Value and Price in Marx's *Capital* [1]

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'Has Struve, who has managed to discern the "harmfulness" (sic!) of repeating Marx, failed to notice the harmfulness of uncritically repeating the fashionable corrections of fashionable bourgeois "science"?' (Lenin) [2]

1. Introduction

Of all the fashionable 'corrections' of Marx's *Capital*, none has been performed so often as the transformation of values into prices. From Bortkiewicz (1907) [3] to Samuelson (1971) [4], bourgeois 'science' has felt itself impelled to improve, correct or revise Marx on this question. With Sweezy's introduction of the Bortkiewicz 'correction' of Marx to the English speaking world in 1946 [5], another round of 'solutions' began. Although many differ in form from the Bortkiewicz/Sweezy contribution, and some avoid the more obvious errors, they treat the problem in a more or less similar way.

Bortkiewicz was a Ricardian and he went to great lengths to defend Ricardo against Marx's systematic attack. In his treatment of value and price, and in his 'solution' to the transformation problem, he is a consistent Ricardian. It is, therefore, not surprising that with the problem being presented in a Ricardian way, the appearance of Sraffa's *Production of Commodities by Means of Commodities* [6] - a thoroughly Ricardian text - has more recently given a new life to the transformation 'problem'. What all these Ricardian type solutions have in common is a failure to grasp Marx's method in 'Capital' and little or no understanding of the categories of value and price. Value and capital cease to have a social significance, to express, in fetishistic form, social relations under the capitalist mode of production. The substance of value - abstract human labour - is replaced by its magnitude, units of labour-time, and capital is simply reduced to dated labour-time inputs. The social relations, usually introduced by these critics of Marx as the rate of exploitation, is an empirically 'given' fact or a mathematically, and presumably sociologically, acceptable explanation of positive profits. It is given once the bundle of commodities forming the wage paid to the workers (in embodied labour-time units, of course) and total income are known. A social process is replaced by technical coefficients and social relations by the distribution of the production between the social classes. [7]

The method of Marx, the dialectical representation in *Capital*, is not a '"hegelese" form of reasoning' [8] that can simply be discarded as so much unnecessary ballast, That is why Lenin remarked:

'It is impossible completely to understand Marx's *Capital*, and especially the first chapter, without having thoroughly studied and understood the whole of Hegel's *Logic*. Consequently, half a century later, none of the Marxists understood Marx!!' [9]

The failure to understand Marx's *Capital*, and especially its first chapter, does indeed lie at the heart of the matter. The consequences must follow their inexorable course. It is not just Marx's transformation of values into prices which has to be 'corrected'. 'We must bury the last iron law of Marxian political economy - the law of the falling tendency of the rate of profit.' [10] But that is not all. The distinction between productive and unproductive labour must be cast aside as well, and the Ricardian treatment of 'luxury goods' (Sraffa's non-basics) necessarily replaces the position of Marx. What we have here is not simply a 'revision' of Marx. It is a complete rejection of Marx's scientific work. It represents a 'new' bourgeois school of thought - Neo-Ricardianism. [11] It must eventually lead to a reformist political practice. [12]

This article will deal primarily with the question of value and price developed in such a way as to 'solve' the transformation problem. Other questions will be considered in so far as they are relevant and follow as a by-product of this. I shall not attempt in any systematic manner to answer criticisms of the other positions held by Marx. This has been done elsewhere. [13] It has as its precondition an understanding of the method of Marx and of the categories of value and price. This will be the aim of this article.

2. The transformation 'problem'

2.1 The question as posed by Marx

In Volume 1 of *Capital*, Marx had assumed that all commodities sold at their values. At the level of abstraction of Volume 1 of *Capital* - the immediate process of production - where capital *as such* was not distinguished from individual capital, this creates no difficulties. [14] The general law of capitalist accumulation was developed on this foundation. But once we attempt to deal with 'the concrete forms which grow out of the movement of capital as a whole' [15] a major difficulty seems to arise. At this level of abstraction the existence of 'many capitals', and the competition between capitals, has to be brought into the analysis. The fact of a general rate of profit, that is, that capitals of equal magnitude, no matter what their organic compositions, yield equal profits, seems to conflict with the 'law of value', the determination of the value of commodities by the socially necessary labour-time to produce them. Marx formulates the problem in terms of the difficulties facing the Ricardian system as follows:

'The difficulty arose because capitals of equal magnitude, but of unequal composition - it is immaterial whether the unequal composition is due to the capitals containing unequal proportions of constant and variable capital, or of fixed and circulating capital, or to the unequal period of circulation of the capitals - set in motion unequal quantities of immediate labour, and therefore unequal quantities of unpaid labour; consequently they cannot appropriate equal quantities of surplus-value or surplus product in the process of production. Hence they cannot yield equal profit if profit is nothing but the surplus-value calculated on the value of the whole capital advanced. If, however, *the surplus-value were something different from (unpaid) labour, then labour could after all not be the foundation and measure of the value of commodities.*' [16]

Ricardo merely regards these difficulties (not recognised in their generality by him) as *exceptions* to the law of value. The later Ricardians toiled 'painfully to deduce undeniable empirical phenomena by simple formal abstraction directly from the general law, or to show by cunning that they were in accordance with that law'. [17] Marx accused Ricardo of 'forced abstraction'. Although many regarded Ricardo as 'being too abstract', he did not carry true abstract thinking far enough. This was because of his inability when dealing with the value of commodities 'to forget profits, a factor which confronts him as a result of competition'. [18] Instead of merely postulating a general rate of profit, Ricardo should have examined how far its existence is reconcilable with the 'law of value'. He would have found that instead of being consistent with it, at first sight, it contradicts it. The existence of a general rate of profit can in fact only be explained by a number of *intermediary stages*, which is very different from merely including it under the law of value. [19] Marx's transformation of values into prices of production is such an intermediary stage. The price of production - a modified form of value - is such an intermediate link.

2.2 Marx's solution

The formal aspect of Marx's solution is well known. Marx takes five different spheres of production and lets the capital in each have a different organic composition. The rate of exploitation is the same in each sphere. Due to different organic compositions of capitals invested in the different lines of production, capitals of equal magnitude put into motion different quantities of labour and produce different quantities of surplus-value. The rates of profit existing in the different branches of production are initially very different. These different rates of profit are equalised by competition to a single general rate of profit which is the average of all these different rates of profit. [20] This is brought about by *capitals* moving from spheres with a low rate of profit to others which give a higher rate of profit.

'Through this incessant outflow and influx, or, briefly, through its [i.e. capital's - DY] distribution among the various spheres, which depends on how the rate of profit falls here and rises there, it creates such a ratio of supply to demand that the average profit in the various spheres of production become the same, and values are, therefore, converted into prices of production.' [21]

As a result of this process the capitalists of the different spheres of production, in selling their commodities at their price of production, do not secure the surplus value, and consequently the profit, created in their own sphere by the production of these commodities. They recover money in proportion to the value of the capital consumed in their production but receive a profit in proportion to the advanced capital as the aliquot part in the total capital. [22] The price of production, it must be stressed, is a modified form of *value* as Marx makes clear. It is the cost price of a commodity, the quantity of paid labour contained in it, plus a share of the unpaid labour, of the annual average profit on the total capital invested in production. [23]

'In Book 1 and 2 we dealt only with the *value* of commodities. On the other hand, the *cost-price* has now been singled out as part of this value, and on the other the price of production of commodities has been developed as its converted form.' [24]

In such a way these particular rates of profit in every sphere of production can be deduced out of the values of commodities. If this were not the case the general rate of profit and the price of production of commodities 'would remain a vague and senseless conception'. [25] Profits are therefore only a secondary, derivative and transformed form of surplus-value. Total profit, which is surplus-value *computed differently*, can neither grow nor decrease through this transformation of values into prices of production. What is modified is not it, but only its distribution among capitals. [26]

So that,

'the sum of all profits in all spheres of production must equal the sum of the surplus values, and the sum of the prices of production of the total social product equal to the sum of its value.' [27]

Marx's general points are illustrated in the following arithmetical table. The rate of surplus value is assumed to be 100%

Capitals		Surplus value	used up c	cost price of commodities	value of commodities	price of production of commodities	rate of profit	Deviation of price from value
I	80c+20v	20	50	70	90	92	22%	+ 2
II	70c+30v	30	51	81	111	103	22%	- 8
III	60c+40v	40	51	91	131	113	22%	-18
IV	85c+15v	15	40	55	70	77	22%	+ 7
V	95c+5v	5	10	15	20	37	22%	+17

Marx assumes for each of the five capitals different proportions of constant capital go into the value of the product. This is what the column 'used up c' indicates The rate of profit is measured on the total capital advanced. [28] It can be seen that the total value of the social product is equal to the sum of the prices of production and total surplus value will be equal to total profits. The commodities exchange at their prices of production with the existence of a general rate of profit.

It is important to recognise that this is an intermediate stage in the analysis. To confuse a price of production with an empirically given price is to make a fundamental methodological mistake. The price of production is an 'intermediate link' in the process of explaining the empirically given reality on the basis of the 'law of value'. Marx did speak of the price of production being the centre around which the daily market prices fluctuate, [29] but he did not stop his analysis there. At this stage of the analysis merchant capital has been left out of consideration [30] and so has banking capital and rent. Merchant capital, for example, while creating no new value, participates in levelling surplus value to average profit. The general rate therefore contains a deduction from surplus value due to merchant's capital, and therefore a deduction from the profit of industrial capital. [31] Marx indicates very clearly his method:

'In the course of scientific analysis, the formation of a general rate of profit appears to result from industrial capitals and their competition, and is only later corrected. supplemented, and modified by the intervention of merchant's capital.' [32]

Similar considerations would be involved with rent and banking capital, etc. The process of analysing the actual intrinsic relations of capitalist production is clearly a complicated matter [33] and it is only the method adopted by Marx which can lead to any deep understanding of the real concrete relations. A necessary stage in this analysis is the transformation of values into prices of production and surplus value into average profit. The method Marx adopted is the only one which makes it possible to grasp the fact of a general rate of profit on the basis of the value analysis developed in Volume 1 of *Capital*.

'If the limits of value and surplus-value are given, it is easy to grasp how competition of capitals transforms values into prices of production and further into mercantile prices, and surplus-value into average profit. But without these limits, it is absolutely unintelligible why competition should reduce the general rate of profit to one level instead of another, e.g. make it 15% instead of 1500%. Competition can at best only reduce the general rate of profit to *one* level. But it contains no element by which it could determine this level itself.' [34]

2.3 Bortkiewicz/Sweezy 'correction' of Marx

All the critics, and indeed many of the sympathisers, of Marx have discovered a similar source of error in Marx's own illustration of the transformation of values into prices. In Marx's price scheme the capitalists' outlays on constant and variable capital are left exactly as they were in the value scheme. [35] The constant capital and variable capital used up in production are still expressed in value terms while the outputs are expressed in price terms. Marx, we are told, was not unaware of the problem as a possible source of error and passages are quoted from *Capital* to make the point. [36] The most familiar is the following...

'Since the price of production may differ from the value of a commodity. it follows that the cost-price of a commodity containing this price of production of another commodity may also stand above or below that portion of its total value derived from the value of the means of production consumed by it. It is necessary to remember this modified significance of the cost-price, and to bear in mind that there is always the possibility of an error if the cost-price of a commodity in any particular sphere is identified with the value of the means of production consumed by it.' [37]

Marx, however, leaves the matter there by saying directly after this 'our present analysis does not necessitate a closer examination of this point'. Sweezy thinks Marx might have left the matter in a more satisfactory state if he had lived to rewrite Volume III of *Capital*. [38] Others merely say that Marx was 'inconsistent' [39] or lacked the mathematical experience and knowledge to do it. [40]

A second feature of the 'transformations' of the critics is that they relate the problem directly to the reproduction schema of Volume II of *Capital*. In the case of Bortkiewicz/Sweezy they are only concerned with simple reproduction. Considering the different levels of abstraction in Volume II and Volume III of *Capital* this needs to be justified. As far as I know, none of the critics have even recognised a problem here. Marx, it will be remembered, dealt with capitals in different spheres of production. He was concerned with different capitals engaged in unrelated lines of industry. The reproduction schema are concerned with the turnover of *total social capital*, not with the relation of 'many capitals' to one another through competition. This point will be taken up in section 3.

