Article

Capital & Class

On the transformation of values into prices of production apropos of Moseley's *Money and Totality*

Capital & Class
2025, Vol. 49(2) 311–339

DOI: 10.1177/03098168241240473
journals.sagepub.com/home/cnc
Sage

Juan Iñigo-Carrera
Centro para la Investigación como Crítica Práctica, Argentina

Abstract
Mosely's book provides a vantage point for a critical analysis of the 'transformation problem', as it questions the dominant conceptions that reduce the methodological debate to a matter of constructing systems of equations; at the same time, it shares with them the reduction of the methodological question to a matter of interpreting Marx's texts. Moseley interprets 'Capital' as a logical representation composed of a macro theory and a micro theory. The article starts by showing how this approach mutilates the organic unity between social capital and individual capitals. Consequently, focus is placed on Moseley's presupposition of values as if they were given in prices of production to explain the determination of these same prices, as well as on his exclusion of gold's exchangeability as a product of capital from the transformation process. The article extends the methodological analysis to the above-mentioned prevailing conceptions and their ideological basis. Next, it shows how they coincide with Moseley's in the logical inconsistency of assuming that the value of total variable capital and total surplus value appear unchanged in prices of production, although the organic compositions of the spheres that produce their material content differ from the social average. At this point, the real issue is brought forward: it is not about interpreting Marx's texts in search of a 'given' or an 'invariance postulate' to construct a model that satisfies them; the point is to follow Marx's methodological proposal to reproduce by way of thought the concrete determinations that make values take the complete form of prices of production of a certain magnitude. Finally, the article follows this path to demonstrate how, even if the value contents of total variable capital and total surplus value remain quantitatively unchanged, the prices of production in which they necessarily take form will quantitatively differ from those value contents.

Corresponding author:
Juan Iñigo-Carrera, Centro para la Investigación como Crítica Práctica, Lavalle 391, 1° D, C1049AAG, Ciudad Autónoma de Buenos Aires, Argentina.
Email: juanbinigo@gmail.com

Keywords
dialectical method, Marxism, price of production, transformation problem, value

Moseley's *Money and Totality* provides a vantage point for a critical examination of the 'transformation problem' debate. It does so not only because its approach confronts dominant ones but also because of what it shares with them. In the former sense, Moseley proposes a methodological discussion that goes far beyond the common issue concerning the system of equations and the variables to be chosen. Through it, he concludes the nonexistence of a 'problem' to be solved. In the latter, he agrees that the only correct approach to the transformation of values into prices of production is a matter of properly interpreting Marx's writings.

Given this twofold attribute of Mosely´s approach, its critical analysis obviously must start by focusing on its peculiarities. However, it necessarily goes beyond these peculiarities to discuss the ideological foundations and methodological coherence of the perspectives that conceive the question as a matter of interpreting Marx.

This path will advance by following Marx's methodological proposal *to reproduce by way of thought the concrete* determinations that make values take the form of prices of production of a certain magnitude. Quite the opposite of the path ruled by the search of a 'given' or a 'postulate of invariance' in Marx's texts.

The core of Mosely's conception is well known. Marx's *Capital* deals exclusively with the capitalist mode of production (Moseley 2016: 6–7, 222). From Part 2 of Volume I on, commodities enter circulation not just as the products of labour, but as the concrete products of capital; hence, commodities enter circulation with their values determined as prices of production (Moseley 2016: 30, 140, 312). Then, when the means of subsistence for the workers and the means of production, respectively, appear as variable and constant capital constituting the premises of production, their values have to be taken as already determined as prices of production (Moseley 2016: 20, 30, 136–138, 141–142, 170–171, 180–187, 312). And this criterion must apply even at the points in *Capital* where Marx himself explicitly refers to those capitals as simple values. Such textual references should be interpreted as mere accidents where Marx 'slipped back into his previous simplistic thinking', where he 'misspoke' due to 'habit' or, at best, he 'simplified the exposition [. . .] but it has resulted in ambiguity and confusion ever since' (Moseley 2016: 138, 170, 187). There is no transformation question whatsoever:

> . . . if Marx's logical method is interpreted in this way, then there is no 'transformation problem' in Marx's theory, and [. . .] Marx's theory of prices of production is logically coherent and complete. (Moseley 2016: 4)

In his own words, first, Moseley recognises method as the true core of the debate, and second, he conceives the central issue as a matter of interpreting what he calls 'Marx's logical method' (Moseley 2016: XI–XII). From his point of view, Volume I essentially consists of a 'macro theory' concerning total social capital as such and its unitary valorisation through the extraction of surplus value from productive wage labour as a whole (Moseley 2016: XII–XIII, 4, 15, 38, 151, 223, 258). In this totality – according to Marx himself, as Moseley correctly points out – the total sum of prices of production equals the total sum of value, and the total sum of profits equals the total sum of surplus value (Moseley 2016: 39). In turn, Moseley interprets Volume III essentially as a 'micro theory' concerning the distribution of an already determined total surplus value among the multiplicity of individual capitals operating in the different spheres of social production, through the average rate of profit. Therefore, an immanent critique of Moseley's approach to the unfolding of the concrete determinations of prices of production needs to begin by discussing his methodological criterion.

On the mutilation of the organic unity of social capital and individual capitals as its concrete organs by representing it through a macro–micro theoretical approach

In the capitalist mode of production, the valorisation of total social capital rules the organic unity of the process of social metabolism, taking shape through the valorisation of individual capitals thus determined as its concrete organs. On one hand, a macro theory abstracts the organic movement of total social capital from the concrete movements of individual capitals through which the former takes shape. On the other hand, a micro theory abstracts the movements of individual capitals as if they were not the concrete forms taken by the very organic unity of total social capital. The neoclassical fragmentation between macroeconomics and microeconomics is a typical example of this operation. For example, macroeconomics studies gross domestic product (GDP) without bothering to explain the determination of prices, while microeconomics studies the elasticity of demand without considering it as the necessary form taken by the organic unity between social consumption and private production.

This twofold abstraction is a procedure inherent in the method of logical representation. This representation necessarily starts by defining a set of concepts through the abstraction of attributes presented by its object. It then proceeds to represent the relations between the isolated concepts in accordance with the formal rules established by constructive logical necessity. Now, could this double fragmentation of the organic unity of the object be a legitimate recourse when the methodological point is not to represent the concrete but to achieve a dialectical 'reproduction of the concrete by way of thought'? (Marx 1993 [1857–1858]: 101). The answer should be obvious, according to Marx's reference to the starting point of this reproduction:

> In the first place, I do not start out from 'concepts' . . . What I start out from is the simplest social form in which the labour-product is presented in contemporary society, and this is 'the commodity'. I analyse it and, right from the beginning, in the *form in which appears*. (Marx 2002 [1879–1880]: 241)

The commodity in question is not a historically abstract one. The very first sentence of *Capital* has already made it clear that it specifically belongs in the capitalist mode of production. Thus far, a fact with which Moseley repeatedly states his agreement. Nevertheless, at the same time, no 'provisional' or 'not exactly true' assumptions fit into the starting point of the dialectical reproduction of capitalist society, despite Moseley's repeated assertions to the contrary.

Marx starts by analysing a commodity in search of the action that gives it the social attribute of exchangeability, its value. He thus discovers that commodities are able to relate between themselves as equal values in exchange for being materialisations of socially necessary abstract labour – that is, materialisations of the productive expenditure of human labour power in general, and as such common to all forms of social organisation – whose historical specificity arises from its allocation under its concrete useful forms in a private and independent way. He then dialectically follows how value necessarily expresses itself. He thus discovers, first, that although labour is the substance of value, the value of a commodity can never express itself in quantities of this substance. It can only express itself as exchange value, that is, as quantities of the body of another commodity, precisely because of the private form taken by the social labour that constitutes it. Second, Marx thus discovers that, as values, commodities are the objectified form taken by the general social relationship between the units of social production and consumption that function as the private and independent organs of the process of social metabolism. Third, he thus discovers that money – namely the commodity whose body acts as the general expression of value and, hence, in which exchange value takes the concrete shape of price – represents the capacity to rule the social labour privately performed in an objectified manner. In brief, in Chapter 1 of Volume I Marx discovers that, in the capitalist mode of production, the organic unity of the process of social metabolism is embodied in the exchange of the material products of its individual private and independent organs as equivalent materialisations of social labour. Therefore, these individual organs only act indirectly as bearers of the organic unity and, hence, can only recognise themselves as such organs in that same indirect way.

At this point, Marx has discovered commodities as the simplest expression of the way in which social labour is organised in the capitalist mode of production. Nevertheless, commodities do not yet present any trace of their concrete determination as the products of capital. On the contrary, thus far, commodities are known only as the products of private labour in its purest form, that is, of private labour based on the private property of one's own means of production.

By following the movement of money in circulation, in Chapter 3 Marx comes to face the concrete form taken by the general unity of social production and consumption. As results from the private organisation of social labour, this unity can only be established after social production has taken place, through the adjustment of solvent social needs to the former. Consequently, the mutual recognition of the social labour performed by the private productive units entails the possibility of a non-equivalent exchange in terms of social labour, as some commodity owners put in more (less) and take out less (more) of it by selling their commodities at prices below (above) their value or purchasing them at prices above (below) their value.

