

Léon Walras's Thoughts on Labour in His Trilogy: A Moulding of the Neoclassical Principle of Labour Exchange

Motohiro Okada

Abstract:

This study critically examines Léon Walras's thoughts on labour in terms of pure, applied and social economics. In his theory of pure economics, Walras incorporated labour exchange into his general equilibrium system. He disregarded worker subjectivity towards labour performance and the resulting variability in the substance of labour. This neoclassicist bias emasculating the human traits of labour caused him to negate the distinctiveness of labour exchange and argue for its market determination. Thus, Walras assumed labour exchange to be 'moral-free.' In addition, Walras denied the influence of 'moral' factors in the scope of applied economics treating industries and contended that production activities, including the labour–management relationship, generally should be subject to free competition. However, Walras recognised a need for the state regulation of labour time. Nevertheless, he opposed the minimum wage system and denounced strikes for wage increases. Consequently, Walras adhered to his theory of labour exchange, incurring serious inconsistencies in his own arguments. Walras stressed that social economics dealing with distributional issues in light of justice represents 'moral' study. Under the profound influence of his father, Auguste Walras, Walras defended labour-based property rights and proposed land nationalisation. However, he justified the acquisition of capital profit as well as wages determined in a competitive market economy and denied a conflict between labour and capital. Hence, he substantially excluded labour exchange and the labour–capital relationship from the topics of social economics. In this manner, Walras advocated the market determination of labour exchange embracing its subsumption of production and distribution, and labour–management and labour–capital harmony. Therefore, Walras's arguments in his trilogy allowed a moulding of the neoclassical principle of labour exchange. However, like his contemporary economists who advanced the same line of ideas, Walras enforced this step by playing down his own fair observations of the realities of industrial relations that were at variance with his theory. Thus, Walras's trilogy reveals features of the formation of neoclassical thought on labour exchange.

JEL classification numbers: B 13, J01.

I Introduction

This study critically examines Léon Walras's thoughts on labour in his trilogy—pure, applied, and social economics—and elucidates the problems he raised about moulding the neoclassical principle of labour exchange.

Of the numerous studies of Leon Walras (1834–1910), only a minority elaborate on his arguments regarding labour. Even authoritative Walras scholars, such as William Jaffé, Michio Morishima and Donald A. Walker, make only occasional references to these arguments (Jaffé 1983; Morishima 1977; Walker 1996, 2006). Boson (1951, 265–70, 280–81; 1963, 107–08, 115–18), Dockès (1996, 203–05), Misaki (1998, 75–80), Nakakubo (1979), Potier (1998, 380–84; 2011) and Schaller (1971, 453–56) are among the researchers who carry out noteworthy investigations in this respect. However, they chiefly focus on Walras's opinions on labour policies and/or co-operative movements and do not sufficiently delve into his theoretical treatment of labour presented in *Éléments d'économie politique pure (EEPP)* and its reference to his practical ideas.

Meanwhile, Pagano (1985, 95–115) aims to explain Walras's notion of the relationship between labour and worker welfare in his theory of pure economics and provides a novel and significant contribution to studies on Walras. However, Pagano does not expound Walras's discussions on labour in his writings outside of *EEPP*.

Thus, it may be stated without doubt that an exhaustive enquiry into Walras's thoughts on labour is yet to be undertaken. Based on the direction taken by Pagano, this study comprehensively examines Walras's arguments on labour. Walras classified the system of economics into three branches: pure economics (*économie politique pure*), applied economics (*économie politique appliquée*) and social economics (*économie sociale*). Such researchers as Boson (1951), Dockès (2006), Misaki (1998), Potier (1998, 370–75), Rugina (1982) and Wolff (1981, 5–127) conduct overall assessments of Walras's perspectives in their respective fields. This study, on the other hand, pursues an overall assessment of Walras's views regarding labour, which are not scrupulously investigated by those earlier studies.

This study develops the following arguments. Like other pioneers in neo-classical economics, Walras disregarded worker subjectivity towards labour performance and the resulting variability in the substance of labour, thereby identifying the nature of labour exchange with that of the exchange of non-human objects. Thus, in his theory of pure economics, Walras incorporated labour exchange into his general equilibrium system and argued for its market determination. Meanwhile, in his writings on applied economics, which he supposed

was grounded on pure economics, Walras made observations about the realities of industrial relations that were at variance with his own theory. However, this insight did not lead him to question the validity of the notion of labour exchange presented in his pure economics; he continued to adhere to it. This was also shown in his discussions on social economics dealing with distributional issues in light of justice. Here, Walras justified the acquisition of capital profit as well as wages determined in a competitive market economy, and so, substantially excluded labour exchange and the labour–capital relationship from the topics of social economics. In this manner, Walras's trilogy writings advocated the market determination of labour exchange embracing its subsumption of production and distribution, and labour–management and labour–capital harmony. This grew to be the neoclassical principle of labour exchange.

