarkable anonymous work, written in the last century bears no date. It is clear, however, from internal evidence, that it appeared in the reign of George II, about 1739 or 1740.

10. "Toutes les productions d’un même genre ne forment proprement qu’une masse, dont le pris se determine en general et sans egard aux circonstances particulières." (Le Trosne, l.c., p. 893.)


12. Tutti i fenomeni dell’ universo, sieno essi prodotti della mano, dell’ uomo, ovvero delle universali leggi della fisica, non ci danno idea di attuale creazione, ma unicamente di una modificazione della materia. Accostare e separare sono gli unici elementi che l’ingegno umano ritrova analizzando l’idea della riproduzione: e tanto e riproduzione di valore (value in use, although Verri in this passage of his controversy with the Physiocrats is not himself quite certain of the kind of value he is speaking of) e di ricchezze se la terra l’aria e l’acqua ne’ campi si trasmutino in grano, come se colla mano dell’ uomo il glutine di un insetto si trasmuti in velluto ovvero alcuni pezzetti di metallo si organizzino a formare una ripetizione."Pietro Verri. "Meditazioni sulla Economia Politica" [first printed in 1773] in Custodi’s edition of the Italian Economists, Parte Moderna, t. xv. p. 22.


14. The reader must note that we are not speaking here of the wages or value that the labourer gets for a given labour time, but of the value of the commodity in which that labour time is materialized. Wages is a category that, as yet, has no existence at the present stage of our investigation.

15. In order to prove that labour alone is that all-sufficient and real measure, by which at all times the value of all commodities can be estimated and compared, Adam Smith says, "Equal quantities of labour must at all times and in all places have the same value for the labourer. In his normal state of health, strength and activity, and with the average degree of skill that he may possess, he must always give up the same portion of his rest, his freedom, and his happiness." (Wealth of Nations, b. I. ch. v.) On the one hand, Adam Smith here (but not everywhere) confuses the determination of value by means of the
quantity of labour expended in the production of commodities, with the determination of the values of commodities by means of the value of labour, and seeks in consequence to prove that equal quantities of labour have always the same value. On the other hand, he has a presentiment, that labour, so far as it manifests itself in the value of commodities, counts only as expenditure of labour power, but he treats this expenditure as the mere sacrifice of rest, freedom, and happiness, not as the same time the normal activity of living being. But then, he has the modern wage-labourer in his eye. Much more aptly, the anonymous predecessor of Adam Smith, quoted above in Note 1, p. 6, says, "one man has employed himself a week in providing this necessary of life and he that gives him some other in exchange, cannot make a better estimate of what is a proper equivalent, than by computing what cost him just as much labour and time; which in effect is no more than exchanging one man's labour in one thing for a time certain, for another man's labour in another thing for the same time." (l.c. p. 39) [The English language has the advantage of possessing different words for the two aspects of labour here considered. The labour which creates Use-Value, and counts qualitatively, is Work, as distinguished from Labour; that which creates Value and counts quantitatively, is Labour as distinguished from Work. - ED.]

Chapter 8

Constant Capital and Variable Capital

The various factors of the labour-process play different parts in forming the value of the product.

The labourer adds fresh value to the subject of his labour by expending upon it a given amount of additional labour, no matter what the specific character and utility of that labour may be. On the other hand, the values of the means of production used up in the process are preserved, and present themselves afresh as constituent parts of the value of the product; the values of the cotton and the spindle, for instance, reappear again in the value of the yarn. The value of the means of production is therefore preserved, by being transferred to the product. This transfer takes place during the conversion of those means into a product, or in other words, during the labour-process. It is brought about by labour; but how?

The labourer does not perform two operations at once, one in order to add value to the cotton, the other in order to preserve
the value of the means of production, or, in what amounts to the same thing, to transfer to the yarn, to the product, the value of the cotton on which he works, and part of the value of the spindle with which he works. But, by the very act of adding new value, he preserves their former values. Since, however, the addition of new value to the subject of his labour, and the preservation of its former value, are two entirely distinct results, produced simultaneously by the labourer, during one operation, it is plain that this twofold nature of the result can be explained only by the twofold nature of his labour; at one and the same time, it must in one character create value, and in another character preserve or transfer value.

Now, in what manner does every labourer add new labour and consequently new value? Evidently, only by labouring productively in a particular way; the spinner by spinning, the weaver by weaving, the smith by forging. But, while thus incorporating labour generally, that is value, it is by the particular form alone of the labour, by the spinning, the weaving and the forging respectively, that the means of production, the cotton and spindle, the yarn and loom, and the iron and anvil become constituent elements of the product, of a new use-value. Each use-value disappears, but only to re-appear under a new form in a new use-value. Now, we saw, when we were considering the process of creating value, that, if a use-value be effectively consumed in the production of a new use-value, the quantity of labour expended in the production of the consumed article, forms a portion of the quantity of labour necessary to produce the new use-value; this portion is therefore labour transferred from the means of production to the new product. Hence, the labourer preserves the values of the consumed means of production, or transfers them as portions of its value to the product not by virtue of his additional labour, abstractedly considered, but by virtue of the particular useful character of that labour, by virtue of its special productive form. In so far then as labour is such specific productive activity, in so far as it is spinning, weaving, or forging, it raises, by mere contact, the means of production from the dead, makes them living factors of the labour-process, and combines with them to form the new products.

If the special productive labour of the workman were not spinning, he could not convert the cotton into yarn, and therefore could not transfer the values of the cotton and spindle to the yarn. Suppose the same workman were to change his occupation to that of a joiner, he would still by a day’s labour add value to the material he works upon. Consequently, we see, first, that the addition of new value takes place not by virtue
of his labour being spinning in particular, or joinering in particular, but because it is labour in the abstract, a portion of the total labour of society; and we see next, that the value added is of a given definite amount, not because his labour has a special utility, but because it is exerted for a definite time. On the one hand, then, it is by virtue of its general character, as being expenditure of human labour-power in the abstract, that spinning adds new value to the values of the cotton and the spindle; and on the other hand, it is by virtue of its special character, as being a concrete, useful process, that the same labour of spinning both transfers the values of the means of production to the product, and preserves them in the product. Hence at one and the same time there is produced a twofold result.

By the simple addition of a certain quantity of labour, new value is added, and by the quality of this added labour, the original values of the means of production are preserved in the product. This twofold effect, resulting from the two-fold character of labour, may be traced in various phenomena. Let us assume, that some invention enables the spinner to spin as much cotton in 6 hours as he was able to spin before in 36 hours. His labour is now six times as effective as it was, for the purposes of useful production. The product of 6 hours’ work has increased sixfold, from 6 lbs. to 36 lbs. But now the 36 lbs. of cotton absorb only the same amount of labour as formerly did the 6 lbs. One-sixth as much new labour is absorbed by each pound of cotton, and consequently, the value added by the labour to each pound is only one-sixth of what it formerly was. On the other hand, in the product, in the 36 lbs. of yarn, the value transferred from the cotton is six times as great as before. By the 6 hours’ spinning, the value of the raw material preserved and transferred to the product is six times as great as before, although the new value added by the labour of the spinner to each pound of the very same raw material is one-sixth what it was formerly. This shows that the two properties of labour, by virtue of which it is enabled in one case to preserve value, and in the other to create value, are essentially different. On the one hand, the longer the time necessary to spin a given weight of cotton into yarn, the greater is the new value added to the material; on the other hand, the greater the weight of the cotton spun in a given time, the greater is the value preserved, by being transferred from it to the product.

Let us now assume, that the productiveness of the spinner’s labour, instead of varying, remains constant, that he therefore requires the same time as he formerly did, to convert one pound of cotton into yarn, but that the exchange value of the cotton
varies, either by rising to six times its former value or falling
to one-sixth of that value. In both these cases, the spinner puts
the same quantity of labour into a pound of cotton, and therefore
adds as much value, as he did before the change in the value: he
also produces a given weight of yarn in the same time as he did
before. Nevertheless, the value that he transfers from the cotton
to the yarn is either one-sixth of what it was before the
variation, or, as the case may be, six times as much as before.
The same result occurs when the value of the instruments of
labour rises or falls, while their useful efficacy in the process
remains unaltered.