As Marx goes on by following the movement of money in circulation, in Chapter 4 he faces its circuit as capital: M-C-M'. In the first place, this circuit reflects the 'general form of capital' as a self-valorising value 'in which it appears directly in the sphere of circulation' (Marx 1982 [1867]: 257). And, concerning circulation:

> If, therefore, commodity production, or one of its associated processes, is to be judged according to its own economic laws, we must consider each act of exchange by itself, apart from any connection with the act of exchange preceding it and that following it. And since sales and purchases are negotiated solely between particular individuals, it is not admissible to look here for relations between whole social classes. (Marx 1982 [1867]: 733)

Therefore,

> . . . money-capital [. . .] provides the form in which each individual capital steps onto the scene and commences its process as capital. Hence it appears as prime mover, giving the first impulse to the whole process. (Marx 1992 [1885]: 430)

What M-C-M' does not reflect by itself is the circuit of total social capital: this circuit takes the synthetic form C'. . .C' (Marx 1992 [1885]: 176–177), the concrete content of that 'immense collection of commodities' from the first paragraph of *Capital*.

In its movement in circulation, any individual capital appears as an amount of value that valorises itself without bearing in itself any qualitative difference whatsoever. Nevertheless, as soon as Marx follows the movement of an individual capital into the process of production, that is, into the process in which an individual capital produces itself and, moreover, asserts itself as a concrete subject of privately organised social production, he discovers the substantial qualitative difference between variable and constant capital. Variable capital is consumed in production, as the labour power in which it is materialised becomes active labour that engenders a new value, that partly replaces the value of the labour power consumed and partly becomes surplus value. By contrast, the value of constant capital, dead labour materialised in the means of production, which lacks the capacity to valorise itself, reappears in the value of the product (Marx 1982 [1867]: 307).

As he advances within the process of valorisation of individual capitals, Marx acknowledges that the determination of the length of the working day transcends their individuality through 'a protracted and more or less concealed civil war between the working class and the capitalist class' (Marx 1982 [1867]: 412–413). In turn, class struggle determines the necessity that the valorisation of individual capitals take shape through the state's action: '. . .the limits and the pauses of work [. . .] formulation, official recognition and proclamation by the state were the result of a long class struggle' (Marx 1982 [1867]: 394–395). Thus, Marx discovers that the true concrete subject of the process of social life in the capitalist mode of production are not the individual capitals, but the total capital of society. That is, total social capital is the alienated concrete subject, whose unitary movements take form through the scattered movements of the individual capitals that constitute its organs.

Marx has thus unpacked how 'capital produces' (Marx 1982 [1867]: 280), recognising commodities not just as the products of labour, but as the products of labour alienated in capital; in brief, as the products of capital. Nevertheless, at this point, the reproduction in thought of the movement of individual capitals remains within the scope of the determinations it has discovered in the process of production. And, within this scope, no determination has arisen that could cause the value of the commodities produced by individual capitals to take a concrete expression in circulation that differs from that previously discovered at the stage in which commodities were recognised only as the simple products of labour.

Marx makes this point explicit in a letter to Engels:

> Regarding the objection that you mentioned the philistines and vulgar economists will infallibly raise [. . .] it amounts, in scientific terms, to the following question: How is the value of the commodity transformed into its price of production [. . .] This matter cannot therefore be treated prior to the 3rd book [. . .] Now if I wished to refute all such objections in advance, I should spoil the whole dialectical method of exposition. (Marx 2010 [1867]: 390)

He publicly makes the point again in Chapter 11, the last one on absolute surplus value:

> The law demonstrated above therefore takes this form: the masses of value and of surplus-value produced by different capitals – the value of labour-power being given and its degree of exploitation being equal – vary directly as the amounts of the variable components of these capitals . . . This law clearly contradicts all experience based on immediate appearances. Everyone knows that a cotton spinner, who [. . .] employs much constant capital and little variable capital, does not, on account of this, pocket less profit or surplus-value than a baker, who sets in motion relatively much variable capital and little constant capital. For the solution of this apparent contradiction, many intermediate terms are still needed. . . (Marx 1982 [1867]: 421)

Not even in passing does Marx mention the term 'price of production' throughout Volume I. And, once more, in Volume III he remarks:

> In Volumes 1 and 2 we were only concerned with the values of commodities. Now a part of this value has split away as the *cost price*, on the one hand, while on the other, the *production price* of the commodity has also developed, as a transformed form of value. (Marx 1991 [1894]: 263)

In his own words, Marx makes it evident that Moseley crudely mistakes the specificity of the course followed by the dialectic method for Marx having 'slipped back into his previous simplistic thinking', or 'mispoke[d]' due to 'habit', or 'simplified the exposition', as quoted above. And, yes, of course, ignoring the said specificity 'has resulted in ambiguity and confusion ever since'.

The next step in the dialectical reproduction of the movement of capital presents Marx with the real subsumption of labour under capital via the production of relative surplus value. This production is an attribute of total social capital, through which it determines the very subjective and objective conditions for its intensified self-valorisation:

> From the standpoint of society, then, the working class, even when it stands outside the direct labour process, is just as much an appendage of capital as the lifeless instruments of labour are. (Marx 1982 [1867]: 719)

Real subsumption further develops by producing a relative surplus labouring population – thus depriving its members of their generic human attribute – in order to satisfy capital's need for an industrial reserve army. Total social capital is now recognised in its complete determination as the concrete historical subject of the process of social life under the capitalist mode of production:

> The capitalist process of production, therefore, seen as a total, connected process, i.e. a process of reproduction, produces not only commodities, not only surplus-value, but it also produces and reproduces the capital-relation itself; on the one hand the capitalist, on the other the wage-labourer. (Marx 1982 [1867]: 724)

Marx has unfolded to this point, in Volume I, the unitary movement of total social capital. Nevertheless, the concrete process through which the general increase in the rate of surplus value develops still appears to be ruled just by the independent actions of the individual capitals. They compete among themselves in pursuit of an extraordinary surplus value by making the labour privately materialised in their products appear in circulation as if it were a multiplied amount of social labour:

> Now let some one capitalist contrive to double the productivity of labour [. . .] The individual value of these articles is now below their social value [. . .] He will therefore sell them above their individual but below their social value [. . .] By this means he still squeezes an extra surplus-value [. . .] whether or not his commodities [. . .] participate in determining the general value of labour-power. (Marx 1982 [1867]: 434)

In brief, Moseley's methodological fragmentation of *Capital* into a macro and a micro theory overlooks three contradictions that appear in Volume I, whose development constitutes the synthetic unity that flows from it into Volume III. These contradictions embody the development of the determination of individual capitals as the concrete organs through which total social capital asserts itself as the inverted subject of the unity of social life in the capitalist mode of production:

1. In circulation, individual capitals appear as values that valorise themselves without embodying any qualitative difference whatsoever. On the contrary, in production, the substantial qualitative difference between variable and constant capital becomes evident. Individual capitals belonging to different spheres of production diverge in their capacity to valorise themselves due to their different organic compositions, as becomes evident through their different rates of profit: given a rate of surplus value, capitals of equal total amount produce less (more) surplus value in each production cycle, the higher (lower) the proportion of constant to variable capital in their composition. This same contradiction between the lack of qualitative difference with which individual capitals present themselves in circulation vis-a-vis their qualitative differentiation in production becomes further developed in Volume II. At first, within the process of production because (a) in some spheres the production cycle extends its length beyond working time, thus including a period when no surplus value is created; (b) since the application of living labour along the production cycle differs technically across spheres, in some cases the totality of advanced variable capital remains continuously active in the production of surplus value; in others, parts of it are forced to temporarily remain in a latent state, whether before

or after producing surplus value; and (c) the different turnover modes of advanced variable capital do not only affect its capacity to produce surplus value over a period, but they also affect the opportunity in which the constant capital whose material elements are integrally consumed in each production cycle is to be advanced and, therefore, its own turnover. Thus, no longer in terms of their capacity to generate surplus value but rather in terms of their mode of turnover, variable capital together with the said portion of constant capital constitute circulating capital. Finally, the process of circulation itself produces qualitative differences in advanced circulating capital's capacity for valorisation since its mode, length and possible combination with the mode and length of each production cycle differ from one sphere to another. All the alternatives analysed above converge in determining the length of circulating capital turnover that results for each sphere of production. Therefore, their effect on each sphere's advanced circulating capital relative capacity to produce surplus value is determined by its turnover rate, measured on a common annual basis: given the rate of surplus value, for circulating capitals of equal organic composition, the higher (lower) their turnover rate, the higher (lower) their annual rate of profit (Marx 1992 [1885], Chapters 12–16).