Bortkiewicz/Sweezy deal with the problem in the following way. They divide industry into three major branches. Department I producing means of production, Department II, workers' consumption goods (wage goods), and Department III, capitalists' consumption goods (luxury goods), all having different organic compositions. Sweezy then shows that, using Marx's method of transformation, the equilibrium conditions for simple reproduction will break down. He illustrates this in the following table. [41] The rate of surplus-value is 100%.

Department	Constant Capital	Variable Capital	Profit	Price
I	250	75	108 1/3	433 1/3
II	50	75	41 2/3	166 2/3
III	100	50	50	200
TOTAL	400	200	200	800

The total quantity of constant capital used up in production is still 400 as for the value scheme, but the constant capital produced in Department I is now priced at 433 1/3. A similar consideration applies to the wage bill. Simple reproduction breaks down and so Marx's method is inconsistent. So to the alternative solution.

Inputs are transformed into prices and three equations are obtained with four unknown quantities which are to be solved for a consistent and unique solution (see appendix). A fourth equation is introduced.

In the case of Bortkiewicz/Sweezy this is done by making price equal to value for the luxury goods Department III. The price of a unit of luxury good (gold) is equal to its value. Equilibrium is restored but it is found that although total surplus-value and total profit are equal, total price differs from total value. Although this contradicts the very essence of Marx's argument, Sweezy is not perturbed. We are merely told,

'It is important to realise that no significant theoretical issues are involved in this divergence of total value from total price. It is simply a question of the unit of account.' [42]

Sweezy's value and price schema are given below. [43]

Department	Constant Capital	Variable Capital	Surplus Value	Value
I	225	90	60	375
II	100	120	80	300
III	50	90	60	200
TOTALS	375	300	200	875
Department	Constant Capital	Variable Capital	Profit	Price
I	288	96	96	480
II	128	128	64	320
III	64	96	40	200
TOTALS	480	320	200	1000
(The rate of surplus value is 66%)				

It will be seen that total price is 1000 units and total value 875 units, this deviation being due to the unit of account chosen. Bortkiewicz, in his paper, makes the same point a little more strongly, seeing in it something of much greater significance.

'Without paying the slightest regard to the conditions of production of the good serving to measure values and prices, Marx simply asserts in general terms that total price equals total value. This assertion is not only unproven, it is false.' [44]

Two major errors are contained within the Sweezy/Bortkiewicz position. The first is the failure to understand the nature of money and also treating the money commodity and luxury goods as one undifferentiated type. The significance of money price is, therefore, not understood. The second error implicit in the schema, but general to the Ricardian standpoint, is that changes in the structure of Department III (luxury goods/non-basics) do not affect the average rate of profit. Total profit equals total surplus value in this schema as a consequence of the fact that the goods used as 'value and price measure' belong to Department III. [45] I shall deal with the former error here as it is common to all the efforts to 'correct' Marx's transformation of values into prices of production. The other question will be dealt with in Section 3.

We have said earlier that Marx had stated that changes in the mere money expression of the same values were not at all being considered here (footnote 23). It is also the case, at this stage of the analysis, that the organic composition of capital in the sphere of production producing the money commodity - whether it has a lower or higher composition for other commodities - is of no real importance for our discussion. This is so for two reasons. The first is that *the money commodity as a measure of value does not have a price*. The second is that the category of money is developed on the assumption that all commodities sell at their values. When Sweezy states that the price of gold will be greater than its value because of its relatively high organic composition in his schema, [46] he shows he has not understood Marx's categories of exchange-value and money.

'The price of the commodity which serves as a measure of value and hence as money, does not exist at all, because otherwise, apart from the commodity which serves as money I would need a second commodity to serve as money - a double measure of values. The relative value of money is expressed in the innumerable prices of all commodities; for in each of these prices in which the exchange-value of the commodity is expressed in money. the exchange-value of money is expressed in the use-value of the commodity. There can therefore be no talk of a rise or fall in the price of money.' [47]

Marx argues that in the study of money it is assumed that commodities are sold at their value. The concept of money cannot, in fact, be developed on any other foundation, and price, in its general meaning is value in the form of money. It is quite immaterial whether a commodity sells at a price above or below its value, as, in the study of money, we are not concerned with just the metamorphosis of a certain commodity (C-M-C) but rather the social interrelation of all these metamorphoses. Gold is therefore regarded, in this discussion, as the direct incarnation of human labour in the abstract, as 'value in itself'. Price, as the money expression of value, is measured in physical units, e.g. ounces of gold, not in labour-time units. [48]

Although, as a commodity, the magnitude of its value is determined by the labour-time socially necessary for its production, as the money commodity, that labour-time is directly universal labour-time. 'It becomes a commodity like other commodities, and at the same time it is not a commodity like other commodities. [49] Money has to be understood in its role as a *measure of value* and a *standard of price*. It is a measure of value in so far as it is the socially recognised 'incarnation' of human labour. It is the standard of price inasmuch as it is a fixed weight of metal (say gold). [50] As Marx clearly put it in attacking the 'time chitters',

'The first basic illusion of the time-chitters consists in this, that by annulling the *nominal difference* between real value and market value, between exchange-value and price - that is, by expressing value in units of labour-time itself instead of in a given objectification of labour-time, say gold or silver - that in so doing they also remove the *real difference and contradiction between price and value*...' [51]

Marx had, in fact, already anticipated Bortkiewicz/Sweezy in his criticism of Ricardo. Ricardo thought that the organic composition of capital employed in the production of the money commodity was significant in determining the effect a rise or fall in the value of gold (due in this case to a rise or fall of wages) would have on the price of other commodities. Marx said,

'With regard to *money* prices this seems *wrong*. When gold rises or falls in value, from whatever causes, then it does so to the same extent for all commodities which are reckoned in gold. Since it thus represents a relatively unchangeable medium despite its changeability. it is not at all clear how any relative combination of fixed capital and circulating capital in gold, compared with commodities can bring about a difference. But this is due to Ricardo's *false assumption* that money, in so far as it serves as a medium of circulation, exchanges as a commodity for commodities. Commodities are assessed in gold before it circulates them.' [52]

Price as distinct from value is necessarily money price and this means that values have to be measured as prices on different standard from their own. [53] So that if we return to Sweezy's value and price schema (p35) the fact that total price (as money price) is greater than total value is simply a *confusion.* The two schemas cannot be compared if the second represents the total sum of money prices. They are incommensurable. The first is measured in labour-time units, the second in, say, ounces of gold. The price of production 'system' must have, in fact, the same dimensions as the value 'system'. That is why we referred to it as a modified form of value. Both systems can be expressed in terms of money prices.

'Money is already a *representation* of value, and presupposes it. As the *standard* of price money, for its part, already presupposes the (hypothetical) transformation of the commodity into money. If the values of all commodities are represented in money prices, then one can compare them, they are in fact already compared. But for the value to be represented in price, the value of commodities must have been expressed previously as money. Money is merely the form in which the values of commodities appears in the process of circulation.' [54]

Both of Sweezy's schemas represent *values* (whether both are expressed in money commodity units or not). Total price must equal total value, otherwise new value would have to be created in the process of transformation, an obvious absurdity.

It might be argued that this is unfair. The 'unit of account', after all, is not so important. It represents an 'arbitrary' choice. Sweezy, himself, said that the divergence of total value from total price 'involved no significant theoretical issue' [55]. But it does, and with Bortkiewicz we have a clear expression as to what *is* at issue.

'Price is also, however, like value, the index (or exponent) of an exchange-relationship, and, again just like value, represents a purely theoretical structure, although price, i.e. the price of production, which is essentially the same as the "natural price" of the classical economists, represents a higher degree of approximation to reality than does value. Value calculation means to determine the exchange relationship according to the Law of Value. Price-calculating means to determine the same exchange-relationship according to the Law of the Equal Rate of Profit.' [56]

Price, just like value, according to Bortkiewicz represents a purely theoretical structure. But the symbol of labour-time as such is not a purely theoretical structure. It represents a *social relationship* under capitalist production.

'It is not money that renders commodities commensurable. Just the contrary. It it because all commodities, as values, are realised human labour, and therefore commensurable, that their values can be measured by one and the same special commodity, and the latter be converted into the common measure of their values, i.e. into money. Money as a measure of value is the phenomenal form that must of necessity be assumed by that measure of value which is immanent in commodities, labour-time.' [57]

The 'unit of account' is not arbitrary as *money* under capitalist production. The fact that money, in certain of its functions, can be replaced by mere symbols of itself, gives rise, says Marx, to the other mistaken notion, that it is itself a mere symbol. [58] Marx's criticism of Ricardo equally applies to Bortkiewicz/Sweezy as it does to all the Neo-Ricardians.

'What Ricardo does not investigate is the *specific* form in which labour manifests itself as the common element of commodities. *That is why he does not understand money*. That is why in his work the transformation of commodities into money appears to be something merely formal. which does not penetrate very deeply into the very essence of capitalist production.' [59]

It is incorrect to treat gold, as the money commodity, exactly in the same way as luxury products, although they share important features in common. However, gold, as the money commodity, does not have a price of production, while luxury products do. Further, competition does not affect the gold industry in the same way as for luxury products - it has a certain independence. Gold producers, in producing the money commodity, have a social monopoly. It is the only commodity which cannot be over-produced. The moment it is produced it is already in exchangeable form. If we regard, with Marx, luxury products as being a sub-section of Department II (II_b), gold, as the money commodity, would require a separate department of its own. [60]

2.4 Other 'solutions'

All other 'solutions' take as given that inputs have to be changed into prices of production. Unless we construct some kind of artificial mathematical system choosing a suitable 'unit of account', in general, the identities of total value and total price and total surplus-value and total profit will not hold simultaneously. [61] What all the 'solutions' essentially amount to is the selection of a definite aggregate of the value system *which remains invariant to the transformation into prices*. This type of 'solution' can also be shown to hold for 'n' sector models and is not limited to the three departments of the Bortkiewicz/Sweezy 'correction'. [62] Further, it can be shown to hold for expanded as well as simple reproduction.

Bortkiewicz/Sweezy, it will be remembered, held the unit-value of luxury goods invariant to the transformation in prices. Winternitz argues that the Bortkiewicz/Sweezy choice is an arbitrary and unjustified assumption which makes the sum of prices differ from the sum of values. This assumption is said not to be in the 'spirit' of the Marxian system. Winternitz, therefore, takes total values equal to total prices and carries out the transformation on this basis. In these circumstances total profit does not equal total surplus value (see appendix). The transformation is, according to Winternitz, equally applicable to the conditions of expanded reproduction. In such circumstances the functional relations between the rates of accumulation in the various departments will not remain unchanged by the transformation. [63]

Meek, in the usual three sector illustration, chooses to hold the ratio of gross output to wages constant in the transformation. This is said, for reasons better known to Meek, to be essential for Marx's standpoint. He also assumes total surplus value is equal to total profit. In fact, in the general case, the equalities postulated only hold if the organic composition of capital in Department II (wage goods industry) is equal to the social average, as Meek himself points out. The sum of prices, though, will diverge from values [64]. Seton has given a general proof that the transformation can be 'solved' along the lines so far indicated for an n-fold sub-division of the economy. He also makes the important point that

'There does not seem to be an objective basis for choosing any particular variance postulate in preference to all the others, *and to that extent the transformation problem may be said to fall short of complete determinacy*.' [65]

Laibman, recognising this point, has tried to justify choosing one invariance criteria rather than another. He chooses the rate of exploitation, arguing that 'it would be unreasonable to have a change in the rate of exploitation - a parameter reflecting the real forces of the class struggle - forced upon us as a result of the transformation process. The transformation problem is isolated by holding constant the *real* forces determining a given value situation: technology and the balance of power between capitalists and workers.' [66]

However, accepting this 'sociological' factor, this 'category' of the relations of production still means that, in general, total value does not equal total price, and total surplus value does not equal total profit. Whether workers 'experience' this 'socially tangible factor' or not, there is little justification for choosing it to the exclusion of the other main factors usually held invariant in the transformation process. As we shall show later, this empiricist explanation for the 'invariance' of the rate of exploitation has little in common with that of Marx. [67]

A number of attempts have been made to utilise the work of Piero Sraffa in order to 'solve' the transformation problem. Medio offers the most sophisticated example of this. He claims to eliminate the last element of indeterminateness in the transformation problem. [68] What is required, according to Medio, is to find a numeraire for the system - a commodity or an aggregate of commodities - whose price is equal to value. Medio finds and constructs a commodity (actually a composite commodity) - w* commodity which satisfies this requirement. This is the case if the industries which produce the inputs utilised in the production of the w* commodity taken as a whole, have the same organic composition of capital w*, as that for the industry producing the w* commodity and the same is true for the industries which produce their inputs and so on without limit. The formal way of constructing the w* commodity is the same as that for Sraffa's 'Standard commodity'. The set of equations (or industries) taken in the proportions that produce the Standard commodity is called the Standard system. And for the Standard system Marx's general postulates for the transformation of values into prices all hold if the wage is expressed in terms of the Standard commodity.

