Notes on Exploitation and the Theory of Value in Marxian Economics

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"The importance of Marx's theories is … wholly *emotional*" (F.Y. Edgeworth, 1921).

"Marxian economics appears to be infinitely superior to modern orthodox theory in its sense of reality. Marx grasps the kernel of reality, its pressing problems and fundamental changes, the transformation of small scale production into large scale, the corresponding conglomeration of formerly independent workers as dependent laborers, the related transformation of a smoothly working competitive market into a market hampered by manifold monopolistic elements.... [Nevertheless Marx's] labor value theory is, first, logically untenable, second, inapplicable to the practical problems arising within capitalism, [and] third, unnecessary for the true objectives of the Marxian theoretical problem..." (E. Heimann, 1937).

This paper critically evaluates the role of the concept of exploitation, and its connection to the theory of value, in Marxian economics. Exploitation bears a close, and somewhat complicated, relationship to the labor theory of value. The latter has been the target of various critiques, most notably by Böhm-Bawerk, Bortkiewicz and Steedman, and is no longer held to provide a robust explanation of price. Yet it is still widely maintained that Marx's labor value analysis provides insights about how capitalism works that cannot be obtained through other means. Edgeworth's remark that Marx's significance is exclusively "emotional" is not true, of course; yet one cannot help but sense that the labor theory of value (a term that Marx himself never used) continues to exert a strong emotional pull that has to some degree obscured his genuine analytical contributions.

The difficulties operate on two levels. First, on the level of how Marxian economists communicate with one another, differences over how Marx ought to be interpreted can be distracting and counterproductive. Marx wrote before economics had acquired a unified language and conceptual framework. Moreover, he had not resolved to his own satisfaction many of the problems upon which he was working: his failure to complete Volumes II and III of *Capital* was due as much to this as to illness and the distractions of his political activities. To the extent that Marx had not fully worked out his own ideas on issues like the relation between labor values and prices of production, no definitive reading is possible. Yet debates over such matters continue to absorb a good deal of intellectual energy. I do not mean to suggest that we ought not to debate what Marx—or Keynes or Ricardo or Smith—really meant: these are interesting questions, and trying to tease out the answers to them is how we extract insight from the writers of the past. But when these sorts of questions are transformed into litmus tests for who is a true Marxist or a true Keynesian, they become actively harmful to useful discussion.

Second, the attachment to Marx's labor value analysis hinders communication with non-Marxian economists. Joan Robinson tells us that "Keynes … was allergic to Marx's writing" (*Essay on Marxian Economics*, p. vi). She meant Marx's dialectical rhetoric, which Keynes found both impenetrable and aesthetically repellent. Robinson praised Marx's "penetrating analysis of exploitation" (p. viii), but she had no use for his value theory—"metaphysics," she called it, using one of her favorite epithets—and she equated exploitation with the idea that workers do not receive the whole of the net product, and she quantified the degree of exploitation in terms of the ratio of aggregate profits to the aggregate wage bill.

The word exploitation originated in the morally neutral concept of explication, and came to mean (and in some contexts still does mean) making the most effective use of a resource or an opportunity. It acquired a morally unsound connotation in English only in the mid-nineteenth century, at about the time that Marx was beginning his economic studies, when social reformers made it apply to human beings (as opposed to just objects or situations). And in fact Marx uses the word in this way in his *Economic & Philosophic Manuscripts of 1844* (p. 62). He appears to have read Ricardo by then, though his thinking on theoretical economic questions was still in an embryonic stage. *The Poverty of Philosophy*, written just two years later, exhibits a much more sophisticated grasp of theoretical economics and a deeper familiarity with Ricardo's work. By the time of his critique of Proudhon, Marx had arrived at many of the essential elements of his account of exploitation. He recognized that workers can be exploited because they have been alienated from the means of production through a historical process of expropriation and technological transformation. This insight, and the method of analysis by which he arrived at it, are impressive scientific achievements. But they have nothing to do with the labor value analysis of *Capital*, which Marx did not formulate until at least a decade and a half later.