2. By following the movement of individual capitals in their self-valorisation and reproduction, it becomes evident in Volume I that total social capital is the true subject of the process of accumulation and that individual capitals are concrete organs of its unitary movement. Nevertheless, thus far individual capitals appear to lack any determination that immediately rules their movement as individual organs and that allows them to recognise themselves as such. Marx further develops this contradiction in Volume II from the perspective of total social capital: the movement of individual capitals must satisfy the material unity between social production and consumption, though in an indirect way given the private realisation of social labour (Marx 1992 [1885]: 144, 470). In simple reproduction, this unity takes form in the twofold expression of total constant capital, variable capital and surplus value, on one hand, as the social aggregate of the respective portion of the value of each commodity and, on the other hand, as the total value of the product of the capitals that produce, respectively, means of production, the workers' means of subsistence and the means of consumption for the capitalists (Marx 1992 [1885]: 473–474).
3. From Part 2 of Volume I on, commodities are known as the products of capital. Nevertheless, in Volumes I and II the expression of their value, that is, their price, is only known as if it corresponded to their simplest determination as the products of privately performed social labour.

Volume III opens by synthesising the character of its content:

> Our concern is rather to discover and present the concrete forms which grow out of the process of capital's movement considered as a whole. In their actual movement, capitals confront one another in certain concrete forms, and, in relation to these, both the shape capital assumes in the immediate production process and its shape in the process of circulation appear merely as particular moments. (Marx 1991 [1894]: 117)

This dialectical unity of content has no way of fitting into a macro–micro theoretical fragmentation.

In Volume III, Marx develops the three above-mentioned apparent contradictions to the point of their supersession through the formation of the general rate of profit through competition in the process of circulation. Only at this stage of its unfolding is the dialectical reproduction able to recognise that, in the capitalist mode of production, the private allocation of social labour to the different spheres of production does not correspond to the proportions of social labour materialised in each type of commodity, as it has been able to unfold thus far. It now recognises this allocation as it is concretely determined by the social representation of the abstract labour materialised in commodities as amounts of proportionally valorised values. As it thus recognises the value of commodities under its necessary concrete form of prices of production, it recognises (a) the reason why, from the very beginning, individual capitals appear in circulation as amounts of value that valorise themselves without any qualitative difference, notwithstanding their substantial qualitative differences in production and in the turnover of their circulating portions; (b) the form in which individual capitals carry within their own singular processes of valorisation their determination as the concrete aliquot organs of the unitary movement of total social capital; and (c) commodities as the products of capital not just as they emerge from production but as they flow in circulation.

Thus, Marx lays open the path to advance in the dialectical reproduction of the complete development of value as the objectified social relation that affirms itself through its own negation under the concrete form of price of production. This is the only path that enables the discovery of the necessary quantitative determinations through which the qualitative transformations at stake take shape.

The recognition of these concrete determinations makes evident another crucial point concerning the debate on the 'transformation problem'. As stated above, the formation of the general rate of profit takes place in the process of circulation, through competition among capitals belonging to the different spheres that compose social production. Now, focus needs to be placed on the mechanism by which the rate of profit is equalised across spheres. While commodities are exchanged at their values, the lower the organic composition of the capitals of a sphere, the higher their specific rate of profit. Individual capitals compete to enter a sphere of this type, thereby expanding its production. They now face the necessity of an expanded solvent social need for their commodity. And, with the given productivity of labour, they can only achieve this expansion by selling their commodity below its value, thus pushing down their specific rate of profit. Contrarily, individual capitals escape from the lower specific rate of profit obtained in the spheres with higher organic composition, thus contracting these spheres' production. The solvent social need for their commodity must accordingly diminish. The competition among buyers makes this happen as it raises the price of the commodity above its value. And this rise pushes up the sphere's specific rate of profit. Through this twofold mechanism, a portion of the surplus value produced by the capitals of the spheres with an organic composition below the social average ends up being appropriated by the capitals of the opposite spheres. The movement ceases when the sphere in which they produce becomes indifferent to individual capitals, since they appropriate the same rate of profit in all of them.

Since the equalisation of the rates of profit takes place in circulation, no new value or surplus value can emerge from it, nor can the rate of surplus value determined in the process of production be affected. Nevertheless, compared with its allocation to the different spheres of production according to the value content of their commodities, a certain amount of total social capital has flown from the spheres with higher organic compositions and, consequently, annual specific rates of profit below the social average, towards the spheres with lower organic compositions and, consequently, annual specific rates of profit above the social average. This flow causes the inverse movement of the respective prices, which ends as they reach their determination as prices of production. However, its result does not come down to transforming values into prices of production; in so doing, it has lowered the average organic composition of total social capital. This happened as the capitals of the spheres with lower organic compositions expanded in order to multiply their production, while those corresponding to the spheres with higher organic compositions faced the opposite situation. Thus, the former capitals have expanded their share at the expense of the latter ones and, consequently, at the expense of a lower average productivity of labour. Now, with the amount of total social capital unchanged, a lower average organic composition implies an increased amount of its variable portion. Since the rate of surplus value remains unchanged, this increased variable capital produces an increased amount of surplus value vis-a-vis that resulting from the allocation of social labour according to commodities' value. This happens not only while the amount of total social capital remains unchanged, but even if the total amount of living plus dead labour expended in production, therefore the total value of the product, remains unchanged.

Likewise, individual capitals that represent a certain portion of total social capital flow from the spheres with lower turnover rates of their circulating portion towards the spheres with higher turnover rates. They do so, escaping from the specific lower annual rates of profit that correspond to the former in pursuit of the higher ones of the latter. Hence, the very process through which values take the form of prices of production pushes up the average turnover rate of circulating total social capital. Even if the amount of advanced total social capital remains unchanged, this higher turnover rate releases it in the corresponding proportion, thus enabling its additional entrance into production. In turn, this additional entrance increases its capacity to render a total amount of surplus value on a yearly basis beyond that which results from the allocation of social labour according to commodities' values. (Since the specificity of the turnover rate of circulating capital is relevant for the transformation of values into prices of production, from here on it will also be referred to as the 'relevant turnover rate' for the sake of brevity.)

Finally, the additional surplus value produced by an unchanged amount of total social capital due to its lower average organic composition and higher average turnover rate of its circulating portion results in an increased general rate of profit. Within each sphere of production, the effects of a relative organic composition and of a relative turnover rate of circulating capital can sum up, but they can also compensate each other in a lesser or greater degree. On the contrary, the determination of values as prices of production imposes itself on total social capital by lowering its average organic composition and raising the turnover rate of its circulating portion, thus necessarily raising the average rate of profit above that which corresponds to the circulation of commodities at their values.

Therefore, the concrete form taken by the private allocation of social labour through the equal valorisation of values carries in itself not only a different material composition of social production and consumption. It also carries in itself a different average annual rate of profit compared with the one previously discovered when commodities were still known in circulation as simple values. From the concrete determination of individual capitals as the aliquot organs of the unitary movement of total social capital, a concrete determination of the valorisation of the latter itself emerges here.

The question about the determination of values as prices of production and of surplus value as average profit goes far beyond the scope of any micro theory, and more specifically of one that reduces the question to the distribution of surplus value between the capitals of the different spheres of production. This sort of reduction shows its consequences when the focus is placed on the analytical representation of the quantitative expressions taken by the determination at stake.

The inversion of the development of the concrete determination of prices of production by values into a matter of interpreting Marx to formulate systems of equations

Marx appeals to a very elementary model to represent the quantitative determination of prices of production by values. This model is based on five different spheres of production, whose unity Marx compares with that of a single individual capital distributed among those spheres rather than with that of the total social capital (Marx 1991 [1894]: 255). So much so that the model does not assume the general unity between production and consumption; in other words, it is not a scheme of simple or expanded reproduction whatsoever. And, as it concerns the core of the debate, it does not take into account the transformation of the value of the elements of variable and constant capital into prices of production. Those who take part in the debate know very well the presence of these two assumptions upon which Marx bases his model. But, recalling Hegel, perhaps for that very reason, they do not recognise that, however abstract the model could seem given the former assumptions, its true abstract character results from the fact that *it abstracts from the concrete form through which the determination it attempts to quantitatively represent necessarily realises itself*. That is, it abstracts from the shift in the allocation of social labour from the spheres whose capital has a higher organic composition, or a lower turnover rate of its circulating portion, towards the spheres that present the opposite attributes.

This is not the case of a form that could be disregarded in order to show the movement of its content freed from the constant deviations from the norm in which the latter realises itself. It is the case of a form in which the content itself necessarily realises its normal determination. Simply put, there is no transformation of values into prices of production other than through a shift in the allocation of individual capitals between the different spheres. Hence, only provided this fundamental abstract character of the model is overlooked, the qualitative content that underlies the quantitative expression could be reduced to a mechanical distribution of a given surplus value.

However much they may diverge in the definition of their equations and unknowns, and even in their simultaneous or iterative temporal structure, the many well-known 'solutions' to the 'transformation problem' share a common trait. They all start by ignoring that the concrete determination of values as prices of production implies a change in the materiality of the reproduction of social production and consumption compared with that whose determinations have already been discovered when commodities were recognised in production as the products of capital, but still known in circulation only as the products of labour.

