

Sraffa on the degeneration of the notion of cost

Saverio M. Fratini*

The paper reconstructs the history of what Sraffa called the ‘degeneration of cost’, as emerges from his manuscripts of the late 1920s. In particular, Sraffa regards the Physiocrats as having the correct idea of cost as being the commodities that allow workers to subsist. The classical economists measured this bundle of commodities in terms of labour, which they also ambiguously viewed as ‘toil and trouble’. Then, the idea of labour as ‘toil and trouble’ was indicated by Marshall as an anticipation of the conception of cost as a sacrifice. Conferring also upon abstinence from consumption the nature of sacrifice, the neoclassical-marginalist theory understood wages and interest as compensation for the disutility of working and saving. Then, cost was ultimately seen as what induces workers and capitalists to produce. This completed the degeneration of cost from the objective-physical conception of the Physiocrats to the subjective-psychological view of the marginalist school.

Key words: Cost, Economic methodology, Sraffa, Sraffa’s manuscripts
JEL classifications: B12, B13, B41, B51, D24

1. Introduction

According to the reconstruction provided by Garegnani in his seminal essay on Sraffa’s unpublished manuscripts,¹ until the first half of 1927 Sraffa essentially accepted Marshall’s approach to the theory of value. It was during the summer of 1927, while preparing the lectures delivered at Cambridge over the period 1928–1931, that he began to drift away from the partial equilibrium method and to explore the difficulties that arise for the determination of the prices of many commodities and factors together.

As will be shown in Section 2, in order to tackle these difficulties, Sraffa started to look for an ‘ultimate standard’ for the value of commodities. Specifically, the attempt

Manuscript received 6 June 2016; final version received 3 June 2017.

Address for correspondence: Saverio M. Fratini, Department of Economics, Roma Tre University, Via Silvio D’Amico, 77, 00145, Rome, Italy; e-mail: saveriomaria.fratini@uniroma3.it.

* Università Roma Tre. I must first of all express my gratitude to the late Pierangelo Garegnani, under whose guidance I embarked on the study of the material discussed here some years ago. I also thank Tony Aspromourgos, Antonietta Campus, Christian Gehrke, Heinz D. Kurz and Attilio Trezzini for fruitful exchanges of ideas. Comments and suggestions from two anonymous referees are gratefully acknowledged too. I am also most grateful to Jonathan Smith and the staff of the Wren Library for all the help received in the consultation of Sraffa’s manuscripts and books. Needless to say, the ideas put forward here are entirely my own and I alone am responsible for any errors or shortcomings.

¹ Garegnani (2005).

was to refer to one of the two standards discussed by Marshall, namely the real cost, but conceiving it in terms of commodities, as a ‘physical real cost’,² rather than in terms of ‘efforts and sacrifices’ (disutility), as instead Marshall did.³

Bearing in mind that cost must be conceived as the commodities necessary to enable production, Sraffa discovered that Petty and the Physiocrats had this ‘right notion of cost’, which he then called ‘physical cost’. This discovery led him, during the period from autumn 1927 to spring 1928, to undertake the reconstruction of the history of the ‘degeneration of cost’ from the initial ‘right’ conception to those of Marshall and the modern authors,⁴ highlighting the fundamental steps of this path.⁵ Sraffa wrote as follows in a well-known manuscript:

Evolution of concept of cost.

It was only Petty & the Physiocrats who had the right notion of cost as ‘the loaf of bread’. Then somebody started measuring it in labour, as every day’s labour requires the same amount of food.

Then they proceeded to regard cost as actually an amount of labour. Then A. Smith interpreted labour as ‘the toil and trouble’ which is the ‘real cost’ (Ricardo, p. 10, 15 n)⁶ and the ‘hardship’.

Then this was by Ricardo brought back to labour, but not far back enough, and Marx went only as back as Ricardo.

Then Senior invented Abstinence, and Cairnes unified all the costs (work, abstinence & risk) as sacrifice.

Now Davenport, Cassell, Henderson, have carried it a step further, the last step in the wrong direction. (D3/12/4:4)

And, following Sraffa, this is the story we shall try to tell in Sections 3, 4, 5 and 6.

Moreover, Section 7 will be devoted to Sraffa’s comparison between the notion of physical cost and that adopted by the neoclassical theory, which he named ‘psychic cost’. Furthermore, some of the reasons leading the degeneration from the former conception to the latter will be considered in Section 8.

² The list of papers in which it is claimed that ‘between 1927 and 1928 Sraffa introduced, or at least went much more deeply into, the notion of “physical real cost”’ (de Vivo, 2001, p. 158) includes de Vivo (2001), Garegnani (2004, 2005), Kurz (1998, 2003 and 2006), Kurz and Salvadori (2005a and 2005b), Marcuzzo (2001) and Pasinetti (2001).

³ According to Marshall:

The exertions of all the different kinds of labour that are directly or indirectly involved in making it; together with the abstinences or rather the waitings required for saving the capital used in making it: all these efforts and sacrifices together will be called the *real cost of production* of the commodity. The sums of money that have to be paid for these efforts and sacrifices will be called either its *money cost of production*, or, for shortness, its *expenses of production*; they are the prices which have to be paid in order to call forth an adequate supply of the efforts and waitings that are required for making it; or, in other words, they are its supply price. (Marshall, 1920, p. 339, V, iii, 2, emphasis original)

⁴ The adjective ‘neoclassical’, used today with reference to the supply-and-demand approach to value and distribution, never appears in Sraffa’s writings of the period considered here, where expressions like ‘marginal-subjective doctrine’ or simply ‘Economics’ are used to denote the approach developed by Jevons, Marshall and the other founders of the modern theory. In particular, Sraffa distinguishes three different schools corresponding to three different stages or periods in D3/12/4:10: i) ‘Classical Political Economy ... from Petty to Ricardo’; ii) ‘Vulgar Political Economy ... from Malthus to {John} Stuart Mill’; and iii) ‘Economics ... since Jevons & Co {i.e. Menger and Walras} and Marshall’. On Sraffa’s division of the various school of thought, see also Martins (2014, pp. 16, 17).

⁵ This reconstruction was then also used by Sraffa in his lectures. Cf. Signorino (2005, pp. 372–76).

⁶ The page numbers refer to Ricardo (1888).

Finally, the paper is based on the analysis which emerges from Sraffa's manuscripts referable to the period from summer 1927 to the end of 1928.⁷ Some of these manuscripts have been quoted and discussed repeatedly in various essays,⁸ we believe nonetheless that the picture we shall outline here by means of them can present elements of novelty.

2. The conception of physical cost

In order to reconstruct the path which led Sraffa toward the conception of physical cost, we must start from Marshall's partial equilibrium approach to the theory of value, which was at the basis of Sraffa's analysis in his articles of 1925 and 1926.

It is a fact that the demand-and-supply apparatus was presented by Marshall (see in particular, [Marshall, 1920](#), Appendix I) as an attempt to rehabilitate Ricardo's ideas about the role of the cost of production in the theory of value. These were severely criticized by Jevons, who maintained that 'value depends entirely upon marginal utility' ([Jevons, 1888](#), p. 1). According to [Marshall \(1920, p. 817\)](#):⁹

This [Jevons'] statement seems to be no less one-sided and fragmentary, and much more misleading, than that into which Ricardo often glided with careless brevity, as to the dependence of value on cost of production; but which he never regarded as more than a part of a larger doctrine, the rest of which he had tried to explain.

In Marshall's theory, the 'cost of production principle' and the 'final utility principle' are regarded as component parts of 'one all-ruling law of supply and demand'.¹⁰ For every possible given quantity of a commodity, the cost of production and the marginal utility have their money counterpart, respectively, in the supply price (or the expenses of production) and the demand price. It is only via their equality that the value of that commodity is determined, together with its equilibrium quantity.