Okada (2012a; 2015) expounds the notion that the works of William Stanley Jevons and Vilfredo Pareto exhibited marked discrepancies between their respective neoclassicist theories of labour exchange and views on its realities. This study shows that Walras's writings possessed similar characteristics. Thus, when illustrating his case, this study contributes to the elucidation of a critical moment for the establishment of neoclassical economic thought; that is, although its early leading figures had broad and diverse perspectives on real-world industrial relations, their views resulted in espousing a notion of labour exchange that contradicts its nature.

The remainder of this article is structured as follows. Section II expounds Walras's treatment of labour exchange in his theory of pure economics. Section III describes Walras's views on the labour–management relationship in his writings on applied economics. Section IV explains Walras's arguments on social economics and explores his attitude towards the labour–capital relationship. Section V concludes.

II Walras's Treatment of Labour Exchange in Pure Economics

For Walras, pure economics takes priority over applied and social economics. In his letter to Louis Ruchonnet on 6 September 1870, Walras wrote that 'pure economics occupies the first rank necessarily, but the order of the other two—applied economics and social economics—can be inverted indifferently' (L. Walras 1965, 212). Here, Walras defined pure economics as the 'study of the natural laws of *exchange value and exchange or theory of social wealth*' (L. Walras 1965, 208; emphasis in original).¹

1 All quotations from Léon Walras's and Auguste Walras's works in this article have been translated by the present author.

In *EEPP*, based on this concept, Walras developed a general equilibrium theory of the determination of the exchange value of ‘social wealth,’ which, according to him, refers to all things, material or immaterial, possessing *rareté*, that is, being in limited quantity as well as useful, on the assumption of ‘a hypothetical regime of absolutely free competition (*libre concurrence absolue*)’ (L. Walras 1988, 11, 45).

In Section IV of *EEPP*, titled ‘Theory of Production,’ Walras introduced markets for services, in addition to those for consumption goods explicated in the preceding section, and explained the determination of the prices of labour services, that is, wages, alongside the determination of the prices of land and capital goods services, that is, rent and capital profit. Although four editions of *EEPP* were published during Walras's lifetime (1st 1874, 1877; 2nd 1889; 3rd 1896; 4th 1900), no major changes were made to his arguments on labour exchange in any of these re-editions (L. Walras 1988, 261–342).

What should be noted first about Walras's discussions in Section IV of *EEPP* is his distinction between ‘personal faculties (*facultés personnelles*)’ and labour (*travail*). Walras (1988, 264–65) remarked:

The productive elements are three in number. Authors, when they enumerate them, most often state: *land*, *labour* and *capital*. However, these enunciations are not rigorous enough to serve as bases for rational deductions. *Labour* is the service of personal faculties or of persons; alongside it, therefore, we must arrange not land and capital, but *rent* or the service of lands (*terres*) and *profit* or the service of capitals (emphasis in original).

Walras had already distinguished between personal faculties and labour in *L'Économie politique et la justice* (1860, *EPJ*), his first economics work published as a book: ‘Personal faculties are capital whose income is labour’ (L. Walras 2001 a, 265). However, this idea was not novel. Auguste Walras had earlier defined capital, in a broad sense, as ‘every limited utility that survives the first service which it renders us’ and categorised it into land, personal faculties, and ‘artificial capital (*capital artificiel*).’ Auguste further stated that land, personal faculties, and ‘artificial capital’ bring about rent, labour, and profit, respectively, as income (*revenu*), which he defined as ‘every social wealth or every exchangeable value that serves only once’ (A. Walras 1997 b, 140, 151; see also A. Walras 1990b, 77; henceforth, ‘Auguste’ refers to Auguste Walras, and ‘Walras’ refers to Léon Walras). Walras faithfully followed this definition of capital and income (Jaffé 1983, 20; Walker 1996, 3; L. Walras 1988, 265–72).²

2 In addition, Walras referred to the service of ‘capitals in their proper meaning (*capitaux*

As Blaug (1996, 258) notes, Walras's personal faculties–labour distinction shown in this passage paralleled Karl Marx's distinction between labour power (*Arbeitskraft*) and labour (*Arbeit*). Despite this similarity, however, there were crucial differences between Walras and Marx in their perspectives on labour exchange. Pagano (1985, 37–62, 95–115) and Okada (2011; 2014) illuminate this issue, especially in view of the impact of labour on worker welfare and worker subjectivity towards labour performance, respectively, instead of the traditional Marxian concept of exploitation. Herein, Walras's treatment of labour exchange is examined based on the findings of these studies.