Medio argues that the w* commodity can be used as a 'representative' of the overall features of the economy with w* being the ratio between the weighted average of constant capitals and the weighted average of variable capitals of the entire system measured in value terms. But, and this is the key point, unless the *actual* system (economy) is in Standard proportions this *numeraire* has no more relevance than any of the other artificial constructions we have already discussed. It is only another *commodity* standard of value. The value of commodities, however, has already an inherent unit of measurement - money price. In fact Medio, in spite of all protestations to the contrary, has, like all the Ricardians, not understood the nature and role of money in a capitalist economy. There is no need to construct an artificial *numeraire*. 'Commodities', as Marx put it, 'are assessed in gold before it circulates them'. Medio has failed to take the problem further in spite of his rather ingenious construction of a *numeraire*. [69]

As the actual system (economy) is not in standard proportions, most of the theorems Medio concludes with, such as the relation between profits and wages, have no real significance. Further, as capital accumulates the organic compositions of capital and the productivity of labour will change and so will his *numeraire*. This would not have the same effect as a rise or fall in the value of the money commodity as we have already explained. The organic composition, w*, of Medio's commodity *numeraire* is important in relation to the changing system. [70] Finally, the clear Ricardian basis of Medio's analysis lies in his treatment of non-basics/luxury goods. As non-basics are completely excluded from the role of means of production and do not contribute to the wage of the workers, they play no role in the Standard system. They are, therefore, not involved in the determination of the rate of profit or in the prices of basic commodities. Likewise, the organic composition of non-basic commodities does not enter in the determination of the 'average' organic composition of capital, w*. [71] This, as we will show later, conflicts with the basic Marxian view. What this section suggests is that there is no real 'solution' to the transformation 'problem', along the lines indicated by the critics of Marx, which conforms with the basic intention of Marx. The rest of this article will indicate the methodological basis for accepting Marx's method of proceeding in the transformation of values into prices as the only correct one.

3. The method and categories of *Capital*

Many of the 'critics' of Marx have regarded the transformation problem as a purely formal, and unimportant problem. [72] In fact it is an essential stage in Marx's scientific analysis. To understand what Marx was attempting to do, and to justify what he did, it is essential to grasp and not to confuse the different levels of abstraction in the positions put forward in the three volumes of *Capital*. We must, therefore, examine the method and categories of *Capital*.

3.1 Marx's scientific method

Marx began *Capital* with an analysis of the most simple social form in which the product of labour *presents* itself in capitalist society, the commodity. [73] This is analysed in the *form in which it appears*. It is seen to be an object of use (a use-value) and a bearer of exchange-value. Further analysis shows that the common *substance* that manifests itself in the exchange-value of commodities whenever they are exchanged is their value - the expenditure of abstract human labour. Exchange-value is the only form in which the value of commodities can be expressed under commodity production. [74] The commodity, however, conceals the contradiction between use-value and exchange-value. [75]

'The commodity is a *direct unity of use-value and exchange-value*, that is to say, two opposites. It is therefore a direct contradiction. The contradiction must unfold as soon as we examine [the commodity] as a whole in its real relation to other commodities, and not analyse it, as before now, on the one hand from the standpoint of use-value, on the other from the standpoint of exchange-value. The *real* relationship of commodities to each other, is however, their exchange process.' [76]

The further development of this contradiction presents itself in the duplication of the commodity into commodity and money. [77] Marx then goes on to show how implicit in the money form is the further development to the capital form of value, value that generates surplus value (value-in- process). [78] Capital is exchange-value posited as the unity of commodity and money - a contradictory unity. As Marx presents it in the *Grundrisse*,

'we have already seen, in the case of money, how value, having become independent as such - or in the general form of wealth - is capable of no other motion than a quantitative one; to increase itself. It is, according to its concept, the quintessence of all use values; but, since it is always a definite amount of money (here, capital), its quantitative limit is in contradiction with its quality. It is therefore inherent in its nature constantly to drive beyond its own barrier.' [79]

Although the money form of value and capital are 'latent' within the commodity, it is only under certain objective conditions, and as an outcome of a long historical process, that this 'latency' is realised. [80] The general historical condition for this to be the case is that labour power itself - the capacity to labour - becomes a commodity. There must exist a use-value which has the property of creating value and is the source of value. [81] This action of labour power not only reproduces its own value but produces value over and above this - surplus value. [82] Capital has found confronting it the use-value adequate to itself.

'As *use value* labour exists only *for capital*, and is itself the use value of capital, i.e. the mediating activity by means of which it reproduces and multiplies (verwertet) itself. Capital, as that which produces and increases its value, is autonomous exchange value (money) as a process, as the process of its reproduction and self-expansion (Verwertung)' [83]

The concept of capital has been developed by a process of dialectical reconstruction from an analysis of the commodity. What is fundamental to *Capital* has been understood independently of any consideration of 'many capitals' or the action of capitals on one another through competition. The latter will be analysed after consideration of what they (many capitals) have in common as capital. As Marx put it in the *Grundrisse*,

'To the extent that we are considering it here, as a relation distinct from that of value and money, capital is *capital in general*, i.e. the incarnation of the qualities which distinguishes value as capital from value as pure value or money. Value, money, circulation. etc,. prices, etc., are presupposed, as is labour, etc. But we are still concerned neither with a *particular* form of capital nor with an *individual* capital as distinct from other individual capitals, etc. We are at present at the process of its becoming. This dialectical process of its becoming is only the ideal expression of the real movement through which capital comes into being. The later relations are to be regarded as developments coming out of this germ (keim). But it is necessary to establish the specific form in which it is posited at a certain point. Otherwise confusion arises.' [84]

It follows that the later form of capital is contained in embryonic form (Keimform) within the general concept of capital. This means not only the 'civilising' dynamic tendencies of capital but also the latent contradictions which drive capital beyond its own limits. [85]

What Marx did in beginning his analysis with the commodity - the simple social form in which the product of capitalist society presents itself - was to abstract what is essential to all commodity exchange, and show the underlying social relationships expressed in fetishistic form by the exchange of commodities. Marx examines the contradictory forms of appearance of value and their development to newer, more concrete forms. Moving from the abstract to the concrete - the scientifically correct method - thought reproduces the concrete in the mind as concrete. [86] As he wrote to Engels,

'The most abstract determinations, when more carefully examined, always point to a further definite concrete basis (of course - since they have been abstracted from it in these determinations).' [87]

Another feature of Marx's method is important for our argument. In attempting to show how the 'law of value' governs the forms of appearances of capitalist society, Marx, at certain stages of the analysis, points out how decisive contradictions with the 'law of value' seem to arise. The 'law of value' appears to be in contradiction with the facts of the real world. This is when Marx moves from general definitions to more particular explanations. An example of this is in Volume I of *Capital*, Part II, when it is necessary to explain a conclusion Marx has reached which conflict with reality. That is, the impossibility of the creation of surplus-value on the basis of the exchange of commodities according to their value. He does this not by throwing out the earlier definitions but by modifying and developing them. In this case he introduces the concept of labour power. A similar procedure is adopted in the case of the transformation of values into prices. On the basis of exchange of commodities at their values, with different organic compositions of the capitals producing these commodities, there would be different rates of profit This contradicts reality, and so again the earlier position is modified and developed with the category of price of production. [88] In such a way Marx shows, with the help of *mediating links*, how the 'forms of appearance' of capitalist society are connected to their determination by the 'law of value'. It is precisely the failure of Ricardo and the Neo-Ricardians that they attempt to do this *formally*, directly, without the help of such *mediating links*.

'Money and exchange itself (circulation) therefore appear only as purely formal elements in (Ricardo's) economics; and although. according to him, economics is concerned *only* with exchange value, profit, etc.. appears there *only* as a percentage of the share of the product, which happens just as much on the basis of slavery. He never investigated the form of the mediation.' [89]

Whereas Ricardo wishes to deal, as do the Neo-Ricardians, *immediately* with all the phenomena that contradict the law, Marx only comes to deal with the realm of 'appearance' with the opening of the third volume of *Capital*. [90] This is after a long, detailed, and *necessary* analysis of the immediate process of production in Volume I of *Capital* and the circulation of total social capital in Volume II.

3.2 Levels of abstraction in **Capital**

Volume I and II of *Capital* are concerned with an examination of 'capital in general' and the special forms of existence of 'capital in general' as fixed and circulating capital. Competition between capitals must not interfere with the investigation here. Capital as *such* is not, therefore, separated from individual capital. [91] In Volume I we are dealing with the immediate process of production as such - the production of value and surplus value and the accumulation of capital in this context. Volume II moves on to the *circulation* of total social capital. Here, in the circulation process, the forms the individual capitals take become important. A capital's time of circulation limits, generally speaking, its time of production and hence the process of generating surplus-value. [92] The reproduction schema consider the importance of these forms - the value component and the use-value components - for the reproduction and circulation of the aggregate social capital. It should be remembered, however, that throughout Volume II of *Capital*.

'that products are exchanged at their values and also that there is no revolution in the values of the component parts of productive capital.' [93]

It is only in Volume III that Marx begins to examine the concrete forms which grow out of the *movements of capital as a whole...*

'In their actual movement, capitals confront each other in such concrete shape, for which the form of capital in the immediate process of production, just as its form in the process of circulation, appear only as special instances. The various forms of capital, as evolved in this book, thus approach step by step the form which they assume on the surface of society, in the action of different capitals on one another, in competition, and in the ordinary consciousness of the agents of production themselves.' [94]

This really has to be understood. It is of little relevance for Hodgson to remark, as though he has made an important discovery, that the 'capitalists will calculate their rate of profit on capital invested in terms of prices, not values' and that 'the goad to accumulate takes the form of prices as the capitalists are not aware of, or disposed towards, a calculation in terms of values'. [95] He, as a Ricardian, wishes to bring in at the very beginning all the phenomena which apparently contradict the 'law of value'. For Hodgson it is necessary 'to give the science *before* the science'. [96] Instead of moving step by step by a process of increasing concretisation to the 'starting point of the vulgar conception', Hodgson remains tied to the 'level of appearances' and allows them to dominate his conception. 'But all science would be superfluous if the outward appearance and essence of things directly coincided.' [97] Pilling has expressed this important point particularly well:

'All the manifold links, missing in Ricardo, have to be established between the outward form of things and their inner source. For Marx, this was precisely what he had in mind when he suggested to Kugelmann that the problem was to establish how the law of value operates. *So when the realm of appearances was finally reached, they were not considered as isolated, disembodied, phenomena, as in the vulgar conception, nor were they merely counterposed to their source, the law of value,* at in classical economy. They were now grasped as *necessary appearances*, contradictory, opposite, manifestations of definite, historically determined social relations of production.' [98]

It is precisely the fact that 'in competition everything appears in an inverted form' [99] that Marx's method of procedure remains essential for a scientific understanding.

3.2.1 competition and accumulation of capital

A scientific analysis of competition is not possible until we have a concept of 'capital in general', that is, of the 'inner nature of capital'. Marx called competition the 'essential locomotive of bourgeois economy'. It does not, however, *create* or *establish* its laws but merely allows them to be exhibited or realised ('the inner Nature as external necessity'). Capitalist production exists in its most 'adequate' form in so far as competition develops. Marx did say that capital 'cannot exist except in the form of a number of capitals, and its self-determination thus *appears* as these many capitals one with another'. [100] But it is precisely this form of appearance which is deceptive. For example, it seems as though competition brings about a fall in the rate of profit. In fact it is a fall in the rate of profit which calls forth a competitive struggle amongst capitalists, not vice versa.' [101] Only in competition are the inherent laws of capital, its tendencies realised. But competition does not impose its laws on capital, laws not already inherent in its movement. In relation to the formation of the average rate of profit, Marx makes this clear.