Moreover, as Marshall had explicitly claimed (1920, p. 463, V, xiii, 2), 'the normal price of a commodity which obeys the law of constant return is determined absolutely by its expenses of production: demand has no influence in the matter beyond this, that the thing will not be produced at all unless there is some demand for it at this fixed price'. Therefore, since constant returns to scale—or constant average costs—had to be assumed in order to avoid the problems Sraffa himself had highlighted in his articles, the cost of production appeared, in this framework, to be the only determinant of commodity prices.¹¹

It was with this theory in mind that Sraffa started preparing the lectures he would then deliver at Cambridge over the period 1928–1931. We refer here to the group of manuscripts called *pre-lectures* and referable to the summer of 1927 (folder D3/12/3).

⁷ While most of the documents considered here are not individually dated, there is nearly always a reference to a period of time (months, seasons or university terms and the year) on the folder.

⁸ Some of these essays are listed in footnote 2. For brevity, hereafter we shall not specify for each document whether or not it has already been quoted in other papers.

⁹ For a discussion of Marshall's critical assessment of Jevons' standpoint, cf. also [Martins \(2014, pp. 23–25\)](#).

¹⁰ "The 'cost of production principle' and the 'final utility' principle are undoubtedly component parts of the one all-ruling law of supply and demand; each may be compared to one blade of a pair of scissors. When one blade is held still, and the cutting is effected by moving the other, we may say with careless brevity that the cutting is done by the second; but the statement is not one to be made formally, and defended deliberately' ([Marshall, 1920](#), p. 820, App. I, 3).

¹¹ Cf. [Sraffa \(1926, p. 541\)](#).

Sraffa's article of 1926 mentions the need, if the available quantity of one or more factors of production is regarded as constant, 'to extend the field of investigation so as to examine the conditions of simultaneous equilibrium in numerous industries' (p. 541), even though he saw the difficulties due to the complexity of this approach. However, it was precisely in preparing the lectures that Sraffa became fully aware that the reasoning leading to the determination of commodity prices by their expenses of production 'is legitimate only in respect of one commodity at a time: we could of course apply it in succession to each of the other commodities ... but not to all or several commodities at the same time', as he wrote in the manuscript below:

We shall mainly be concerned with the study of the causes of the determination of the price of an individual commodity, considered separately from all the others; we shall assume that all prices and quantities of other commodities are constant (i.e. not affected by variations of our own), and regard them as data of our problem.¹² We shall therefore take into consideration only demand prices and expenses of production, without regard of the utilities and real costs which may be behind them.¹³ It would not be legitimate, under the given hypotheses, to follow a different course: in fact, the only way of measuring the utilities of our commodity, is to observe the amount of money sacrifice that each successive dose is able to call forth and, being a very specialised commodity, the slope of the demand curve for it will be chiefly determined by the prices of substitutes (at fixed prices) and by their efficiency in giving utility, and only to a negligible extent by its «absolute utility»:¹⁴ and we shall not be able to go behind the prices of substitutes to find out their utility, as, ex hypothesis, we cannot make vary their consumption.¹⁵

On the other hand, cost of production would be only the loss of remuneration {of production factors} involved in not using them (at fixed remuneration) in the other industries, which would, ex hypothesis, be willing to take any amount of them at fixed prices.¹⁶

But this method of reasoning is legitimate only in respect of one commodity at a time: we could of course apply it in succession to each of the other commodities (so far as they can reasonably be brought within such hypotheses: not, e.g., corn) but not to all or several commodities at the same time.

We can therefore go without a conception of ultimate standard of value: our standard is—the value of other commodities: and this can be done, and is useful so far as we want to inquire into the internal organisation of an industry and its methods of marketing.

But so soon as we want to analyse how the general equilibrium is reached—i.e. we want to analyse the interactions of one commodity upon the other, how they affect each other's conditions of production and utilities, and how the remuneration of common factors of production is determined—then an ultimate standard of value is required. We can no more refer the costs and

¹² {Sraffa's note;} We shall also assume that our commodity is only one of a great number that is produced with the same factors of production and consumed by the same consumers, so that its variations cannot appreciably affect marginal utility of money and cost of factors of production.

¹³ {Sraffa's note;} expand according to Marshall 338–9.

¹⁴ Sraffa's reference to 'a very specialized commodity' in this passage appears to require at least a brief attempt at interpretation. There are several possible ways to understand commodities in economic analysis. In particular, we can refer to the different needs that consumption goods satisfy and call these goods 'clothes', 'food' or 'housing', as is typically done in first-year textbooks of microeconomics. We cannot adopt this view of commodities, however, if we want to use the partial equilibrium method, in which each sector or market must be so small as to have a negligible influence on other sectors of the economy. We cannot therefore refer in the analysis to 'clothes' or 'food' but only to specific items like 'cotton T-shirts' or 'basmati rice'.

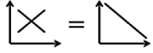
Thus, as Sraffa stressed, the demand for a very specific commodity such as 'basmati rice' does not depend on its 'absolute utility'. The absolute need for basmati rice can even be difficult to conceive. Human beings do not need exactly this particular kind of rice but rather nourishment, which can be provided by every sort of food.

¹⁵ {Sraffa's note;} Demand curves are inter-destructive: Wicksteed.

¹⁶ {Sraffa's note;} expand explain why it is necessary to stick very rigidly to the hypotheses.

utilities of one article to the costs and utilities of another one—in this case this would beg the question, and we would be reasoning in a circle.

Two standards offered: they are the same thing—words. But the intermediate is illegitimate: you cannot say where one begins and the other ends: and they are not independent. And if they were could they be measured one in terms of the other? crossing curves, Bernoulli? or Wicksteed



However there is one reality in cost, i.e. labour. (Clay) (D3/12/3:37–40, emphasis in original)

Summing up, according to Sraffa, the possibility of determining commodity prices without specific reference to an ‘ultimate standard of value’ (utility or cost) is a consequence of the partial equilibrium approach. In that approach, in fact, the marginal utility of a commodity is actually measured by the money sacrifice which its last dose is able to call for, while its cost of production is based on the remuneration that the factors used would have received if employed in other sectors. Therefore, demand and supply prices for an individual commodity are determined on the basis of the prices of other commodities and factor remunerations, which are taken as data. But in order to determine the prices of all commodities together, Sraffa, at that time, felt the need to refer value to an ultimate standard, so as to avoid the risk of arguing in a circle, which he was worried about because of the connections among commodity prices, as well as between commodity prices and factor remunerations.¹⁷ However, in Sraffa’s opinion, if the two standards Marshall considered in his analysis, namely the marginal or final utility and the real cost, are not expressed in terms of demand price and expenses of production, then they are just words. And the synthesis of the two that Marshall provided by the law of supply and demand is ‘illegitimate’, because supply and demand, in the general equilibrium framework, are not independent.¹⁸

Moreover, as for the ultimate standards of value discussed by marginalist authors,¹⁹ and the real cost²⁰ in particular, Sraffa notes that:

¹⁷ Commenting on a passage from Quesnay’s *Dialogues* quoted by Cannan (1893), Sraffa wrote:

Quesnay, quoted by Cannan, Theories, 20

‘la valeur réelle de ces marchandises n’est que la valeur même de la matière première et de la subsistance que l’ouvrier a consommée pendant son travail’

The second *valeur* is obviously misplaced and transforms the whole argument in a vicious circle. (D3/12/11:73, emphasis in original)

¹⁸ The problem of the lack of independence of demand and supply curves is considered by Sraffa also in another document in the same folder:

If we assume, as it is correct in general, that in our commodity’s production are used only factors in «general» use, it is clear that the conditions of supply and demand of this commodity will not (appreciably) affect the reward (price) of factors. In fact, we are considering only small changes: a small change in one of many commodities could not affect factors’ price (second order). If it affected them, all prices would change, our demand curve would be modified—therefore this would mean that D{emand} C{urve} is not independent of S{upply} C{urve}, and all our static system would collapse. (D3/12/3:60)

¹⁹ Cf., amongst others, Clark (1892, 1893) and Böhm-Bawerk (1894). For an in-depth reconstruction of the debate about the ‘ultimate standard of value’ and the role of Marshall’s theory in this connection, see also Campus (2000).