In *EEPP*, Walras treated personal faculties as classifiable like land and capital goods. In addition, he assumed that the services of personal faculties, also like those of land and capital goods, could be used for private purposes as 'consumable services (*services consommables*),' as well as provided to entrepreneurs as 'productive services (*services producteurs*)' (L. Walras 1988, 268, 301–02).

Walras expressed the principle that governs a person's labour supply by the following equation:

$$\varphi_p(q_p - o_p) = p_p \varphi_a(d_a) \quad (1)$$

φ_p =the *rareté* function with respect to the service (p) of a personal faculty

q_p =the disposable amount of (p)

o_p =the amount of (p) supplied

p_p =the price of (p)

φ_a =the *rareté* function with respect to the numeraire consumption good (a)

d_a =the amount of (a) demanded.³

In addition, Walras presented the same types of equations for a person's supply of land and capital goods services as well as for her/his demand for consumption goods. As Walras indicated, these equations together, in essence, represented Gossen's second law, that is, the equi-marginal utility–price ratio across all goods and services required for utility maximisation. From those equations, Walras derived a person's supply function of the labour service of each kind of personal faculty as well as of the service of each kind of land and capital good, and her/his demand function for each kind of consumption good, which uniformly included the prices of all the services and consumption goods in their arguments. Furthermore, Walras argued that the total supply function of each service and total demand function for each consumption good are obtained by summing their respective individual functions (L. Walras 1988, 116, 301–04).

proprement dits)' or capital goods as '*profit*' and the return on it as '*intérêt* (interest)' (L. Walras 1988, 281), but this article uses the term 'capital profit' to represent the latter.

3 Walras assumed the *rareté* (marginal utility) function with respect to a good or service to be a unary function of the amount of the good or service consumed.

In this manner, Walras equated the principle of labour supply with that of the supply of non-human services and demand for consumption goods.

$q_p - o_p$ in Equation (1) represents the amount of the service of a personal faculty retained for private use. From here, Pagano (1985, 100–01) maintains the following: ‘In the case of labour, the welfare of an individual is assumed to be affected by that part of himself that he consumes. By contrast, it is not assumed that the welfare of an individual is affected by that part of labour that he has offered and sold on the market.’ This criticism is key to understanding Walras’s treatment of the relationship between worker subjectivity and labour.

In one piece of his writings in the late 1850s, the young Walras (2000 a, 26) stated that ‘the will of human being is free and that of animal is fatal.’ In his later works, Walras (1990 c, 138–39, 186; 2001 a, 95) characterised a human being as an entity that pursues her / his purposes by her / his own free will and thereby assumes responsibility for the results (see also Walker 2006, 118–24). In *EEPP*, indeed, an individual agent’s supply of labour time, as well as her / his supply of land and capital goods services and demand for consumption goods, was assumed to be determined by her / his own preferences (L. Walras 1988, 301–04). However, Walras paid scant attention to one of the vital matters on which worker subjectivity acts, that is, the substance of labour.

Walras underscored the inalienability of personal faculties from their possessors (L. Walras 1993 a, 75; 1993 b, 363; 2001 a, 404). Indeed, this peculiarity of personal faculties renders labour supply essentially dissimilar from the supply of non-human services. A time-unit use of each unit of land or capital goods with the same physical properties assures the same service. By contrast, the type and intensity of labour performed by a person primarily depends on her / his will, and hence, can have infinite latitude within her / his capacity, and even more latitude between different people. This holds true in a modern capitalist society, in which workers’ right to dispose of their own labour ability is guaranteed, at least formally. As Okada (2011; 2014) argues, Marx appreciated this multivalent labour ability–labour relationship, but Walras’s theory was devoid of its perception.

Walras (1988, 301) postulated that the labour service of each kind of personal faculty can be measured in time *per capita*. However, the variability in the real content of each time-unit of labour, depending on each worker’s will, renders labour time alone inadequate to measure labour service. Hence, labour time is also disqualified as a trading unit in the labour service market. On the other hand, it is a circular reasoning to attempt to find it by resorting to labour product.

Thus, it appears that, in general, no adequate trading unit exists for the formation of a labour service market. It is, therefore, unfeasible to determine not

only the substance of labour but also wages and labour time according to market transactions. Consequently, their settlement must be left to labour–management relations in the production process. They belong to what Walras referred to as the ‘moral facts (*faits moraux*)’ or ‘morals (*moeurs*)’; that is, ‘what result from the human will and activity being exerted towards the will and activity of other human beings; in other words, the relations of persons to persons’ (L. Walras 1988, 41–42). In addition, there is no reason to deny that collective worker–entrepreneur power struggles, state intervention and other socio-political forces inevitably enter into the prime determinants of working conditions in this context. Furthermore, these forces also affect the determination of capital profit and rent. Marx’s arguments clarified such particular characteristics of labour exchange (Okada 2011, 52–56; 2014, 410–14).

