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David Ricardo was a peaceful man, well liked and admired for both his intellectual and his personal traits by his colleagues and rivals whether on the Stock Exchange, in the nascent field of political economy, or among the members of Parliament. He could maintain personal friendship and well-behaved exchange of ideas with someone as strongly removed in both religion and economic doctrine as Thomas Malthus. The intellectual strength of his written work could dominate the thought of such a great mind as that of John Stuart Mill and rouse the writer Thomas de Quincey from his opium-riddled state to renewed mental vigor.

Yet Ricardo's posthumous reputation has been very variable. Many economists in the decades after his death attacked the realism of his theories, particularly with regard to population pressure. Samuel Bailey did not think much of his logical powers. John Stuart Mill took him as supreme authority, yet almost all Mill's original contributions tended to subvert Ricardo's doctrines and move them in the direction of neoclassical theory. Karl Marx, like Mill, put Ricardo in the highest rank, yet used his theories for directions totally antithetical to any view Ricardo might have held. The neoclassical

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theory arose as a reaction to the limitations of Ricardian classicism, and its supporters can never have a wholly approving tone; at best, the most favorable statements they can make are that Ricardo in part anticipated them, most notably in the marginalist character of his theory of rent. The most famous neoclassical judgment, if put more strongly than most would, was that of Jevons [1]: "that able but wrong-headed man, David Ricardo, shunted the car of Economic science on to a wrong line." (The figure of speech is an interesting anachronism, since the railroad was still in its infancy at Ricardo's death.) The general neoclassical view of Ricardo as at best an imperfect and none-too-coherent predecessor has continued to the recent past; nor is it confined to the more mathematical wing. Frank Knight, greatly influential in the formation of the Chicago School, severely criticized Ricardo's failure to consider economics as a process of resource allocation. Joseph Schumpeter, magisterially surveying economic analysis from a self-chosen viewpoint above all schools, hardly has a good word for Ricardo's methodology. The "Ricardian vice" to Schumpeter is that of assuming enough variables as given outside the system that the remaining analysis becomes trivial.

There is one striking exception to the generally negative neoclassical view of Ricardo, that of Alfred Marshall. Marshall's repeated admiration for Ricardo, was expressed at greatest length in Appendix I of the <u>Principles</u>. Like Schumpeter, Marshall saw himself in a very superior position in the whole world of economics, and even towards his hero, Ricardo, there is more than a touch of condescension. Ricardo is given to an excessive love of abstraction, no doubt, says Marshall, the result of Ricardo's "Semitic" heritage. (The great biological developments of the nineteenth century had their dark side in the use of science to justify racism, and this example is far from the only one in Marshall.) But a candid reading of Marshall makes his admiration hard to understand. Marshall's theory is at the bottom no different from Jevons's or Walras's, though of course enriched in many ways and given more concrete development. Demand and its determination through utility play a central role, totally absent from Ricardo. There is of course emphasis on the cost of production as a determinant of value, but Jevons understood its role equally well, and Walras was as clear as could be desired on the symmetry between cost and utility. The most distinctive aspects of Marshall's doctrines, the notion of external economies to reconcile perfect competition with increasing returns and the development of the role of time in equilibrium ("long-run" versus "short-run") are precisely those most remote from Ricardian thought. Most of Marshall's Appendix I consists of showing that Ricardo was "feeling his way" towards modern and "correct" ideas, such as the distinction between marginal and total utility.

There is one curious episode which may illuminate or obscure Marshall's views on Ricardo. Marshall reviewed Jevons's Principles of Political Economy for a magazine called, Academy, in 1872. Instead of recognizing and applauding the novelty of the ideas or criticizing them from, let us say, Ricardian or Millian lines, the review can only be described as carping. From the analytic viewpoint, the main criticism was that Jevons had not gone far enough in taking a truly general equilibrium viewpoint. After Marshall's death, a copy of the review was found with a note appended. Its flavor can best be present-ed in some direct quotations [2]: "I looked with great excitement for Jevons' Theory; but he gave me no help in my difficulties and I was vexed. I have since learned to estimate him better. ...[H]e seemed perversely to twist his own doctrines so as to make them appear more inconsistent with...Ricardo's than they really were. But the genius which enabled Ricardo...to tread his way safely through the most slippery paths of mathematical reasoning, though he had no aid from mathematical training, had made him one of my heroes; and my youthful loyalty to him boiled over when I read Jevons' Theory. The editor of the Academy, having heard that I had been working on the same lines, asked me to review the book: and, though a quarter of a century has passed, I have a vivid memory of the angry phrases which would force themselves into my draft, only to be cut out and then reappear in another form a little later on, and then to be cut out again."