²⁰ That the real cost of a commodity depends on the prices of the other products was clearly stated by Henderson, who Sraffa referred to in many manuscripts of that period. Henderson (1921, pp. 164–65)

All the ultimate standards we have considered up to this point are psychological: that is to say their test is the willingness of consumers or producers to make a sacrifice in order to obtain a utility—or vice versa. Real costs interpreted as disutility are thus strictly dependent upon the alternative uses to which they can be put: the more attractive such alternative uses, the greater the disutility incurred in giving them up. But this is still, it may be said, a relative, not an ultimate, conception. (D3/12/3:42, emphasis in original)

Accordingly, Sraffa began to look for a standard of value other than utility or real cost/disutility, and started considering the possibility of a ‘physical real cost’, namely a sort of Marshall’s real cost but expressed in terms of commodities rather than ‘efforts and sacrifices’, i.e. disutility. Although he believed that some difficulties could arise because of the substitutability concerning primarily the goods consumed by workers, the idea was, initially, to find a ‘necessary commodity’ involved in every production and in terms of which the cost of all the other commodities could be reduced. He thought that:

if commodities have substitutes, there is no more ‘one’ real cost composed of a series of various quantities of commodities, which don’t require a common measure: so soon as there are substitutes, there is an infinite number of combinations of the different commodities, which satisfy the condition of maintaining life and efficiency of the producers.²¹ How are we to choose between these combinations? it is of course impossible to choose between 1 kg of bread + 1/2 kg of meat and 1/4 kg of bread + 1 kg of meat, unless we introduce the common measure of their value—and that would beg the question.

It should be remarked that if this difficulty (of no substitutes) were overcome and an absolutely necessary commodity found, the difficulty of reducing to a common measure the various things entering into real cost would solve by itself. In effect, would be easy to find the cost of all the other things in terms of the necessary one, and thus by going back enough in the genealogy of production (and stopping along each branch so soon as we have resolved it into our necessary commodity) we might find exactly the total amount of corn (if this were the ideal necessary commodity, which it is not) that has actually entered into the production of, say, this book, and covers entirely its cost of production, at the exclusion of any other commodity. (D3/12/3:44–45)

Moreover, referring to the *necessary commodity* to be used as ‘a common measure’ of ‘the various things entering into real cost,’ Sraffa stressed that ‘[t]he best measure available is the amount of various commodities that is required to support during an hour, a common average labourer’ (D3/12/3:46).

This is the state in which Sraffa left the topic in the group of manuscripts called *pre-lectures*.²² During the later months of the same year, he went on developing the idea of cost as a set of commodities, namely ‘the means necessary to enable production to be made’ (D3/12/4:7, emphasis in original), and referred to it as ‘physical cost’. In particular, between the end of 1927 and the beginning of 1928, Sraffa’s studies proceeded in two main directions. On the one hand, he tried, by means of examples, to find a way to determine commodity exchange values on the basis of their physical costs, i.e. their methods of production.²³ On the other hand, he performed a reconstruction,

maintained that the real cost of a commodity corresponds to the loss of utility which arises from the fact that a smaller quantity of the other commodities is produced and consumed in order to make the inputs available for the production of the commodity in question.

²¹ {Sraffa’s note;} But in a community that produces just what is sufficient to keep it going would there not be only one combination which satisfies the above condition? it would be ‘the cheapest’.

²² The way in which physical real cost can be conceived is considered not only in the *pre-lectures* but also in D3/12/42:33–56. This set of manuscripts is in a folder attributed to the period 1945–1967 which, according to Garegnani, contains the notes Sraffa intended to use for a work subsequent to *Production of Commodities*.

²³ While a discussion of Sraffa’s equations lies beyond the scope of the present paper, it should be pointed out that the idea of commodity prices as depending on their real physical cost—i.e. that they ‘spring directly

both historical and analytical, of the process toward which the notion of ‘physical cost’, expressed in terms of the commodities which support an average labourer, that he attributed to Petty and the Physiocrats, degenerated into the modern notions of cost. The next sections will be devoted to this second direction followed by Sraffa.

3. From food to labour

In the *pre-lectures*, Sraffa expressed the idea that cost consists of a set of different commodities, but if this set of commodities is not fixed due to substitutability, then it must be expressed in terms of a ‘necessary commodity’ and in particular in terms of the composite commodity made with what is necessary to support an average labourer for a given working time.

In these months Sraffa also discovered—probably through reading Marx’s *Histoire*²⁴—that Petty and the French Physiocrats, in their analyses, understood cost in terms of the necessities required to support the workers. Sraffa copied the following note from Marx’s *Histoire* by hand in a document of November 1927:

Petty, Pol {itical} Anat {omy} of Ireland, London 1672, p. 65

(quot {ed} by Marx, Hist {oire} I, 3 n.)

‘C’est la nourriture journalière moyenne d’un adulte et non pas son travail journalier, qui est la mesure ordinaire de la valeur ... C’est pourquoi j’ai fixé la valeur d’une hutte irlandaise d’après le nombre des rations journalières consommées par l’ouvrier pendant la construction’ e Marx commenta ‘C’est bien la théorie des physiocrates’. (D3/12/11:88, emphasis in original)²⁵

Therefore, Petty and the Physiocrats ‘had the right notion of cost as “the loaf of bread”’. The process of transformation of this notion began very early, however, with the measurement of the cost in terms of labour, instead of subsistences:

All trouble seems to have been caused by small initial errors, which have cumulated in deductions (e.g. food of worker = quantity of labour, is nearly true. Petty had foreseen the possibility of being misunderstood, cfr. Marx, Hist {oire}, vol I, p. 1. (D3/12/11:32, emphasis in original)

According to Sraffa, the classical economists knew that the cost of production (and hence the value) of each commodity depends on the amount of commodities which have been destroyed for its production,²⁶ but in order to express this cost as a single

from the methods of production’ (Sraffa, 1960, p. 3)—can be regarded as the starting point of a path that led Sraffa to the analysis in the first chapter of *Production of Commodities*.

²⁴ As is known, the English translation of Marx’s *Theorien über den Mehrwert* was not available at that time and Sraffa studied the (1924) French edition (Marx, 1924).

²⁵ ‘The days food of an adult Man, at a Medium, and not the days labour, is the common measure of Value, and seems to be as regular and constant as the value of fine Silver... Wherefore I valued an Irish Gabbin at the number of days food, which the Maker spent in building of it’ (Marx [1863] 1963, vol. 1, p. 362).

²⁶ As for Torrens, Sraffa wrote that:

Torrens knew that the (absolute) value of the product is determined by (in fact, is) the amount of things that have been destroyed for its production. But he did not see his way through without finding a ‘common measure’ of them: he probably felt a repulsion to, or thought that it could not be done, to sum together quantities of heterogeneous things measured in different units. This was of course fatal: he started to find something common in them, upon which to base his measurement: the labour theory was ready at hand, all those things had been ‘made by labour’, and he therefore regarded them simply as quantities of ‘accumulated labour’. The result was of course absurd. He proceeded to say that the ‘exchangeable value’ was determined entirely by ‘the amount of capital, or quantity of accumulated labour, and not the sum of accumulated and immediate labour expended on production’. (D3/12/5:26, emphasis in original)

magnitude they conceived it as an amount of labour. Nonetheless, the equality ‘food of worker = quantity of labour’ was deemed by Sraffa as ‘nearly true’, so that, although ‘Smith, Ricardo and Marx indeed began to corrupt the old idea of cost, from food to labour’, ‘their notion was still near enough to be in many cases equivalent’ to the idea of cost of Petty and the Physiocrats (cf. D3/12/4:2).²⁷

Sraffa is even more explicit in a paper found in a folder of notes attributed to the period 1945–1967,²⁸ but probably written earlier:

Physical real cost

This theory coincides with labour theory of cost. In effect, we cannot measure, for lack of common unit, goods which are in the cost: but ultimately, if we go back enough, all goods come to labour, and, if we want to go behind labour, we find the goods commanded by labourers: if we want to measure them, the only unit is ‘quantity of goods necessary to support a labourer for one day’. This is roughly constant, and therefore we can take ‘an hour of ordinary labour’ as a unit. (D3/12/42:56)

The point is quite clear: the amount of food required to produce a unit of a commodity depends on the quantity of labour directly and indirectly employed to produce it and on the quantity of goods needed to support a labourer for one day.²⁹ Since this bundle of commodities is ‘roughly constant’, the cost of a commodity in terms of workers’ subsistences is equivalent to the quantity of labour it embodies. In other words, once the composite commodity which supports a worker for a day is defined, the cost of a certain output can be understood as a quantity of this composite commodity, which is numerically tantamount to the quantity of labour embodied in that output.