'Competition can permanently depress the rate of profit, only if and in so far as a general and permanent fall of the rate of profit, having the force of a law, is conceivable *prior* to competition and regardless of competition. Competition executes the inner laws of capital: makes them into compulsory laws towards the individual capital, but it does not invent them. It realises them [realisiert]. To try and explain them simply as results of competition therefore means to concede that one does not understand them.' [102]

Since *total profit* is *surplus value itself computed differently*, it cannot grow nor decrease through exchange. What is modified with the introduction of 'many capitals' and the competition between capitals is not *total surplus value* but its distribution among the different capitals. [103] On the basis of Marx's method it can only be understood in this way.

3.2.2 the reproduction schema

The Reproduction Schema are concerned with the reproduction and circulation of the aggregate social capital. They are discussed and must be discussed before the introduction of 'many capitals'. They are concerned to show how the 'bodily form' of the commodities produced becomes important in the discussion of the reproduction of total social capital.

'The reconversion of one portion of the value of the product into capital and the passing of another portion into the individual consumption of the capitalist, as well as the working class, form a movement within the value of the product itself in which the result of the aggregate capital finds expression; and this movement is not only a replacement of value, but also a replacement in material and is therefore as. much bound up with relative proportions of the value-components of the total social product as with their use-value, their material shape.' [104]

With the reproduction and circulation of total social capital, the use-value of the product is significant. Marx did not, as Sweezy argues, exclude use-value as a category from the field of investigation of political economy. [105] In fact he said the opposite and argued that it was *Ricardo*, 'who believes that the bourgeois economy deals only with exchange-value, and is concerned with use-value only exoterically'. Use-value, for Marx, plays a role as an economic category. [106] It plays such a role in the reproduction of total social capital.

In the discussion of the Reproduction Schema, Marx assumes that all commodities are sold at their values and no changes in the values of the component parts of productive capital takes place. This, in fact, excludes the *accumulation of capital*, in the proper sense of the term. With accumulation proper, changes in the organic composition of capital and the productivity of labour occur. In this sense, the reproduction of the aggregate social capital in Volume II belongs, correctly, to the *circulation* process of capital. Now the circulation and reproduction of capital contains the reproduction of both use-values as well as values and, therefore, can only be expressed in *money prices*.

'In the exchange of the commodity for money, the material and the formal changes coincide; for. in money, precisely the content itself is part of the economic form. The transformation of money into commodity is here, however. at the same time present in the retransformation of capital into the material conditions of production. The reproduction of a specific use-value takes place, just as well as of value as such.' [107]

Marx begins the discussion of simple reproduction by saying that the figures he is using may indicate millions of marks, francs or pounds sterling. [108] He can say this because all commodities are exchanged at their values, and prices, at this stage of the analysis, do not diverge from values. We may say that the reproduction schema are expressed in 'simple prices' [109] as opposed to prices which are the money expression of transformed values, that is, of prices of production. This important point has clearly not been understood as the reproduction schema are usually considered to express only *values*. In this sense, there is no such thing as a *value* schema in those discussions of the transformation problem which immediately relate the problem to the reproduction of social capital. Both Sweezy's schema, already discussed, have to be in money prices. So the insistence of most of the 'critics' that capitalists relate to *money prices*, etc., not values, is just another confusion.

Marx makes the point that if prices diverge from values, this cannot exert any influence on the movements of the social capital. In this case he must be speaking of market prices as prices of production have not yet been introduced into the analysis. [110] In fact, if prices diverge from values due to different organic compositions of capital and equal rates of profit, then it will affect the movement of social capital. This is clear because the movement of capitals is involved in the establishing of prices of production. It would mean a change in the distribution of society's labour time. In this case, though, it becomes impossible to represent the schema in a formal (mathematical) way. As the values of the means of production differ from their cost-prices, and it is the *value* that is transferred to the product, it becomes impossible to represent this as a continuous process. Here the dual nature of a commodity as a use-value and exchange-value prevents a merely *quantitative* representation of the process. This is why growth models based on the reproduction schema are of little relevance for capitalist production. They do not take into account the dual nature of the commodity, and they misunderstand the level of abstraction in the discussion of reproduction schema in *Capital*. Further, because money has to play a role as *money-capital* in order that the normal course of reproduction of capital can take place, the possibilities of disequilibrium and crisis are inherent in the process of the reproduction of social capital itself. [111] It is because they ignore the role money must play in the reproduction schema - it follows from the dual nature of the commodity - that the kind of growth models mentioned above are essentially 'harmonistic' in character. It should now be seen that Marx was clearly aware of these problems and that is why it was necessary to illustrate the transformation of values into prices of production with five different *unrelated* capitals.

3.3 Value and capital as social relations

Under commodity production the private labour of individuals presents itself as general *social* labour, and the relation between people as relations between things. The values of commodities have a social reality - acquired because they are embodiments of one social substance, abstract human labour - which can only manifest itself in the social relation of commodity to commodity, in the act of exchange. [112] Exchange-value, Marx argues, is only the phenomenal form of something contained in it, yet distinguishable from it. [113] In order to trace the genesis of the money-form of value, it was necessary to examine what lay behind the 'form of appearance' of value as exchange-value. It is, therefore, important not to confuse the 'form of value' and value. What Marx shows through his analysis of the commodity is how the concrete labour of the individual must be transformed into its opposite, abstract labour, and in this form, social labour. Abstract social labour is found to be the substance of value - it 'creates' value. It is socially equalised (homogeneous) labour in the historical *form* which it acquires under commodity production. [114] One of the chief failings of classical economy, wrote Marx, was that it never succeeded in discovering that 'form of value', under which value becomes exchange-value.

'Even Adam Smith and Ricardo, the best representatives of the school, treat the form of value as a thing of no importance, as having no connection with the inherent nature of commodities. The reason for this is not solely because their attention is entirely absorbed in the analysis of the magnitude of value. It lies deeper. The value-form of the product of labour is not only the most abstract, but is also the most universal form, taken by the product in bourgeois production and stamps that production as a particular species of social production, and thereby gives it its special historical character. If then we treat this mode of production as one eternally fixed by Nature for every state of society, we necessarily overlook that which is the *differentia specifica* of the value-form, and consequently of the commodity-form, and of its further developments, money-form, capital-form, etc.' [115]

Abstract labour appears and develops to the extent that production becomes production for exchange, i.e. commodity production. The more generalised and widespread is exchange, the more the concrete labour of the individual takes on the character of abstract social labour. It is only in the development of the market to a world market that money has a tendency to develop into world money and abstract labour into social labour.

'Abstract wealth, value, money, hence abstract labour, develop in the measure that concrete labour becomes a totality of different modes of labour embracing the world market...' [116]

Exchange-value is now shown to be the necessary 'form of appearance' of value - its phenomenal form under commodity production. Exchange-value cannot be divorced from the social relations of production - it arises from the concept of value and not vice versa, 'Our analysis has shown that the form or expression of the value of a commodity originates in the nature of value, and not that value and its magnitude originate in the mode of their expression as exchange-value.' [117]

The magnitude of value, therefore, also expresses a relation of social production. That is, the connection between a certain article and the portion of the total labour time of society required to produce it. The magnitude of the value of a commodity is measured by the time socially necessary to produce it.

What I have tried to show so far is how the 'form of appearance' of value is necessarily related to value as a social relation. To reduce *value* to its magnitude ignoring the 'substance of value' and the 'form of value' is precisely to ignore the social relations of production and the particular historical character of the mode of production. And this is just what Ricardo and the Neo-Ricardians then do, by concentrating their investigation on the *magnitude* of value. [118] The 'social' relations are usually introduced, as we have indicated earlier, by an examination of the distribution of the social product of labour between the different social classes.

It is because Ricardo and the Neo-Ricardians occupy themselves with labour as the measure of the magnitude of value that they do not understand the nature of money. [119] It is because the labour of a private individual must present itself as abstract (social) labour under capitalist society that it finds its objectification in the money commodity. It is the commensurability of commodities as objectified (vergegenstandlichte) labour-time, that turns gold into money. [120]

'Universal abstract labour-time is ideally represented in their price in which commodities appear as commensurable embodiments of the same value-substance differing merely in quantity.' [121]

It is now clear why Medio, who attacks the Neo-Ricardians, can end up in the same camp in utilising the work of Sraffa to 'solve' the transformation problem. He argues in the following way

'Abstract labour is, by definition, the substance of *value*. Since the process of expenditure of abstract labour takes place over time, the magnitude of *value* is naturally measured in terms of abstract labour time. Dimensionally, we have therefore: value = abstract labour time.' [122]

Medio has not grasped the nature of abstract labour as *social* labour, and the magnitude of value as *socially necessary* labour time. He has merged together in a confused way the *substance* of value and its *magnitude*. He, therefore, cannot understand money as objectification of 'universal abstract labour time' - capitalist society necessarily creates its *own* 'measure' of value. This explains why Medio thinks that it is possible to move from the *value level* to the *price level* in a *formal logical way* [123] - a fault of all Neo-Ricardians. Finally, this is consistent with his construction of the *numeraire* [124] to solve the transformation problem (see above). It comes down to a failure to understand the 'forms of value', and so money and exchange-value, for Medio, become purely *formal* elements. [125]

Capital as 'value in process'. as self-expanding value, necessarily contains within it the reproduction of capitalist social relations on an extended scale. [126] Marx argues that the tendency to create the *world market* is directly given in the concept of capital itself. [127] If it is remembered that Marx associated the fullest development of abstract (social) labour with the creation of the world market it is seen how clearly the concept of capital is a development of the 'value-form' of the product of labour under commodity production. Already in the simple forms of exchange-value and of money the opposition between capital and labour 'latently' exists - the individual producer is producer of exchange-value and entirely *determined* by society. [128]

Labour power exists as a use-value for capital; it is the *mediating* activity by means of which capital reproduces and multiplies itself (sich verwertet). [129] It is simply wrong to regard capital as merely *accumulated* labour.time. This is to ignore the 'capital-form' of the product of labour and the underlying social relation that capital expresses.

'When it it said that capital is "accumulated (realized) labour (properly, *objectified* [*vergegenständlichte*] labour), which serves as the means for new labour (production)", then this refers to the simple material of capital, without regard to the formal character without which it is not capital. This means nothing more than that capital is - an instrument of production, for, in the broadest sense, every object. including those furnished purely by nature, e.g. a stone, must first be appropriated by some sort of activity before it can function as an instrument, as means of production. According. to this, capital would have existed in all forms of society, and is something altogether unhistorical.' [130]

Marx criticised Mill as a Ricardian for defining labour and capital simply as different forms of labour - the one *immediate* labour, the other *hoarded* labour. [131] In fact this is what all the Neo-Ricardians tend to do. [132] Inevitably, they must treat the question of accumulation of capital as a merely *formal* question. The contradictions expressed by the dual nature of the commodity, the fact that concrete labour is transformed into abstract (social) labour under commodity production, the development of the 'value-form' to the 'capital-form' of the product are all ignored in their work. They inevitably have to introduce the antagonism between *capital* and *labour* at the level of the distribution of the social product. Their category, the rate of exploitation is, in spite of Marx's warning, defined in terms of fractions of the value added to the product. Indeed, for their work, no concept of value, let alone 'value-form', is required. Finally, they have no understanding of the category 'variable capital' and it is to this that we now turn.

3.3.1 variable capital

It is remarkable how little the category variable capital has been understood. It is often confused with the *value* of the means of subsistence or wage of the worker. [133] What forms the variable part of capital is not the labourers' means of subsistence but his labour power in action.

'The variable capital exists at first in the hands of the capitalist as *money-capital*; and it performs the function of money-capital by his buying labour-power with it. So long as it persists in his hands in the form of money, it is nothing but a given value existing in the form of money; hence a constant and not a variable magnitude, It is variable capital only potentially, owing to its convertibility into labour-power. It becomes real variable capital only after divesting itself of its money-form. after being converted into labour-power functioning as a component part of productive capital in the capitalist process.' [134]

The capitalist exchanges a definite *given* magnitude of value for the production and self-expansion of value. The creation of surplus value arises out of the consumption of labour power following the exchange of value for value-creating power, out of the conversion of a constant into a variable magnitude. [135] The variable capital functions as *capital* in the hands of the capitalist and as revenue in the hands of the worker. But it is not the case of variable *capital* functioning in a dual capacity, as capital for the capitalist and as revenue for the labourer.