Again, if the technical conditions of the spinning process
remain unchanged, and no change of value takes place in the means
of production, the spinner continues to consume in equal
working-times equal quantities of raw material, and equal
quantities of machinery of unvarying value. The value that he
preserves in the product is directly proportional to the new
value that he adds to the product. In two weeks he incorporates
twice as much labour, and therefore twice as much value, as in
one week, and during the same time he consumes twice as much
material, and wears out twice as much machinery, of double the
value in each case; he therefore preserves, in the product of two
weeks, twice as much value as in the product of one week. So long
as the conditions of production remain the same, the more value
the labourer adds by fresh labour, the more value he transfers
and preserves; but he does so merely because this addition of new
value takes place under conditions that have not varied and are
independent of his own labour. Of course, it may be said in one
sense, that the labourer preserves old value always in proportion
to the quantity of new value that he adds. Whether the value of
cotton rise from one shilling to two shillings, or fall to
sixpence, the workman invariably preserves in the product of one
hour only one half as much value as he preserves in two hours. In
like manner, if the productiveness of his own labour varies by
rising or falling, he will in one hour spin either more or less
cotton, as the case may be, than he did before, and will
consequently preserve in the product of one hour, more or less
value of cotton; but, all the same, he will preserve by two
hours' labour twice as much value as he will by one.

Value exists only in articles of utility, in objects: we
leave out of consideration its purely symbolical representation
by tokens. (Man himself, viewed as the impersonation of
labour-power, is a natural object, a thing, although a living
conscious thing, and labour is the manifestation of this power
residing in him.) If therefore an article loses it utility, it
also loses its value. The reason why means of production do not
lose their value, at the same time that they lose their
use-value, is, this, they lose in the labour-process the original
form of their use-value, only to assume in the product the form
of a new use-value. But, however important it may be to value,
that it should have some object of utility to embody itself in,
yet it is a matter of complete indifference what particular
object serves this purpose; this we saw when treating of the
metamorphosis of commodities. Hence it follows that in the
labour-process the means of production transfer their value to
the product only so far as along with their use-value they lose
also their exchange value. They give up to the product that value
alone which they themselves lose as means of production. But in
this respect the material factors of the labour process do not
all behave alike.

The coal burnt under the boiler vanishes without leaving a
trace: so, too, the tallow with which the axles of wheels are
greased. Dye stuffs and other auxiliary substances also vanish
but re-appear as properties of the product. Raw material forms
the substance of the product, but only after it has changed its
form. Hence raw material and auxiliary substances lost the
characteristic form with which they are clothed on entering the
labour-process. It is otherwise with the instruments of labour.
Tools, machines, workshops, and vessels, are of use in the
labour-process, only so long as they retain their original shape,
and are ready each morning to renew the process with their shape
unchanged. And just as during their lifetime, that is to say,
during the continued labour-process in which they serve, they
retain their shape independent of the product, so, too, they do
after their death. The corpses of machines, tools, workshops,
etc., are always separate and distinct from the product they
helped to turn out. If we now consider the case of any instrument
of labour during the whole period of its service, from the day of
its entry into the workshop, till the day of its banishment into
the lumber room, we find that during this period its use-value
has been completely consumed, and therefore its exchange value
completely transferred to the product. For instance, if a
spinning machine lasts for 10 years, it is plain that during that
working period its total value is gradually transferred to the
product of the 10 years. The lifetime of an instrument of labour,
therefore, is spent in the repetition of a greater or less number
of similar operations. Its life may be compared with that of a
human being. Every day brings a man 24 hours nearer to his grave:
but how many days he has still to travel on that road, no man can
tell accurately by merely looking at him. This difficulty,
however, does not prevent life insurance offices from drawing, by
means of the theory of averages, very accurate, and at the same
time very profitable conclusions. So it is with the instruments of labour. It is known by experience how long on the average a machine of a particular kind will last. Suppose its use-value in the labour-process to last only six days. Then, on the average, it loses each day one-sixth of its use-value, and therefore parts with one-sixth of its value to the daily product. The wear and tear of all instruments, their daily loss of use-value, and the corresponding quantity of value they part with to the product, are accordingly calculated upon this basis.

It is thus strikingly clear, that means of production never transfer more value to the product than they themselves lose during the labour-process by the destruction of their own use-value. If such an instrument has no value to lose, if, in other words, it is not the product of human labour, it transfers no value to the product. It helps to create use-value without contributing to the formation of exchange value. In this class are included all means of production supplied by Nature without human assistance, such as land, wind, water, metals in situ, and timber in virgin forests.

Yet another interesting phenomenon here presents itself. Suppose a machine to be worth £1000, and to wear out in 1000 days. Then one thousandth part of the value of the machine is daily transferred to the day’s product. At the same time, though with diminishing vitality, the machine as a whole continues to take part in the labour-process. Thus it appears that one factor of the labour-process, a means of production, continually enters as a whole into that process, while it enters into the process of the formation of value by fractions only. The difference between the two processes is here reflected in their material factors, by the same instrument of production taking part as a whole in the labour-process, while at the same time as an element in the formation of value, it enters only by fractions. (2*)

On the other hand, a means of production may take part as a whole in the formation of value, while into the labour-process it enters only bit by bit. Suppose that in spinning cotton, the waste for every 115 lbs. used amounts to 15 lbs., which is converted, not into yarn, but into “devil’s dust.” Now, although this 15 lbs. of cotton never becomes a constituent element of the yarn, yet assuming this amount of waste to be normal and inevitable under average conditions of spinning, its value is just as surely transferred to the value of the yarn, as is the value of the 100 lbs. that form the substance of the yarn. The use-value of 15 lbs. of cotton must vanish into dust, before 100 lbs. of yarn can be made. The destruction of this cotton is therefore a necessary condition in the production of the yarn. And because it is a necessary condition, and for no other reason,
the value of that cotton is transferred to the product. The same holds good for every kind of refuse resulting from a labour-process, so far at least as such refuse cannot be further employed as a means in the production of new and independent use-values. Such an employment of refuse may be seen in the large machine works at Manchester, where mountains of iron turnings are carted away to the foundry in the evening, in order the next morning to re-appear in the workshops as solid masses of iron.

We have seen that the means of production transfer value to the new product, so far only as during the labour-process they lose value in the shape of their old use-value. The maximum loss of value that they can suffer in the process, is plainly limited by the amount of the original value with which they came into the process, or in other words, by the labour-time necessary for their production. Therefore the means of production can never add more value to the product than they themselves possess independently of the process in which they assist. However useful a given kind of raw material, or a machine, or other means of production may be, though it may cost ú150, or, say, 500 days' labour, yet it cannot, under any circumstances, add to the value of the product more than ú150. Its value is determined not by the labour-process into which it enters as a means of production, but by that out of which it has issued as a product. In the labour-process it only serves as a mere use-value, a thing with useful properties, and could not, therefore, transfer any value to the product, unless it possessed such value previously.(3*)

While productive labour is changing the means of production into constituent elements of a new product, their value undergoes a metempsychosis. It deserts the consumed body, to occupy the newly created one. But this transmigration takes place, as it were, behind the back of the labourer. He is unable to add new labour, to create new value, without at the same time preserving old values, and this, because the labour he adds must be of a specific useful kind; and he cannot do work of a useful kind, without employing products as the means of production of a new product, and thereby transferring their value to the new product. The property therefore which labour-power in action, living labour, possesses of preserving value, at the same time that it adds it, is a gift of Nature which costs the labourer nothing, but which is very advantageous to the capitalist inasmuch as it preserves the existing value of his capital.(4*) So long as trade is good, the capitalist is too much absorbed in money-grubbing to take notice of this gratuitous gift of labour. A violent interruption of the labour-process by a crisis, makes him sensitively aware of it.(5*)

As regards the means of production, what is really consumed
is their use-value, and the consumption of this use-value by labour results in the product. There is no consumption of their value. (6*) and it would therefore be inaccurate to say that it is reproduced. It is rather preserved; not by reason of any operation it undergoes itself in the process; but because the article in which it originally exists, vanishes, it is true, but vanishes into some other article. Hence, in the value of the product, there is a re-appearance of the value of the means of production, but there is, strictly speaking, no reproduction of that value. That which is produced is a new use-value in which the old exchange-value re-appears. (7*)

It is otherwise with the subjective factor of the labour-process, with labour-power in action. While the labourer, by virtue of his labour being of a specialised kind that has a special object, preserves and transfers to the product the value of the means of production, he at the same time, by the mere act of working, creates each instant an additional or new value. Suppose the process of production to be stopped just when the workman has produced an equivalent for the value of his own labour-power, when, for example, by six hours' labour, he has added a value of three shillings. This value is the surplus of the total value of the product, over the portion of its value that is due to the means of production. It is the only original bit of value formed during this process, the only portion of the value of the product created by this process. Of course, we do not forget that this new value only replaces the money advanced by the capitalist in the purchase of the labour-power, and spent by the labourer on the necessaries of life. With regard to the money spent, the new value is merely a reproduction; but, nevertheless, it is an actual, and not, as in the case of the value of the means of production, only an apparent, reproduction. The substitution of one value for another, is here effected by the creation of new value.