What, then, was the function of the value analysis? The answer lies in the efforts of Marx's classical predecessors to explain the rate of profit. The interest of the classical economists in understanding the forces that regulate the profit rate stemmed from their belief that its magnitude determines the rate of capital accumulation. Classical political economy saw competition as the central coordinating mechanism within capitalism. In the absence of impediments to the mobility of resources, intersectoral capital flows push outputs and market prices toward their long-period normal levels, so that the profit rate will tend to equalize across all lines of enterprise. The constellation of prices, outputs and the real wage consistent with the establishment of a uniform profit rate reflects the dominant and systematic forces operating on prices and distribution.

A distinctive feature of the classical analysis of distribution is the central role it assigns to the opposition of class interests—in particular between workers and capitalists, but also, as in Ricardo's writings, between capitalists and landowners. If we abstract from rents, within this framework, the share of aggregate income received by the owners of capital represents a surplus obtained after deducting from the social product the consumption goods necessary for the sustenance and reproduction of the working class, and the commodities used up in the production process, including depreciated capital. The profit rate depends upon the magnitude of this surplus relative to the quantity of capital utilized in production.

Here a complication arises. The social product, the consumption of workers, and the fixed and circulating capital that enter into production are not scalars: they are vectors comprised of numerous different types of commodities. Before the profit rate can be established as a ratio of the surplus to the quantity of capital utilized in production, these vectors must be made commensurable. An obvious way to proceed would be to weight the components of the vectors by their long-period prices of production, so that the numerator and denominator of the ratio appear as magnitudes of monetary value. But since a normal return on capital is an element of cost, prices themselves depend upon the profit rate and therefore cannot be treated as known prior to the determination of the latter. The solution to this puzzle, as is now well known, requires that relative prices and the profit rate be determined simultaneously (see Sraffa, *Production of Commodities*). Ricardo and Marx, however, confronted the problem long before economic science became a mathematical discipline; they had to look elsewhere for a solution.

In the *Principles* (1821), Ricardo supposed that commodities exchange approximately in proportion to the quantities of labor that enter into their production. On this assumption the profit rate can be determined as a ratio of quantities of labor-time. Ricardo realized that this solution was imperfect since, owing to sectoral differences in capital structure, commodities do not generally exchange in proportion to the quantities of labor embodied in them. Still, despite its limitations, the labor-embodied approach enabled him to establish important and robust results. Ricardo was the first theorist clearly to grasp: (i) that the profit rate and the real wage are related to one another in a systematic way, and that the properties of the trade-off between them depend upon the technical conditions of production; (ii) that a commodity's price varies not only with the quantity of labor required to produce it, but also with changes in distribution; and (iii) that the direction and magnitude of the variations in a commodity's price, consequent upon a change in distribution, depends upon the proportions in which labor and produced inputs enter into the production of that commodity relative to the proportions in which they enter into the production of the *numéraire*.

Ricardo, then, developed his labor-embodied approach in order to address a technical problem, relating to the measurement of capital, that arises from the interdependence of prices and the profit rate. Marx confronted the same problem in his effort to provide an account of capitalist production relations. As with Ricardo, his labor-value analysis is a technical device designed to isolate an objective relationship, between wages and the profit rate, that he was not equipped to expose by other means.

Marx's approach to the puzzle is not identical to Ricardo's, though. Ricardo supposes that commodities exchange roughly in proportion to their labor-values; if one can find the right standard of value, then distribution-induced price changes will counterbalance each other in the aggregate, so that variations in the profit rate could be attributed to changes in the amounts of labor required to produce wage goods and capital goods. Ricardo drew no sharp distinction between value and price: he generally used the word value to mean a commodity's long-period normal price. But a unique aspect of Marx's theoretical system is his assertion that something called value exists which is different from and analytically prior to price. Marx in effect *defined* value as the amount of socially necessary labor directly and indirectly embodied in a commodity. Price is the form in which value manifests itself; but the two are not the same thing, and value is the more fundamental category.