By contrast, as Pagano’s above-mentioned comment suggests, Equation (1) shows that in Walras’s theory, the worker is supposed to determine her / his labour supply based on time–wage rates and the utility of service of personal faculties for private purposes without regard to the content of employed labour. Thus, as Pagano (1985, 111–13) further indicates, it may be stated reasonably that Walras provided a precursory model for the neoclassical theory of labour supply that confines its attention to worker choice between earning wages and leisure as its opportunity cost.

Walras’s neglect of the relationship between the substance of employed labour and worker welfare was reflected in the production functions with fixed coefficients presented in *EEPP*. Those production coefficients included the labour time required for the production of one unit of product. Walras posited the equality between the ‘production cost’ based on such a production function and the product price as an equilibrium condition. Here, Walras did not consider the possibility that output could vary depending on the content of time-unit labour (L. Walras 1988, 305, 329–30).

Such disregard for worker subjectivity towards labour performance and the resulting variability in the substance of labour implied in Walras’s above-mentioned treatment was not specific to him; it is also found in the writings of Jevons and Carl Menger, who, along with Walras, constituted the Marginalist Revolution trio; however, unlike Walras, they explicitly referred to workers’ labour-accompanying feelings (Okada 2012 a; 2012 b). Furthermore, this defect emasculating the human traits of labour nurtured a bias shared by subsequent neoclassical economists in general, who, in contrast to classical economists, stressed agent motivation and worker autonomy. In addition, the marginal productivity theory, assuming a unique correspondence between labour time and output, *qua* the basis for the neoclassical tenet of labour demand, was founded on this direction.

Walras (1988, 302–09) argued that the prices of all kinds of ‘productive services’ and consumption goods are determined by solving the simultaneous equations—the ‘equations of production (*équations de la production*)’ in his nomenclature—that satisfy their respective market equilibria. These equations comprise the afore-mentioned service supply and production functions.

In this manner, Walras incorporated labour exchange into his general equilibrium system and rationalised its market determination. Thus, Walras’s distinction between personal faculties and labour, unlike Marx’s labour power–labour distinction, did not deduce the distinctiveness of labour exchange, but his theory negated it.⁴

Walras held that exchange value is a ‘natural fact (*fait naturel*)’ being independent of human will and, therefore, ‘moral-free.’ Hence, Walras viewed pure economics in pursuit of the laws of exchange value as a natural science (L. Walras 1988, 33, 39–40, 50–51; see also Dockès 1996, 46–48; Walker 2006, 61–63). The exchange value of labour was no exception in this regard. In *EPJ*, Walras (2001 a, 271) had already asserted that wages as well as rent and interest alike are determined ‘naturally (*naturellement*)’ in the market. His arguments in *EEPP* denying a ‘moral’ attribute of labour exchange materialised this conception.

III Walras’s Applied Economics and the Labour–Management Relationship

Walras (1990 c, 31–32) argued that the perspective of pure economics is truth (*vérité*), whereas that of applied economics is interest (*intérêt*) or utility (*utilité*). In other words, while pure economics investigates objective laws of economic phenomena, applied economics pursues practical requisites that can increase economic welfare.

Specifically, Walras (1990 c, 31) defined applied economics as ‘the study of the most favourable conditions for *agriculture, industry, commerce* and *credit*, or *theory of the production of wealth*’ (emphasis in original). Like Adam Smith, Walras (1996 b, 460–03; 2000 b, 170–71, 174) stressed the role of division of labour as the mainspring for improving wealth. Furthermore, Walras (1990 c, 162) remarked: ‘From the physiological point of view, human being is an existence that is suited to divide labour and that manifests this aptitude socially in *industry (industrie)*’ (emphasis in original). In his theory of pure eco-

4 In Section V of *EEPP*, Walras (1988, 345–53) explained that the prices of personal faculties can be estimated in the same way as the prices of land and capital goods, namely, by discounting their service prices.

nomics, Walras did not explore the concreteness of production or industries. For him, applied economics had to conduct this outstanding enquiry.

Meanwhile, Walras (1992, 408) stated that applied economics 'treats relations between human beings not as moral persons, but as workers dividing labour, that is, in view of their relations with things (*choses*).' Indeed, Walras (1988, 41–42) defined industry as 'what results from the will and activity of human being that is exerted towards natural forces' and referred to the theory of industry as art. Thus, Walras conceived that the scope of applied economics is not involved with 'moral' factors. This implied that the production methods, including labour, in various branches could be determined independently of interpersonal relations, and therefore, socio-political influences, too. Such a notion characterised the neoclassical perspective on production and matched the concept of production described in Walras's theory of pure economics, the scope of which he also considered to be 'moral-free.'