We know, however, from what has gone before, that the labour-process may continue beyond the time necessary to reproduce and incorporate in the product a mere equivalent for the value of the labour-power. Instead of the six hours that are sufficient for the latter purpose, the process may continue for twelve hours. The action of labour-power, therefore, not only reproduces its own value, but produces value over and above it. This surplus-value is the difference between the value of the product and the value of the elements consumed in the formation of that product, in other words, of the means of production and the labour-power.

By our explanation of the different parts played by the various factors of the labour-process in the formation of the
product’s value, we have, in fact, disclosed the characters of
the different functions allotted to the different elements of
capital in the process of expanding its own value. The surplus of
the total value of the product, over the sum of the values of its
constituent factors, is the surplus of the expanded capital over
the capital originally advanced. The means of production on the
one hand, labour-power on the other, are merely the different
modes of existence which the value of the original capital
assumed when from being money it was transformed into the various
factors of the labour-process. That part of capital then, which
is represented by the means of production, by the raw material,
 auxiliary material and the instruments of labour, does not, in
the process of production, undergo any quantitative alteration of
value. I therefore call it the constant part of capital, or, more
shortly, constant capital.

On the other hand, that part of capital, represented by
labour-power, does, in the process of production; undergo an
alteration of value. It both reproduces the equivalent of its own
value, and also produces an excess, a surplus-value, which may
itself vary, may be more or less according to circumstances. This
part of capital is continually being transformed from a constant
into a variable magnitude. I therefore call it the variable part
of capital, or, shortly, variable capital. The same elements of
capital which, from the point of view of the labour-process,
present themselves respectively as the objective and subjective
factors, as means of production and labour power, present
themselves, from the point of view of the process of creating
surplus-value, as constant and variable capital.

The definition of constant capital given above by no means
excludes the possibility of a change of value in its elements.
Suppose the price of cotton to be one day sixpence a pound, and
the next day, in consequence of a failure of the cotton crop, a
shilling a pound. Each pound of the cotton bought at sixpence,
and worked up after the rise in value, transfers to the product a
value of one shilling; and the cotton already spun before the
rise, and perhaps circulating in the markets as yarn, likewise
transfers to the product twice its original value. It is plain,
however, that these changes of value are independent of the
increment or surplus-value added to the value of the cotton by
the spinning itself. If the old cotton had never been spun, it
could, after the rise, be resold at a shilling a pound instead of
at sixpence. Further, the fewer the processes the cotton has gone
through, the more certain is this result. We therefore find that
speculators make it a rule when such sudden changes in value
occur to speculate in that material on which the least possible
quantity of labour has been spent: to speculate, therefore, in
yarn rather than in cloth, in cotton itself, rather than in yarn. The change of value in the case we have been considering, originates, not in the process in which the cotton plays the part of a means of production, and in which it therefore functions as constant capital, but in the process in which the cotton itself is produced. The value of a commodity, it is true, is determined by the quantity of labour contained in it, but this quantity is itself limited by social conditions. If the time socially necessary for the production of any commodity alters — and a given weight of cotton represents, after a bad harvest, more labour than after a good one — all previously existing commodities of the same class are affected, because they are, as it were, only individuals of the species.(8*) and their value at any given time is measured by the labour socially necessary, i.e., by the labour necessary for their production under the then existing social conditions.

As the value of the raw material may change, so, too, may that of the instruments of labour, of the machinery, etc., employed in the process; and consequently that portion of the value of the product transferred to it from them, may also change. If in consequence of a new invention, machinery of a particular kind can be produced by a diminished expenditure of labour, the old machinery becomes depreciated more or less and consequently transfers so much less value to the product. But here again, the change in value originates outside the process in which the machine is acting as a means of production. Once engaged in this process, the machine cannot transfer more value than it possesses apart from the process.

Just as a change in the value of the means of production, even after they have commenced to take a part in the labour process, does not alter their character as constant capital, so, too, a change in the proportion of constant to variable capital does not affect the respective functions of these two kinds of capital. The technical conditions of the labour process may be revolutionised to such an extent, that where formerly ten men using ten implements of small value worked up a relatively small quantity of raw material, one man may now, with the aid of one expensive machine, work up one hundred times as much raw material. In the latter case we have an enormous increase in the constant capital, that is represented by the total value of the means of production used, and at the same time a great reduction in the variable capital, invested in labour-power. Such a revolution, however, alters only the quantitative relation between the constant and the variable capital, or the proportions in which the total capital is split up into its constant and variable constituents; it has not in the least degree affected
the essential difference between the two.

NOTES:


2. The subject of repairs of the implements of labour does not concern us here. A machine that is undergoing repair, no longer plays the part of an instrument, but that of a subject of labour. Work is no longer done with it, but upon it. It is quite permissible for our purpose to assume, that the labour expended on the repairs of instruments is included in the labour necessary for their original production. But in the text we deal with that wear and tear, which no doctor can cure, and which little by little brings about death, with "that kind of wear which cannot be repaired from time to time, and which, in the case of a knife, would ultimately reduce it to a state in which the cutler would say of it, it is not worth a new blade." We have shown in the text, that a machine takes part in every labour-process as an integral machine, but that into the simultaneous process of creating value it enters only bit by bit. How great then is the confusion of ideas exhibited in the following extract! "Mr Ricardo says a portion of the labour of the engineer in making [stocking] machines." is contained for example in the value of a pair of stockings. "Yet the total labour, that produced each single pair of stockings.... includes the whole labour of the engineer, not a portion; for one machine makes many pairs, and none of those pairs could have been done without any part of the machine." ("Obs. on certain verbal disputes in Pol. Econ. particularly relating to value," p. 54) The author, an uncommonly self-satisfied wiseacre, is right in his confusion and therefore in his contention, to this extent only, that neither Ricardo nor any other economist, before or since him, has accurately distinguished the two aspects of labour, and still less, therefore, the part played by it under each of these aspects in the formation of value.

3. From this we may judge of the absurdity of J.B. Say, who pretends to account for surplus-value (Interest, Profit, Rent), by the "services productifs" which the means of production, soil, instruments, and raw material, render in the labour-process by means of their use-values. Mr Wm. Roscher who seldom loses an occasion of registering, in black and white, ingenious apologetic fancies, records the following specimen: -- "J.B. Say (Traite, t. 1. ch. 4) very truly remarks: the value produced by an oil mill,
after deduction of all costs, is something new, something quite different from the labour by which the oil mill itself was erected." (I.c., p. 82, note.) Very true, Mr. Professor! the oil produced by the oil mill is indeed something very different from the labour expanded in constructing the mill! By value, Mr Roscher understands such stuff as "oil," because oil has value, notwithstanding that "Nature" produces petroleum, though relatively "in small quantities," a fact to which he seems to refer in his further observation: "it (Nature) produces scarcely any exchange value." Mr Roscher's "Nature" and the exchange value it produces are rather like the foolish virgin who admitted indeed that she had had a child, but "it was such a little one."

This "savant sérieux" in continuation remarks: "Ricardo's school is in the habit of including capital as accumulated labour under the head of labour. This is unskilful work, because, indeed, the owner of capital, after all, does something more than the merely creating and preserving of the same: namely, the abstention from the enjoyment of it, for which he demands, e.g., interest."

(l.c.) How very "skilful" is this "anatomico-physiological method" of political economy, which, "indeed," converts a mere desire "after all" into a source of value.

4. "Of all the instruments of the farmers' trade, the labour of man... is that on which he is most to rely for the repayment of his capital. The other two... the working stock of the cattle and the... carts, ploughs, spades, and so forth, without a given portion of the first, are nothing at all." (Edmund Burke: "Thoughts and Details on Scarcity, originally presented to the Right Hon. W. Pitt, in the month of November 1795," Edit. London, 1800, p. 10)

5. In "The Times" of 26th November, 1862, a manufacturer, whose mill employed 800 hands, and consumed, on the average, 150 bales of East indian, or 130 bales of American cotton, complains, in doleful manner, of the standing expenses of his factory when not working. He estimates them at ú6,000 a year. Among them are a number of items that do not concern us here, such as rent, rates, and taxes, insurance, salaries of the manager, book-keeper, engineer, and others. Then he reckons ú150 for coal used to heat the mill occasionally, and run the engine now and then. Besides this, he includes the wages of the people employed at odd times to keep the machinery in working order. Lastly, he puts down ú1,200 for depreciation of machinery, because "the weather and the natural principle of decay do not suspend their operations because the steam-engine ceases to revolve." He says, emphatically, he does not estimate his depreciation at more than the small sum of ú1,200, because his machinery is already nearly
worn out.