Marx appears to have adopted labor-values as the units of an accounting system designed to reveal certain essential aspects of capitalist reality, presumably aspects that could not have been uncovered by other means. The labor-value analysis was not necessary to demonstrate that capitalist production relations generate profits through exploitation. Exploitation occurs when capitalists appropriate part of the net output that workers produce. That this is a feature of capitalism is evident, and there is no need for a special analytical device to establish the presence of the phenomenon. Nor does one need to express one's accounts in units of labor-time in order to show that capitalist exploitation is sociologically complex or that it inflicts upon workers a historically specific form of alienation.

As with Ricardo, Marx's value analysis was intended to expose the existence of a necessary relationship between the wage and the profit rate. The argument is well known. Within the capitalist mode of production, workers' labor-power—their capacity to work—is a commodity and therefore has value. As with all commodities, the value of labor-power is the amount of abstract labor required for its production. If the wage is some biologically and socially determined norm, then the value of labor-power is the amount of socially necessary labor-time embodied in the typical wage basket. The capitalist purchases a worker's labor-power for a certain amount of time, say a ten-hour working day. If the value of a day's wages is equal to five hours of labor, then after five hours' labor the worker has generated an amount of value just equal to the value of his labor-power. Any additional work he performs creates value in excess of what is required to reproduce his capacity to work. This surplus-value is the basis of profits. Unlike Ricardo's approach, Marx's procedure does not rely upon the supposition that commodities exchange in proportion to their labor-values, though of course in Volume I of *Capital* he does make this assumption in order to render transparent "the laws of surplus-value" that regulate the profit rate. Instead, Marx contends that the total mass of profits coincides with the total mass of surplus-value, and that the ratio of the latter to the aggregate quantity of constant and variable capital, reckoned in labor-value terms, determines the general rate of profit. In Volume III he then uses the profit rate, so determined, to transform values into prices of production.

Neither Marx nor Ricardo put forth any doctrine that can properly be called a "labor theory of value"; it is no accident that the term cannot be found in their writings.

Ricardo had *a cost of production theory of price* (in which, to be sure, he regarded labor as the principal influence on cost). Marx had *a labor definition of value*. But they both understood the profit rate to depend upon the technical conditions of production and the real wages of labor. Labor plays somewhat different roles in their theories of the profit rate; but for both the role was largely technical.

I do not mean that this was the *only* use to which he put the labor-value analysis. Marx was a sophisticated thinker whose training in philosophy exerted a powerful influence on the way he analyzed social phenomena. We know from his *Economic and Philosophic Manuscripts* that he saw the organization of work as the basis of oppression, and its *re*organization as the key to human liberation. His humanistic philosophical views are interwoven throughout his scientific discussion of how capitalism functions. This aspect of Marx's rhetorical style complicates the job of interpreting his economic writings. In particular, it throws difficulties in the way of disentangling the role of labor in his philosophical thinking from the role of labor-values in his analysis of the profit rate. But to acknowledge that these two dimensions of Marx's thought are connected does not mean that labor-values were essential to what he was trying to expose in his analysis of the profit rate.

The many defenders of Marx who insist that the centrality of exploitation to capitalist production relations cannot be grasped without Marx's labor value analysis are mistaken. To be clear, exploitation, as Marx understood it, is a real phenomenon, and is a characteristic of capitalistic production relations. But it does no one on the left—Sraffian or otherwise—much good to place exploitation at the center our scientific discourse. We can just as fruitfully talk about class conflict, bargaining power, living standards, inequality in the distribution of income and wealth, etc.

On matters of structure, the approaches of Marx and Ricardo hardly differ from one another. Where Ricardo makes a possibly questionable empirical assumption (commodities exchange more or less in proportion to embodied labor times), Marx makes a certainly indefensible theoretical assertion (the normal rate of profit is equal to and determined by the ratio of surplus labor to the labor time embodied in constant and variable capital). There is nothing in Ricardo that opens a door for vulgar economists. The Ricardian school proper was always quite small because an influential vulgar economy tradition, dating back to the mercantilist period, never faded from the scene, and dominated economic discourse even during the years of Ricardo's widest influence: e.g. J. B. Say, Malthus, Senior, and even McCulloch, who was at best only partially Ricardian. Vulgar economy, unlike classical political economy, was never "submerged and forgotten" (to use Sraffa's expression). So Marx was off-target to suggest that Ricardo's analytics gave aid and comfort to the hired guns of vulgar economy.