'It is the same *money* which exists first in the hands of the capitalist as the money-form of his variable capital, hence as potential variable capital, and which serves in the hands of the labourer as an equivalent for sold labour-power as soon as the capitalist converts it into labour-power. But the fact that the same money serves another useful purpose in the hands of the seller than the buyer is a phenomenon peculiar to the purchase and sale of all commodities.' [136]

Therefore, to confuse variable capital with the revenue, which the worker buys his means of subsistence to reproduce his labour-power with, is a fundamental mistake.

3.3.2 variable capital, constant capital and prices of production

We can now directly relate to the question of changing *inputs* into prices of production in the transformation of values into prices. To attempt to do this in the case of variable capital (v) is just to confuse *variable capital* with the *value of the means of subsistence*. Variable capital, in its money form, represents a *definite, given* value exchanged for living labour power, i.e. labour power in action, variable capital in its productive form. In Marx's discussion of just the very point the 'critics' consider important - that of the difference between the price of production and the value of a commodity entering into the cost-price of other commodities as one of its elements - he argues, 'Variable capital, whatever difference between value and cost-price [price of production - DY] it may contain, is replaced by a certain quantity of labour which forms a constituent part of the value of the new commodity, irrespective of whether its price expresses its value correctly, or stands above or below its value.' [137]

The organic composition of capital, the ratio of constant to variable, indicates the amount of labour power set in motion by a given capital. If the rate of surplus value is given, it also tells us the mass of surplus value produced by the workers employed by that capital. In the case of commodities produced by capitals with the average organic composition of capital, the amount of profit falling to such capitals will be equal to the surplus value produced when the commodities exchange at their prices of production. In all profit calculations we must take a *capital* of average social composition as the standard to measure surplus value and average profit. It is of no consequence whether this capital of average social composition exists or not. Marx regarded it as an *ideal* standard, as an average which does not really exist. What is important is that the capital of average social composition is representative of the total social capital. It is an abstraction from total social capital. Further, those capitals of average social composition serve as a practical measure of the rate of profit no matter whether c and v represent the actual values of the commodities comprising them or not.

'The quantity of profit falling to these commodities is equal to the quantity of surplus value contained in them. For instance, in a capital of the given composition, 80c + 20v, the most important thing in determining surplus-value is not whether these figures are expressions of actual values, but how they are related to one another, i.e. whether v = $^1/_5$ of the total capital, and c = $^4/_5$. Whenever this is the case, the surplus value produced by v is, as was assumed, equal to the average profit. On the other hand, since it equals the average profit, the price of production = cost price plus profit = k+p = k+s; i.e. in practice is equal to the value of the commodity' [138]

The practical result is therefore the same, Marx argues, as it would be if these commodities sold at their real values. This *ideal* standard enables Marx to illustrate the correctness of his approach to the transformation process in spite of the modified significance of cost-price which the critics of Marx are so keen to stress. Marx does not change c and v into prices of production because he treats the different spheres of production as constituent parts of the social capital. The organic compositions of the capitals in the different spheres tells us the labour power set in motion by each capital as part of the labour power set in motion by the total social capital. Each variable capital v indicates the part of societies' labour time (paid labour), expressed in money commodity units, necessary to replace it. As each sphere of production represents a certain capital invested for the purpose of increasing value, given the rate of exploitation we know the mass of surplus value (unpaid labour time) produced by the labour power set in motion by each capital, expressed in money. In the case of constant capital c

'This part of capital...enters unchanged into the production process and emerges from it unchanged.' [139]

The average profit is calculated on the average social capital, and with the formation of prices of production the capitalist recovers money in proportion to the *value of capital consumed* in production plus the average profit on the capital advanced.

The most generalised form of the circuit of total capital is represented by M-C-M' and each individual capital is seen to relate to this circuit. What occurs in the formation of prices of production is a redistribution of the surplus value (M' minus M) between capitals, brought about by the movement of *capitals* between the different spheres of production. This is the only way that the process can be represented if we bear in mind that *capital* is a social relation not a mere quantity. The difficulty arises because of the dual nature of the commodity as *use-value* and *exchange-value*. We must not confuse means of production and accumulated (objectified) labour with capital.

'The catch is that if all capital is objectified labour which serves as means for new production, it is not the case that objectified labour which serves as means for new production is capital. *Capital is conceived as a thing, not as a relation*.' [140]

Capital is a process in whose various moments it is always capital. That is why we, necessarily, must represent the process of transformation in terms of the movement of capital in its various forms.

When Marx speaks of the 'modified significance of cost-price' due to the fact that the price of production of a commodity, entering into the production of a new commodity, differs from its value, he does not speak of the *value of capital consumed*. He speaks of the value of *means of production consumed* or, in another place. the value of the *commodity*, in so far as in the form of constant capital it becomes an ingredient of the production process. [141] That the cost price of a commodity produced by an individual capital is not equal to the value of the commodities consumed in its production does not alter the basic point. We have to regard the individual capital as part of the total social capital, and for the total capital they coincide. [142] Capital should, therefore, not be confused with the means of production and the means of subsistence of the working class, but has to be regarded as an aliquot part of the total social capital. For total social capital the circuit is M-C-M' and the total cost-price is equal to the total value of capital consumed, total value is equal to total price and total surplus value is equal to total profit. The movement of individual capitals as part of the total capital does not, and cannot, change this. What it alters is the distribution of surplus-value, as well as the use-values (means of production, labour power) between the different spheres of production - the circuit represented in C-M-C. The constant capital and variable capital therefore represent the actual capitals invested in the different spheres of production as shares of the total capital, and as such remain unchanged in the transformation process. [143] The average rate of profit is the result of a complex process of redistribution of surplus-value brought about by the movements of capital. Its limits are determined by the production of value and surplus value given in the movement of total capital in the immediate process of production.

3.3.3 the rate of exploitation

Surplus value is the difference between the *time* necessary to reproduce the commodity labour power and the length of the working day. The values of variable capital and the value of labour power purchased by that capital are equal. The value of labour power determines the necessary portion of the working day, the paid labour-time, and the unpaid labour-time, the surplus value. Given the intensity of labour, the rate of exploitation depends on the *social* productivity of labour and the length of the working day. The rate of exploitation depends not on the productivity of labour of the individual branch in which the worker works, but on the *social* productivity of labour. That is, how great a part of the working day is devoted to the reproduction or production of the value, i.e. equivalent, of the workers' means of subsistence. In each particular sphere of production the individual capitalist, as well as the capitalist class as a whole, take direct part in the exploitation of the working class by the totality of capital. [144] The direct interest of a capital of any particular sphere, says Marx, in the exploitation of labourers who are directly employed by him is confined to making an extra-gain,

'a profit exceeding the average, either through exceptional overwork, or reduction of the wage below the average. or through the exceptional productivity of the labour employed.'

For the transformation of values into prices of production Marx assumes that the rate of exploitation is the same in all spheres of production. This would assume competition between workers and a continual migration from one sphere to another to bring about this equalisation. This general. rate of surplus value - viewed as a tendency, like all other economic laws - is assumed for the sake of theoretical simplification. That is, it is assumed that the laws of capitalist production operate in their pure form. [145] The reasons for assuming the rate of exploitation invariant in the transformation process are not based on any spurious 'sociological' proposition - the workers directly experience it, etc. - but on understanding what *capital* is. The compulsion to produce surplus value is deduced from the nature of capital as self-expanding value. It arises from the exchange of variable capital for labour power - value creating power.

The rate of exploitation expresses this compulsion as the ratio of surplus-value to variable capital. Its magnitude depends on the *social* productivity of labour and the length of the working day, given certain physiological and historical norms for determining the value of labour power. Each capital participates in the exploitation of *total* labour by the *totality* of capital. At the level of abstraction involved in the discussion of the transformation of values into prices. we ignore extra-gains made by capitals due to exceptional circumstances. Variable capital and surplus-value relate to the direct process of *production*. Once this has taken place they are given and, therefore, the rate of exploitation is given. It cannot change with the circulation and competition between capitals - it is determined in the process of production. [146] So that it is both justified to assume the same rate of exploitation in all spheres of production and the invariance of the rate of exploitation in the transformation process.

3.4 Luxury goods and the rate of profit [147]

The mass of surplus value is determined, given the rate of surplus value, by the number of productive workers which capital exploits. The general rate of profit, which is the *total* mass of surplus value produced, divided by the total capital invested, therefore depends on two factors, the organic composition of total capital and the rate of surplus value. [148] The former is an indicator of the number of productive workers employed by capital, the latter the ratio of unpaid to paid labour time. It is now relatively simple to show how changes in the structure of luxury goods production affect the rate of profit.

Luxury goods are not part of the consumer necessaries i.e. means of subsistence of the working class, nor do they contribute directly or indirectly to the production of consumer necessaries. [149] Increases of productivity in the luxury industries therefore cannot reduce the value of consumer necessaries so cannot produce that form of surplus value which results from the growing productivity of industry as such.

'It is correct, however, that productivity in the luxury industries cannot reduce the value of labour power, it cannot produce any relative surplus value and, in general, cannot produce that form of surplus value which results from the growing productivity of industry as such.' [150]

Increased productivity in the luxury industry cannot, therefore, affect the *rate* of profit insofar as it is determined by the rate of surplus value. [151] Luxury production can only influence the rate of profit insofar as it affects either the *amount* of surplus value or the ratio of variable capital to constant capital and to the total capital. [152]

A rise in the organic composition of capital in the luxury sector will simply accelerate the tendency of the rate of profit to fall as it cannot increase the rate of exploitation, and so increase relative surplus value to partially counter this fall. [153] Accumulation of capital in the luxury industry increases the mass of surplus value, but it prevents the growing mass of surplus value from rising sufficiently to partially offset the tendency of the rate of profit to fall. A growing proportion of capital in the luxury industry restricts that form of capital which can increase relative surplus value and so partially offset the tendency of the rate of profit to fall. [154]

The profits of luxury production enter into the equalisation of the general rate of profit just as much as that in any other sphere. [155] However the nature of the use-value has a particular effect in the reproduction process of capital.

The points we have argued show clearly that it is fundamentally wrong to regard luxury production as having no overall effect on the rate of profit or on the accumulation of capital. Theoretically, this amounts to treating only the rate of surplus value as *the* important determinant of the rate of profit, ignoring the organic composition of capital. And this is once again a Ricardian standpoint:

'(Ricardo) furthermore overlooks the fact that the rate of profit depends on the *amount of surplus-value*, and by no means on the *rate of surplus value*. When the rate of surplus-value, i.e. of surplus-labour, is given, the amount of surplus-value depends on the organic composition of the capital, that is to say, on the number of workers which a capital of a given value, for instance £100, employs.' [156]

It further means looking at the question statically, ignoring the overall effects of luxury production on the accumulation of capital through the effect on the rate of profit. To argue that there is 'too much' luxury production is to argue this in the context of the formation of the general rate of profit and the tendency of the rate of profit to fall. [157]

As those workers who work in the luxury sector are productive workers [158], luxury industries will be involved in the transformation of simple prices into prices of production. At that level of abstraction they will be treated as part of productive capital. [159] It is only later that the effect on the tendency of the rate of profit to fall will be considered.

4. Conclusion: The transformation of values into prices and the law of value

We have shown how Marx's representation of the transformation of values into prices of production is a necessary stage in the process of explaining capitalist reality as it appears on the surface of society and in the ordinary conciousness of the agents of production themselves. The price of production is an 'intermediary link' between the immediate process of production and the forms of appearance of surplus value as ground rent, profit and interest. Marx does this in stages. He first deals with the production of value and surplus value in the direct process of production. When he moves on to consider in Volume III, profit and the rate of profit - the form in which surplus value presents itself in view [160] - he takes this process as given,

'When in general we speak about profit or rate of profit, then *surplus-value* is supposed to be given. The influences, therefore, which determine surplus-value *have* all operated. This is the pre-supposition.' [161]

Profit as it first appears is seen as the surplus-value already produced expressed in relation to the total capital invested. This is explained very clearly in the *Grundrisse*:

'Profit as we still regard it here, i.e. as the profit of capital *as such*, not of an individual capital at the expense of another, but rather as the *profit of the capitalist class*, concretely expressed, *can never be greater than the sum of the surplus value*. As a sum, it is the sum of surplus value, but it is the same sum of values as a proportion relative to the total value of the capital, instead of to that part of it whose value really grows, i.e. is exchanged for living labour. *In its immediate form, profit is nothing but the sum of surplus value expressed as a proportion of the total value of the capital*'. [162]

The *individual capitals* participate in the total profit by obtaining a share of profit in proportion to their share of capital invested as a part of the total *social capital*. This is brought about by the movement of capitals and competition between capitals. It involves a redistribution of surplus value already produced. This occurs through commodities selling at their prices of production and not their values. We have justified Marx's method of transforming values into prices of production by showing the inadequacy of all other 'solutions', and the correct nature of Marx's solution given an understanding of his scientific method. We have also indicated how it is only their empiricist methodology which enables the critics of Marx to avoid Bortkiewicz's inevitable conclusion that price and profit cannot be deduced from value and surplus value. This is achieved by introducing a positive rate of exploitation either at the level of distribution of the social product - whether this is by asserting its existence as an empirical fact or 'deducing' it from a mathematical relation - or by regarding it as, in some sense, 'socially tangible' and part of the experience of the working class at the level of production. This procedure, as we have shown, is not only alien to Marx's method but quite unnecessary once that method is understood.