6. "Productive consumption... where the consumption of a commodity is a part of the process of production... In these instances there is no consumption of value." (S.P. Newman, l.c. p. 296)

7. In an American compendium that has gone through, perhaps, 20 editions, this passage occurs: "It matters not in what form capital re-appears;" then after a lengthy enumeration of all the possible ingredients of production whose value reappears in the product, the passage concludes thus: "The various kinds of food, clothing, and shelter, necessary for the existence and comfort of the human being, are also changed. They are consumed from time to time, and their value re-appears in that new vigour imparted to his body and mind, forming fresh capital, to be employed again in the work of production." (F. Wayland, l.c. pp. 31, 32) Without noticing any other oddities, it suffices to observe, that what re-appears in the fresh vigour, is not the bread’s price, but its blood-forming substances. What, on the other hand, re-appears in the value of that vigour, is not the means of subsistence, but their value. The same necessaries of life, at half the price, would form just as much muscle and bone, just as much vigour, but not vigour of the same value. This confusion of "value" and "vigour" coupled with our author's pharisaical indefiniteness, mark an attempt, futile for all that, to thrash out an explanation of surplus-value from a mere re-appearance of pre-existing values.

8. Toutes les productions d’un même genre ne forment proprement qu’une masse, dont le prix se détermine en général et sans regard aux circonstances particulières." (Le Trosne, l.c. p. 803)

Chapter 9

The Rate of Surplus Value

1. The Degree of Exploitation of Labour-Power

The surplus-value generated in the process of production by C, the capital advanced, or in other words, the self-expansion of the value of the capital C, presents itself for our consideration, in the first place, as a surplus, as the amount by which the value of the product exceeds the value of its
The capital $C$ is made up of two components, one, the sum of money $c$ laid out upon the means of production, and the other, the sum of money $v$ expended upon the labour-power; $c$ represents the portion that has become constant capital, and $v$ the portion that has become variable capital. At first then, $C = c + v$: for example, if £500 is the capital advanced, its components may be such that the £500 = £410 const. + £90 var. When the process of production is finished, we get a commodity whose value = $(c + v) + s$, where $s$ is the surplus-value; or taking our former figures, the value of this commodity may be $(£410\, \text{const.} + £90\, \text{var.}) + £90\, \text{surpl}$. The original capital has now changed from $C$ to $C'$, from £500 to £590. The difference is $s$ or a surplus value of £90.

Since the value of the constituent elements of the product is equal to the value of the advanced capital, it is mere tautology to say, that the excess of the value of the product over the value of its constituent elements, is equal to the expansion of the capital advanced or to the surplus-value produced.

Nevertheless, we must examine this tautology a little more closely. The two things compared are, the value of the product, and the value of its constituents consumed in the process of production. Now we have seen how that portion of the instant capital which consists of the instruments of labour, transfers to the product only a fraction of its value, while the remainder of that value continues to reside in those instruments. Since this remainder plays no part in the formation of value, we may at present leave it on one side. To introduce it into the calculation would make no difference. For instance, taking our former example, $c = £410$: suppose this sum to consist of £312 value of raw material, £44 value of auxiliary material, and £54 value of the machinery worn away in the process; and suppose that the total value of the machinery employed is £1,054. Out of this latter sum, then, we reckon as advanced for the purpose of turning out the product, the sum of £54 alone, which the machinery loses by wear and tear in the process; for this is all it parts with to the product. Now if we also reckon the remaining £1,000, which still continues in the machinery, as transferred to the product, we ought also to reckon it as part of the value advanced, and thus make it appear on both sides of our calculation.(1*) We should, in this way, get £1,500 on one side and £1,590 on the other. The difference of these two sums, or the surplus-value, would still be £90. Throughout this Book therefore, by constant capital advanced for the production of value, we always mean, unless the context is repugnant thereto, the value of the means of production actually consumed in the process, and that value alone.
This being so, let us return to the formula $C = c + v$, which we saw transformed into $C' = (c + v) + s$, $C$ becoming $C'$. We know that the value of the constant capital is transferred to, and merely re-appears in the product. The new value actually created in the process, the value produced, or value-product, is therefore not the same as the value of the product; it is not, as it would at first sight appear $(c + v) + s$ or $u410$ const. $+ u90$ var. $+ u90$ surpl.; but $v + s$ or $u90$ var. $+ u90$ surpl. not $u590$ but $u180$. If $c = 0$, or in other words, if there were branches of industry in which the capitalist could dispense with all means of production made by previous labour, whether they be raw material, auxiliary material, or instruments of labour, employing only labour power and materials supplied by Nature, in that case, there would be no constant capital to transfer to the product. This component of the value of the product, i.e., the $u410$ in our example, would be eliminated, but the sum of $u180$, the amount of new value created, or the value produced, which contains $u90$ of surplus-value, would remain just as great as if $c$ represented the highest value imaginable. We should have $C = (O + v) = v$ or $C'$ the expanded capital $= v + s$ and therefore $C' - C = s$ as before. On the other hand, if $s = 0$, or in other words, if the labour-power, whose value is advanced in the form of variable capital, were to produce only its equivalent, we should have $C = c + v$ or $C'$ the value of the product $= (c+v) + 0$ or $C = C'$. The capital advanced would, in this case, not have expanded its value.

From what has gone before, we know that surplus-value is purely the result of a variation in the value of $v$, of that portion of the capital which is transformed into labour-power; consequently, $v + s = v + v'$ or $v$ plus an increment of $v$. But the fact that it is $v$ alone that varies, and the conditions of that variation, are obscured by the circumstance that in consequence of the increase in the variable component of the capital, there is also an increase in the sum total of the advanced capital. It was originally $u500$ and becomes $u590$. Therefore in order that our investigation may lead to accurate results, we must make abstraction from that portion of the value of the product, in which constant capital alone appears, and consequently must equate the constant capital to zero or make $c = 0$. This is merely an application of a mathematical rule, employed whenever we operate with constant and variable magnitudes, related to each other by the symbols of addition and subtraction only.

A further difficulty is caused by the original form of the variable capital. In our example, $C' = u410$ const. $+ u90$ var. $+ u90$ surpl.; but $u90$ is a given and therefore a constant quantity; hence it appears absurd to treat it as variable. But in fact, the term $u90$ var. is here merely a symbol to show that this value
undergoes a process. The portion of the capital invested in the purchase of labour-power is a definite quantity of materialised labour, a constant value like the value of the labour-power purchased. But in the process of production the, labour-power in action, dead place of the ú90 is taken by the labour is replaced by living labour, something stagnant by something flowing, a constant by a variable. The result is the reproduction of v plus an increment of v. From the point of view, then, of capitalist production, the whole process appears as the spontaneous variation of the originally constant value, which is transformed into labour-power. Both the process and its result, appear to be owing to this value. If, therefore, such expressions as "ú90 variable capital," or "so much self-expanding value," appear contradictory, this is only because they bring to the surface a contradiction immanent in capitalist production.

At first sight it appears a strange proceeding, to equate the constant capital to zero. Yet it is what we do every day. If, for example, we wish to calculate the amount of England's profits from the cotton industry, we first of all deduct the sums paid for cotton to the United States, India, Egypt and other countries; in other words, the value of the capital that merely re-appears in the value of the product is put = 0.