Although the quantity of labour used in order to measure the cost is equivalent to the amount of subsistences forming the physical cost, the passage from food to labour was the premise for both the confusion about the conception of labour treated in the next section, and the real degeneration of the notion of cost that occurred as a result of conceiving it as a sum of efforts and sacrifices (Section 5).

4. The ‘mystical conception’ of labour

In Section 2, we referred to Marshall’s assessment of the conflict between Jevons’ standpoint, in which utility is the ultimate determinant of value, and the one according to which value depends upon the cost of production. This was, at least, Marshall’s reconstruction. In fact, the position that Jevons and other marginalist authors explicitly attributed to Ricardo and Mill, and intended to disprove, was the one in which labour is regarded as the ‘origin of value’. As Jevons wrote:

²⁷ A similar idea can be found in Sraffa’s *lectures* (D2/4/3:35), when he wrote that:

there are in A. Smith’s doctrine two distinct ways of representing cost of production: as amount of labour, of a ‘toil and trouble’ required for producing a commodity, or as a stock of material goods, which are used mainly for supporting that labour. The two quantities cannot of course be added together, without duplication, since they represent, not simultaneous distinct objects, but successive phases of the same quantities. But A. Smith, regarding the quantity of labour as proportional to the quantity of goods consumed for its maintenance, could for many purposes treat the two quantities as equivalent.

²⁸ See footnote 22.

²⁹ Even though this paper does not use the same argument as chapter 6 of *Production of Commodities* (the chapter in which ‘prices are considered from their cost-of-production aspect’, p. 34), it shows that Sraffa’s idea of reducing the means of production to labour probably arose from the need to trace back to a common element the different commodities forming the cost.

Repeated reflection and inquiry have led me to the somewhat novel opinion, that *value depends entirely upon utility*. Prevailing opinions make labour rather than utility the origin of value; and there are even those who distinctly assert that labour is the cause of value. I show, on the contrary, that we have only to trace out carefully the natural laws of the variation of utility [...] in order to arrive at a satisfactory theory of exchange. (Jevons, 1888: pp. 1, 2, emphasis in original)

Therefore, the early marginalist economists, and Jevons in particular, believed that the scholars belonging to the ‘Ricardo-Mill school’ had asserted that labour is the origin or even the cause of value.³⁰ This distorted interpretation of the labour theory of value is actually known to be one of the arguments of the Ricardian socialists. They claimed that ‘if labour produces all wealth, then labour should receive all wealth.’³¹ Hence, Jevons and the others who maintained that utility, and not labour, is the ultimate determinant of value intended, in this way, to contrast the socialist view.³²

Coming back to Sraffa, as we saw in the previous section, he thought that the classical economists adopted labour essentially as a *measure* of the physical cost. Moreover, as will be made clear in Section 8, Sraffa was well aware that the political implications of the classical approach to distribution do not rest on the labour theory of value,³³ but rather on the social surplus and the possibility of its arbitrary division. However, he also recognized that in various passages the classical authors and Marx had an ambiguous position and actually referred to labour not only as the measure of cost, but also as the *cause* or the *source* of value. This was, according to Sraffa, a ‘mystical’ or ‘metaphysical’ conception of labour. Referring to Marx, he wrote:

The typical case of Marx’s metaphysics is his statement that ‘only human labour produces (causes) values’, ‘values are embodied human energy (crystallised)’: there is no doubt that he attached to it some metaphysical meaning. (D3/12/4:16)

The classical economists and Marx were prompted to hold this view about labour, according to Sraffa, because conceiving the cost of commodities as commensurate with the amounts of labour employed in their production led them to regard labour as a quantity, although ‘labour’ is the name of the whole process of production’ (D3/12/11:32). In Sraffa’s words:

It is the whole process of production that must be called ‘human labour’, and thus causes all product and all values. Marx and Ricardo used ‘labour’ in two different senses: the above, and

³⁰ Actually, Ricardo referred to the labour bestowed on the production of commodities as ‘the original source of exchangeable value’ (Ricardo, 1951–1973, vol. 1, p. 13).

³¹ In his analysis of the political implications of economic theory, Fetter wrote:

Labor is the source of value (exchange value, virtually market price, as he [Ricardo] used it); labor is the cause of value; labor produces all wealth. Naturally follows the ethical and political conclusion: if labor produces all wealth then labor should receive all wealth.

This conclusion was drawn almost immediately by contemporaries of Ricardo, and while the commonplace McCulloch was striving as a faithful disciple to prove the unqualified truth of the labor-theory against even the admissions of Ricardo himself, ‘the Ricardian socialists’ were drawing radical conclusions from it that in principle completely anticipated the later use of it by Karl Marx. (Fetter, 1923, 597–98)

Sraffa took the reference to Fetter’s (1923) article from Clark’s essay in Tugwell (1924). Cf. (D3/12/11:8).

³² This point will be considered again in Section 8.

³³ Sraffa was also familiar with Marx’s critique of Proudhon, who actually held that distorted view of Ricardo’s theory of value. Cf. (D3/12/5:36).

that of one of the factors of production ('hours of labour' or 'quantity of labour' has a meaning only in the latter sense).

It is by confusing the two senses that they got mixed up and said that value is proportional to quantity of labour (in second sense) whereas they ought to have said that it is due to human labour (in first sense a non measurable quantity, or rather not a quantity at all). (D3/12/11:64)

On the one hand, understood as a quantity, labour was used by the classical economists to measure the amount of food that constitutes the cost of different commodities. This was just a 'small error', if an error at all. On the other, understood as 'the whole process of production' and therefore not as a quantity, human labour is the source of wealth. The classical economists and Marx then 'got mixed-up', however, and sometimes regarded the quantity of labour not merely as the measure but also as the determinant of value.

We have seen how Sraffa considered this view as just a 'metaphysical' or 'mystical conception', as also emerges from the following manuscript of the spring of 1928:

'Labour'

There appears to be no objective difference between the labour of a wage earner and that of a slave; of a slave and of a horse; of a horse and of a machine; of a machine and of an element of nature (? this does not eat)

It is a purely mystical conception that attributes to human labour a special gift of determining value. Does the capitalist entrepreneur, who is the real 'subject' of valuation and exchange, make a great difference whether he employs men or animals? Does the slave-owner? (D3/12/9:89)³⁴

5. From labour to sacrifice

The measurement of cost in terms of labour, although essentially equivalent to the physical cost, was nonetheless misleading. In the previous section, we referred to the 'mystical' or 'metaphysical' conception of labour deriving from the confusion between labour as a quantity and as a process. Another ambiguity was related to the way in which the classical economists understood the amount of labour. On the one hand, they used it as a measure of the necessities given to workers—an objective quantity—but on the other hand, they also regarded labour as a sacrifice.³⁵ Referring to Ricardo, Sraffa, in the summer of 1927, wrote:

Thus to Ricardo's T{heory of} V{alue}, based on amount of labour, two interpretations can be given: 1) the subjective (psycholog{ical}), disutility one, 2) the objective (physical), necessities of existence one. He probably had not always clear in mind the distinction, but I believe that the latter is the one that underlies his T{heory of} V{alue}. (D3/12/3:47)³⁶

Sraffa regarded Adam Smith as the source of this possible confusion, referring in particular (cf. D3/12/4:4) to the well-known passage in the *Wealth of Nations* (1976, vol.