In *Capital*, Marx moves on to deal with the law of the tendency of the rate of profit to fall in relation to the profit of industrial (productive) capitals. He then, and only then, begins to deal with other sections of the capitalist class who have a claim to a share of the *total profits* produced - merchant capital, banking capital and those claiming rent. Continuing in this way we can deal with the capitalists able to charge prices containing a monopoly content etc., and so on. In such a way Marx penetrates the veil of appearances of capitalist society and shows how they relate as necessary appearances to the determination of social production by the 'law of value'.

The 'law of value' - the determination of the value of commodities by the time socially necessary to produce them - is reconciled in this way with appearances which seem at first to contradict it. Marx has shown that as long as generalised commodity production exists the laws of movement of society remain determined by the 'law of value'.

Society remains subjected to the dictates of the 'law of value' as long as the capitalist mode of production exists. [163] In this way, Marx's Critique of Political Economy as presented in *Capital* shows and justifies its revolutionary significance.

APPENDIX

We assume that all capital invested is used up in each period of production. We shall consider three departments of production, Department I producing means of production, Department II producing means of consumption (wage goods), and Department III producing 'luxury goods'. With the usual notation we have the 'value' schema

I $c_1 + v_1 + s_1 = w_1$

II $c_2 + v_2 + s_2 = w_2$ (1)

III $c_3 + v_3 + s_3 = w_3$

Let us write

$c_1 + c_2 + c_3 = C$

$v_1 + v_2 + v_3 = V$ (2)

$s_1 + s_2 + s_3 = S$

Bortkiewicz/Sweezy

We have the following 'price of production' equations. Inputs are changed into prices of production.

I $(xc_1 + yv_1)(1 + r) = xw_1$
II $(xc_2 + yv_2)(1 + r) = yw_2$ (3)
III $(xc_3 + yv_3)(1 + r) = zw_3$

Here the price of production of a unit of constant capital (product of Department I) is x times its value, that of means of consumption y times its value, and that of luxury goods z times its value. The rate of profit is r. It can be seen from the equations of Department I and Department II that it is possible to find a solution for r independent of Department III. We can rewrite I and II as follows

$x(c_1(1+r) - w_1) = -y(v_2(1+r))$ (4)
$xc_2 = -y(v_3(1+r) - w_2)$ (5)

On dividing we can obtain a solution for r from an equation of the second degree. This is what leads to the statement that the structure of Department III has no influence on the rate of profit. This is a conclusion which is based on a purely 'formal' understanding of capitalism and which we have shown in the text to be fundamentally incorrect. From equation (3) we have three equations and four unknowns. In order to 'solve' the equations we need another equation. Bortkiewicz/Sweezy take z = 1. If we do this and add the equations of (3) we obtain
$(xC + yV)(1 + r) = xw_1 + yw_2 + w_3$ (6)

For simple reproduction $w_1 = C$, $w_2 = V$ and $w_3 = S$
and $(xC + yV)(1+r) = xC + yV + S$
so that: $(xC + vV) r = S$
That is, total profit = total surplus value
Now, total price = $xw_1 + yw_2 + w_3 = xC + yV + S$
and total value = $C + V + S$

So that in general total price does not equal total value. They are only equal if
$xC + yV = C + V$
i.e. if
$$\frac{C}{V} = \frac{1 - y}{x - 1}$$
which, in general, is not the case.

Winternitz's solution
Winternitz starts from equations (3) and does not assume simple reproduction. He argues that total value = total price, that is
$w_1 + w_2 + w3 = xw_1 + yw_2 + zw_3$ (7)

So that (7) is Winternitz's fourth equation.
From equation (1) on adding
$C + V + S = w_1 + w_2 + w_3$
and from (6) and (7) we obtain for total profit - $(xC + yV)r$
$= w_1 + w_2 + w_3 - xC - yV$
$= C + V + S - xC - yV$
$= C (1-x) + V (1-y) + S$

That is that total profit does not equal total surplus value unless $C (1-x) = V (y-1)$, which is in general not the case.

In conclusion, there exists no general solution for the equations which preserves the equality of total value and total price, and total surplus value and total profit, if inputs are changed to prices of production.

If *inputs are not changed into prices of production* then there is a unique solution with the equalities holding (3) would now read
$(c_1 + v_1)(1+r) = xw_1$
$(c_2 + v_2)(1+r) = yw_2$ (8)
$(c_3 + v_3)(1+r) = zw_3$
If total value = total price then on adding equations (8) and from (1)
$(C + V)(1+r) = xw_1 + yw_2 + zw_3$
$= w_1 + w_2 + w_3$
$= C + V + S$
i.e. $(C + V) r = S$
that is total surplus value is equal to total profit.

Notes

[1] I wish to acknowledge the contributions made by members of the Revolutionary Communist Group to the development of the ideas in this article. I would also like to thank Michael Williams for his help on many substantial points concerning Marx's method. This article is a development and clarification of a short note 'Value, Price and the Neo-Ricardians: An Introductory Note' in the *Bulletin of the Conference of Socialist Economists* (*BCSE*) Autumn 1973 p42-47.

[2] 'Uncritical Criticism' in *Collected Works* Volume 3 p632, Lawrence and Wishart 1964.

[3] L von Bortkiewicz, 'On the Correction of Marx's Fundamental Theoretical Construction in the Third Volume of Capital' in Eugen von Bohm-Bawerk, *Karl Marx and the Close of His System* (New York 1949). Originally published in

Jahrbucher fur Nationaloekonomie und Statistik July 1907. Also 'Value and Price in the Marxian System' in *International Economic Papers*, No 2, 1952. Originally in *Archiv fur Sozialwissenschaft und Sozialpolitik*, Volume XXV, 1907.

[4] P A Samuelson, 'Understanding the Marxian Notion of Exploitation: A Summary of the So-called Transformation Problem Between Marxian Values and Competitive Prices' in the *Journal of Economic Literature*,.June 1971, Volume IX No 2 p399-431.

[5] Paul M Sweezy, *The Theory of Capitalist Development*, Dennis Dobson Ltd. 1946 (1962 ed) p109-130.

[6] Piero Sraffa, *Production of Commodities by Means of Commodities*, Cambridge University Press 1960 (1963 ed).

[7] See for example, Sweezy op cit p129-130, Ian Steedman, 'Marx on the Rate of Profit' in *BCSE*. Winter 1972 p104-109, Geoff Hodgson, 'Marxist Epistemology and the Transformation Problem' in *BCSE* Autumn 1973 p47-64, and 'The Theory of the Falling Rate of Profit' in *New Left Review* No 84. March-April 1974, Alfred Medio, 'Profits and Surplus-Value: Appearance and Reality in Capitalist Production' in *A Critique of Economic Theory* (ed E K Hunt and J G Schwartz) p312-346, and David Laibman, 'Values and Prices of Production: The Political Economy of the Transformation Problem' in *Science and Society*, Winter 1973-1974 Volume XXXVII No 4 p404-436. Hodgson and Steedman make all the major errors outlined in the text. Hodgson explicitly recognises that Marx rejected the definition of the rate of exploitation given in his article but does not grasp the significance of this. See Hodgson, 'The Theory of...' op cit p80. Medio gives the impression that he has avoided the Neo-Ricardian pitfalls and even criticises the Neo-Ricardian School. But having done this he commits most of the same blunders. See Medio op cit p330, p331, p332. Laibman, while attacking the Bortkiewicz/Sweezy 'Solution', nevertheless, in arguing for the 'invariance' of the rate of exploitation in the transformation process of values into prices, regards it as 'socially tangible...part of the relevant experience of a social class' and a 'parameter reflecting the real forces of the class struggle'. See Laibman op cit p426.

[8] An unfortunate expression used by Medio op cit p314.

[9] In 'Philosophical Notebooks' *Collected Works* Volume 38 p180

[10] Hodgson op cit p80.

[11] It is, of course, not really a new School of thought. Most of the positions are already in Bortkiewicz. See 'Value and Price...' op cit p32 (on 'non-basics' and 'luxury goods'), p33 and p53 (on the rate of profit). Only an empiricist methodology saves the other critics of Marx from Bortkiewicz's eventual conclusion 'we are thus driven to reject Marx's derivation of price and profit from value and surplus value' op cit p13.

Besides the articles mentioned so far, John Harrison's 'Productive and Unproductive Labour in Marx's Political Economy' in *BCSE* Autumn 1973 p70-82 is a straightforward rejection of Marx's position. Hodgson's 'Permanent Arms Economy: A Critique' in *International* January 1973 Volume 1 no 8 p54-66 accepts Bortkiewicz's view on luxury goods/non-basics. This article is a confused critique of M Kidron's *Western Capitalism Since the War*, Penguin 1970, which actually holds to a similar position, see especially p55.

[12] See my article 'The Crisis of Profitability: A Critique of the Glyn-Sutcliffe Thesis' in *NLR* No 80 p45-62, which shows the reformist implications of a rejection of Marx's law of the tendency of the rate of profit to fall, See also Frank Richards, 'The International Socialists and Centrism: The Re-emergence of Economism' in this issue for a critique of the reformist practice of a group whose basic theoretical positions are opposed to those developed by Marx in *Capital*, M Kidron is one of their leading theoreticians.

[13] See my article 'The Marxian Theory of Crisis, Capital and the State' in *BCSE* Winter 1972 p5-58, reprinted in *Economy and Society* Volume 2 No 2, May 1973 p 186-232. See also Peter Howell 'Once Again on Productive and Unproductive Labour' in *Revolutionary Communist* No 3/4 pp 46-68, November 1975, for a critique of Harrison's position.

[14] *Grundrisse*, Penguin Books 1973, p449, p517;p727, p767. The *Grundrisse* is used for citations as it often makes explicit what is implicit in Volume 1 of *Capital*. Sweezy is quite wrong when he says that Volume 1 of *Capital* assumes equal organic compositions of capital in all branches of production for the law of value to directly control the prices of commodities. He has not, as elsewhere in his book, understood Marx's method of analysis. Marx is dealing with the immediate process of production as *such*, and at that level of abstraction Sweezy's problem does not arise. Capital as such is not differentiated from *individual* capital. See Sweezy op cit p109.

[15] *Capital* Volume III p25 Lawrence and Wishart/Moscow 1962.

[16] *Theories of Surplus Value* (*TSV*) Part III p177 Lawrence and Wishart, London 1972. Marx's emphasis indicates the importance of the 'difficulty'. See also *Capital* Volume III op cit p155-6.

[17] *TSV* Part I p87, Moscow (no date). How much Marx had already anticipated our own Neo-Ricardians is clear. He spoke of 'crass empiricism' turning into 'false metaphysics'. This is one of the characteristics of all Neo-Ricardian methodology. The Neo-Ricardians do not confuse surplus value and profit in the same way as Ricardo but in their treatment of luxury goods they show they follow a similar line of reasoning to Ricardo. For Marx on Ricardo see *TSV* Part II p427, Lawrence and Wishart, London 1969.

[18] *TSV* Part II ibid p191 and p437.

[19] *TSV* ibid p174 and *TSV* Part III op cit p87. Marx attacks Mill's solution to the problem in a very precise way:

'Here the contradictions between the general law and further developments in the concrete circumstances is to be resolved not by the discovery of the connecting links but by simply subordinating and immediately adapting the concrete to the abstract' ibid.

Although the problem is a much more general one for the Neo-Ricardians, they, with their various models and reproduction schemes, do exactly the same.

[20] *Capital* Volume III op cit p155-6.