Of course the ratio of surplus-value not only to that portion of the capital from which it immediately springs, and whose change of value it represents, but also to the sum total of the capital advanced is economically of very great importance. We shall, therefore, in the third book, treat of this ratio exhaustively. In order to enable one portion of a capital to expand its value by being converted into labour-power, it is necessary that another portion be converted into means of production. In order that variable capital may perform its function, consent capital must be advanced in proper proportion, a proportion given by the special technical conditions of each labour-process. The circumstance, however, that retorts and other vessels, are necessary to a chemical process, does not compel the chemist to notice them in the result of his analysis. If we look at the means of production, in their relation to the creation of value, and to the variation in the quantity of value, apart from anything else, they appear simply as the material in which labour-power, the value-creator, incorporates itself. Neither the nature, nor the value of this material is of any importance. The only requisite is that there be a sufficient supply to absorb the labour expended in the process of production. That supply once given, the material may rise or fall in value, or even be, as land and the sea, without any value in itself; but this will have no influence on the creation of value or on the variation in the
quantity of value. (2*)

In the first place then we equate the constant capital to zero. The capital advanced is consequently reduced from \(c + v\) to \(v\), and instead of the value of the product \((c + v) + s\) we have now the value produced \((v + s)\). Given the new value produced = \(\text{£}180\), which sum consequently represents the whole labour expended during the process, then subtracting from it \(\text{£}90\) the value of the variable capital, we have remaining \(\text{£}90\), the amount of the surplus-value. This sum of \(\text{£}90\) or \(s\) expresses the absolute quantity of surplus-value produced. The relative quantity produced, or the increase per cent of the variable capital, is determined, it is plain, by the ratio of the surplus-value to the variable capital, or is expressed by \(s/v\). In our example this ratio is 90/90, which gives an increase of 100%. This relative increase in the value of the variable capital, or the relative magnitude of the surplus-value, I call, "The rate of surplus-value." (3*)

We have seen that the labourer, during one portion of the labour-process, produces only the value of his labour-power, that is, the value of his means of subsistence. Now since his work forms part of a system, based on the social division of labour, he does not directly produce the actual necessaries which he himself consumes; he produces instead a particular commodity, yarn for example, whose value is equal to the value of those necessaries or of the money with which they can be bought. The portion of his day's labour devoted to this purpose, will be greater or less, in proportion to the value of the necessaries that he daily requires on an average, or, what amounts to the same thing, in proportion to the labour time required on an average to produce them. If the value of those necessaries represents on an average the expenditure of six hours' labour, the workman must on an average work for six hours to produce that value. If instead of working for the capitalist, he worked independently on his own account, he would, other things being equal, still be obliged to labour for the same number of hours, in order to produce the value of his labour-power, and thereby to gain the means of subsistence necessary for his conservation or continued reproduction. But as we have seen, during that portion of his day's labour in which he produces the value of his labour-power, say three shillings, he produces only an equivalent for the value of his labour-power already advanced by the capitalist; the new value created only replaces the variable capital advanced. It is owing to this fact, that the production of the new value of three shillings takes the semblance of a mere reproduction. That portion of the working day, then, during which this reproduction takes place, I call "necessary" labour-time,
and the labour expended during that time I call "necessary" labour. (4*) Necessary, as regards the labourer, because independent of the particular social form of his labour. Necessary, as regards capital, and the world of capitalists, because on the continued existence of the labourer depends their existence also.

During the second period of the labour-process, that in which his labour is no longer necessary labour, the workman, it is true, labours, expends labour-power; but his labour, being no longer necessary labour, he creates no value for himself. He creates surplus-value which, for the capitalist, has all the charms of a creation out of nothing. This portion of the working day, I name surplus labour-time, and to the labour expended during that time, I give the name of surplus-labour. It is every bit as important, for a correct understanding of surplus-value, to conceive it as a mere congelation of surplus labour-time, as nothing but materialised surplus-labour, as it is, for a proper comprehension of value, to conceive it as a mere congelation of so many hours of labour, as nothing but materialised labour. The essential difference between the various economic forms of society, between, for instance, a society based on slave labour, and one based on wage labour, lies only in the mode in which this surplus-labour is in each case extracted from the actual producer, the labourer. (5*)

Since, on the one hand, the values of the variable capital and of the labour-power purchased by that capital are equal, and the value of this labour-power determines the necessary portion of the working day; and since, on the other hand, the surplus-value is determined by the surplus portion of the working day, it follows that surplus-value bears the same ratio to variable capital, that surplus-labour does to necessary labour, or in other words, the rate of surplus-value \( s/v = \) [surplus labor/necessary labor]. Both ratios, \( s/v \) and [surplus labor/necessary labor] express the same thing in different ways; in the one case by reference to materialised, incorporated labour, in the other by reference to living, fluent labour.

The rate of surplus-value is therefore an exact expression for the degree of exploitation of labour-power by capital, or of the labourer by the capitalist. (6*)

We assumed in our example, that the value of the product = £410 const. +£90 var. + £90 surpl., and that the capital advanced = £500. Since the surplus-value = £90, and the advanced capital = £500, we should, according to the usual way of reckoning, get as the rate of surplus value (generally confounded with rate of profits) 18%, a rate so low as possibly to cause a pleasant surprise to Mr Carey and other harmonisers. But in truth, the
rate of surplus-value is not equal to \(s/C\) or \(s/(c+v)\) but to \(s/v\): thus it is not 90/500 but 90/90 or 100%, which is more than five times the apparent degree of exploitation. Although, in the case we have supposed, we are ignorant of the actual length of the working day, and of the duration in days or weeks of the labour-process, as also of the number of labourers employed, yet the rate of surplus-value \(s/v\) accurately discloses to us, by means of its equivalent expression, \([\text{surplus labor}/\text{necessary labor}]\) the relation between the two parts of the working day. This relation is here one of equality, the rate being 100%. Hence, it is plain, the labourer, in our example, works one half of the day for himself, the other half for the capitalist.

The method of calculating the rate of surplus value is therefore, shortly, as follows. We take the total value of the product and put the constant capital which merely re-appears in it, equal to zero. What remains, is the only value that has, in the process of producing the commodity, been actually created. If the amount of surplus-value be given, we have only to deduct it from this remainder, to find the variable capital. And vice versa, if the latter be given, and we require to find the surplus-value. If both be given, we have only to perform the concluding operation, viz., to calculate \(s/v\), the ratio of the surplus-value to the variable capital.

Though the method is so simple, yet it may not be amiss, by means of a few examples, to exercise the reader in the application of the novel principles underlying it.

First we will take the case of a spinning mill containing 10,000 mule spindles, spinning No. 32 yarn from American cotton, and producing 1 lb. of yarn weekly per spindle. We assume the waste to be 6%. under these circumstances 10,600 lbs. of cotton are consumed weekly, of which 600 lbs. go to waste. The price of the cotton in April, 1871, was 7 3/4d. per lb.: the raw material therefore costs in round numbers ú342. The 10,000 spindles, including preparation-machinery, and motive power, cost, we will assume, ú1 per spindle, amounting to a total of ú10,000. The wear and tear we put at 10%, or ú1000 yearly = ú20 weekly. The rent of the building we suppose to be ú300 a year or ú6 a week. Coal consumed (for 100 horse-power indicated, at 4 lbs. of coal per horse-power per hour during 60 hours, and inclusive of that consumed in heating the mill), 11 tons a week at 8s. 6d. a ton, amounts to about ú4 1/2 a week: gas, ú1 a week, oil, et c., ú4 1/2 a week. Total cost of the above auxiliary materials, ú10 weekly. Therefore the constant portion of the value of the week's product is ú378. Wages amount to ú52 a week. The price of the yarn is 12 1/4d. per lb., which gives for the value of 10,000 lbs. the sum of ú510. The surplus value is therefore in this case ú510 - ú430
We put the constant part of the value of the product = 0, as it plays no part in the creation of value. There remains ú132 as the weekly value created, which = ú52 var. + 80 = ú80 surpl. The rate of surplus-value is therefore 80/52 = 153 11/13%. In a working day of 10 hours with average labour the result is:
necessary labour = 3 31/33 hours and surplus-labour = 6 2/33.(7*)

One more example. Jacob gives the following calculation for the year 1815. Owing to the previous adjustment of several items it is very imperfect; nevertheless for our purpose it is sufficient. In it he assumes the price of wheat to be 8s. a quarter, and the average yield per acre to be 22 bushels.

VALUE PRODUCED PER ACRE.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed</td>
<td>ú1 9 0</td>
</tr>
<tr>
<td>Tithes, Rates, and Taxes</td>
<td>ú1 1 0</td>
</tr>
<tr>
<td>Manure</td>
<td>2 10 0</td>
</tr>
<tr>
<td>Rent</td>
<td>1 8 0</td>
</tr>
<tr>
<td>Wages</td>
<td>3 10 0</td>
</tr>
<tr>
<td>Farmer's Profit and Interest</td>
<td>1 2 0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Ú7 9 0</td>
</tr>
<tr>
<td><strong>Total, var. + fix</strong></td>
<td>Ú3 11 0</td>
</tr>
</tbody>
</table>

Assuming that the price of the product is the same as its value, we here find the surplus-value distributed under the various heads of profit, interest, rent, etc. We have nothing to do with these in detail; we simply add them together, and the sum is a surplus-value of ú3 11s. 0d. The sum of ú3 19s. 0d., paid for seed and manure, is constant capital, and we put it equal to zero. There is left the sum of ú3 10s. 0d., which is the variable capital advanced: and we see that a new value of ú3 10s. 0d. + ú3 11s. 0d. has been produced in its place. Therefore s/v = [ú3 11s. 0d./ú3 10s. 0d.] giving a rate of surplus value of more than 100%. The labourer employs more than one-half of his working day in producing the surplus-value, which different persons, under different pretexts, share amongst themselves.(8*)

2. The Representation of the Components of the Value of the Product by Corresponding Proportional Parts of the Product Itself.