³⁴ The point expressed by Sraffa in this manuscript may be viewed in relation to Marshall's claim that 'free human beings are not brought up to their work on the same principles as a machine, a horse, or a slave' (1920, p. 504). Sraffa comments critically on this passage of Marshall's *Principles* in D3/12/7:105, which is more or less from the same period as D3/12/9:89, quoted here.

³⁵ As Marx noted in *Capital* (cf. Marx 1961–1962, vol. 1, p. 46), Adam Smith often referred to labour as a 'sacrifice of rest, freedom, and happiness'. Sraffa copied this passage by hand from the French edition (Marx, 1872–1875) of Marx's *Capital* (cf. D3/12/10:49).

³⁶ As seen in footnote 27, a similar claim is made in Sraffa's *lectures* (D2/4/3:35) with reference to Adam Smith, who, according to Sraffa, represented the cost of production in two distinct ways: i) 'toil and trouble' required for producing a commodity and ii) the stock of commodities supporting the workers.

II, p. 47, I.v.2)—which, as Sraffa noted, was quoted with approval by Ricardo too³⁷—where Smith states that ‘toil and trouble’ is ‘what every thing really costs’.

This passage allowed Marshall, many years later, to indicate Smith as the precursor of the conception of cost as sacrifice or disutility, namely the ‘real cost’. Sraffa copied these lines from Marshall’s *Principles* (1920, pp. 758, 759; App. B, 3):

A. Smith’s ‘highest claim to have made an epoch in thought is that he was the first to make a careful and scientific enquiry into the manner in which value measures human motive, on the one side measuring the desire of purchasers to obtain wealth, and on the other the efforts and sacrifices (or “Real Cost of Production”) undergone by its producers’. (D3/12/11:99, emphasis in original)

Marshall’s reference to Smith concerning the idea of cost in terms of efforts and sacrifices was deemed by Sraffa as a ‘futile and misguided’ attempt ‘to bridge over the cleavage and establish a continuity in the tradition’ (D3/12/4:2, note). In fact, according to Sraffa, the change from labour-cost to pain-cost (disutility) was a dramatic breach of the tradition of the classical political economy, so that the marginalists had no real forerunner among the classical economists and Marshall tried to force the interpretation of these authors for the purpose of hiding this fact.

A similar attempt was also made by Whitaker, who tried to maintain that a notion of pain-cost was at the basis of the labour theory of value Ricardo adopted:³⁸

In the writer’s judgement the presumption is that by the labour cost which regulates the exchange value of the commodities, Ricardo meant what we call pain cost. At one place, Ricardo said ‘difficulty of attainment’ is the true measure of value. It seems almost assured that this must mean ‘pain cost’. When cost is conceived as the ultimate essence of value, the cost will almost certainly be pain cost or ‘real cost’. (Whitaker, 1904, p. 137)

Sraffa criticized Whitaker’s interpretation of Ricardo’s theory very clearly and effectively:

Ricardo not pain cost

R[icardo]’s labour theory of value is based on the assumption that real wages are constant, and fixed at the level of habitual necessities. The principle of population is always there to see that this constancy is preserved by means of starvation or multiplication. Profits are a percentage of wages (which are the same thing as capital).

Therefore, since price is equal to wages and profits, and the rate of profits is equal in different industries given the number of hours of labour required for each of different commodities, their values will be proportional to the amount of labour embodied in each of them.

This is radically different from pain-cost; the latter assumes freedom of choice and active utilitarian calculation in the worker; hence the necessity of a wage that will compensate the pain he undertakes and will induce him to work: the worker’s subjective estimate of his disutility is essential to determine his wages and thus the value of his product. (D3/12/9:31)

For Sraffa, it was therefore very clear that the classical economists, notwithstanding some ambiguity or ‘mystical conception’ about labour, had no notion of cost in terms of sacrifice or disutility.³⁹ On the contrary, as shown in the previous sections, Smith,

³⁷ Cf. Ricardo (1951–1973, vol. 1, pp. 12, 13).

³⁸ Cf. also D3/12/10:56.

³⁹ In the document D3/12/11:10, commenting on a sentence taken from *Bye* (1924), who maintains that the classical economists explained cost in terms of disutility, Sraffa wrote that ‘[e]ven Mill had no notion of ‘sacrifice’ as cost, let alone the real classics.’

Ricardo and Marx's notion of cost 'was still near enough to be in many cases equivalent' to that of Petty and the Physiocrats (D3/12/4:2). Despite all that, Marshall and other marginalist authors tried instead to force the interpretation of some ambiguous passages by Smith and Ricardo for the purpose of attributing a notion of pain-cost to the classical authors, so as to assert an alleged continuity between the old and the new theory. Marshall, as we have already seen in Section 2, actually tried to present the latter as the former with the demand side added, that is, as a sort of 'rehabilitation', according to the modern view, of the classical economist.

Moreover, once the cost is conceived as 'efforts and sacrifices', then labour is no longer regarded as the only—or at least the major—determinant of cost. In accordance with Senior's theory of abstinence, the sacrifice of capitalists-savers who forego part of their present consumption—i.e. of their present utility—must also be taken into account.

Following Sraffa's reconstruction (see in particular D3/12/4:2 and D3/12/4:4), in the final decades of the nineteenth century, all the 'efforts and sacrifices' required by the production process, such as labour, abstinence and risk, were lumped together as disutility. The 'physical' idea of cost as an amount of 'things' or 'food' adopted by Petty and the Physiocrats thus degenerated into a 'psychological' notion of cost as 'disutility', thereby giving the theory of value a subjective rather than objective basis. In this way, 'the black night descended over P{olitical} E{conomy}' (D3/12/7:160) and its place was taken by a different science: economics. The differences between the two will be discussed in Section 7, while the next section will be devoted to Sraffa's critical assessment of what, at the time, he considered 'the modern theory'.

6. From sacrifice to inducement

'The last step in the wrong direction' (D3/12/4:4) was the evolution from the idea of cost as 'sacrifice' to its conception as 'inducement', in other words, from 'pain-cost' to 'opportunity-cost'. The sacrifices involved in working and saving are regarded as foregoing pleasant activities like leisure and consumption, so something must therefore be promised to workers and savers in order to induce them respectively to work and save. In the manuscripts considered here, Sraffa referred to this approach as 'the modern theory of cost' and saw it as due to Cassel, Davenport and Henderson (cf. D3/12/4:4 and D3/12/11:9).

On the one hand, in Sraffa's view, the theory of opportunity cost can be regarded as a logical implication of Marshall's conception of real cost as sacrifice (disutility). As he wrote:

being psychological, sacrifice is measured by incentives: incentive implies free choice, voluntary acceptance or refusal: and this implies in the factor of production the possibility of an alternative use, or of no use at all (which is in the present sense a form of use). The worker, if he has to be 'induced', this means that he can do something else of himself, and that this something else is preferable than work at the lower wage: the capitalist too must be assumed to have an alternative use, consuming {...}; only the landlord has no alternative use, therefore no inducement is required because he make no sacrifice, and, therefore «rent does not enter into cost of production {»}.⁴⁰ (D3/12/4:5(1, 2))

⁴⁰ As for rent, in the *lectures*, Sraffa changed his position and maintained that, according to the theory of opportunity cost, rent has to be included into cost (cf. D2/4/3:60–62).

On the other, however, the theory of opportunity cost reveals that it is impossible to regard the 'real cost' as a sum of 'efforts and sacrifices' and keep it independent of utility at the same time. According to Sraffa, this shows the inconsistency of Marshall's ideas of real cost and utility as two independent principles that, together, determine commodity values.

In particular, Sraffa wrote that if cost is to be regarded as a sum of sacrifices, the pleasant activities alternative to working and waiting must be set outside the analysis. If they are instead correctly taken into consideration, as with the theory of opportunity cost, the claim that costs are determined by these sacrifices would lead to a vicious circle:

these 'alternatives' (the giving up of which constitutes the sacrifice) have to be outside the field of our consideration, or else they involve us in a vicious circle {...}. Thus leisure is put outside the national dividend. {...} But after all it is a matter of allotment of expenditure, just as between socks & butter, and there is no greater difficulty in settling between leisure & socks.