[21] ibid p192. The formation of prices of production and this movement of capital should not be confused with the actual movement of capital seeking higher profits once the general rate of profit has been formed.

[22] ibid p157.

[23] ibid p156 and p163. A price of production is called a 'price' because it represents a closer approximation to empirical market prices than value. As a modified form of value, it like value has to be expressed in money in the process of circulation of commodities. Marx also makes it clear that 'mere changes in the money expression of the same values are, naturally, not at all considered here' ibid p164. These points will be discussed more fully below.

[24] ibid pl6l and p170-1. See also *TSV* part III op cit p81. It should be pointed out that in *TSV* Marx uses the term cost-price for price of production.

[25] *Capital* Volume III op cit p155. See also *TSV* Part III op cit p83.

[26] *Grundrisse* op cit p595 and p760.

[27] *Capital* Volume III op cit p17O, p157 and p165. See also *Grundrisse* op cit p767

[28] *Capital* Volume III op cit p154-5. My table is the same as Marx's on page 155 with an extra column 'used up c' - taken from the table on page 154 - and in slightly different order. See mathematical appendix for a more general version.

[29] ibid p176, In so far as merchant capital is used to reduce circulation time the matter is more complex. This point was made to me by Makoto Itoh.

[30] ibid p204.

[31] ibid p281.

[32] ibid p282.

[33] ibid p307. More complex and in a different sense to that put forward by the mathematical economists who have attempted to reduce *Capital* to a number of equations.

[34] ibid p308. The stages in the analysis necessary before we arrive at 'the *forms of appearance* which serve as the *starting point* in the vulgar conception' are clearly indicated by Marx in a letter to Engels, 30th April 1868, in Karl Marx and Frederick Engels *Selected Correspondence*, Moscow (no date), p245-250. It is important to note that in the letter and Volume III of *Capital* the law of the tendency of the rate of profit to fall - a law rejected by the Neo-Ricardians - is dealt with before the modifications due to the existence of merchants' capital. banking capital. etc., the splitting of capital into profit and interest and rent, are taken into account.

[35] Sweezy op cit p115. L von Bortkiewicz 'Correction of Marx's Fundamental... op cit p205. Most of the later work takes this point as given. The only works on this question which I am aware of that reject this point of view are: I I Rubin *Essays on Marx's Theory of Value* (1928) p223-257, Black and Red, Detroit 1972 (translated from the Russian by Milos Samardzija and Fredy Perlman), Henryk Grossman 'Die Wert-Preis Transformation bei Marx und dat Krisenproblem' (1932) in *Aufsatze zur Krisentheorie*, Archiv sozialistischer Literatur 20, Verlag Neue Kritik, Frankfurt 1971, Paul Mattick 'Samuelson's "Transformation" of Marxism into Bourgeois Economics' in *Science and Society* Fall 1972, Volume XXXVI No 3 p258.273, and S H Mage *The Law of the Falling Tendency of the Rate of Profit, Its Place in the Marxian Theoretical System and Relevance to the US Economy* Columbia University PhD 1963, University Microfilms Inc., Ann Arbour, Michigan, especially Appendix A, p234ff.

[36] Sweezy op cit p115, Steedman op cit p39.

[37] *Capital* Volume III op cit p162, see also p202-3 and *TSV* Part III op cit p167.

[38] Sweezy op cit p116.

[39] Steedman op cit p37. Steedman thinks Marx inconsistent even if input prices are transformed.

[40] Hodgson 'Marxist Epistemology...' op cit p48. As Marx was fully aware of this problem before writing the main draft of Volume III of *Capital* (1865-6) - he did not 'return' to it, as Sweezy states, in *Theories of Surplus Value* - it had already been discussed in *TSV* (1861-3), there can be no other explanation for our critics than Marx's mathematical inability to carry out the transformation with inputs changed into prices of production, The letter to Engels already cited (1868) does not take this matter further, Marx seemed quite content with what he had done.

[41] Sweezy op cit p114. What this has in common with the accumulation of capital and the continual movement of capitals from one branch to another, which is at the centre of Marx's problem only Sweezy/Bortkiewicz could say. Of course simple reproduction will break down under such conditions. Capitals will have to move between departments to establish prices of production. It is interesting to note that even in Volume II of *Capital* all Marx's examples of simple reproduction assume equal organic compositions of capital. Perhaps Marx had a little more understanding of the problem than his critics tend to give him. Marx argued, in fact, that disproportions between fixed and circulating

capital would occur with fixed capital being merely *preserved* under conditions of simple reproduction. See Volume II of *Capital* p469, Moscow 1961.

[42] Sweezy op cit p122. Sweezy cites Natalie Moszkowska, *Das Marxische System*, Berlin 1929, who uses a unit of labour time as the unit of account in both schemes and this preserves the equality of total value and total price. He forgets to add that in this case total surplus value does not equal total profit. See Moszkowska op cit p19, where she says that in general 'if total price = total value, then total profit =/= total surplus value; on the other hand, if total profit total surplus value, then total price =/= total value'.

[43] Sweezy op cit p121, The fact that one set of capitalists would need to become merchant capitalists to fit Sweezy's scheme in order that the right sort of commodities get in the right place is left out of consideration. This arises because IIIv is greater than IIs. See *Capital* Volume II op cit p407, p408.

[44] Bortkiewicz 'Value and Price ' op cit p11.

[45] Bortkiewicz 'Correction of Marx's Fundamental.... op cit p205.

[46] Sweezy op cit p121,

[47] Marx *TSV* Part II op cit p201.

[48] For a discussion of these points see *Capital* Volume III op cit p189, p426, p450, and *Capital* Volume I op cit p92. Also *Grundrisse* op cit p794. Marx says here 'why is labour time, the substance and measure of value, not at the~same time the measure of prices , See also ibid p801. For an analysis of gold as the money commodity and its importance for South African capitalism see Michael Williams 'An Analysis of South African Capitalism - Neo-Ricardianism or Marxism' forthcoming *BCSE* Winter 1974/5.

[49] ibid p152 and pp136-153. The producer of the money commodity exchanges his product for another commodity without having first sold it, In this it proves the exception. *Capital* Volume I op cit p110.

[50] *Capital* Volume I op cit p97.

[51] *Grundrisse* op cit p138 my emphasis. Marx does not fail to 'separate rigorously enough the two principles of value and price calculation' as Bortkiewicz would have it. It is Bortkiewicz who, as a Ricardian, does not understand the 'real difference and contradiction between price and value'. See Bortkiewicz 'Value and Price...' op cit p7.

[52] *TSV* Part II op cit p200.

[53] *Grundrisse* op cit p140.

[54] Marx *TSV* Part III op cit p161-2. Kenneth May in 'Value and Price of Production: A Note on Winternitz's Solution', *Economic Journal* December 1948 p596-9 and Laibman op cit p412 make a similar criticism of Sweezy. The extreme confusion of some of the Neo-Ricardians on this point is summed up by Hodgson's statement that to say total price is equal to total value 'denies the possibility of general price inflation'. In fact the matter is precisely the other way round. We can only explain inflation by accepting what money is and really has to be, the universal equivalent of exchange value, Hodgson confuses the content of money with its nominal value. See Hodgson 'Permanent Arms Economy...' op cit p59. Marx's warning proves to be correct '*Thus everything appears reversed in competition*', *Capital* Volume III op cit p205,

[55] Sweezy op cit p122. One would still like to know from Sweezy where the extra gold comes from without the expenditure of additional labour-time - no doubt a point of interest to gold-mining capitalists too.

[56] Bortkiewicz 'Value and Price...' op cit p6.

[57] *Capital* Volume I op cit p94. See also ibid p69 and *TSV* Part III p161-2.

[58] *Capital* Volume I op cit p90.

[59] *TSV* Part III op cit p138, my emphasis.

[60] For a discussion of this point see Michael Williams op cit. The feature which it shares with luxury products is that gold, as the money commodity, is *unproductively consumed*. As Marx put it; 'Gold and silver as money-commodities mean circulation costs to society which arise solely out of the social form of production. They are *faux frais* of commodity production in general, and they increase with the development of this production, especially of capitalist production. They represent a part of the social wealth that must be sacrificed to the process of circulation.' *Capital* Volume II op cit p136.

In so far as gold has the features of a luxury product, changes in the organic composition of the capitals engaged in its production affect the average rate of profit. See discussion for luxury goods proper in Section 3 below.

[61] R L Meek 'Some Notes on the "Transformation Problem"' in *Economics and Ideology and Other Essays*, Chapman and Hall Ltd. 1967, p148. See also Laibman op cit p410-12.

[62] See for example F Seton 'The "Transformation Problem"' in *Review of Economic Studies* Volume 24 1957 p149-160.

[63] J Winternitz 'Values and Prices: A Solution of the So-called Transformation Problem' in *The Economic Journal* 1948 p276-280.

[64] Meek op cit p153-4.

[65] Seton op cit p153.

[66] Laibman op cit p426.

[67] ibid p426-7. As these processes take place behind the backs of the participants and it is precisely the 'ultimate money-form of the world of commodities' which conceals the social relations, what workers 'experiencing' exploitation means is not very clear. See Marx *Capital* Volume I op cit p44, p76 and p540. Marx in fact says that the form of wages makes the actual relation invisible, ibid.

[68] Medio op cit p335.

[69] Medio ibid p332-344. Laibman makes most of the points about the standard system and the actual system in his article op cit p424 and p429-30. The Marx quote is from *TSV* part II op cit p200. For Sraffa's construction of the Standard Commodity see Sraffa op cit p18-25. It is interesting that when Marx talks about the 'average composition, he talks of an ideal average, i.e. an average that does not really exist, *Capital* Volume III op cit p170. Medio does not give the complete quote on this, see Medio op cit p331-2.

[70] See Marx *TSV* Part II op cit p200 and discussion on page 36 above. It is interesting that Medio regards the equalities in most solutions of the transformation problem, such as total value = total price, as 'some sort of arbitrary "invariance postulate" ' op cit p335.

[71] Medio op cit p34O-1. Also Sraffa op cit p25.

[72] See Meek op cit p152, Steedman op cit p37, and Hodgson 'Marxist Epistemology...' op cit p63.

[73] *Capital* Volume I op cit p35 and 'Comments on Adolf Wagner's 'Lehrbuch der Politischen Okonomie" ' in *Karl Marx on Value* (British and Irish Communist Organization, 1971) p21.

[74] *Capital* Volume I op cit p38.

[75] *TSV* part III op cit p88.

[76] This very clear passage is taken from the first edition of Volume I of *Capital*. It was left out of the Third edition. It comes at the end of Chapter 1 and is an additional paragraph. Taken from Marx-Engels II *Studienausgabe* Politische Oekonomie Fischer Bucherei July 1966 p246 (my translation). This antagonistic movement is expressed by the fact that an increased quantity of material wealth may correspond to a simultaneous fall in the magnitude of its value due to increased productiveness of labour. *Capital* Volume I op cit p46.

[77] *TSV* part III op cit p88.

[78] *Capital* Volume I op cit p154 and *TSV* Part III op cit p137.

[79] *Grundrisse* op cit p270 and also p266.

[80] *Grundrisse* op cit p297.

[81] *Capital* Volume I op cit p167.

[82] *Capital* Volume I op cit p208, *Grundrisse* op cit p296.

[83] *Grundrisse* op cit p305 changed in translation. Nicolaus translates 'Verwertung' incorrectly as realisation throughout the *Grundrisse*. He also translates 'Realisierung' as realisation. They, of course, mean something very different. When a commodity obtains a price, i.e. is realised in money, then Marx uses 'realisiert' (ibid p312). If we are speaking of the process of capital expansion (reproduction of capital requires its expansion ibid p310-11) then the correct term is 'Verwertung'. The confusion of the two has, in the past, led to underconsumptionist theories of crisis. The relevant pages in the German edition *Grundrisse der Kritik der Politischen Okonomie*, Berlin 1953, are p213, p217-8.

[84] ibid p310 also see ibid p517.

[85] ibid p409-10 and p331 and p334. It is not surprising that Hodgson, who rejects Marx's attempt (an 'arbitrary assumption') to treat the social capital as a whole (capital in general), argues that the tendency of the organic composition of capital to rise cannot be deduced from the 'concept of capital'. He also argues that to start from the definition of capital as 'self expanding value" is a mere tautology. Marx, on the other hand, made it very clear that 'Mere self-preservation, non-multiplication of value contradicts the essence of capital' *Grundrisse* ibid p310, see also *Capital* Volume II op cit p79.