This brings us to the question of how Marx constitutes an advance over Ricardo. There are several dimensions of Marx's work that carry our understanding of economic and historical processes forward in significant ways.

- There is first of all the method of historical materialism and the associated idea that the evolution of the mode of production shapes the ideological, cultural, scientific and institutional superstructure of a society.

- Where Ricardo's main concern, vis-à-vis distribution, was the class antagonism between capitalists and landlord, Marx shifted the focus to the conflict between capitalist and worker. In this he was no doubt influenced by the Ricardian socialists who wrote during the three decades after Ricardo's death, notably Hodgskin and Bray.

- The intersectoral analysis of *Capital* Vol. II, which explicitly models the economy as a self-reproducing system in which machines enter into the production of machines, resurrected the physiocratic idea of the interconnectedness, the layered nature, of production. This insight, now a commonplace, has enormous practical and analytical implications. It is the basis of modern input-output analysis. It underpins the structural complexities of the price system which Piero Sraffa, Pierangelo Garegnani and Luigi Pasinetti drew upon to expose the defects of the orthodox theory of distribution. And it is a key element of Kalecki's business cycle model.
- Marx's crisis theory and his critique of Say's Law anticipated much of Keynes's economics. This in fact was the aspect of Marx's work that Robinson thought most worth developing in 1942.
- Marx's analysis of technological unemployment was an important contribution. Though technological unemployment drifted off economists' radar screens after the Keynesian revolution, the topic was at the center of the work of many of the economists who emigrated from fascist Germany and Austria in the 1930s.
- The idea of the financial system as an engine for the concentration of wealth remains relevant (e.g. D. Henwood's *Wall Street*).

None of these contributions is grounded in, requires, or is enhanced by Marx’s labor value analysis.

The question relating to exploitation that often arises in the sort of discussion we are having now is whether one needs to conduct one's analysis in terms of labor values in order to derive insight into exploitation. My own feeling is that the concept of exploitation is not particularly useful to a scientific understanding of how capitalism works: it's a value-loaded label that resonates with people who already have a pretty good sense of the brutality of capitalism. I do not mean to say that capitalism isn't exploitative. It surely is. But that’s a value judgment.

Nor do I mean to suggest that Marx's discussion of exploitation contains nothing of scientific value. On the contrary, and as I have already noted, his insight that the transition from feudalism to capitalism was accompanied by the separation of workers from the means of production is central to any explanation of capitalist class relations—and is a significant advance over anything in Smith or Ricardo. (Smith only hints at something like this in his discussion of the conflict between masters and workers over wages.) But the scientific content of this insight can be, and probably ought to be, articulated without recourse to the word exploitation.

We can define exploitation in purely technical terms—the ratio of labor time embodied in the net social product to the labor time embodied in wage goods—but that conveys no sense of the coercive nature of wage labor which is surely one hallmark of an exploitative economic system. And the coercive nature of capitalist production relations can be adequately described without measuring ones accounts in units of labor time. What matter, it seems to me, are the power imbalances stemming from workers’ alienation from the means of production. We can talk about these clearly enough without adopting Marx's labor value analysis.

Moreover, I don't see how this is substantively different from the argument that workers are exploited to the extent that they do not receive the whole of the net product: they produced it all, and if capitalists, who didn't produce any of it, are able to expropriate a part of it because they own the means of production, that amounts to a taking and hence to an injustice. The existence of any nonproductive class means that some members of society are toiling for the benefit of others, for otherwise the nonproductive class would cease to exist. One doesn't need to measure the economy's accounts in units of labor time to suss this out. Of what quantitative significance is the ratio of surplus labor to the labor embodied in the wage bundle? I.e., what do we learn from knowing the rate of exploitation that we can't figure out from the simple fact that capitalists, because they own the means of production, can dictate the conditions of employment and skim off part of the value produced by workers? The word "exploitation" succinctly conveys something substantive about the power imbalances that define our economic system, and in that sense it is useful; but its ideologically charged character may also constitute a barrier to discussion with those who aren't yet, and indeed may never be, persuaded of the fundamentally predatory nature of capitalism. Yet we must engage with them if we are to have any impact at all.