The advance towards the concrete determinations of prices of production requires the development of the relations of measure involved beyond the point achieved by Marx. Instead, the 'solutions' invert the process. They start by inverting these relations of measure – dogmatically in some cases, ill-intended in others – into Marx's 'postulates of invariance':

> Essentially what it amounts to is the selection of a definite aggregate (or other characteristic) of the value system which is to remain invariant to the transformation into prices. (Seton 1957: 152)

Then, the chosen 'invariant condition' enters as such in the construction of the 'transformation' model, therefore inverting what has to be discovered into the presuppositions for its own discovery. Thus, doubly inverted, the discovery of the concrete quantitative relations is brought down to a matter of building some system of linear equations, either of simultaneous or iterative character. In the former case, the equalisation of the number of equations and unknowns renders a unique solution; in the latter, the repeated reintroduction of given constants ensures the convergence towards a unique solution. Yet, in neither case, the solution achieved corresponds to the concrete determination of values as prices of production. These 'solutions' just result from the mathematical attributes of the respective systems of linear equations. In other words, the mathematical properties of the models are mistaken for the concrete determinations of prices of production.

Under the appearance of advancing towards the concrete determinations of values as prices of production by allegedly including in their models the conditions for the reproduction of social production and consumption, and the determination of the values of variable and constant capitals as prices of production, the 'solutions' engender mathematical abstractions emptied of the real content they are supposed to represent. Their modelling starts by leaving aside the twofold character of commodities, as the unity of use value and value. On this basis, they abstract the determination of the latter as if it were alien to the material allocation of the general capacity of society to perform productive labour – that is, the allocation of abstract labour – to its socially useful concrete forms in a private and independent way.

Thereby, the point ceases to be about further facing the real concrete determinations of prices of production as the forms of values to discover the necessity of their quantitative expressions, thus following the path opened by Marx. Instead, it becomes a matter of debating whether an SSSI, an SDSI, an SSSI, an NI or a TSSI, is the best of the different ways to *interpret* Marx. (Note: the acronyms stand for Simultaneous Single-System Interpretation, Simultaneous Dual-System Interpretation, New Interpretation, Temporal

Single-System Interpretation. See Kliman 2007: 51–53 for the authors commonly associated with each interpretation.) Consequently, the problem of discovering the objective concrete determinations of the capitalist mode of production is *transformed* into the problem of interpreting texts to make them fit with a system of equations.

Underlying the widespread uncritical acceptance of this abstraction lies the equally widespread, uncritical acceptance of two conceptions that are commonly taken as irreconcilable opposites. On one hand, the inversion of the materiality of social abstract labour into a 'concept' that 'in reality, it takes place through [. . .] exchange', inspired by Rubin (1990 [1928]: 142). On the other hand, the inversion of a direct allocation of social labour that produces use values – hence, where neither commodities (as a historically specific social form) nor value exist – as if it were the private allocation of social labour that specifically produces commodities and therefore value, renewed by Sraffa (1960: 3). Based on the former, the relation between values and prices of production is conceived as a matter of changing the allocation of an abstract mass of abstract values between spheres. Based on the latter, the same relation is conceived as a matter of naming 'commodities' as the products of a social labour *a priori* directly allocated to each sphere in direct unity with social consumption, from which so-called 'values' emerge inverted as the result of that direct unity.

A brief history of the ideological basis of the inversion

Bortkiewicz openly announces the twofold ideological inversion underlying his need to invert a tool able to represent the quantitative expression taken by a qualitative determination (being this the complete determination of commodities as the products of capital) as if it were able to account for the movement of that qualitative determination itself. First, he degrades the method that proceeds from the simplest determinations to follow their development into their necessary concrete forms to a 'successionist prejudice', from which 'modern economics' is 'beginning to free itself' due to the 'superior standpoint' of the 'mathematical school led by Walras' (Bortkiewicz 1952 [1907]: 24). Second, Bortkiewicz claims for the 'harmony' between 'the cost of production theory', 'the law of supply and demand' and 'the determination of prices by the subjective valuations of buyers', thanks to 'the mathematical method' (Bortkiewicz 1952 [1907]: 54). Such is the ideological basis needed to produce the first step in the inversion of the necessity to advance in the 'reproduction by way of thought' of the concrete determinations of prices of production beyond the point reached by Marx, into a matter of quantitatively relating forms abstracted from their content – thus turned into abstractions themselves – thanks to the externality inherent in algebraic structures.

Sweezy totally subscribes to Bortkiewicz's inversion. Yet, while the inversion itself remains untouched, its ideological basis suffers the changes demanded for its introduction to the Marxist field by the name of 'the transformation problem'. Sweezy gives a first step by inverting Marx's dialectical 'reproduction of the concrete by way of thought' into an 'abstract-deductive method which was such a marked characteristic of the Ricardian school', that 'consists in moving from the more abstract to the more concrete in a step-by-step fashion, removing simplifying assumptions', and lacks any formal specificity other than the fact that 'his [Marx's] objective [. . .] is radically different from that of non-Marxian schools of thought' (Sweezy 1962 [1942]: 11–12). Notably, Marx himself explicitly quotes a reference to his method as being 'the deductive method of the whole English school' among 'the various mutually contradictory conceptions' that show 'that the method employed in *Capital* has been little understood' (Marx 1982 [1867]: 99). But this little understanding is the necessary first step to separating all content from the development of its necessary concrete forms.

Along the first Chapter of *Capital*, Marx unfolds the necessity inherent in the substance of value, given the private form taken by social labour, to take form as a quantity of the use value of a singular commodity, which in the movement of exchange is separated from the rest as the socially recognised general equivalent, namely money. In his need to isolate the form of value from its content, Sweezy reduces Marx's unfolding to the abstract formulation of a 'theory of money', so alien to the development that flows from the substance of value to its concrete form of price of production as to add 'which we shall not attempt to present in this work' (Sweezy 1962 [1942]: 54). Not in vain, Marx pointed out that, while classical political economy had been able to discover labour as the substance of value, the necessity of the form taken by that substance as exchange-value fell beyond its scope (Marx 1982 [1867]: 174–175).

Sweezy gives his second step by accusing Marx of falling short with respect to the method he had attributed to him:

> Orthodox economists [. . .] have developed a kind of price theory which is more useful in this sphere [the behavior of the disparate elements of the economic system] than anything to be found in Marx or his followers. (Sweezy 1962 [1942]: 129)

According to Sweezy, a knowledge that stops at the appearances of circulation can better account for the concrete determinations of prices of production than the reproduction by way of thought of the unfolding of the necessary forms taken by the substance of value, starting from commodities as the simple products of labour up to reaching their concrete existence as the products of capital. Furthermore, Sweezy inverts Marx's remark about:

> It is necessary to bear in mind this modified significance of the cost price, and therefore to bear in mind too that if the cost price of a commodity is equated with the value of the means of production used up in producing it, it is always possible to go wrong. (Marx 1991 [1894]: 265) into 'the source of Marx's error' (Sweezy 1962 [1942]: 115).

Marx develops his knowledge of the transformation of values into prices of production by following a scientific method that dialectically reproduces the concrete, beginning with the commodity as the simplest social form in capitalist society to unfold the concrete forms taken by this general social relation. Notably, Sweezy's path ends up denying this development to the point of presenting Marx as someone who 'believes' in the Ricardian inverted conception of surplus value as a 'deduction' from total labour product:

> If we believe with Marx that profit can be understood only as a deduction from the combined product of social labor, there is no way of dispensing with value calculation and the labor theory of value on which it is based. (Sweezy 1962 [1942]: 130)

In short, at the very opening of the 'transformation problem', the objectivity of scientific knowledge is expelled by its opposite, ideology.

Soon afterwards, Winternitz (1948) sets the norm that will be followed by the different interventions in the debate around the 'transformation problem'. Point one, he starts by recognising that the material composition of social production and consumption that corresponds to the circulation of commodities at their values will necessarily be affected by the transformation of those values into prices of production (let aside his conditional 'may'): 'A change of prices may necessitate a changed distribution of social labour to restore the equilibrium' (Winternitz 1948: 277). Point two, he presents his own model based on the omission of the said material change. Moreover, he consecrates the inversion by taking the results of the model as if they corresponded to the real determinations, albeit those results are openly opposed to these real determinations themselves:

> The formula shows that the rate of profit in department III which supplies consumption goods for the capitalist class and the amount of capital invested there has no influence on the average rate of profit. (Winternitz 1948: 279)

Point three, the real development of value into its necessary concrete form of price of production is cancelled as the object of research. From here on, the object comes down to interpreting Marx's texts in a way that fits the formal requirements of the system of equations: 'The obvious proposition in the spirit of the Marxian system is that the sum of prices is equal to the sum of value' (Winternitz 1948: 279).

Sixty years later, Kliman attests to the presence of this third point all along the 'transformation problem' debate:

> I assess the standard interpretation of Marx's value theory, the TSSI, and other interpretations only in terms of their relative success in making Marx' s own theory make sense. . . . The point is to make the text make sense, but we do not really make it make sense if we falsify or discard textual evidence in order to produce the semblance of coherence. (Kliman 2007: 3, 66)

In this context, the reduction of the object of knowledge to a text that has to be interpreted reaches the point in which the 'theory of value' ceases to be a form of appropriating in thought the actual object 'value', that is, the social attribute embodied in commodities as the products of socially necessary abstract labour privately performed. Contrarily, the 'theory of value' appears as an object existing in and by itself, that can be submitted to different interpretations: 'Marx's Interpretation of the Labor Theory of Value' (Foley 1982: 45). What does exist are different theories of value, not different interpretations of the entelechy 'theory of value'. No wonder even Samuelson (1971: 425) could mock how to solve the 'transformation problem'.