Let us now return to the example by which we were shown how the capitalist converts money into capital. The product of a working day of 12 hours is 20 lbs. of yarn, having a value of 30s. No less than 8/10ths of this value, or
24s., is due to mere re-appearance in it, of the value of the means of production (20 lbs. of cotton, value 20s., and spindle worn away, 4s.): it is therefore constant capital. The remaining 2/10ths or 6s. is the new value created during the spinning process: of this one half replaces the value of the day’s labour-power, or the variable capital, the remaining half constitutes a surplus-value of 3s. The total value then of the 20 lbs. of yarn is made up as follows:

30s. value of yarn = 24 const.+3s. var.+3s. surpl.

Since the whole of the value is contained in the 20 lbs. of yarn produced, it follows that the various component parts of this value, can be represented as being contained respectively in corresponding parts of the product.

If the value of 30s. is contained in 20 lbs. of yarn, then 8/10ths of this value, or the 24s. that form its constant part, is confined in 8/10ths of the product or in 16 lbs. of yarn. Of the latter 13 1/3 lbs. represent the value of the raw material, the 20s. worth of cotton spun, and 2 2/3 lbs. represent the 4s. worth of spindle, etc., worn away in the process.

Hence the whole of the cotton used up in spinning the 20 lbs. of yarn, is represented by 13 1/3 lbs. of yarn. This later weight of yarn contains, it is true, by weight, no more than 13 1/3 lbs. of cotton, worth 13 1/3 shillings; but the 6 2/3 shillings additional value contained in it, are the equivalent for the cotton consumed in spinning the remaining 6 2/3 lbs. of yarn. The effect is the same as if these 6 2/3 lbs. of yarn contained no cotton at all, and the whole 20 lbs. of cotton were concentrated in the 13 1/3 lbs. of yarn. The latter weight, on the other hand, does not contain an atom either of the value of the auxiliary materials and implements, or of the value newly created in the process.

In the same way, the 2 2/3 lbs. of yarn, in which the 4s., the remainder of the constant capital, is embodied, represents nothing but the value of the auxiliary materials and instruments of labour consumed in producing the 20 lbs. of yarn.

We have, therefore, arrived at this result: although eight-tenths of the product, or 16 lbs. of yarn, is, in its character of an article of utility, just as much the fabric of the spinner’s labour, as the remainder of the same product, yet when viewed in this connexion, it does not contain, and has not absorbed any labour expended during the process of spinning. It is just as if the cotton had converted itself into yarn, without help; as if the shape it had assumed was mere trickery and deceit: for so soon as our capitalist sells it for 24s., and with the money replaces his means of production, it becomes evident that this 16 lbs. of yarn is nothing more than so much cotton and
spindle-waste in disguise.

On the other hand, the remaining 2/10ths of the product, or 4 lbs. of yarn, represent nothing but the new value of 6s., created during the 12 hours’ spinning process. All the value transferred to those 4 lbs., from the raw material and instruments of labour consumed, was, so to say, intercepted in order to be incorporated in the 16 lbs. first spun. In this case, it is as if the spinner had spun 4 lbs. of yarn out of air, or, as if he had spun them with the aid of cotton and spindles, that, being the spontaneous gift of Nature, transferred no value to the product.

Of this 4 lbs. of yarn, in which the whole of the value newly created during the process, is condensed, one half represents the equivalent for the value of the labour consumed, or the 3s. variable capital, the other half represents the 3s. surplus-value.

Since 12 working hours of the spinner are embodied in 6s., it follows that in yarn of the value of 30s., there must be embodied 60 working hours. And this quantity of labour-time does in fact exist in the 20 lbs. of yarn; for in 8/10ths or 16 lbs. there are materialised the 48 hours of labour expended, before the commencement of the spinning process, on the means of production; and in the remaining 2/10ths or 4 lbs. there are materialised the 12 hours’ work done during the process itself.

On a former page we saw that the value of the yarn is equal to the sum of the new value created during the production of that yarn plus the value previously existing in the means of production.

It has now been shown how the various component parts of the value of the product, parts that differ functionally from each other, may be represented by corresponding proportional parts of the product itself.

To split up in this manner the product into different parts, of which one represents only the labour previously spent on the means of production, or the constant capital, another, only the necessary labour spent during the process of production, or the variable capital, and another and last part, only the surplus-labour expended during the same process, or the surplus-value; to do this, is, as will be seen later on from its application to complicated and hitherto unsolved problems, no less important than it is simple.

In the preceding investigation we have treated the total product as the final result, ready for use, of a working day of 12 hours. We can however follow this total product through all the stages of its production; and in this way we shall arrive at the same result as before, if we represent the partial products, given off at the different stages, as functionally different.
The spinner produces in 12 hours 20 lbs. of yarn, or in 1 hour 1 2/3 lbs.; consequently he produces in 8 hours 13 1/3 lbs., or a partial product equal in value to all the cotton that is spun in a whole day. In like manner the partial product of the next period of 1 hour and 36 minutes, is 2 2/3 lbs. of yarn: this represents the value of the instruments of labour that are consumed in 12 hours. In the following hour and 12 minutes, the spinner produces 2 lbs. of yarn worth 3 shillings, a value equal to the whole value he creates in his 6 hours necessary labour. Finally, in the last hour and 12 minutes he produces another 2 lbs. of yarn, whose value is equal to the surplus-value, created by his surplus-labour during half a day. This method of calculation serves the English manufacturer for everyday use; it shows, he will say, that in the first 8 hours, or 2/3 of the working day, he gets back the value of his cotton; and so on for the remaining hours. It is also a perfectly correct method; being in fact the first method given above with this difference, that instead of being applied to space, in which the different parts of the completed product lie side by side, it deals with time, in which those parts are successively produced. But it can also be accompanied by very barbarian notions, more especially in the heads of those who are as much interested, practically, in the process of making value beget value, as they are in misunderstanding that process theoretically. Such people may get the notion into their heads, that one spinner, for example, produces or replaces in the first 8 hours of his working day the value of the cotton; in the following hour and 36 minutes the value of the instruments of labour worn away; in the next hour and 12 minutes the value of the wages; and that he devotes to the production of surplus value for the manufacturer, only that well known "last hour." In this way the poor spinner is made to perform the two-fold miracle not only of producing cotton, spindles, steam-engine, coal, oil, etc., at the same time that he spins with them, but also of turning one working day into, five: for in, the example we are considering, the production of the raw material and instruments of labour demands four working days of twelve hours each, and their conversion into yarn requires another such day. That the love of lucre induces an easy belief in such miracles, and that sycophant doctrinaires are never wanting to prove them, is vouched for by the following incident of historical celebrity.

3. Senior's "Last Hour"
One fine morning, in the year 1836, Nassau W. Senior, who may be called the bel-esprit of English economists, well known, alike for his economical "science," and for his beautiful style, was summoned from Oxford to Manchester, to learn in the latter place the political economy that he taught in the former. The manufacturers elected him as their champion, not only against the newly passed Factory Act, but against the still more menacing Ten-hours' agitation. With their usual practical acuteness, they had found out that the learned Professor "wanted a good deal of finishing;" it was this discovery that caused them to write for him. On his side the Professor has embodied the lecture he received from the Manchester manufacturers, in a pamphlet, entitled: "Letters on the Factory Act, as it affects the cotton manufacture." London, 1837. Here we find, amongst others, the following edifying passage: "Under the present law, no mill in which persons under 18 years of age are employed,... can be worked more than 11 1/2 hours a day, that is 12 hours for 5 days in the week, and nine on Saturday.