In *EPJ*, Walras (2001 a, 153) had already argued that 'we must naturally make a theory of *production* follow the theory of exchange value' (emphasis in original). Walras's above-mentioned views presented in later years suggested the subordination of the principles of applied economics to those of pure economics. A cardinal principle that Walras formulated in his pure economics theory was as follows: '[T]he equations [of exchange and production] . . . lead to the general and superior rules of the freedom of production. This freedom procures, within certain limits, the maximum utility; therefore, the causes that disturb it are an impediment to this maximum; and no matter what they could be, we must remove them as much as possible' (L. Walras 1988, 335). Assuming this statement as the primary norm for applied economics, indeed, Walras (1992, 183–214; 1996 b, 463–513) maintained that except for a handful of industries such as railways, production activities should be subject to free competition and conducted without state intervention (see also Potier 1998; 2006). Furthermore, Walras contended that the labour–management relationship should consider this rule of production. However, he had to tackle the problems that challenged this claim.

In *EEPP*, Walras theorised that labour time is market determined, thereby depending on individual preferences. In *Études d'économie politique appliquée (EEPA)*, Walras recognised that this 'hypothesis' was unrealisable in most actual cases, and labour time for all workers was prone to be the same within a firm and an industry. He further observed that under a *laissez-faire* regime, the number of hours worked tends to expand indefinitely as a result of inter-entrepreneurial price competition. In this regard, Walras stated: 'This tendency, however, must be stopped. The worker cannot work twenty-four hours a day. The fixation of a maximum must be imposed. Therefore, nothing is more natural than en-

trusting it to the state, which will conduct it according to its requests for morality, hygiene, etc.’ (L. Walras 1992, 253; see also Dockès 1996, 203). Thus, Walras argued in support of the state regulation of labour time (Boson 1951, 280–81; Potier 2011, 449).⁵ In addition, he favoured woman and child labour-regulating laws (L. Walras 1996b, 585–86). Furthermore, Walras supported pro-unionisation laws and recognised positive roles played by organisations, such as professional unions for labour–management cooperation (L. Walras 1992, 257–58; 1996b, 579–80; Potier 2011, 444–46).

When it came to wage issues, however, Walras opposed state intervention. He was against the minimum wage system (L. Walras 1988, 657–58; 1992, 261). Furthermore, he heavily criticised strikes for wage increases. Walras (1996b, 581) complained that ‘workers do not have an exact notion of the mechanism of the determination of the prices of products and productive services through free competition.’ He argued as follows. Workers erroneously believe that their bosses collude to fix product prices as high as possible and production costs as low as possible, thereby maximising their margins. However, the reverse is actually true because entrepreneurs tend to be in a state of competition with each other. Far from raising product prices and lowering production costs, entrepreneurs do the opposite, thereby reducing the price–cost difference to zero. Under these circumstances, wages may rise without a strike, which, instead, would force entrepreneurs to shut down their businesses (L. Walras 1996b, 581–82; see also L. Walras 1990b, 209–12).

On the other hand, Walras was aware of the difficulties in coping with strikes. Hence, he admitted the efficacy of arbitration (*arbitrage*) as a means to their settlement. However, he regarded this legal step as ‘an extra-scientific solution’ and insisted: ‘The scientific and definitive solution is bidding up (*enchère*) and bidding down (*rabais*) on the labour market; bidding up by entrepreneurs when labour demand is larger than supply, and bidding down by workers when supply is larger than demand’ (L. Walras 1996b, 582–83; see also Boson 1951, 267; Dockès 1996, 203–04; Potier 2011, 446–47; Schaller 1971, 455–56).⁶

5 Walras’s specific opinions on this policy were rather moderate, as follows: ‘In what concerns the organisation of labour, the regulation must comply with the following principles. “The regular labour time in a day will not be allowed to exceed eleven hours, and ten hours on Saturdays or vigils” ’ (L. Walras 1987b, 227).

6 Walras (1992, 258–59; 1996b, 455–56, 585–86) cautioned workers against a population increase that could cause an oversupply of labour and their destitution (see also Potier 2011, 452–53). Walras regarded the first Malthusian postulate that population increases geometrically as ‘almost absolutely rigorous,’ although he considered the second postulate that means of subsistence increase arithmetically to be ‘far from having the same value’ (L. Walras 1988, 592–94).