Neither Marx nor I start from capital as self-expanding value but from an analysis of the commodity. Utilising the method of Marx one reaches conclusions that appear as tautologies - may appear as if we had before us an *a priori* construction (*Capital* Volume I op cit p19 - Afterword to second German edition) - but they are derived by the *dialectical method* from the starting point. It is because Hodgson rejects Marx's method - regarding it as a collapse into Hegelian Idealism - and replaces it by an empiricist and formalistic methodology that he is forced to reject the law of the tendency of the rate of profit to fall. See Hodgson 'Marxist Epistemology...' op cit p51, and 'The Theory of the Falling Rate of Profit' op cit p65.

[86] *Grundrisse* op cit p100-1.

[87] Marx to Engels, April 2nd 1858 in *Selected Correspondence* op cit p128-9.

[88] See I I Rubin op cit p248-9 for this important point.

[89] *Grundrisse* op cit p327, also in ibid p331 and p333.

[90] See also Geoffrey Pilling 'The Law of Value in Ricardo and Marx' *Economy and Society* Volume I No 3 p293.

[91] *Grundrisse* op cit p310 and p517.

[92] *Capital* Volume II op cit p125 and p130.

[93] ibid p393, see also p73 and p24.

[94] *Capital* Volume III op cit p25.

[95] 'Marxist Epistemology... op cit p51 and Steedman op cit p37. compare the remarks of these authors with those of Marx, 'Their "mind", their consciousness, may be completely ignorant of, unaware of the existence of, what in fact determines the value of their products or their products as values. They are placed in relationships which determine their thinking but they may not know it. Anyone *can* use money as money without necessarily understanding what money is. He (Bailey - but it could just as well be Hodgson - DY) transfers the problem into the sphere of consciousness, because his theory has got stuck.' *TSV* Part III op cit p163. See also how close Hodgson's standpoint is to that of Adam Smith's in that he looks at the question from the standpoint of the individual capitalist, *TSV* Part II op cit p218-20.

[96] Marx to Kugelmann July 11th 1568. *Marx-Engels Selected Correspondence* op cit p252.

[97] *Capital* Volume III op cit p797.

[98] Pilling op cit p294-5. My emphasis except for 'necessary appearance.

[99] *TSV* Part II op cit p217, and *Grundrisse* op cit p761.

[100] *Grundrisse* op cit p414 (my emphasis), also p413, p552 and *Capital* Volume I op cit p316. Hodgson in his article merely takes this quote out of context and does not understand the essential point, see 'Marxist Epistemology...' op cit p51. This quote indicates how the theory of State Capitalism of the International Socialists group is fundamentally at odds with Marx's *Capital*.

[101] *Capital* Volume III op cit p251.

[102] *Grundrisse* op cit p751-2.

[103] ibid p760.

[104] *Capital* Volume II op cit p394

[105] Sweezy op cit p26. Sweezy, throughout his book, which has had more influence than any other work on Anglo-American Marxists, fails to understand Marx's method, as we have indicated a number of times in this article. This is only another example.

[106] *Grundrisse* op cit p646-7 and p320.

[107] ibid p667. See also p741-2.

[108] *Capital* Volume II op cit p397. See also ibid p399, where Marx says 'I say £ solely to indicate that it is value in the *form* of money'.

[109] This term was suggested to me by Michael Williams. Once again we see a fundamental confusion in Hodgson's work, where he argues the 'reproduction schemes are in value terms only' in 'The Theory of the...' op cit p64.

[110] *Capital* Volume II op cit p393.

[111] *Capital* Volume II op cit p495. Also *TSV* Part II op cit p5l3ff.

[112] *Capital* Volume I op cit p73 and *TSV* Part III op cit p137.

[113] *Capital* Volume I op cit p27.

[114] Concrete labour would not be transformed into abstract (social) labour under a different mode of production. This is only the case under commodity production. Under socialism concrete labour would be directly social labour and neither exchange-value nor 'value' would exist as categories. The form of value has to be adequate to its content. Although they must be distinguished they cannot be 'torn' apart. Form necessarily grows out of the content, In this we can see Marx's great debt to Hegel. In a passage in the first edition of *Capital* (not in later editions) Marx expressed this very clearly.

'The decisive, crucial point consists of revealing the necessary internal connection between the form, substance and magnitude of value, i.e. expressed conceptually (ideell) to prove that the form of value arises out of the concept of value.'*Capital* first edition op cit p240. (cited in I I Rubin op cit p112 as *Kapital,* I, 1867, p34).

For a discussion on abstract labour, see Rubin op cit chapter 13 and 14.

[115] *Capital* Volume I op cit p81.

[116] *TSV* Part III op Cit p253.

[117] *Capital* Volume I op cit p60.

[118] *A Contribution to the Critique of Political Economy* C H Kerr and Co 1904 p69. Also Marx 'Comments on Adolph Wagner's...' op cit p12, and *TSV* Part II op cit p164.

[119] *TSV* Part II op cit p164, and *TSV* Part III op cit p137.

[120] *A Contribution to the Critique...* op cit p78-9.

[121] ibid p80.

[122] Medio op cit 321.

[123] ibid.

[124] Marx connected this point precisely with the failure to understand value, 'The problem of an "invariable measure of value" was in reality only an erroneous expression of the search for the concept, the nature, of *value* itself...' *TSV* Part III op cit p134 (slightly corrected translation see *Marx-Engels Werke* Dietz Verlag, Berlin 1968 Volume 26 Part III p132). This, in fact, sums up the position of the whole Sraffian school. It could be argued, in the case of Sraffa, that his is an attempt to be rid of the concept of value itself altogether and replace it completely by use-values and technical coefficients - physical units/labour inputs/bundles of commodities - hence we can understand the significance of the so-called 'corn' models.

In this sense this is a degeneration back to the Physiocrats who represented surplus value in *physical units* (surplus product of agriculture). For a similar position and developments of this point see Michael A Lebowitz 'The Current Crisis of Economic Theory' in *Science and Society* Volume XXXVII No 4 p385-403. Unfortunately he does not see that Medio has not remained uninfluenced by this 'development' in modern economic theory.

[125] See Marx's critique of Ricardo on this point, *Grundrisse* op cit p333.

[126] Hodgson states this in terms of the social relation on an extended scale and yet never explains why this is the case and what it means, If he regards the definition of capital as self-expanding value as tautological, or is it just *starting* with it that is tautological, it is not clear how he then shows that the accumulation of capital is the reproduction of the capitalist social relation on an extended scale. After all a surplus *product* is produced in other class societies besides the capitalist one. See Hodgson 'The Theory of...' *NLR* op cit p64-5. Much of Hodgson's article consists of assertions of this kind and yet they are never justified.

[127] *Grundrisse* op cit p408, Hodgson would, no doubt, regard this as Marx's 'idealistic method of reasoning' ('The Theory...' op cit p65) but it is in fact the result of Marx's *scientific* method, the only 'way in which thought appropriates the concrete, reproduces it as concrete in our mind' (*Grundrisse* op cit p101). To fail to approach the problem in this way means to fall into an empiricist methodology. That is, to start, as Hodgson puts it with 'social practice' and 'real processes', whatever this is meant to signify. Marx, as I have said, began with the commodity, which one supposes is real enough, and developed the concept of capital from the 'value-form' of the product of labour under capitalist production. Does Hodgson accept this or not? The rising organic composition of capital was developed through such a method of procedure - quite *logically* from the concept of capital. If Hodgson rejects this - and it *is* the method of procedure in *Capital* - although explained more fully in the *Grundrisse* - then he rejects Marx's *method*. If this is the case then let him say so. To say that in *Capital* the idealistic method of reasoning receives little prominence, is mere subterfuge. The method of the *Grundrisse* and *Capital* are one and the same. See Hodgson op cit p65.

[128] *Grundrisse* op cit p248.

[129] *Grundrisse* op cit p305 - my translation from *Grundrisse der Kritik*... op cit p213.

[130] *Grundrisse* op cit p257.

[131] Marx *TSV* Part III op cit p98.

[132] Steedman's article 'Marx on the Rate of Profit' in *BCSE* Winter 1972 p104-5 is a good example. There is also a clear expression in this article how exchange, money, etc., are merely treated *formally*, ibid p108.

[133] For example Hodgson 'The Theory of the...' *NLR* op cit p57. Steedman 'The Transformation Problem Again' op cit p37. There he talks of the 'physical aspect of variable capital'. See Marx *TSV* Part III op cit p371 where he takes up just this confusion.

[134] *Capital* Volume II op cit p439.

[135] ibid p165, p214, p219 and *Capital* Volume I op cit p209, Bob Rowthorn's definition of 'variable' in terms of the power of combatants in the production process was *not* Marx's intention, as can be seen, See 'Vulgar Economy' Part II in *BCSE* Spring 1973 p11 - reprinted in *NLR* No 86.

[136] *Capital* Volume I op cit p439-40.

[137] *TSV* Part III op cit p167.

[138] *Capital* Volume III op cit p203, and ibid p170, p216.

[139] *TSV* Volume III op cit p178.

[140] See *Grundrisse* op cit p258. See also p257.

[141] *Capital* Volume III op cit p162. *TSV* Part III op cit p167.

[142] *Capital* Volume III op cit p158-9 and p163. This is what Marx was getting at when he said

'But if we place the sum of the cost-prices of commodities of an entire country on one side and the sum of its surplus-values, or profits, on the other, the calculation must evidently be right.'

[143] It is because they do not understand this that the critics argue for transforming inputs into prices of production.

[144] *TSV* Part II op cit p405. *Capital* Volume III op cit p193.

[145] *Capital* Volume III op cit p173.

[146] We assume that all capitals circulate in the same period. In fact differences of circulation time, in general, mean differences in *production* time.

[147] This position corrects that in the first edition of the article in *Revolutionary Communist* 1 p47-48. There, luxury production is called *unproductive* end it is incorrectly asserted that luxury production is excluded at the level of

abstraction of the discussion of the formation of prices of production. Luxury production is productive for capital, but has the particular effect on the rate of profit as argued in this section. It is necessarily included in the discussion of the 'transformation' of values into prices of production.

[148] *Capital* Volume III op cit p68.

[149] *TSV* Part III op cit p43.

[150] ibid p350.

[151] ibid p349.

[152] ibid

[153] This correct position is exactly the opposite of that argued by Kidron and others who hold to the theory of the Permanent Arms Economy. It shows how the International Socialists have completely broken from Marx's analysis of capitalism.

[154] For a discussion of this and other questions relating to luxury goods production see Peter Howell op cit pp 57-68 As explained in the Editorial to *Revolutionary Communist* No 3/4, Peter Howell, through his work on Productive and Unproductive Labour, instigated the discussion which has led to a correction of our earlier views on luxury production. Part of this new section is taken from the article 'Inflation, the Crisis and the Post-War Boom' by Paul Bullock and David Yaffe in *Revolutionary Communist* No 3/4 p20-21.

[155] *TSV* III op cit p350.

[156] *TSV* Part II op cit p376.

[157] See Peter Howell op cit p65.

[158] Once it is recognised that workers in the luxury goods sector are productive workers many of the arguments of the Neo-Ricardians are seen to be wrong. See P. Howell's critique of the absurd position of Kidron and others who argue that luxury production does not enter into the determination of the rate of profit, op cit p57-60.

[159] *Grundrisse* op cit, p441.

[160] *Capital* Volume III op cit p47.

[161] *TSV* Part III op cit p228.

[162] *Grundrisse* op cit p767. Marx's emphasis.

[163] Until commodity production exists and has become the dominant mode of production then the 'law of value' does not exist in the sense used in this essay. See Marx *TSV* Part III op cit p73. It ceases to exist in socialist society. This is quite consistent with Marx's often misunderstood statement in *Capital* that the determination of value, in the sense of regulation and distribution of labour among production groups would still exist - *Capital* Volume III op cit p830. Preobrazhensky makes clear the important difference,

'I speak of the law of value as the spontaneous regulator under the commodity and commodity-capitalist system of production, that is, of the historically-transient *form* assumed in exchange society by the regulation of the economy by labour expenditure. I do *not* speak of this regulation *in itself*. This regulation will exist under planned economy, too, but will be effected in another way, that is, on the basis of direct calculation of labour-time.' *New Economics* OUP 1965 p95n.