What I have, somewhat teasingly, referred to as the "emotional pull" of the so-called labor theory of value appears to be present in various attempts to rescue the theory from the critiques that have been leveled against it. I do not want to enter into a detailed discussion of these efforts. I will briefly mention the New Solution put forth by Duncan

Foley and Gérard Duménil & David Lévy, which purports to validate Marx's value analysis and in particular to rehabilitate his solution to the transformation problem. But it doesn't really do that; it replaces Marx's value magnitudes (expressed as quantities of labor time) with somewhat different categories (expressed as quantities of monetary value) to which it then assigns Marx's labels (value, surplus value). As Lipietz notes, in his system the rate of exploitation and variable capital "do not have the same meaning, nor the same quantitative measure" as they do in Marx's. In the end, the standard criticisms of the transformation algorithm and the LTV are not eliminated by the New Solution: they are merely camouflaged.

I would add that these rescue efforts have the defect of being analytically cumbersome as compared to Marx's labor value analysis, or indeed even Sraffa's simple production models. Marx wanted his critique of capitalism to be accessible to working-class readers, and his labor value analysis is, whatever its flaws, readily understandable. The TSS solution and the New Solution require considerable effort from readers who are not professionally trained economists. This in itself is not a reason to reject them, but they seem in this regard to be not in the spirit of Marx.

I wish to close with some broad remarks on Sraffa's attitude toward Marx, a topic which has been addressed by others in considerable detail, and on which consensus remains elusive. There can be no doubt that Sraffa's reading of Marx helped him to organize and clarify his thinking on the issues with which he was concerned in *Production of Commodities*. Sraffa came to Ricardo via his critique of Marshall, when some time in 1927 he recognized that the classical theory was not an embryonic version of the marginalist theory with an underdeveloped demand-side, but an altogether different analytical framework. We know that Sraffa had read Marx by the time he embarked upon the research that would ultimately lead to *Production of Commodities*; in a manuscript fragment entitled Metaphysics, in a file of notes dated May–July, 1928, Sraffa speculated about the direction the project would take:

> I foresee that the ultimate result will be a restatement of Marx, by substituting to his Hegelian metaphysics and terminology our own modern metaphysics and terminology: by metaphysics here I mean, I suppose, the emotions that are associated with our terminology and frames (schemi mentali) —that is, what is absolutely necessary to make the theory living (lebendig), capable of assimilation and at all intelligible. (D3/12/9)

Sraffa appears to have drawn inspiration from Marx in several ways. The same file contains some notes on Vol. II of *Capital* which suggest that the structure of the argument of Part I of *Production of Commodities* owes something to Marx. Sraffa writes that Marx

> always considers, first simple reproduction, where the capitalist consumes all the surplus value; then reproduction with accumulation of all of the surplus value. I will have to consider:
>
> 1) simple reproduction without surplus value
> 2) simple reproduction with surplus value entirely consumed
>   2b) the same as 2 in the form of 1 (without r)
>
> ...
>
> 3) reproduction with total accumulation
> 4) reproduction with accelerated accumulation (the percentage accumulated increased every year: due to inventions) (D3/12/9; my translation)

We find also in the manuscripts evidence of affinities between the views of Sraffa and Marx on scientific method, objectivism and ideology. Sraffa was, first of all, acutely conscious of the tendency for ideological elements to infiltrate scientific work. The following passage is worth quoting at length:

> The distinction between “value judgements” and “empirical (or objective, scientific, etc.) knowledge”. This trite distinction has recently gained popularity amongst German economists (they always think in terms of it), having been newly stated by max Weber. Unless it is taken in a purely practical, common-sense fashion, it is exceedingly stupid.
>
> Its success is due, not to the ”don’ts” it implies, but to its affirmative part—the fact that it gives the economists the faculty of saying something which has scientific validity, which must be accepted by laymen as the truth ascertained by science. It is therefore constantly used by economists to smuggle under its cover their “value jusdgements” labeled as “objective knowledge”.
>
> Thus, according to Weber (see Diehl’s account of his work in Q.J.E. xxxviii, 95) the “professors” may show the political parties “the facts with which you will have to reckon”—but the facts are infinite, and with what criterion will the selection be made? Then they have to be described, —is this possible “objectively”?
>
> A typical case is that of Pareto: I only say what the consequences of free trade & protection are—free trade leads to an increase of wealth, protection to destruction—now I do not say what you must choose as an economist etc.
>
> But a much better case is that of the Einaudi–deViti controversy on the taxation of saving. (D3/12/7)