Thus, Walras straightforwardly rendered the principle of wage determination in his theory of pure economics the norm for their practical settlement. In his view, therefore, the only true means to eradicate strikes was the organisation of a labour market on the basis of free competition. In *EEPA*, indeed, Walras (1992, 256) wrote: 'Why don't we see strikes between entrepreneurs and capitalists? Because the market for fixed capital, which is the Bourse, and that for circulating capital, which is the Bank, are a little better organised than the labour market, which is not organised at all.'

On the other hand, Walras held that such labour market organisation needs state backing. He did not detail the relevant policies. He suggested only that the state should help make it easier for workers to move from firms at which wages tend to fall, to firms at which wages tend to rise to achieve and maintain production equilibrium (Boson 1951, 265; Potier 2011, 446–48; L. Walras 1992, 254–56). It should be noted here that Walras did not approve of the state's strong-arm suppression of strikes, for example, 'by articles of the penal code and by cavalry's patrols' (L. Walras 1992, 256). He considered that a revolution-leading class conflict would be caused by an uncompromising attitude of the aristocracy to the bourgeoisie or of the bourgeoisie to the proletariat (L. Walras 2000c, 649).⁷

In any event, there was a stark contrast between Walras's attitude towards the settlement of labour time and wages shown in his writings on applied economics. With regard to the former, Walras perceived that individual workers' powerlessness and subjugation to entrepreneurs' command under 'competition pressure' justified state control. Thus, Walras *de facto* conceded 'moral' attributes in labour exchange. By contrast, he believed in the market determination of wages and decisively objected to the intervention of the state and worker coalitions there.⁸

Walras's above-mentioned views were irreconcilable with his own theory of pure economics. In this theory, he presented a simultaneous determination of labour time and wages. Accordingly, this theory had to take into account that if labour time tends to be settled without regard for individual workers' preference and to entrepreneurs' advantage, the same holds for the settlement of wages.

If Walras had duly attended to this problem, he would have had to review thoroughly the validity of not only his practical perspective on wages but also

7 In this respect, Walras differed from Pareto, who also desired the establishment of competitive labour markets with state intervention but favoured Fascism for this purpose (Okada 2015).

8 Here, Walras's standpoint resembled that of Jevons, for whom Walras felt great empathy as a 'comrade' in their new approach to political economy (Okada 2012a).

the notion of labour exchange in his theory of pure economics. As a result, he could have perceived that disputes over wages are rooted not so much in workers' ignorance and a lack of labour market organisation as in the nature of labour exchange. Actually, far from attaining such a reconsideration, Walras went as far as concluding that questions of labour time are questions in 'civil and political cœnonics (*cœnonique*)' rather than in applied economics; thus he attempted to exclude 'moral' factors from the realm of applied economics in an arbitrary fashion (L. Walras 1992, 252).⁹ In this way, Walras, like such early neoclassical economists as Jevons and Pareto, although making fair observations about the realities of industrial relations that were at variance with his own theory of labour exchange, downplayed the former and adhered to the latter, which embraced the subsumption of production under market exchange and labour-management harmony (Okada 2012a; 2015). It can be appreciated that this feature, which was shared by Walras and his contemporary economists, provided a critical moment for the establishment of neoclassical economic thought.

IV Walras's Social Economics and the Labour-Capital Relationship

Walras (1990c, 31–32) defined social economics as 'the study of the best conditions of *property* (*propriété*) and tax (*impôt*), or *theory of the distribution* (*répartition*) of wealth' (emphasis in original) and indicated that it pursues 'conditions for the most equitable distribution' of wealth in light of justice. In addition, Walras (1988, 62) remarked: '[T]he distribution of social wealth between human beings . . . is a moral fact. . . . It is a relation of persons to persons.' Thus, Walras considered that unlike pure and applied economics, social economics is a 'moral' study.

Walras's writings on social economics showed the profound influence of Auguste (Jaffé 1983, 274). Indeed, Walras dealt with property and taxation *à la* Auguste as early as his debut as an economist (Schaller 1971, 449–50; L. Walras 1990c, 335–52; 2001b; 2001c).¹⁰

Auguste (1997a, 81) avowed that 'I am a partisan, and a declared partisan of private property.' Walras (2001a, 106, 130), too, denounced Pierre-Joseph Proudhon's famous expression 'property is theft' as an 'absurd phrase' and main-

9 For Walras's concept of cœnonics, see Dockès (1996, 41–43), Frambach (1993, 96) and L. Walras (1992, 252–53, 406).

10 There is no space for an extended discussion of Auguste's influence on Walras. For this issue, see Boson (1951, 25–48), Cirillo (1980), Diemer (2006), Jolink (1996), Pirou (1946) and Sato (1981).

tained that 'property is not appropriation, but is the legitimate appropriation by reason and justice.' In addition, Walras followed Auguste in holding exchange value to be grounded on *rareté*, and so, rejecting the labour theory of value, but arguing that 'labour is the true foundation of the property right' (A. Walras, 1990b; 1997c, 184; L. Walras 1988, 245–47; 1990c, 195–206; 2001a, 126).