Clearly, Marshall had already developed at least the basic lines of his theory when Jevons' book appeared; the editor of the Academy knew that. Marshall freely acknowledged his indebtedness to the neoclassicists *avant la lettre*, J. von Thunen and A.A. Cournot. Is it too much to conjecture that he was disappointed or worse to find himself unexpectedly anticipated by Jevons? Perhaps the defense of Ricardo could justify to Marshall an anger about priority unacknowledgeable even to himself.

Since I have made one conjecture, I might as well make another. The supreme authority of Marshall at Cambridge well beyond his active career is not in dispute. The modern use of Ricardo as a bludgeon against neoclassical economics is certainly centered at Cambridge, with some alliances among Italian economists; is it possible that it derives at least the aura of respectability and legitimacy from Marshall's emotional pro-Ricardo bias?

At any rate, the next great step in the history of the reception of Ricardian thought is the designation of Piero Sraffa as the editor of the Royal Economic Society's edition of the collected works of Ricardo. That Ricardo should be so singled out by the Royal Economic Society hardly needs explanation. Ricardo's influence on the history of economic thought is great, whether one thinks it good or bad. Keynes's dominance of the Royal Economic Society continued the still uncontested Cambridge leadership created by Marshall, and Keynes correctly foresaw that Piero Sraffa would be a superb editor. No doubt the choice of Sraffa was the more logical since Sraffa disliked lecturing and therefore had the more leisure for the task.

Sraffa had his own intellectual agenda. He did not like the subjective elements in neoclassical theory and therefore wanted to play down the importance of demand. Above all, he was clearly influenced by Marx's version of Ricardo, so in particular he refused to accept the position that the supply of capital was the result of subjective decisions about the timing of consumption. Obviously, there is a major ideological position here, one which Marx understood well enough when he ridiculed Senior's argument that saving is due to "abstinence." The rich, exemplified for Marx by the Rothschilds, are hardly "abstaining." Sraffa began in the late 1920's the elaboration of his theory of "production of commodities by means of commodities," a work that was to see publication only in 1960[3]. But through the oral traditions of Cambridge, Sraffa's version of Ricardo was to influence strongly the work of Joan Robinson and of such younger Italian and British economists as L. Pasinetti, N. Garegnani, A. Roncaglia, and J. Eatwell.

While Sraffa was diligently and very slowly completing his edition of Ricardo (for which, in the end, he needed the collaboration of M.H. Dobb) and the exposition of his own doctrines, Cambridge and the economic world was rocked by a another revolution, which drew to it most of the bright young spirits, including Joan Robinson. Keynes was, in successive steps, developing the new attack on past economics which culminated in The General Theory. Keynes shared with Sraffa a lack of interest in marginal economics and especially in the marginal utility theory of demand; he did not share Sraffa's ideological presuppositions or his appreciation of Marx. From Keynes's viewpoint, there was little distinction between classical and neoclassical economics; both mistakenly assumed full employment, Say's Law, and the impossibility of general gluts. Ricardo as well as A.C. Pigou had to be purged. Keynes did not confuse an antiquarian interest in seeing Sraffa produce a good edition of Ricardo with any excessive respect for an obstacle to what he saw as correct thinking. His understanding of past economists was primarily dictated by their consistency with his current thought. There could be little sympathy between Sraffa and Keynes, much as Keynes admired Sraffa's intellect. As Joan Robinson says, "Sraffa had shown a draft [of Production of Commodities by Means of Commodities] in 1928. Keynes evidently did not make much of it and Sraffa, in turn, never made much of the General Theory."[4]

It is therefore surprising that a wave identified as Ricardian or at least, "neo-Ricardian," emerged in the shadow of Keynes after his death. Joan Robinson sought to remain true to both traditions in some way, by dropping Ricardo's assumption of full employment. Others, like Sraffa himself, seemed to be indifferent to the full employment hypothesis, though one would have thought a position on this question to be basic to the formulation of a coherent model. If prices do not have the property that all markets clear, then there must be a hypothesis that the price on a non-clearing market may, for some one reason, remain unaffected.

What is common to all varieties of neo-Ricardian thought is a generally antagonistic attitude to capitalism and a tendency to interpret the history of economic thought and in particular the emergence of neoclassical thought as an attempt to divert attention from Marxist critiques and from the allegedly subversive character of Ricardian thought. The neoclassicists, it is alleged, are the more or less conscious apologists for capitalism. Ricardo's doctrines are taken to have two implications which later economists, both his immediate successors and the later marginalists, were concerned to deny: that labor is the source of all value and that profits have to be thought of as a deduction from output and therefore from labor's share.