From the 'transformation problem' to a problem of logical contradiction

Moseley defines his position on the transformation of values into prices of production as a matter of properly interpreting Marx's texts. This definition directly locates his position within the realm of the 'transformation problem'. The first peculiarity presented by Moseley's conception in this field, is the rejection of the 'problem' as a nonexistent one. Its second peculiarity is the assertion that the values of variable and constant capitals enter the model already determined as prices of production from the outset. Moseley justifies his interpretation by arguing that, as commodities belong in the capitalist mode of production, they have to be considered the products of capital, both in production and in circulation, from the very beginning of the process of knowledge, since they actually are such. Therefore, Moseley mistakes the real concrete determination for the ability achieved by the process of knowledge to objectively recognise that determination at each stage of its advancement.

Marx himself makes clear the necessity to take into consideration the determinations that arise from the transformation of the value of the components of variable and constant capitals into their prices of production. He explicitly points out the risk of being mistaken if the quantitative relationships between those prices of production were considered the unequivocal expressions of the material allocation of social labour to the different spheres of production (Marx 1991 [1894]: 261, 264–265). By contrast, Moseley's approach presupposes the prices of production of the components of variable and constant capitals as given in order to properly explain the quantitative determination of the prices of production of the products in general. In other words, it presupposes the prices of production of the means of subsistence for the workers and the means of production to explain the quantitative determination of the prices of production of these very same means of subsistence and production as products themselves. Therefore, it explains the quantitative determination of a concrete form by presupposing the same quantitative determination as already given, as a precondition for itself. The logical flow itself becomes inverted: the *explanandum* is posited as a given condition to explain the *explanans*.

The implicit assumption in the 'solutions' of average social organic compositions and relevant turnover rates among the departments

Even setting aside the logical circularity, Moseley's conception shows it has not an analytical but an abstract character (Marx 1976 [1847]: 163). This evidence does not result from the singularity of its assumptions. On the contrary, it results from the assumptions it shares with a number of other 'solutions', including Bortkiewicz–Sweezy's, as Moseley himself makes evident through a very exhaustive and illuminating study (Moseley 2016, Part 2).

In its concrete determination, the identity of content between total surplus value and total profit lies in the fact that both are the historical specific social expression of the total surplus product, hence of the total surplus labour extracted from the productive workers in the capitalist mode of production (Iñigo-Carrera 1995: 16–17).[1] The former expresses the unitary content as the commodities produced by capital are still recognised in circulation as the simple products of labour; the latter expresses the unitary content as the commodities produced by capital are already recognised in circulation under their concrete determination as the products of capital. Therefore, the quantitative expression as an amount of money of one and the same amount of value is mediated by the relative organic composition of the capitals that produce the said surplus product. And the same happens regarding the relative average of their circulating portions. If that organic composition is higher, or this turnover rate is lower than the respective social average, the same amount of privately materialised abstract social surplus labour will be socially represented in exchange, under the form of total profit, as if it embodied a higher amount of social labour than that it actually does. A relative lower composition or higher turnover rate will present the opposite result. In either case, the same content of privately materialised social abstract surplus labour, that is, of surplus value, will appear in circulation represented by two different amounts of money, namely gold, when commodities are recognised as the simple products of labour or as the products of capital.

Moseley's conception abstracts value from its content as the necessary mode of organising the private allocation of social labour into its concrete useful forms. This abstraction reduces value to the empty appearance of its form, namely to an amount of money. Under this appearance, the unity of content between total surplus value and total profit becomes inverted into the assumption of their equalisation as one and the same amount of money. This assumption is then forced into the model as an 'invariant condition'.

Now, this apparently inconsequential assumption has a direct implication concerning the model's self-coherence as a representation of the transformation of values into prices of production. It implies that the price of production of the set of commodities on which the total profit is expended must be immediately equal to the set's value. In turn, this implies that the said set of commodities unavoidably must be produced by a set of capitals having the social average organic composition plus the social average turnover rate of their circulating portions: 'Only for capitals [. . .] in branches of production whose composition chanced to coincide with the social average, would the value and the price of production be the same' (Marx 1991 [1894]: 264). In simple reproduction, for example, the assumption of equality between the total value and total price of production implies that the capitals that produce the means of consumption for the capitalists must satisfy these average conditions. From this, it follows that the set of capitals that produce the means of subsistence for the workers and the means of production, taken together, must satisfy the average conditions too.

In brief, Moseley's model implicitly imposes an average organic composition and relevant turnover rate on the capitals that produce the set of commodities on whose purchasing surplus value is expended. It does so to explain the general quantitative determination of prices of production by values, albeit this determination results from the contingent differences in the organic compositions and relevant turnover rates between the different spheres of production. Again, that which has to be explained is posited as a condition for its own explanation. No wonder that Moseley time and again reduces the content of Marx's analysis of simple reproduction in Volume II to a discussion with Smith on the difference between the value product and the value of the product (Moseley 2016: 62, 133, 192, 225, 274). Likewise, he explicitly rejects the need to consider the indirect achievement of the material unity of social reproduction through the private allocation of social labour to the spheres that produce the different types of use values, as a step in the process of knowledge that flows towards the discovery of the determination of prices of production by values. He does so by equating this step with the absurd inverted assertion that the said reproduction is itself the determination in question (Moseley 2016: 371). In other words, the fact that the process of reproduction does not intervene in the determination of the prices of production does not mean, conversely, that these prices are not the ones at which the materiality of social reproduction has to be indirectly achieved.

The 'New Interpretation' goes even further than Moseley's interpretation concerning the implicit and unnoticed assumption of an average organic composition and relevant turnover rate for the capitals that produce the different parts of the social product. It assumes that not only the monetary amount of total profit is quantitatively identical to that of total surplus value, but that this equality is also verified concerning variable capital (Foley 1982: 45), that is, that the price of production of the means of subsistence for the workers also equals their value. Therefore, this solution starts by implicitly assuming that, for example, in simple reproduction, not only the capital that produces the commodities for the personal consumption of the capitalists, but also the capital that produces the means of subsistence for the workers have the average organic composition and relevant turnover rate. Consequently, the capitals that produce the means of production that in turn enter the circuit as constant capital must necessarily share the same attribute. In other words, if two of the three portions of total social capital have the average organic composition and relevant turnover rate such that the sum of the prices of production of their product equals its value, it is an arithmetic truism that the capital of the third portion must satisfy the same condition. From this it follows that the sum of the prices of production of total social product must immediately equal total value. Nevertheless, thanks to the magic of linear systems, this interpretation concludes that, under the assumed conditions, this equality is not verified 'because the prices of non-labor inputs to production can derivate from their labor values' (Foley 1982: 45). The New Interpretation is a tautology that bears the peculiar property of contradicting itself.

Both the Simultaneous Single System Interpretation and the Temporal Single-System Interpretation suffer from the same source of self-contradiction. They do not claim that their models maintain the new added value, that is, the value product, unchanged in terms of prices of production. Yet, this quantitative identity is explicitly assumed (Kliman 2007: 164), in order to compute total profit by deducting variable capital at its price of production from total value product. Since total profit is quantitatively identical to total surplus value, variable capital at prices of production is equal to variable capital at its value. Consequently, the organic composition and turnover time of both the aggregate capital that produces the means of subsistence for the workers, and the one that produces the means of living for the capitalists (assuming simple reproduction for simplicity) must equal their social averages. And, again, the same happens with the aggregate capital that produces the components of constant capital.

The exchangeability of gold as a concrete product of capital

Moseley names his methodological approach to the questions developed in Volume I a 'macro-monetary theory'. Nevertheless, when the time comes to recognise gold's concrete determination as the product of capital, he rejects any consideration of the determination of the exchangeability of gold in its function as money. He argues that, since prices are the expression of value in quantities of money, it does not make sense to speak of a price of production of gold as money (Moseley 2016: 208–209). This argument is absolutely correct: 'Since a commodity cannot be related to itself as equivalent, and therefore cannot make its own physical shape into the expression of its own value' (Marx 1982 [1867]: 148). But it does not enable the demise of the said determination (Iñigo-Carrera 1995: 24–26). The point is not about a flawed name given to the determination of the quantitative exchangeability of gold in the full development of its recognition as the product of capital. The point is that, albeit gold is unable to express its own value in the form of a price of production, its concrete capacity to express the value of the rest of commodities by functioning as their general equivalent is affected by its determination as the product of capital. As such, its exchangeability is mediated by the divergence from the social average organic composition and relevant turnover rate presented by the capital that produces it.