Walras (1990c, 34, 117, 143, 185–87; 2000b, 177) maintained that each person, by natural law, possesses the ownership of her / his personal faculties, labour service, wages and anything else for which she / he can exchange wages (see also Van Daal 1999, 95).¹¹ Thus, Walras (2001a, 226) was against slavery and serfdom. Furthermore, Walras (2001a, 185) stated in *EPJ*:

Between the entrepreneur and the worker, there is exchange of a *wage* for a *labour*. *Equivalence of the labour and the wage*—here is the exact translation of the law of equality of values in the exchange. . . .

Now, the value of labour, as the value of wage, is settled by the relation of demand to supply, on the market. The worker who gives his time and his effort for a certain price only does so because he cannot obtain a higher price. The entrepreneur who gives a wage in exchange only consents to give it because he cannot give a lower one. It is free competition that creates this market situation, which determines all the values, and which makes exchanges operate between equal values.

(emphasis in original)

In this way, the young Walras had already asserted that wages are equivalent reward for labour and are market determined. Furthermore, the above-mentioned quoted passage suggests that labour exchange in a competitive market accords with Walras's justice norm of 'equality of conditions; inequality of positions (*égalité des conditions; inégalité des positions*),' which comprises 'commutative justice (*justice commutative*)' and 'distributive justice (*justice distrib-*

11 'His [a person's] body and his soul, his physical and intellectual faculties, belong to the person; his labour, which is the exercise of his faculties, belongs to him; and his wage, which is the fruit of his labour, belongs to him. He has, therefore, a property right to all the things for which he can exchange the service of his personal faculties' (L. Walras 1990c, 117).

Earlier, Auguste also argued: '*Labour belongs to the individual*; in other words, the individual disposes himself at his will (*l'individu s'appartient à lui-même*). Each citizen has, in order to live, his industrial force, his arduous aptitude, his physical, intellectual and moral capacity. The daily exercise of our personal faculties and the *wage* that results from it—here is our *private income*, our personal fortune' (A. Walras 1997c, 184; emphasis in original).

utive)’ (L. Walras 1990c, 139–40). In *EEPA*, indeed, Walras (1992, 251) remarked that ‘the just price of each labour is always what corresponds to the equality of supply and demand on the market.’ His exposition of labour exchange in *EEPP*, in a sense, was a theoretical account of the determination of ‘just’ wages. However, in Section II, it was argued that labour exchange in a modern capitalist society—where unlike in slavery and serfdom, worker subjectivity towards labour performance is granted—would rather preclude such wage determinations as Walras harboured.

Walras (1987 a, 148–49; 2001 a, 127, 243–44) asserted that capital is the ‘fruit of labour and savings (*fruit du travail et de l'épargne*)’ or ‘saved wages (*salaires épargnés*),’ thus, indicating that capital profit too is labour-rooted income. Here, also, Auguste (1997 a, 49) took the lead. This statement, however, lacked precision even in light of Walras’s own theory; for in Section V of *EEPP*, Walras (1988, 349–51, 356) assumed that savings and capital formation are made out of rent as well as out of wages and capital profit. On the other hand, Walras’s general equilibrium theory *per se* implied that insofar as a competitive market system is established, capital formation and capital profit acquisition do not prevent workers from acquiring ‘just’ wages. Indeed, Walras (1996 b, 584) contended: ‘Socialists . . . are mistaken when they see the social question in what they call the question of the relations of labour and capital. It is not there.’ Instead, he stressed the abuses of monopoly ‘on the field of wealth production’ and wage taxes ‘on the field of wealth distribution’ (L. Walras 1996 b, 584–85). Thus, Walras denied a conflict between labour and capital. This was also endorsed by his views on co-operative movements, mentioned later in this section, and repudiation of the adverse effect of machinery on workers (L. Walras 1992, 251–52, 428–29, 574–78). Hence, Walras justified the acquisition of capital profit determined in a competitive market economy as well.

Walras, who claimed that ‘the wage . . . is the only kind of social wealth on which individual property right is rigorously established,’ objected to the taxation of wages (Boson 1951, 83; Cirillo 1980, 298–300; Dockès 1996, 172–73; L. Walras 1990c, 126–27; 1996 a, 200–02; 2001 a, 408). Walras (1990c, 126) stated: ‘If I have an absolute right of individual property to my labour, I have the same right to my wage, and the tax imposed on the wage is unjust.’ In addition, Walras did not favour the tax on capital profit, arguing that it would hamper economic development (L. Walras 1988, 688; 1990c, 384–89; 1996 b, 376–81; 2001 b, 403, 429). Meanwhile, although opining that the state’s economic intervention ought to be minimised, Walras held that such services as the judiciary, police, defence and education should be public (L. Walras 1996 b, 484–85; 2001 b, 437). Then, the problem of their financing arose. On this issue, Walras proposed land nationalisation and financing public services from collective rent

revenues, again in line with Auguste's ideas.