As regards the 'sacrifice of waiting', this too is only regarded as a cost to be overcome because we have left out of consideration the alternative uses he made of it: this sacrifice consists only of giving up the advantages of the alternative uses. We must include these alternative uses within the field of the 'product' ('net product' of Ricardo, or National dividend), and then no more incentive will be required, as no 'sacrifice' will be involved in waiting. The alternative use to waiting is, of course, consuming. But in general, when the rate (or return) of interest is too low to induce a millionaire to lend his capital or to invest it himself in productive enterprise, he will not buy an enormous amount of food and proceed forthwith to eat a millionworth of steaks and chops, {...}; he will probably buy 'consumers' capital goods' such as motorcars, jewels, pictures, parks, etc. which will yield (from which he will draw) an annual income in services. {...} If we want to get a consistent definition of net income, we must include in it all these services: if we leave them out we shall be under the delusion that the capitalist undergoes a sacrifice for waiting, when he is simply giving up an alternative investment, we shall confuse cost with loss of utility. If we include them, waiting is no more a cost {...}. 'Waiting' becomes simply the choice made between two alternative investments: obviously it would be silly to say that the 'cost of saving' £ 100 in the form of 5% War Loan is the loss involved in giving up investing them in shares of Celanese: it would be a vicious circle to say that the interest in one investment is determined by the interest to be received in another, and viceversa. (D3/12/4:5(2-4))

According to Sraffa, once the opportunity-cost view is adopted, the idea of cost as a sacrifice vanishes because 'leisure' is just one of the consumption goods and 'waiting' is a matter of choice between alternative investments: capital goods or durable consumption goods. Therefore, if we try to determine wages and interest by the inducements to work and waiting, respectively, we end up in a vicious circle.⁴¹ The only result to be derived from the theory of opportunity cost is that factors of production are allocated across sectors in such a way that, for each of them, the last dose employed

⁴¹ To clarify this point, let us assume that there are two commodities, A and B, produced by means of a certain input available in a fixed amount. According to the theory of opportunity cost, the cost of production of commodity A—and hence its value—is determined by the value of the quantity of commodity B that is not produced because a part of the available amount of the input is devoted to the production of A. Following Sraffa, this argument may entail a vicious circle because the value of A depends on the value of B and in turn the value of B depends on the value of A for exactly the same reason.

Therefore, if leisure is regarded as a consumption good produced by means of labour, it is not an alternative to work—as labour is employed in its production too—but rather to other consumption goods like socks or butter. Accordingly, we cannot say that the value of socks is determined by the sacrifice due to the loss of leisure, as the latter depends in turn and for exactly the same reason on the former.

Once labour is allocated across sectors (leisure included) so that the last dose produces the same marginal utility in each of them, this marginal utility, with negative sign, is the opportunity cost of moving one dose of labour from a sector to another.

produces the same increase of utility in every sector. That amount of utility, with a negative sign, represents the opportunity cost of diverting one dose of the factor from one sector to another. In Sraffa's view, in this theory, cost cannot be regarded as an independent force—independent of utility—capable of contributing to the determination of commodity values.⁴² As he wrote:

A new theory of cost has been advanced in recent years, and finds widespread acceptance. That of alternative cost, or opportunity cost, (Davenport, Cassel, last chapter of Henderson). It is not new in fact: it is only the old 'effort and sacrifice' expressed openly. It implies a vicious circle. It confuses the ideas, because more explicitly than the other recognises that disutility is only a loss of utility, and still insists in regarding them as two different things. (D3/12/4:5(6))

7. Physical cost vs psychological cost

Once the cost is understood as what induces workers and capitalists to take part in the production processes, the dramatic difference versus the conception of physical cost adopted by Petty and the Physiocrats emerges quite clearly. The physical cost is made up of the commodities necessary for production, which are objectively determined and actually employed if the process is to take place, and can therefore be directly observed and measured. Conversely, what induces workers and savers to take part in production instead rests on psychological considerations and can take the form of the promise of commodities to be delivered at the end of the process.

This last remark underlies Sraffa's methodological criticisms of the 'modern' standpoint. Since cost can be regarded, in a certain sense, as the 'cause' of output, Sraffa raises the following objection:

Physical costs

Another very important difference between physical costs and psychic costs (besides enabling and inducing—rather, deriving from it) is that the former have to be paid (i.e. borne by somebody) before the beginning of production, since they must 'enable' and they have actually to be destroyed in the course of production; the latter have to be paid (or distributed) after production has been made, they are simply a way of distributing the surplus, and this cannot be distributed before it exists, i.e. at the end of the period; if it has to induce only, at the beginning it is sufficient a promise, and at the end there is only legal obligation to fulfil it, but no material physical necessity, as in the case of enabling.

Now, the past cost can be a cause, but how can the future be a cause? (D3/12/10:97)

The answer is given by Sraffa in an interesting paper in which he employed Aristotle's distinction between two different sorts of causes, 'efficient' and 'final', also giving a very suggestive example:

Carrots. Efficient & final causes

'Efficient causes' are facts of the past that act on the present: 'final causes' are facts of the future that act on the present. The existence of the latter is at the best dubious and they are better called 'illusions'.

⁴² Sraffa was particularly explicit on this point in the *lectures*. As he wrote with regard to the definition of real cost given by Henderson (1921, pp. 164–65):

no room is left in this theory for any notion of cost and for any distinction between rent & cost. The substance of the matter is to reduce all determination of value to marginal utility. To retain the name real costs, as Mr. Henderson does, and to say that nothing is changed in the symmetry between utility and cost is positively misleading. Apart from the utility aspect of the question, all that opportunity cost says is that equal units of a commodity or a factor of production fetch the same price from different buyers on a competitive market. (D2/4/3:57, 58)

The classical P{olitical} E{conomy} dealt only with the first sort of causes, i.e. of ‘material things’ that have existed in the past. Modern economics deals with the second class, i.e. hopes for the future, such as utility, abstinence, disutility, etc.; these things, it must be noticed, refer only to the foreseeing of future acts. The economists have noticed this point; and have tackled the question whether it is the utility I shall actually get in the future through consumption that determines my demand price, or whether it is that very different thing—the utility I now imagine that I shall get in the future. Thus, P{olitical} E{conomy} was a science of things, Economics is a science of illusions.

Example. Carrots are necessary if we want a donkey to work. But there are two sorts of carrots: those which we must have given to it before in order to enable it to work (otherwise it would be dead) and those you must show to it and promise to it in order to induce it to work.

There is a great difference between the two:

The first is a definite number or weight of real carrots, determined by physiological conditions, and—since they have been actually consumed, it has been possible to weigh them and to know exactly to the ounce their quantity: no tricks can be played about them.

The others are different. They needn’t even be real carrots,—it may be a mashed paper carrot, rubbed against real carrots to take up the smell, which we simply show to the donkey, or it may be a stick, or it may be that at the end of its working day we fulfil our promise and give it its evening ration of carrots. But I suggest that we don’t do this {i.e. using mashed paper carrots} because we are honest or because we don’t want to damage our credit with the donkey, but simply because we want to enable it to work tomorrow.

Now, Economics deals with mashed paper carrots and whips, P{olitical} E{conomy} dealt with real carrots. (D3/12/10:61, emphasis in original)

In this extremely interesting paper, Sraffa thus outlined the difference between political economy and economics by means of the distinction between efficient and final causes. And since efficient causes alone—as maintained by Bacon, Spinoza and Descartes in particular—are to be taken into consideration in scientific investigations, final causes being instead regarded as fictions, he concluded that political economy alone deals with ‘material things’, namely the real working of actual phenomena, while economics deals with ‘illusions’.

The carrots inducing the donkey to work can just be a promise that may or may not be kept at the end of the working day. Conversely, with the means which enable the production, i.e. with the physical costs, no trick is possible because they are necessary and actually consumed.⁴³ That also brings about the possibility of their observation and objective measurement.

8. ‘What has happened then?’