"Now the following analysis (!) will show that in a mill so worked, the whole net profit is derived from the last hour. I will suppose a manufacturer to invest £100,000: - £80,000 in his mill and machinery, and £20,000 in raw material and wages. The annual return of that mill, supposing the capital to be turned once a year, and gross profits to be 15 per cent., ought to be goods worth £115,000.... Of this £115,000, each of the twenty-three half-hours of work produces 5/115ths or one twenty-third. Of these 23-23rds (constituting the whole £115,000) twenty, that is to say £100,000 out of the £115,000, simply replace the capital; -- one twenty-third (or £5000 out of the £115,000) make up for the deterioration of the mill and machinery. The remaining 2/23rds, that is, the last two of the twenty-three half-hours of every day, produce the net profit of 10 per cent. If, therefore (price remaining the same), the factory could be kept at work thirteen hours instead of eleven and a half, with an addition of about £2600 to the circulating capital, the net profit would be more than doubled. On the other hand, if the hours of working were reduced by one hour per day (prices remaining the same), the net profit would be destroyed -- if they were reduced by one hour and a half, even the gross profit would be destroyed."(9*)

And the professor calls this an "analysis!" If, giving credence to the out-cries of the manufacturers, he believed that the workmen spend the best part of the day in the production, i. e., the reproduction or replacement of the value of the buildings, machinery, cotton, coal, etc., then his analysis was superfluous. His answer would simply have been: -- Gentlemen! if
you work your mills for 10 hours instead of 11 1/2, then, other thing being equal, the daily consumption of cotton, machinery, etc., will decrease in proportion. You gain just as much as you lose. Your work-people will in future spend one hour and a half less time in producing or replacing the capital that has been advanced. -- If, on the other hand, he did not believe them without further inquiry, but, as being an expert in such matters, deemed an analysis necessary, then he ought, in a question that is concerned exclusively with the relations of net profit to the length of the working day, before all thing to have asked the manufacturers, to be careful not to lump together machinery, workshops, raw material, and labour, but to be good enough to place the constant capital, invested in buildings, machinery, raw material, etc., on one side of the account, and the capital advanced in wages on the other side. If the professor then found, that in accordance with the calculation of the manufacturers, the workman reproduced or replaced his wages in 2 half-hours, in that case, he should have continued his analysis thus:

According to your figures, the workman in the last hour but one produces his wages, and in the last hour your surplus value or net profit. Now, since in equal periods he produces equal values, the produce of the last hour but one, must have the same value as that of the last hour. Further, it is only while he labours that he produces any value at all, ad the amount of his labour is measured by his labour-time. This you say, amounts to 11 1/2 hours a day. He employs one portion of these 11 1/2 hours, in producing or replacing his wages, and the remaining portion in producing your net profit. Beyond this he does absolutely nothing. But since, on your assumption, his wages, and the surplus-value he yields, are of equal value, it is clear that he produces his wages in 5 3/4 hours, and your net profit in the other 5 3/4 hours. Again, since the value of the yarn produced in 2 hours, is equal to the sum of the values of his wages and of your net profit, the measure of the value of this yarn must be 11 1/2 working hours, of which 5 3/4 hours measure the value of the yarn produced in the last hour but one, and 5 3/4, the value of the yarn produced in the last hour. We now come to a ticklish point; therefore, attention! The last working hour but one is, like the first, an ordinary working hour, neither more nor less. How then can the spinner produce in One hour, in the shape of yarn, a value that embodies 5 3/4 hours labour? The truth is that he performs no such miracle. The use-value produced by him in one hour, is a definite quantity of yarn. The value of this yarn is measured by 5 3/4 working hours, of which 4 3/4 were, without any assistance from him, previously embodied in the means of production, in the cotton, the machinery, and so on; the
remaining one hour is added by him. Therefore since his wages are
produced in 5 3/4 hours, and the yarn produced in one hour also
contains 5 3/4 hours' work, there is no witchcraft in the result,
that the value created by his 5 3/4 hours' spinning, is equal to
the value of the product spun in one hour. You are altogether on
the wrong track, if you think that he loses a single moment of
his working day, in reproducing or replacing the values of the
cotton, the machinery, and so on. On the contrary, it is because
his labour converts the cotton and spindles into yarn, because he
spins, that the values of the cotton and spindles go over to the
yarn of their own accord. This result is owing to the quality of
his labour, not to its quantity. It is true, he will in one hour
transfer to the yarn more value, in the shape of cotton, than he
will in half an hour; but that is only because in one hour he
spins up more cotton than in half an hour. You see then, your
assertion, that the workman produces, in the last hour but one,
the value of his wages, and in the last hour your net profit,
amounts to no more than this, that in the yarn produced by him in
2 working hours, whether they are the 2 first or the 2 last hours
of the working day, in that yarn, there are incorporated 11 1/2
working hours, or just a whole day's work, i. e., two hours of
his own work and 9 1/2 hours of other people's. And my assertion
that, in the first 5 3/4 hours, he produces his wages, and in the
last 5 3/4 hours your net profit, amounts only to this, that you
pay him for the former, but not for the latter. In speaking of
payment of labour, instead of payment of labour-power, I only
talk your own slang. Now, gentlemen, if you compare the working
time you pay for, with that which you do not pay for, you will
find that they are to one another, as half a day is to half a
day, this gives a rate of 100%, and a very pretty percentage it
is. Further, there is not the least doubt, that if you make your
"hands" toil for 13 hours instead of 11 1/2, and, as may be
expected from you, treat the work done in that extra one hour and
a half, as pure surplus-labour, then the latter will be increased
from 5 3/4 hours' labour to 7 1/4 hours' labour, and the rate of
surplus-value from 100%, to 126 2/23%. So that you are altogether
too sanguine in expecting that by such an addition of 1 1/2 hours
to the working day, the rate will rise from 100 to 200% and
more, in other words that it will be "more than doubled." On the
other hand-man's heart is a wonderful thing, especially when
carried in the purse you take too pessimistic a view, when you
fear, that with a reduction of the hours of labour from 11 1/2 to
10, the whole of your net profit will go to the dogs. Not at all.
All other conditions remaining the same, the surplus labour will
fall from 5 3/4 hours to 4 3/4 hours, a period that still gives a
very profitable rate of surplus-value, namely 82 14/32%. But this
dreadful "last hour," about which you have invented more stories than have the millenarians about the day of judgment, is "all bosh." If it goes, it will cost neither you, your net profit, nor the boys and girls whom you employ, their "purity of mind."(10*) Whenever your "last hour" strikes in earnest, think on the Oxford Professor. And now, gentleman, "farewell, and may we meet again in yonder better world, but not before."

Senior invented the battle cry of the "last hour" in 1836.(11*) In the London Economist of the 15th April, 1848, the same cry was again raised by James Wilson, an economical mandarin of high standing: this time in opposition to the 10 hours' bill.

4. Surplus Produce.

The portion of the product that represents the surplus-value, (one-tenth of the 20 lbs., or 2 lbs. of yarn, in the example given in Sec. 2,) we call "surplus-produce." Just as the rate of surplus-value is determined by its relation, not to the sum total of the capital, but to its variable part; in like manner, the relative quantity of surplus-produce is determined by the ratio that this produce bears, not to the remaining part of the total product, but to that part of it in which is incorporated the necessary labour. Since the production of surplus-value is the chief end and aim of capitalist production, it is clear, that the greatness of a man’s or a nation’s wealth should be measured, not by the absolute quantity produced, but by the relative magnitude of the surplus-produce.(12*)

The sum of the necessary labour and the surplus-labour, i.e., of the periods of time during which the workman replaces the value of his labour-power, and produces the surplus-value, this sum constitutes the actual time during which he works, i.e., the working day.

NOTES:

1. "If we reckon the value of the fixed capital employed as a part of the advances, we must reckon the remaining value of such capital at the end of the year as a part of the annual returns." (Malthus, "Principles of Political Economy" 2nd ed., London, 1836, p. 269)

2. What Lucretius says is self-evident: "nil posse creari de nihilo," out of nothing, nothing can be created. Creation of value is transformation of labour-power into labour. Labour-power itself is energy transferred to a human organism by means of nourishing matter.
3. In the same way that the English use the terms "rate of profit," "rate of interest." We shall see, in Book III, that the rate of profit is no mystery, so soon as we know the laws of surplus-value. If we reverse the process, we cannot comprehend either the one or the other.

4. In this work, we have, up to now, employed the term "necessary labour-time," to designate the time necessary under given social conditions for the production of any commodity. Henceforward we use it to designate also the time necessary for the production of the particular commodity labour-power. The use of one and the same technical term in different senses is inconvenient, but in no science can it be altogether avoided. Compare, for instance, the higher with the lower branches of mathematics.