It is also sometimes pointed out that Ricardo's doctrine of rent and in particular of the tendency of population to rise to the agricultural carrying capacity is pessimistic about the prospects of workers under capitalism. It is argued that, as soon as workers become politically significant, it is necessary to show them that capitalism does not imply their permanent misery. However, the scarcity of land is pessimistic with regard to any social system, not merely capitalism; indeed, Malthus introduced his principle of population precisely to argue that social reform of any kind cannot produce continuous progress, as Condorcet and Goodwin had argued. It is no wonder therefore that the possibility of diminishing returns was dropped by Marx and equally by Sraffa and Joan Robinson.

It would be too far from the aim of this essay to examine whether or to what extent the criticism of Ricardo by his successors was motivated, consciously or unconsciously, by the fear of giving aid to the enemies of capitalism. Like any historical inquiry, it would have to be conterfactual, and it is not very clear what would count as relevant evidence.

Instead let me make a few remarks about the fundamental character of Ricardo's system, as I see it. I am a practicing theorist, not a scholar in the history of economic thought, and my reactions are no doubt influenced by my own views. Indeed, it is hard to write intellectual theory and, for that matter, any kind of history, without framing the past through the perspective of the present. It can justly be remarked about history that it is as revealing about the time when it was written as about the time which is its ostensible subject matter. Nevertheless, it is morally incumbent on us to try as far as possible to put ourselves in a position contemporary with that of our author.

Was Ricardo asking a different set of questions about the economy than we would today? The mainstream today asks about the allocation of resources: what incentives direct resources into one activity or another, into one kind of consumption as opposed to another, or into investment for future production as against consumption today, to what extent and under what conditions are resources directed efficiently (with some appropriate definition of efficiency). After Keynes, we might add the question whether resources are all utilized or are there some left idle, a question which, from a certain point of view, is again about a rather gross form of inefficiency. In principle, we ask about allocation among individuals or among owners of different factors of production, but it must be recognized that distributional questions are not asked very loudly or answered very well.

In a competitive system, resource allocation is in particular directed by prices, and so a determination of prices becomes a central issue. Prices of course include both wages and rates of profit.

Adam Smith indeed asked what governed the wealth of nations. But Ricardo apparently asks a different question. The Preface of The Principles of Political Economy and Taxation opens boldly, "The produce of the earth ...is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated. ...To determine the laws which regulate this distribution, is the principal problem in Political Economy." This then is a book on what was later called the "functional" distribution of income. Indeed, there are chapters on wages, on rent (the understanding of which Ricardo regarded as basic to the distribution of income), and on profits.

But these chapters are preceded by a chapter on value and followed by many chapters on the workings of markets, on foreign trade, on the incidence of various kinds of taxes, and on other matters only vaguely associated with the distribution of the produce of the earth (national income) among the different classes of society. Indeed, if Ricardo were to announce a determination to study the allocation of resources in the modern sense but with the knowledge available to him, it would be hard to know how the topics treated would be very much different. For example, labor is needed for production, but the quantity of labor depends on the existence of output (agricultural and other) to provide the standard of living desired by workers. This is governed by the willingness of capitalists to save and thereby provide circulating capital and by the availability of land to produce the food component of the standard of living. The supply of land is not given, but expanding it requires using lower qualities. At each stage, there is a complex interlocking set of resource requirements to meet demands which in turn affect supplies.

The main thrust of Ricardo's system is a bold attempt to determine values independent of demand considerations. I do not mean that Ricardo thought of the alternative of a role for demand in determining values and rejected it. Rather he did not really conceive of this alternative. Clearly he lacked that very elementary tool, the demand schedule. Neither he nor any of his contemporaries had the explicit relation of demand to price, though not many years were to pass before Cournot and J.S. Mill were to develop it independently. But I do not think, as some neo-Ricardians seem to, that there was in any sense an intended repudiation of the demand schedule. Indeed, some of Ricardo's analysis can only be made sensible on the basis of such a concept. Thus, if there is more capital in an industry than is needed to meet the demand, it is asserted that the market price will fall, so that the capital will be earning less than the normal rate of return and therefore will exit. Evidently, the price falls so that demand will rise to use the excess capacity.