To justify his conception, Moseley argues that the surplus value extracted by the capitals in the gold industry from their workers does not enter the formation of the general rate of profit, given its material form: an ounce of gold is always an ounce of gold, whether it is the simple product of labour or the product of capital (Moseley 2016: 212). Suddenly, the materiality of the commodity, completely neglected in all other cases, is brought up as the key argument that explains everything. Of course, an ounce of gold is always an ounce of gold. But the point is not this obvious unitary materiality; the point is the social representation of an ounce's exchangeability in one or the other case. And through the determination of this exchangeability, the surplus value extracted in the sphere that produces gold enters the formation of the general rate of profit as any other. If the capitals that produce gold have an organic composition above (below) the social average, the same ounce of gold will enter circulation as if it embodied a capacity for exchange higher (lower) than that which corresponds to its value. Therefore, it will be able to attract the product of an amount of privately materialised abstract social labour higher (lower) than that actually materialised in it.

As soon as the capitals that produce gold have a higher (lower) organic composition or a lower (higher) turnover rate of their circulating portion than the respective social average, the total sum of the prices of production will appear as an amount of money, that is, of gold, lower (higher) than that which corresponds to the sum of their values when both the commodities and gold produced by capital are still recognised in circulation as the simple products of labour. Consequently, with the velocity of circulation given, a lower (higher) quantity of ounces of gold will be needed to satisfy its function as money in circulation. Now, a new concrete determination of the private material allocation of social labour becomes visible due to the formation of the general rate of profit.

In the general case, the same total amount of privately materialised abstract social labour, namely the same amount of value, will take two different quantitative expressions as amounts of gold if the former is considered entering circulation as the simple product of labour or as the product of capital.

Moseley transforms the determination of gold as the general equivalent into an abstraction. He does so by mistaking the material identity of gold's use value for the social function embodied in this materiality. Strangely, Moseley's interpretation resorts again to the same abstraction (Sweezy 1962 [1942]: 117–118) he condemns as Bortkiewicz–Sweezy's misconception.

Yet, Moseley doubles the abstraction by resorting to the concept of the 'monetary expression of labour time', MELT (Moseley 2016: 214–215), derived as the inverse of Foley's concept of the 'value of money' (Foley 1982: 39). But the substance of value is not just a quantity of 'abstract socially-necessary labor', as Foley defines it with explicit reference to Rubin (Foley 1982: 39). The substance of value is a quantity of abstract socially necessary labour *privately* materialised in its product, making this product a commodity (Marx 1982 [1867]: 132–133). And precisely because of the private form in which social labour is organised, value can never express itself as a quantity of its substance, nor, consequently, can the amount of value-producing labour be identifiable as a quantity of itself (Marx 1982 [1867]: 152). The price of a commodity is the necessary monetary expression of a certain quantity of materialised value-producing labour, precisely because this quantity has no way of expressing itself as such. Contrarily, the MELT supposedly results from dividing total value, under the necessary general form taken by its substance, namely a sum of money, by the total quantity of value-producing labour expended. In turn, the 'value of money' supposedly results from the inverse calculation. Both concepts are illusory abstractions based on presupposing, as directly computable in quantities of itself, an element incapable of expressing itself directly as such due to its contradictory character as a privately performed social labour. Notwithstanding, both are currently used by those approaches that presuppose, as an 'invariance postulate' or a 'given', the quantitative identity of the total value product in its necessary expression as an amount of money, whether as a sum of simple values or of prices of production. It happens that, under the said presupposition, the total value product divided by the alleged total value-producing labour remains unchanged. Then, this result is presented inverted as proof that the exchangeability of money remains unaffected by the transformation of values into prices of production. Bluntly put, the abstract concepts of MELT and 'value of money' serve only to conceal the critical immediate effect that a difference in the exchangeability of money has on the presupposition in question. Under its simplest form of commodity-money, only by accident can its exchangeability remain unmodified when it circulates as a simple product of labour or as a product of capital.

The abstraction of the 'given'

As stated earlier, Moseley's book condenses his lifelong struggle to prove the inexistence of the 'transformation problem'. From his point of view, the key issue is to interpret Marx's texts in such a way as to justify that the identity of content between total surplus value and total profit, as well as between the total value of commodities and the sum of their prices of production, appear immediately manifested as the equality between their respective quantitative expressions as amounts of money. As it has been shown above, he sticks to this aim even to the point of overlooking that his conception inconsistently forces an average organic composition and relevant turnover rate on the capitals that produce the commodities into which surplus value is transformed in the process of reproduction. Likewise, Moseley pursues his objective even at the cost of mistaking the materiality of gold for the functioning of this use value as the general expression of value. Nevertheless, his need to achieve the goal in question makes him appeal to the deeper abstraction of what he interprets as a 'given'.

At the beginning of *Capital*, Marx notes that any use value has to be considered as such under a given quantity of its body. Likewise, provided this quantitatively determined use value is the social product of private labour, it embodies a given quantity of value. And this given quantity of value necessarily expresses itself as a given quantity of the body, the use value, of the commodity that acts as its equivalent in exchange. In turn, this given exchange value takes the concrete form of a given price, as that equivalent is socially accepted as the general one, that is, as money (Marx 1982 [1867]: 163). Then, when this money enters circulation to act as capital, it always does so in a given quantity. But this given quantity of money is not an abstractly given one. It is concretely determined by the value of the labour power – namely, the value of the workers' commodified means of subsistence – and the value of the means of production into which it needs to be transformed to valorise itself. And all these given value-magnitudes are determined, as it is known thus far, by the given quantity of socially necessary abstract labour privately materialised in the respective commodities (Marx 1982 [1867]: 274).

Moseley turns this obvious quantitative determination into a given quality itself. To him, 'given' means that the object in question is taken as if it lacked any already-known qualitative determination that determines its magnitude. In other words, he leaves aside capital's value content as discovered in Part 1, replacing it with the appearance of capital as a given amount of money whose quantity lacks any known qualitatively determined content, as a renewed point of departure (Moseley 2016: XIII, 4). Thus, capital becomes reduced to the appearance of being a given quantified object due to an abstract unknown qualitative character itself. Moreover, to him, 'given' means that this appearance has to be taken as a precondition to discovering the quality that determines this quantitative expression itself. Consequently, following Moseley's conception, the gradual advance towards dialectically discovering the concrete qualitative determinations – and their corresponding quantitative expressions – of capital as an objectified social relation that puts social production into private action must be replaced by a twofold leap. First, a leap that goes from the discovery of money as the general expression of privately materialised social labour to its reduction to a 'given' amount bearing a yet undefined value content; second, from the appearance of capital as that abstract given amount of money that engenders more money to the concrete determination of this amount of money as the sum of the prices of production of variable and constant capital.

To satisfy this conception, Moseley breaks down the contradictory unity between total social capital and its individual organs, into a 'macro-monetary theory' and a 'micro theory' concerning the distribution of an already 'given' amount of money. Nevertheless, he cannot avoid making visible his twofold leap through self-contradiction. On one hand, he repeatedly opposes any attribution of a 'hypothetical' character to Volume I: '. . . Volume I is about the actual capitalist economy . . . Marx's theory is about the actual capitalist economic system from beginning to end' (Moseley 2016: 328, 390; see also pp. XIII, 3, 6–7, 17, 19n30, 39, 121, 151, 182, 222–223, 238, 313). On the other hand, he asserts:

> In Volume I, it is provisionally assumed, as a first approximation, that the long-run equilibrium prices of individual commodities are equal to their values . . . This assumption is not exactly true, it is only a first approximation. (Moseley 2016: 6)

At the very beginning of Volume I, Marx discovers normal prices as the necessary expression of the value substance embodied in commodities within the capitalist mode of production. And he refers to normal prices strictly in this same way all along the said Volume. From a logical point of view, if Volume I is based on a provisional assumption that 'is not exactly true', Moseley is condemning its content to a 'hypothetical' existence, however much he claims to the contrary (Moseley 2016: 7; see also 20, 33, 136, 173, 194).

Now, either Volume I refers to 'the actual capitalist economic system from beginning to end' and, therefore, value is the actual substantial determination of normal prices, or Volume I is rooted in a 'not exactly true' provisional assumption about the determination of normal prices as the form taken by value and, therefore, it has the hypothetical character inherent in all logical representations. But it cannot be both at the same time.

Like the SDSI, SSSI, NI and TSSI, Moseley takes the approach based on interpreting Marx's texts to the point of self-contradiction. But unlike them, this self-contradiction does not remain hidden behind the formal coherence of a system of equations whose content encloses the contradiction of assuming the quantitative identity of prices of production with values despite the divergence of their assumed organic compositions of capitals with respect to the social average. On the contrary, it becomes evident at the very methodological foundation of Moseley's approach. Thus, it directly points to the true methodological question regarding the transformation of values into prices of production.

Dialectical reproduction versus logical representation

The mutilation of the organic unity into a macro-monetary and a micro-distribution theory is not to be blamed on Moseley's eccentricity. On the contrary, his procedure strictly sticks to the principles on which any logical representation must be based. To avoid logical contradiction, every real concrete form must enter the process of representation with its qualitative determination reduced to its quantitative expression; that is, it must enter representation as a given concrete that lacks any qualitative content other than that represented by its measure.

Now, this criterion entails a logical consequence: the simple model based on the given relations of measure is built by appealing to simplifying assumptions. Then, to advance towards a more concrete representation, these assumptions must be lifted. If the relations of measure that result from the more complex model contradict those that result from the simplified model, then this simplified model should be considered mistaken, invalid, or, in the best of cases, trivial. This criterion inherent to logical representation is at the core of the 'transformation problem'; in fact, it is what transforms the transformation of values into prices of production into an unsolvable, albeit false, 'problem'.