5. Herr Wilhelm Thucydides Roscher has found a mare's nest. He has made the important discovery that if, on the one hand, the formation of surplus-value, or surplus-produce, and the consequent accumulation of capital, is now-a-days due to the thrift of the capitalist, on the other hand, in the lowest stages of civilisation it is the strong who compel the weak to economise (l.c. p. 78). To economise what? Labour? Or superfluous wealth that does not exist? What is it that makes such men as Roscher account for the origin of surplus-value, by a mere rechauffe of the more or less plausible excuses by the capitalist, for his appropriation of surplus-value? It is, besides their real ignorance, their apologetic dread of a scientific analysis of value and surplus-value, and of obtaining a result, possibly not altogether palatable to the powers that be.

6. Although the rate of surplus-value is an exact expression for the degree of exploitation of labour-power, it is, in no sense, an expression for the absolute amount of exploitation. For example, if the necessary labour = 5 hours and the surplus-labour = 5 hours, the degree of exploitation is 100%. The amount of exploitation is here measured by 5 hours. If, on the other hand, the necessary labour = 6 hours and the surplus-labour = 6 hours, the degree of exploitation remains, as before, 100%, while the actual amount of exploitation has increased 20%, namely from five hours to six.

7. The above data, which may be relied upon, were given me by a Manchester spinner. In England the horse-power of an engine was formerly calculated from the diameter of its cylinder, now the actual horse-power shown by the indicator is taken.
8. The calculations given in the test are intended merely as illustrations. We have in fact that prices = values. We shall, however, see in Volume III, that even in the case of average prices the assumption cannot be made in this very simple manner.

9. Senior, l.c., p. 12, 13. We let pass such extraordinary notions as are of no importance for our purpose; for instance, the assertion, that manufacturers reckon as part of their profit, gross or net, the amount required to make good wear and tear of machinery, or in other words, to replace a part of the capital. So, too, we pass over any question as to the accuracy of his figures. Leonard Horner has shown in "A Letter to Mr Senior," etc., London, 1837, that they are worth no more than the so-called "Analysis." Leonard Horner was one of the Factory inquiry Commissioners in 1833, and inspector, or rather Censor of Factories till 1859. He rendered undying service to the English working class. He carried on a life-long contest, not only with the embittered manufacturers, but also with the Cabinet, to whom the number of votes given by the masters in the Lower House, was a matter of far greater importance than the number of hours worked by the "hands" in the mills.

Apart from errors in principle, Senior’s statement is confused. What he really intended to say was this: The manufacturer employs the workman for 11 1/2 hours or for 23 half-hours daily. As the working day, so, too, the working year, may be conceived to consist of 11 1/2 hours or 23 half-hours, but each multiplied by the number of working days in the year. On this supposition, the 23 half-hours yield an annual product of £115,000; one half-hour yields 1/23 X £115,000; 20 half-hours yield 20/23 X £115,000; = £100,000, i.e., they replace no more than the capital advanced. There remains 3 half-hours, which yield 2/23 X £115,000 = £15,000 or the gross profit. Of these 3 half-hours, one yields 1/23 X £115,000 = £5000; i.e. it makes up for the wear and tear of the machinery; the remaining 2 half-hours, i.e., the last hour, yield 2/23 X £115,000 = £10,000 or the net profit. In the text Senior converts the last 1/23 of the product into portions of the working day itself.

10. If, on the one hand, Senior proved that the net profit of the manufacturer, the existence of the English cotton industry, and England’s command of the markets of the world, depend on the "last working hour." on the other hand, Dr Andrew Ure showed, that if children and young persons under 18 years of age, instead of being kept the full 12 hours in the warm and pure moral atmosphere of the factory, are turned out an hour sooner into the heartless and frivolous outer world, they will be deprived, by
idleness and vice, of all hope of salvation for their souls.

Since 1848, the factory inspectors have never tired of twitting
the masters with this "last," this "fatal hour." Thus Mr Howell
in his report of the 31st May, 1855: "Had the following ingenious
calculation (he quotes Senior) been correct, every cotton factory
in the United Kingdom would have been working at a loss since the
year 1850." (Reports of the Insp. of Fact. for the half-year,
ending 30th April, 1855, pp. 19, 20) In the year 1848, after the
passing of the 10 hour's bill, the masters of some flax spinning
mills, scattered, few and far between, over the country on the
borders of Dorset and Somerset, foisted a petition against the
bill on to the shoulders of a few of their work people. One of
the clauses of this petition is as follows: "Your petitioners, as
parents, conceive that an additional hour of leisure will tend
more to demoralise the children than otherwise, believing that
idleness is the parent of vice." On this the factory report of
31st Oct., 1848, says: The atmosphere of the flax mills, in which
the children of these virtuous and tender parents work, is so
loaded with dust and fibre from the raw material, that it is
exceptionally unpleasant to stand even 10 minutes in the spinning
rooms: for you are unable to do so without the most painful
sensation, owing to the eyes, the ears, the nostrils, and mouth,
being immediately filled by the clouds of flax dust from which
there is no escape. The labour itself, owing to the feverish
haste of the machinery, demands unceasing application of skill
and movement, under the control of a watchfulness that never
tires, and it seems somewhat hard, to let parents apply the term
"idling" to their own children, who, after allowing for meal
times, are fettered for 10 whole hours to such an occupation, in
such an atmosphere... These children work longer than the
labourers in the neighbouring villages.... Such cruel talk about
"idleness and vice" ought to be branded as the purest cant, and
the most shameless hypocrisy.... That portion of the public, who,
about 12 years ago, were struck by the assurance with which,
under the sanction of high authority, it was publicly and most
earnestly proclaimed, that the whole net profit of the
manufacturer flows from the labour of the last hour, and that,
therefore, the reduction of the working day by one hour, would
destroy his net profit; that portion of the public, we say, will
hardly believe its own eyes, when it now finds, that the original
discovery of the virtues of "the last hour" has since been so far
improved, as to include morals as well as profit; so that, if the
duration of the labour of children, is reduced to a full 10
hours, their morals, together with the net profits of their
employers, will vanish, both being dependent on this last, this
fatal hour. (See Repts., Insp. of Fact., for 31st Oct., 1848, p.
101) The same report then gives some examples of the morality and virtue of these same pure-minded manufacturers, of the tricks, the artifices, the cajoling, the threats, and the falsifications, they made use of, in order, first, to compel a few defenceless workmen to sign petitions of such a kind, and then to impose them upon Parliament as the petitions of a whole branch of industry, or a whole country. It is highly characteristic of the present status of so called economical science, that neither Senior himself, who, at a later period, to his honour be it said, energetically supported the factory legislation, nor his opponents, from first to last, have ever been able to explain the false conclusions of the "original discovery." They appeal to actual experience, but the why and wherefore remains a mystery.

11. Nevertheless, the learned professor was not without some benefit from his journey to Manchester. In the "Letters on the Factory Act," he makes the whole net gains including "profit" and "interest," and even "something more," depend upon a single unpaid hour's work of the labourer. One year previously, in his "Outlines of Political Economy," written for the instruction of Oxford students and cultivated Philistines, he had also "discovered, in opposition to Ricardo's determination of value by labour, that profit is derived from the labour of the capitalist, and interest from his asceticism, in other words, from his "abstinence." The dodge was an old one, but the word "abstinence" was new. Herr Roscher translate it rightly by "Enthaltung." Some of his countrymen, the Brawns, Jones, and Robinsons, of Germany, not so well versed in Latin as he, have, monk-like, rendered it by "Entsagung" (renunciation).

12. "To an individual with a capital of ú20,000, whose profits were ú2,000 per annum, it would be a matter quite indifferent whether his capital would employ a 100 or 1,000 men, whether the commodity produced sold for ú10,000 or ú20,000, provided, in all cases, his profit were not diminished below ú2,000. Is not the real interest of the nation similar? Provided its net real income, its rent and profits, be the same, it is of no importance whether the nation consists of 10 or of 12 millions of inhabitants." (Ric: i.c., p. 416) Long before Ricardo, Arthur Young, a fanatical upholder of surplus produce, for the rest, a rambling uncritical writer, whose reputation is in the inverse ratio of his merit, says, "Of what use, in a modern kingdom, would be a whole province thus divided, [in the old Roman manner, by small independent peasants], however well cultivated, except for the mere purpose of breeding men, which taken singly is a most useless purpose?" (Arthur Young: Political Arithmetic, etc.)
London, 1774, p. 47) Very curious is "the strong inclination... to represent net wealth as beneficial to the labouring class... though it is evidently not on account of being net." (Th. Hopkins, On Rent of Land, etc. London, 1823, p. 126.)