Without the language of demand schedules (and supply schedules for factors), there is really no way of opposing a theory that demand influences prices to a theory where prices are determined purely by technology. But Ricardo works hard at stating the assumptions needed to achieve a purely supply-based pricing theory. Normal wages are exogenous in that they represent conventional demands for subsistence. They are not physiological, and they do include manufactured goods as well as food; but they are enforced by the willingness of laborers to reproduce themselves. Manufacturing operates at constant returns to scale. As we now understand the matter, it is important to assume the absence of joint products. Rent is handled along well-known lines. Capital by and large, though there are some exceptions, is circulating capital, an advance of the wage-goods during the period of production. If, then, the period of production is the same in all industries, manufactured goods exchange in proportion to the labor embodied (directly or indirectly), and they also exchange on the same basis with agricultural product on the marginal land. The analysis of agricultural product is indeed in accordance with modern marginalist principles, except for the fixed proportions between capital and labor.

But the slightest variation in this sketch destroys the simplicity of the system, in particular, the determination of normal prices within a system which excludes demand. I do not intend to engage in the process of scoring Ricardo for his adequacy in anticipating subsequent developments in economic theory. But some deficiencies should have been clear. First of all, there are, as Ricardo himself states briefly, many kinds of labor with very different wage rates. This fact alone should make the meaning of a labor theory of value obscure. Ricardo, like Marx after him, contents himself with taken these differences as given. Smith's environmental determinism implied that all individuals are basically alike; occupation is a decision variable, so that net advantages, rather than wages, are equalized. The most cursory knowledge of the world would suffice to show many wage differences are not explained by net advantages. But Ricardo does not offer even that hypothesis.

Second, the period of production does differ from one industry to another, as Ricardo emphasizes at considerable length. He does try to minimize the practical extent to which relative prices would be affected, but he does not deny the theoretical impact. Logically, for a given willingness to save, however defined, the rate of profit will depend on the relation between the demands for goods with long and short periods of production (I am clumsily trying to avoid the controversial term, "capital-intensity").

Third, competing uses of the same land for different crops or for urban versus agricultural purposes would, as J.S. Mill later recognized, create the same indeterminacy in the system of price determination. One can understand how the dazzling beauty of a simple model of value determination would blind the eyes of any investigator to these problems, however obvious they might seem.

Even Ricardo's most famous accomplishment, the law of comparative advantage in foreign trade, is incomplete, though not wrong, without demand considerations, as J.S. Mill was the first to observe. Ricardo can only determine limits on price ratios.

The difficulty in incorporating demand into Ricardo's system was, no doubt, connected with the problematic relation between use value and exchange value. Smith had already argued that usefulness cannot explain value, because water is clearly more valuable than diamonds. Ricardo therefore concluded, as did Marx after him, that use value was necessary for exchange value but did not explain its magnitude. Jeremy Bentham with his usual clarity of thought did in fact resolve the paradox by distinguishing between marginal and total utility; but as usual with him the fragment was not published. Bentham was very close to James Mill, Ricardo's good friend, and cooperated with Ricardo for a while in an attempt to create a school along Benthamite lines, but somehow never conveyed this insight to either or to his amanuensis, J.S. Mill.

The lack of a satisfactory theory of utility was damaging in another way. It prevented a coherent statement for defending the policies which Ricardo favored, especially free trade. Since foreign trade is an exchange of equal values, there is no gain in terms of value. Ricardo is reduced to vague phrases like, "increasing the general mass of productions," in explaining the benefits of trade.

What Ricardo did contribute was, for good or bad and probably some of both, the style of economic analysis that has dominated the science, abstract reasoning, proceeding from a few [illegible] principles that commend themselves to the reader as reasonable to a multitude of conclusions checked at points against everyday observation. Today, indeed, we have added more systematic use of data and sophisticated empirical analysis to casual observation. The avoidance of inconsistent and ad hoc reasoning is made into a major virtue. It was Ricardo more than anyone else who created the flavor of economic theory and analysis, as much in the neo-Ricardians as in the neoclassicists.

References

[1] W. S. Jevons, The Theory of Political Economy, Fifth Edition. New York: Augustus M. Kelley, 1957. Preface to the Second Edition, p. li.

[2] A.C. Pigou (editor), Memorials of Alfred Marshall. London: Macmillan, 1925. Pp. 99-100.

[3] P. Sraffa, Production of Commodities by Means of Commodities. Cambridge: Cambridge University Press, 1963.

[4] J. Robinson, "Keynes and Ricardo." Reprinted in J.C. Wood (ed.), David Ricardo: Critical Assessments, Volume IV. London and Sydney: Croom Helm. P. 148.