In the previous sections, we followed Sraffa’s analysis as to the fundamental steps in the history of the concept of cost, from Petty to the ‘modern’ authors. As Sraffa

⁴³ The same point was also expressed by Sraffa in a manuscript of November 1927:

Cost is means not inducement.

The possibility to produce depends upon the absolute real size of the remuneration: there is no trick possible, it is a physical material necessity. The willingness to produce depends upon the way in which payment is made: time wages or piece wages, premiums etc (which can be deducted from initial wage, so as to make the total wage equal to physical necessities), payment conditional upon delivery of the goods (Robertson, in *Economica*) etc. It is a psychological necessity only, and can be overcome by tricks, cheating, etc. (D3/12/11:98, emphasis in original)

pointed out, rather than an evolution, there was actually a degeneration of the notion of cost which corresponded to a radical transformation of the theory of value and distribution and, therefore, of a fundamental part of economic science. Accordingly, the science itself, to stress this transformation, changed its name, from *Political Economy* to *Economics*, so as to emphasise the role played by the analytical arguments.

As seen in Section 5, Sraffa, thanks to the reconstruction we have tried to outline here, was able to prove that—despite Marshall's and Whitaker's attempts at pointing to Smith and Ricardo as alleged precursors of the new idea of cost—the old theory was not embedded in but rather submerged by the advent of the new one. Now, the question is: what determined this change?

Metaphysics

In this theory it will be thought that the important part is the analytical and constructive.⁴⁴ The significance of the historical side will be missed. And yet, this is the truly important, that which gives us a real insight into the mystery of human mind and understanding, into the deep unknown relations of individuals between themselves and between the individual and society, (the social, or rather the class mind).

It is terrific to contemplate the abysmal gulf of incomprehension that has opened itself between us and the classical economists. Only one century separates us from them:⁴⁵ how can we imagine to understand the Greeks and the Romans?⁴⁶ The classical economists said things which were perfectly true, even according to our standards of truth: they expressed them very clearly, in terse and unambiguous language, as is proved by the fact that they perfectly understood each other. We don't understand a word of what they said: has their language been lost? Obviously not, as the English of Adam Smith is what people talk to-day in this country. What has happened then? (D3/12/4:14)

The answer to this question is given by Sraffa in the last part of the following manuscript, in which he connects historical and social phenomena with the 'degeneration' of the theory.

Degeneration of cost & value

A. Smith & Ricardo, & Marx indeed began to corrupt the old idea of cost,—from food to labour. But their notion was still near enough to be in many cases equivalent.

The decomposition went on at a terrific speed from 1820 to 1870: Senior's abstinence and Mill's mess of the whole thing. Cairnes brought it to the final stage 'sacrifice' {...}.

Simultaneously a much bigger step was taken in the process of shifting the basis of value from physical to psychical processes: Jevons, Menger, Walras.

This was an enormous breach with the tradition of Pol{itical} E{conomy}; in fact, this has meant the destruction of the classical P{olitical} E{conomy} and the substitution for it, under the old name, of the Calculus of Pleasure & Pain (Hedonistic).⁴⁷

⁴⁴ {Sraffa's footnote:} This is merely a toy, an intellectual gymnastic, which may give us some pleasure, because it suits our habit: it clears up some relations, but tells nothing about the nature of things: now, the relations between things obviously don't exist, they are merely a creation of our minds: do the things themselves exist, or are they merely our imaginations? This is the mystery on which no theory [can (or has ever been able, at least)] throw any light: nor does the present one. It is merely something comparable to a cigarette of the mind—or rather a dose of morphine.

⁴⁵ {Sraffa's footnote:} I say a century: but even ½ a century after, in 1870, they did not understand it. And during the preceding century an obscure process of 'disunderstanding' had been going on.

⁴⁶ {Sraffa's footnote:} Or rather, the extraordinary thing is that we do understand, since we find them perfect, Roman law and Greek philosophy.

⁴⁷ {Sraffa's footnote:} It is unfortunate that so much time has been taken to change the name of P{olitical} E{conomy} into Economics: but it is appropriate: it marks the cleavage, or rather the abyss, between the two.

When the Jevonsians turned back to write their own history, they found with pride (it ought to have been with dismal) that they had no forerunners amongst P{olitical} E{conomists}; their forerunners were mainly two or three cranks, an engineer Dupuit, a mathem{atician} Cournot, a Prussian Civil Servant Gossen, who had only cultivated P{olitical} E{conomy} as a hobby.⁴⁸

They had not the slightest knowledge of the works of the Classical economists. They drew it out of their fancy. In fact, no competent P{olitical} E{cono}mist, with a conscience of his tradition, would have *degnato* to entertain those views.

What had happened in the meantime, to change so much the mind of the economists, and induce them to scrap all that had been done up to that time? {...}

Socialism has been the cause of all this. In fact, classical P{olitical} E{conomy}, with its surplus to be arbitrarily divided, leads straight to Socialism. When after the death of Ricardo the first timid attempts of using socialistically his Theory of value were made {...}, Senior & Mill & Cairnes rallied to the defence by making cost psychological.

But when the mass attack of Marx, and the threat of the rampant International and the Paris Commune came, a much more drastic defence was called for: not only sacrifice, but utility,—and simultaneously J{evons} M{enger} W{alras} and their success. The classical economy was becoming too dangerous as a whole, it had to be scrapped bodily. It was a burning house which threatened to set to fire the whole structure and foundations of capitalist society—it was forthwith removed. (D3/12/4:2(1, 2))

In Section 4, it was seen that, after Ricardo's death, the labour theory of value was improperly used by the Ricardian socialists for political aims. A misunderstanding about the meaning and the role of the labour-value, as well as some ambiguities in the claims of the classical economists, led them to the naïve statement that since labour is the cause of the value of the entire product, then wages must take the entire (net) income. Therefore, when Jevons developed a theory of value grounded on marginal utility, he made explicit his intention to contrast the point of view, which he attributed to the alleged 'Ricardo-Mill school', according to which labour is the cause of value. Even the initial critical reaction to Marx's theory was formulated by marginalist authors⁴⁹ in Jevons' terms, namely as if the fundamental point at issue was whether labour or (marginal) utility is the ultimate cause of value.⁵⁰

Sraffa, on the contrary, grasped the matter in the right way. First, as seen in Sections 3 and 4, following on from his reconstruction, Ricardo and Marx, notwithstanding some ambiguous passages, used labour primarily as a measure of the cost. The 'mystical' or 'metaphysical' conception of labour was instead the result of a misunderstanding, a

⁴⁸ {Sraffa's footnote:} I do not mean by this that cranks can never find new theories: on the contrary, when a big breach with tradition is required, their intervention is usually necessary. What I mean to prove is that there has actually been a breach with tradition, and the intervention of the cranks is an element of the evidence; and that Marshall's attempt to bridge over the cleavage and establish a continuity in the tradition is futile and misguided.

⁴⁹ Cf. in particular Böhm-Bawerk (1890) and Wicksteed (1884).

⁵⁰ Following the convincing reconstruction of the early development of the marginalist school given by Campus (1987), this sort of reaction to the socialists' ideas was due, on the one hand, to the confused or even incorrect way in which many Ricardian socialists made their case. On the other hand, it reflected 'the impasse of the marginalist theory of distribution at that time' (Campus, 1987, pp. 11–12). More precisely, without a theory of distribution coordinated with their theory of value, the marginalist authors were prompted to follow a line of criticism 'of an "esoteric" nature, i.e. that of simply contrasting the utility theory with the labour theory of value' (p. 12).

It was thus with Marshall's *Principles*—leaving aside Walras' *Elements*, which did not have a great impact at that time—that the marginalist theory arrived at a first solution of the problem.

sort of side effect which did not have a real role in their arguments. Second, as emerges from the manuscript cited above, Sraffa understood precisely what the central point is. He did not follow the Ricardian socialists and the ‘Jevonians’, but rightly grasped that it is the ‘surplus to be arbitrarily divided’—and not the labour theory of value—that ‘leads straight to Socialism’.