Bortkiewicz opens the way to the inversion of the dialectical reproduction of the concrete into the logical building of a model based on the relations of measure emptied of their qualitative content, and makes clear the aim of this inversion:

> Insofar as it is a question of demonstrating Marx's errors [. . .] what does not hold in the special case cannot claim general validity. (Bortkiewicz 1949 [1907]: 200)

Sweezy reinforces Bortkiewicz's inversion by presenting Marx's dialectical reproduction of the concrete as its opposite, as if it were a logical construction based on simplifying assumptions that should be lifted to achieve a more concrete representation:

> Throughout Volume I [. . .] it is assumed that in every branch of production the organic composition of capital is the same. Once this assumption is dropped, however, a serious, some have maintained a fatal, difficulty arises. (Sweezy 1962 [1942]: 109)

Contrary to Sweezy's oft-repeated assertion, in Volume I Marx actually presents the question of the different organic compositions among individual capitals in a completely different way:

> The many individual capitals invested in a particular branch of production have compositions which differ from each other to a greater or lesser extent. The average of their individual compositions gives us the composition of the total capital in the branch of production under consideration. Finally, the average of all the average compositions in all branches of production gives us the composition of the total social capital of a country, and it is with this alone that we are concerned here in the final analysis. (Marx 1982 [1867]: 762–763)

There is no recourse to a simplifying assumption here, but the recognition of the irrelevance of the individual differences in the organic composition for the analysis of the process of accumulation that concerns the unity of total social capital.

His disagreement with Bortkiewicz–Sweezy's results notwithstanding, Moseley shares with the latter the methodological inversion of dialectical reproduction into a logical representation based on assuming assumptions:

> In Volume I, it is provisionally assumed, as a first approximation, that the long-run equilibrium prices of individual commodities are equal to their values [. . .] because that is the only assumption consistent with the labour theory of value at the 'macro' level of abstraction of capital in general in Volume I. This assumption is not exactly true; it is only a first approximation. Long-run equilibrium prices depend not only on labour times, but also on the equalisation of the profit rate across industries. (Moseley 2016: 19)

> Marx continued to assume in Volume II, as a first approximation, that the prices of individual commodities are equal to their values (because this is still the only assumption that is consistent with the macroeconomic labour theory of value at the level of abstraction of capital in general presented thus far. . . (Moseley 2016: 190)

According to Moseley, Marx does not start by analysing commodities as they appear in circulation in search of the social attribute that determines their exchangeability as bearers of an equal amount of the same quality, up to discovering the abstract social labour privately materialised in commodities as the source of that common quality, namely their value. Moseley conceives this process as the abstract interpretation of the phenomenon of exchange through the formulation of a 'labour theory of value' – which should be labelled a hypothetical one if his own criterion is to be followed. On the contrary, once Marx has analytically discovered the source of value as the social attribute of commodities, he returns to the concrete form taken by this attribute by following the movement of commodities in the necessary expression of their value as exchange value, and then, as price. He advances through this path up to the point of being able to recognise commodities as the objectified form taken by the general social relation, that is, by the capacity to organise the process of social metabolism through the allocation of society's total labour power into its useful concrete forms, among private independent producers. From Moseley's viewpoint, this process can be brought down to a matter of achieving logical consistency in the formulation of a 'first approximation', an 'assumption consistent with the labour theory of value', concerning the determination of the prices of commodities.

In brief, Moseley interprets Marx's dialectical method as if it were the construction of a representation of the real concrete, based on the appearances presented by its relations of measure. He disagrees with the 'transformation problem' not on a fundamental methodological basis. His disagreement starts as soon as it becomes evident that, based on his same methodological approach, the mathematical results obtained by the models elaborated to represent the concrete transformation of values into prices of production contradict the immediate quantitative identity between total surplus value and total profit, and between total value and total prices of production. And in the domain of logical representation, where no identity of content other than that manifested as a quantitative one fits, such disagreement means the logical rejection of the corresponding theory from its very foundations. In Moseley's words: 'I think the divergence of total profit from total surplus value would diminish considerably the force of Marx's theory of surplus value and exploitation' (Moseley 2016: 364).

Moseley agrees with the logical procedure itself but rejects its unavoidable results. At this point, it can be said that he faces three alternatives. First, to proceed as Sweezy and turn the scientific question into a matter of faith: 'If we believe with Marx.'.. (Sweezy 1962 [1942]: 130). Second, to negotiate the disagreement of some variables in order to preserve, although tattered from a logical viewpoint, some agreements and then interpret these as the truly fundamental ones. However, this leaves an open flank to Sraffians' attacks. Third, to stick to an interpretation that allows the full conservation of the quantitative identities in question. Moseley chooses this third alternative. But the only possibility to sustain it is the continuous appeal to the interpretation of the amounts of constant and variable capital needed to satisfy those quantitative identities as already 'given' in prices of production from the beginning. Consequently, to sustain against all odds the logical coherence of his model, he cannot avoid falling into the already seen logical incoherence of positing an unexplained 'given' quantitative transformation of values into prices of production as a premise to explain that very same quantitative transformation.

Moseley is right in struggling against the mystified 'transformation problem'. Moreover, he is right to do so from a methodological perspective. But since he tries to take the criterion inherent in logical representation as his own weapon, his legitimate attempt is condemned, from the beginning, to become yet another 'interpretation' within the realm of the 'transformation problem'.

The true methodological battleground completely transcends this realm. Like the generality of Marxists, Moseley sustains the historical specificity of social forms.

Nevertheless, although scientific method is a form of social consciousness and therefore a social form itself, like the generality of Marxists, he takes logical representation for the natural, hence unhistorical, method of scientific knowledge. Consequently, he forgets that, since capital is an alienated social relation, it produces a scientific method that needs to turn every concrete form into an abstraction (Iñigo-Carrera 2007: 2–7):

> Logic [. . .] is *alienated thinking*, and therefore thinking which abstracts from nature and from real man: *abstract* thinking. (Marx 1975 [1844]: 330)

As was pointed out above, any logical representation starts by reducing the qualitative determination, that is, the affirmation through self-negation, to an abstract identity immediately expressed by the quantitative relations of measure. On this basis, it is logically incoherent that the same qualitative identity could present a different quantitative expression as the process of knowledge advances from its simplest representation towards its more developed representation through the lifting of simplifying assumptions. Therefore, logical coherence demands that the quantitative expression of value remains identical to itself along this advance, to assert its qualitative identity.

By contrast, the dialectical reproduction of the concrete by way of thought starts by acknowledging that the simplest real concrete, from which it proceeds, necessarily affirms its potentiality through its self-negation. In doing so, it develops into its more concrete forms, whose own movements through self-negation are to be followed in thought by the process of knowledge. Thus, up to completely unfolding the determinations that take form in the concrete object that the action, so organised, aims to transform. Not in vain,

> . . . all science would be superfluous if the form of appearance of things directly coincided with their essence. (Marx 1991 [1894]: 956)

For example, in *Capital*'s Chapter 1, working as an isolated individual with one's own means of production is discovered as a necessary condition to produce commodities. When the unfolding of this simplest determination advances towards its concrete forms, commodities become recognised as the products of collective workers whose individual members are deprived of their means of production. For logical representation, this is a contradiction that turns Chapter 1 into a mere hypothetical model. For dialectical reproduction, Chapter 1 is not about a hypothetical simple commodity production, but about the discovery of the simplest specific determination of actual commodities as the necessary form taken by the products of the private organisation of social labour in the capitalist mode of production (Iñigo-Carrera 2014: 73–83).

Value content and its quantitative expression in capital-commodities

Now, not only does a simplest quality develop itself through self-negation, but its very quantitative determination becomes transformed into expressions of the same simplest content that can quantitatively diverge from those presented as attributes of said simplest quality. Thus, in the case of the transformation of values into prices of production, the point is to develop the necessary determinations of the quantitative expressions of its most concrete forms as commodities become qualitatively recognised as the products of labour alienated in capital.

By following this path, two of these quantitative determinations have been unfolded in this article, but it is worth briefly recalling them now. The first one concerns the flow of individual capitals that represent a certain proportion of total social capital from the spheres with a higher organic composition or a lower turnover rate of their circulating portion towards the spheres that present the opposite conditions, through which the equalisation of their rates of profit takes shape. Therefore, the different relative allocation of social labour between the spheres results in an average lower organic composition for total social capital and a higher turnover rate for its circulating portion. Both conditions imply an increased annual total surplus value while the advanced total capital remains unchanged, which in turn results in a higher annual rate of profit than that corresponding to the exchange of commodities for their value. Moreover, the increased amount of surplus value originated by the lower organic composition happens even if the total amount of living plus dead labour expended in production, and consequently that of the product's total value, remain unchanged.