Elsewhere in the same folder we find a fragment in which Sraffa remarks on the difficulty of formulating a truly objective theory:

> the subjective, moral, point of view has so deeply permeated every element in econ. Theory that hardly anything survives if that is removed. On all we look upon as being “bad” or “good”.
> The very notion of “cost” is so intimately interwoven with “bad” and that of “product” with “good”, that by removing the moral element the very distinction is washed out. (ibid.)

Nonetheless, “It should not be thought that theories devised (or accepted generally) for partisan purposes have no scientific value: they contain elements of truth, which is of scientific value, and is added to knowledge—and seldom is lost again” (D3/12/3). This last phrase—“and seldom is lost again”—might be thought puzzling, in view of Sraffa’s acknowledgment in the Preface to *Production of Commodities* that the classical had, by the early twentieth century, been lost, that is, “submerged and forgotten.” But the quoted passage was written in the late 1920s, as part of a set of notes on the “General Scheme” of the book, early in the working out of his thinking on such matters.

Sraffa did of course refer to “exploitation” in his manuscripts. He was mainly interested in the technical aspects of Marx’s discussion of the phenomenon, and in particular how Marx’s discussion of the redistribution of surplus value in accordance with the uniform profit rate condition might illuminate the relation between the wage share and the profit rate. Sraffa’s remarks indicate that he wished to sequester the ideological implications of the concept from his analysis. On Ricardo & Marx’s theory of value he jotted down the following: “How the fact that profits are proport. to labour implies exploitation *not* in the moral sense (this moral is not in the Theory of value): compare with slave-owner” (D1/21). The same folder contains a few lines copied out from a piece by Harold Laski, from the Times Literary Supplement of 6 October 1927): “At the root of

Marx's view there lies an ethical test of value. Commodities for him have ... an inherent value which is what they would obtain in exchange where society was properly organized, that is, where the equality of primitive society obtained ... Such a society would obviously be just."

I will mention finally some notes Sraffa wrote directly on the topic of exploitation in the autumn of 1942 (see D3/12/17). From September 20:

> "Exploitation"
>
> Having built up the system, make it move. Begin by moving *w*, by steps, to its maximum position. All the prices of individual commodities will move, some rising, some falling. Represent all this by a single diagram. On the ordinate represent prices so that there is a curve for each commodity: arrange the commodities from top to bottom, in order of decreasing organic composition, so that with fall of *w*, the top commodities will fall, the middle ones be unchanged & the bottom ones rise. The points on Oy represent "values".
>
> On the abscissa represent 1 – *w*, or *s/v*, or some other function of the proportions in which the product is distributed (!); choosing the function that gives the simplest curves, preferably the one (if available) that gives straight lines. [NB: in the margin Sraffa glossed: "none". GM}
>
> *W* increases equally in all industries. We notice that in the low composition industries, *W*, as it increases, absorbs more than the total profits previously made in that industry: when *W* reaches its maximum (at the point O) in each of the industries below the middle, *w* has increased *more* than the profits have decreased in the same industry. (On the other hand, in industries above the middle, w rises by less than profits fall).
>
> It is clear that "exploit[ation]" was equal in all industries, in spite of appearances. It is also clear that this is a social phenomenon: even if the capitalists, in the low comp[osition] industries, gave all their profits to *w*, they would still be exploited by cap[italist] society as a whole.

Sraffa elaborates further in some notes dated November 12, 1942:

...