9. Conclusions

In these pages we have followed Sraffa in his reconstruction of what he called the ‘degeneration of the notion of cost’. It, according to Sraffa, passed through four different phases or conceptions, which can be summarised as follows:

- Physical cost or ‘food’ (Petty and the Physiocrats)
- Labour-cost (Smith, Ricardo and Marx)
- Pain-cost or ‘sacrifice’ (vulgar economists: Senior and Cairnes, and, in terms of ‘disutility’, early marginalist theory: Marshall)
- Opportunity-cost or ‘inducement’ (modern theory: Davenport, Cassell and Henderson).

Thanks to this analysis of the evolution of the notion of cost, as we have tried to show, Sraffa was able to distinguish two different approaches to value and distribution. There is, on the one hand, what Sraffa considered the ‘right notion of cost’, the one adopted by Petty and the French Physiocrats, which arrived then, although measured in terms of labour, at the classical economists and Marx. On the other hand, there is the ‘modern theory’ and the notions of pain-cost and opportunity-cost. While the first notion is physically and objectively measurable, being the cost constituted by what is necessary in order to enable the production process to take place, the last notions of cost depend on psychological elements and the measurement—at least outside the partial equilibrium approach—may entail the logical difficulties highlighted by Sraffa (cf. in particular Sections 2, 6 and 7).

Therefore, as Sraffa wrote, there was ‘an enormous breach with tradition of Political Economy’, so that ‘Marshall’s attempt to bridge over the cleavage and establish a continuity in the tradition’, or even to reconcile Jevons with Ricardo, is deemed by Sraffa as ‘futile and misguided.’ Having been developed as a ‘conscious reply’⁵¹ to the socialist implications of the classical political economy, the marginalist theory should necessarily be, and in fact is, appreciably different from the latter. The classical theory was not embodied in the new one, as Marshall ably tried to put it, but rather was ‘submerged and forgotten since the advent of the “marginal” method’ (Sraffa, 1960, p. v).

Bibliography

- Böhm-Bawerk, E. 1890. *Capital and Interest: A Critical History of Economical Theory*, London, Macmillan
- Böhm-Bawerk, E. 1894. The ultimate standard of value, *Annals of the American Academy of Political and Social Science*, vol. 5, 1–60
- Bye, R. 1924. Some recent developments of economic theory, in Tugwell, R. G. (ed.), *The Trend of Economics*, New York, Alfred Knopf, 271–300
- Campus, A. 1987. Notes on cost and price: Malthus and the marginal theory, *Political Economy—Studies in the Surplus Approach*, vol. 3, no. 1, 3–17

⁵¹ In a passage Sraffa copied (D3/12/11:8), J. M. Clark (1924, p. 83) noted that, referring to Fetter’s article (1923), the development of the marginal-subjective doctrine was ‘a conscious reply to Marx’.

- Campus, A. 2000. Scontri e confronti tra teorie alternative del valore: Marshall e la controversia costo-utilità, in Pivetti, M. (ed.), *Piero Sraffa: Contributi per una biografia intellettuale*, Roma, Carocci
- Cannan, E. 1893. *A History of the Theories of Production and Distribution in English Political Economy from 1776 to 1848*, London, Percival and Co.
- Clark, J. B. 1892. The ultimate standard of value, *Yale Review*, vol. 1, no. 3, 258–74
- Clark, J. B. 1893. The ultimate standard of value, *Publications of the American Economic Association*, vol. 8, no. 1, 82–87
- Clark, J. M. 1924. The socializing of theoretical economics, in Tugwell, R. G. (ed.), *The Trend of Economics*, New York, Alfred Knopf, 73–105
- De Vivo, G. 2001. Some notes on *Sraffa Papers*, in Cozzi, T. and Marchionatti, R. (eds), *Piero Sraffa's Political Economy: A Centenary Estimate*, London and New York, Routledge
- Fetter, F. A. 1923. Value and the larger economics, *Journal of Political Economy*, vol. 31, no. 5, 587–605
- Garegnani, P. 2004. Di una svolta nella posizione teorica e nella interpretazione dei classici in Sraffa nei tardi anni 20, in *Atti dei Convegni Lincei n. 200*, Roma, Accademia Nazionale dei Lincei, 159–94
- Garegnani, P. 2005. On a turning point in Sraffa's theoretical and interpretative position in the late 1920s, *European Journal of the History of Economic Thought*, vol. 12, no. 3, 453–92
- Henderson, H. 1921. *Supply and Demand*, London and Cambridge, Nisbet/Cambridge University Press
- Jevons, W. S. 1888. *The Theory of Political Economy*, 3rd ed., London, Macmillan
- Kurz, H. D. 1998. Against the current: Sraffa's unpublished manuscripts and the history of economic thought, *European Journal of the History of Economic Thought*, vol. 5, no. 3, 437–51
- Kurz, H. D. 2003. The surplus interpretation of the classical economists, in Biddle, J. E., Davis, J. B. and Samuels, W. J. (eds), *The Blackwell Companion to the History of Economic Thought*, Oxford, Blackwell Publishers, 167–83
- Kurz, H. D. 2006. The agents of production are the commodities themselves: on the classical theory of production, distribution and value, *Structural Change and Economic Dynamics*, vol. 17, 1–26
- Kurz, H. D. and Salvadori, N. 2005a. Representing the production and circulation of commodities in material terms: on Sraffa's objectivism, *Review of Political Economy*, vol. 17, no. 3, 69–97
- Kurz, H. D. and Salvadori, N. 2005b. Removing an 'insuperable obstacle' in the way of an objectivist analysis: Sraffa's attempts at fixed capital, *European Journal of the History of Economic Thought*, vol. 12, no. 3, 493–523
- Marcuzzo, M. C. 2001. Sraffa and Cambridge economics, 1928–1931, in Cozzi, T. and Marchionatti, R. (eds), *Piero Sraffa's Political Economy: A Centenary Estimate*, London and New York, Routledge, 81–99
- Marshall, A. 1920. *Principles of Economics: An Introductory Volume*, London, Macmillan
- Martins, N. O. 2014. *The Cambridge Revival of Political Economy*, London and New York, Routledge
- Marx, K. [1863] 1963. *Theories of Surplus Value: Volume IV of Capital*. Moscow: Progress Publishers.
- Marx, K. 1872–1875. *Le Capital*, traduction de M. J. Roy entièrement révisée par l'auteur, Paris, Maurice Lachatre
- Marx, K. 1924. *Histoire des doctrines économiques*, tomes I–VIII, publiée par Karl Kautsky, traduit par J. Molitor, Paris, Alfred Costes
- Marx, K. 1961–1962. *Capital*, 3 vols, Moscow, Foreign Languages Publishing House
- Pasinetti, L. L. 2001. Continuity and change in Sraffa's thought: an archival excursus, in Cozzi, T. and Marchionatti, R. (eds), *Piero Sraffa's Political Economy: A Centenary Estimate*, London and New York, Routledge, 139–56
- Ricardo, D. 1888. *The Works of David Ricardo, With a Notice of the Life and Writings of the Author*, edited by J. R. McCulloch, London, John Murray
- Ricardo, D. 1951–1973. *The Works and Correspondence of David Ricardo*, 11 vols, edited by P. Sraffa with the collaboration of M. H. Dobb, Cambridge, Cambridge University Press

- Signorino, R. 2005. Piero Sraffa's lectures on the advanced theory of value 1928–31 and the rediscovery of the classical approach, *Review of Political Economy*, vol. 17, no. 3, 359–80
- Sraffa, P. 1925. Sulle relazioni fra costo e quantità prodotta, *Annali di Economia*, vol. 2, 277–328
- Sraffa, P. 1926. The laws of returns under competitive conditions, *Economic Journal*, vol. 36, no. 144, 535–50
- Sraffa, P. 1960. *Production of Commodities by Means of Commodities*, Cambridge, Cambridge University Press
- Whitaker, A. C. 1904. *History and Criticism of the Labor Theory of Value in English Political Economy*, New York, Columbia University Press
- Wicksteed, P. H. 1884. *Das Kapital: a criticism*, *To-Day*, vol. 2, 388–409