The second quantitative determination previously unfolded concerns the different exchangeability of the commodity-money, gold, as a simple product of labour and as a product of capital. In the latter case, the exchangeability of gold is mediated by the higher or lower organic composition and relevant turnover rate of the capitals that produce it with respect to the corresponding social averages. Only an accidental coincidence can neutralise this mediation. Therefore, even if the total amount of socially necessary abstract labour privately materialised in society's total product remains unchanged as values take the form of prices of production, the magnitude of this unchanged value substance will be normally expressed as two different quantities of gold.

Independently from both determinations already considered, the complete transformation of values into prices of production presents other relevant quantitative determinations that are equally concealed when the analysis is reduced to a matter of building some system of equations based on 'invariance postulates' or it stops by taking as already given what has to be unfolded. A brief development concerning them follows, setting aside for the sake of simplicity the concomitant effects of the two determinations already seen:

(a) The organic composition of capital is an attribute of advanced capital. Fixed constant capital enters the determination of advanced capital for its full value, but it only enters the determination of the product's value for the portion consumed in each production cycle. Inversely, circulating capital, both constant and variable, enters for its full value not only in the determination of advanced capital and organic composition but also in the determination of the capital consumed in each cycle of production and, hence, in the product's value. Therefore, the relative organic composition of the capitals that produce the components of the fixed capital of a sphere will centrally, so to speak, affect this one's share in total social surplus value. Yet, concerning the deviation of the price of production of the product from its value, this centrality passes to the organic composition of the capitals that produce the elements of circulating capital: directly in the case of its constant part; indirectly in the case of its variable part, through the prices of production of the means of subsistence for the workers. Therefore, the capitals belonging to a certain sphere of production could see their share in total advanced social capital increase with respect to that which corresponded to their value, while the price of production of their product fell beneath its value, and vice versa (Iñigo-Carrera 1995: 14–16).

(b) As values are completely transformed into prices of production, for the price of production of a commodity to be identical to its value, it does not suffice that the said commodity be the product of a capital with an average organic composition and average turnover rate of its circulating portion. This same condition should extend indefinitely backwards to the capitals that produced their means of production and the means of subsistence for their workers. The quantitative coincidence of a price of production with its value content thus becomes a matter of sheer accidental compensation (Iñigo-Carrera 1995: 16–17).

(c) At the first stage of the transformation, the advanced capitals from the different spheres enter the process of valorisation as values to be valorised in an equal general proportion according to their amount. In turn, total surplus value appears identical to itself as it takes the form of total profit. The value content of the prices of production becomes immediately visible not only for the product's total price of production but also for each of its parts as constant capital, variable capital and surplus value. At the second stage, advanced capitals enter the valorisation process determined as values already valorised in equal proportion themselves. The compensation between a particular price of production being above value and another price of production being below value takes place within the total product. Therefore, total value goes on appearing quantitatively identical to itself in the form of the total product's price of production. But the said compensation lacks any need to happen within the limits of the spheres that respectively produce the means of production, the means of subsistence for the workers and the luxury means of consumption for the capitalists. Neither the value of total advanced constant capital nor that of variable capital appears identical to themselves as prices of production. And the resulting differences are projected onto the cost prices of the product through the turnover rates of both fixed and circulating capitals corresponding to the respective spheres of production. In turn, surplus value, too, cannot appear quantitatively identical to itself under its form of total profit. Not in vain, total profit appears as the difference between a total cost price that differs from its value content and a total price of production that equals its value content. However, as much as the amounts of total variable capital at its price of production and of total profit appear to differ from their simple value content, they are but the concrete social forms taken, respectively, by the total paid and unpaid socially necessary abstract labour performed by the workers under the private command of capital (Iñigo-Carrera 1995: 18–19).

(d) The capitals of the spheres that produce luxury means of consumption for the capitalists tend to have a relatively low organic composition compared with the generality of the capitals that produce means of production and means of consumption for the workers. This happens given their limited scale and the significant presence of living labour in the personal services they provide. Therefore, their prices of production will be lower than the corresponding values. In simple reproduction, from the point of view of the indirect unity between social production and consumption, the totality of surplus labour extracted from the productive workers will materialise in this type of product. Then, this total surplus labour will appear in the form of the total amount of the corresponding prices of production. Consequently, both the rate of exploitation and the average rate of profit computed in prices of production will appear diminished with respect to the true value relationship they contain. Only provided, from the said point of view, that the totality of the product of social surplus labour has the material form that enables it to be applied to the extensively expanded reproduction of social production, will both relations measured at the prices of production unequivocally reflect their true value content (Iñigo-Carrera 1995: 20–21).

The 'transformation problem' comes down to the self-contradictory attempt to force a quantitative identity between the magnitude of a content and that of its necessary concrete form in pursuit of showing the logical consistency or inconsistency of the qualitative development of that content into this concrete form. The point is to dialectically reproduce the development of the real substantial necessity inherent in the simplest form as it develops itself into its concrete forms, up to explaining the reason that rules these concrete forms' quantitative expressions. Models are unable to explain per se any qualitative determination. Their construction is a necessary step within dialectical reproduction to apprehend in thought the relations of measure between the forms in which qualitative determinations realise themselves. Therefore, a proper model of the complete transformation of values into prices of production needs to be consistent with the above-developed foundations (Iñigo-Carrera 1995: 30–31).

ORCID iD

Juan Iñigo-Carrera https://orcid.org/0000-0003-2668-7640

Note

1. For an extended development see: Iñigo-Carrera J (1997) De las simples mercancías a las mercancías-capital. La transformación de los valores en precios de producción. Buenos Aires: CICP).

References

Bortkiewicz LV (1949 [1907]) On the correction of Marx's fundamental theoretical construction in the third volume of capital. In: Böhm-Bawerk EV (ed.) *Karl Marx and the Close of His System*. New York: Augustus M. Kelley: 197–221.

Bortkiewicz LV (1952 [1907]) Value and price in the Marxian system. *International Economic Papers* **2**: 5–60.

Foley D (1982) The value of money, the value of labor power and the Marxian transformation problem. *Review of Radical Political Economics* **14**(**2**): 37–47.

Iñigo-Carrera J (1995) *From Simple Commodities to Capital-Commodities: The Transformation of Values into Prices of Production*. Buenos Aires, Argentina: CICP.

Iñigo-Carrera J (2007) *Scientific Method: Logical Representation vis-à-vis Dialectical Reproduction*. Buenos Aires, Argentina: CICP.

Iñigo-Carrera J (2014) Dialectics on its feet, or the form of the consciousness of the working class as historical subject. In: Moseley F and Smith T (eds) *Marx's Capital and Hegel's Logic: A Reexamination*. Leiden: Brill: 64–88.

Kliman A (2007) *Reclaiming Marx's 'Capital'. A Refutation of the Myth of Inconsistency*. Lanham, MD: Lexington Books.

Marx K (1975 [1844]) Economic and philosophic manuscripts 1844. In: Marx K (ed.) *Marx/Engels Collected Works*, **vol. 3**. London: Lawrence & Wishart: 229–346.

Marx K (1976 [1847]) The poverty of philosophy. In: Marx K (ed.) *Marx/Engels Collected Works*, **vol. 6**. London: Lawrence & Wishart: 105–212.

Marx K (1982 [1867]) *Capital*, **vol. I**. Harmondsworth: Penguin Books.

Marx K (1991 [1894]) *Capital*, **vol. III**. London: Penguin Books.

Marx K (1992 [1885]) *Capital*, **vol. II**. London: Penguin Books.

Marx K (1993 [1857–1858]) *Grundrisse*. London: Penguin Books.

Marx K (2002 [1879–1880]) Notes on Adolph Wagner. In: Marx K (ed.) *Later Political Writings*. Cambridge: Cambridge University Press, 227–257.

Marx K (2010 [1867]) Letters 1864-68. In: Marx K (ed.) *Marx/Engels Collected Works*, **vol. 42**. London: Lawrence & Wishart.

Moseley F (2016) *Money and Totality: A Macro-Monetary Interpretation of Marx's Logic in Capital and the End of the 'Transformation Problem'*. Leiden; Boston, MA: Brill.

Rubin I (1990 [1928]) *Essays on Marx's Theory of Value*. Montréal, QC, Canada: Black Rose Books.

Samuelson P (1971) Understanding the Marxian notion of exploitation: A summary of the so-called transformation problem between Marxian values and competitive prices. *Journal of Economic Literature* **9**(**2**): 399–443.

Seton F (1957) The 'transformation problem'. *The Review of Economic Studies* **24**(**3**): 149–160.

Sraffa P (1960) *Production of Commodities by Means of Commodities*. Cambridge: Cambridge University Press.

Sweezy P (1962 [1942]) *The Theory of Capitalist Development*. London: Dennis Dobson Ltd.

Winternitz J (1948) Values and prices: A solution of the so-called transformation problem. *The Economic Journal* **58**(**230**): 276–280.

Author biography

Juan Iñigo-Carrera directs the Centro para la Investigación como Crítica Práctica (CICP), where he coordinates a five-year-long workshop on Marx's Capital since 1998, and is a full professor at the Universidad de Buenos Aires, where he teaches courses on the critique of political economy and the economic formation of Argentine society. He has published extensively on the dialectical method, value theory, the global unity and national differentiation of capitalist development, the relationship between economic base and political superstructure, economic cycles and crises, ground rent, and Argentine capitalism.