> Thus, the proceeds of a reduction of wages, don't simply pass from the pockets of the workers to those of *their* employers. They go, as it were, into a social pool of profits, to which each industry contributes in proportion to the importance of its particular variable capital, and which is then shared out among the various industries, each receiving in proportion to their particular *total* capital (variable plus constant).
>
> Conversely, when wages rise, the wherewithal to replace the increased variable capital must come out of social profits, but it is contributed by individual industries, in proportion to their total capital and not in proportion to the number of workers employed in each (i.e. not in proportion to the variable capital): it is however distributed to the various industries in proportion to their variable capital—and again the adjustment is brought about by the rise and fall of prices of the appropriate commodities.

A final affinity between Sraffa and Marx can be found in the role that Sraffa initially intended to assign to intellectual history in *Production of Commodities*. His manuscripts contain an enormous number of documents (including lecture notes) on the character and evolution of classical political economy and its displacement by marginalist theory. Sraffa was a perceptive and highly original intellectual historian, and taken together these documents amount to a peerless exposition of the development of economics from the seventeenth century through to the first three decades of the twentieth. I venture to say that the publication of these documents will spark a thorough re-evaluation of the social and economic thought of the nineteenth century. Some flavor of Sraffa's originality and insight as an intellectual historian can be gathered from his reflections on the "Evolution of the concept of cost." In notes dated 1927 he observes that "The trend has been from meaning by cost the means necessary to enable production to be made to meaning the incentive required to induce somebody to overcome the sacrifice involved in production" (D3/12/4). Elsewhere he elaborates with an 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 plaid [sic] about them.
>
> The others are different. They needn't even be real carrots, it may be a [papier maché] carrot … 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. But I suggest that we don't do this 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 the [papier maché] carrots and whips, P[olitical] E[conomy] dealt with real carrots. (D3/12/10)

Evidence from the manuscripts suggests that Sraffa's original plan was to publish a larger work that would present a fully-developed account of his interpretation of the classicals, and connect that interpretation to the analytics of his price equations and to his implicit critique of orthodox capital theory. Indeed, at an early stage he appears to have considered the historical dimension of the project to be more important than the formal analytics. In notes (written in Italian) dated November 1927 he described the project as he then envisioned it:

> Approach of the book
> The only way is to present history in reverse, and that is: the present state of ec[onomics]; how it was arrived at, showing the differences and the superiority of the old theories. Then to expound the theory. If chronol[ogical] order is

> followed, Petty, Physiocr[ats], Ric[ardo], Marx, Jevons, Marsh[all], it is necessary that it be preceded by a statement of my theory in order to explain what we are "driving at." That means first expounding *all* of the theory. And then there is the danger of ending up like Marx, who publ[ished] Cap[ital] first, and then did not manage to complete the Histoire des Doct[rines]. And even worse, he was unable to make himself understood, without the historical explan[ation]. My plan is: I to lay out the history, which is really the essential element II to make myself understood: for which it is required that I proceed from the known to the unknown, from Marshall to Marx, from disutility to material cost. (D3/12/11; my translation)

Sraffa remarks in the Preface to *Production of Commodities* that while the book was being "put together out of a mass of old notes, little was added." In retrospect the remark is pregnant with irony. Yes, "little was added"; *but much was set aside*. And what Sraffa set aside was the historical material that would have made the constructive purpose of the project apparent.

We can only speculate about Sraffa's reasons for omitting this material. The manuscripts offer no clear evidence about when or why he abandoned his idea of presenting his model in its full historical context. No doubt a number of considerations entered into the decision. He may have concluded that the historical matter would distract rather than clarify. Or perhaps he felt that the historical material needed to be given sharper focus (this is not unlikely, in view of the enormous quantity of notes he had written), but did not want to delay further the publication of the analytical results. I suspect that the explanation may be more subtle, and has something to do with the still imperfectly understood intellectual affinities between Sraffa and his friend the philosopher Ludwig Wittgenstein. The latter once wrote that "I should not like my writing to spare other people the trouble of thinking" (1958, p. x). Like Wittgenstein, Sraffa strove to express himself with utmost clarity; but both would have appreciated from their own intellectual labors that some ideas—the most difficult ones—are more likely to take root if readers are compelled to puzzle them out.