Pareto, Walras's Lausanne professorship successor, removed social economics from his university lectures 'solely because the naming *could* make you believe in socialist tendencies that are not mine' (Pareto 1984, 386; emphasis in original; translation by the present author). Certainly, Walras referred to his own position as 'liberal socialism (*socialisme libéral*)' or 'scientific socialism (*socialisme scientifique*)' (L. Walras 1990c, 147; 2000c, 511).¹² However, at least Walras's 'socialism' was not anti-capitalistic.

In *EEPA*, Walras (1992, 435) stated: 'Many people of my generation had hoped to see take shape in Europe the evolution from the farming regime to the industrial and commercial regime by scientific socialism. Was it a premature hope? I do not believe so.' In fact, Walras's proposal for land nationalisation was closely related to his wish for the realisation of industrialised society expressed in this quotation.¹³ It was Walras's 'theorem (*théorème*),' also following Auguste, that personal faculties belong to individuals, whereas land belongs to the state (A. Walras 1997a, 51; 1997c, 184; L. Walras 1990c, 185–92). Moreover, as in Section VII of *EEPP*, Walras argued that land prices and rent, chiefly due to a natural restriction of land supply, tend to rise with economic development (L. Walras 1988, 583–98). Landowners' achievement of such increased rent by enabling themselves to be in a 'monopolist' condition contravened Walras's norm for justice (Nakakubo 1986, 17). However, his proposal for land nationalisation had another practical aim besides public service financing. As Jolink (1996, 37–38) points out, Walras (1990c, 192–93; 1992, 422) considered that leasing public acreage to private agriculturalists on the basis of collective land-ownership would effectively promote large-scale and capital-intensive farming to meet the increase in total population and relative decrease in agricultural population due to industrialisation. Thus, land nationalisation not only suited Walras's notion of justice but also was positioned as a powerful means for the industrialisation he desired. Here, too, Auguste had already put forward precursory arguments (Sato 1981; A. Walras 1990a, 8–17; 1990b, 93–94; 1997a, 37–58, 83–85, 94; 1997b, 151–60; 1997c, 184–87; 1997d, 300–01, 403–04, 439–40; 1997e, 450–59).

Accordingly, it would not be a misstatement to say that Walras's 'socialism'

12 For the details of Walras's 'scientific socialism,' see Nakakubo (1986).

13 Indeed, Walras (1992, 420) entertained a view on economic development stages similar to that of Friedrich List: 'history had made us know five different economic states or regimes gone through by humankind: the *hunting and fishing* state, the *pastoral* state, the *agricultural* state, the *industrial* state and the *commercial* state' (emphasis in original; see also Jolink 1996, 58–59, 142–45; L. Walras 1996b, 449–56). Here too Walras followed Auguste's opinion (A. Walras 1997d, 394, 439–40).

actually supported capitalistic industrialisation. While describing discordance between landlords and others, Walras, as well as Auguste, never recognised discordance between capitalists and workers (Jaffé 1983, 345; A. Walras 1997e, 453; L. Walras 1996b, 582–87). This was exemplified by Walras's views on co-operative movements, in which he engaged himself in the 1860s. Walras (1992, 261) emphasised that their economic role is 'not to do away with capital, but to render everybody capitalist,' thus putting a premium on workers' advancement to capitalists by 'labour and savings' (see also Misaki 1998, 130). It may be stated reasonably that Walras expected this 'promotion' to be fully achievable in an industrialised society with land nationalisation and the abolition of tax on wages (L. Walras 1990a, 25–29).¹⁴ Furthermore, as Nakakubo (1979, 50–55) indicates, Walras maintained that distributional practises, including wages, within co-operative entities should obey market rules based on self-help. Consequently, Walras refused to discuss co-operative movements in social economics but considered them as an object of applied economics (L. Walras 1990a, 25–29; 1996b, 692–709).

In his 'moral-free' general equilibrium theory, Walras treated the exchange of land services as having the same nature as other exchanges. In his arguments on social economics, however, he attended to the specificity of the exchange of land services, thereby focusing on its 'moral' relations. If Walras had conducted a similar review of labour exchange, especially grounded on such fair observations about the realities of industrial relations as made in his writings on applied economics, he would have sensed a need to amend his theory about labour exchange, and this would have encouraged him to reconsider the labour–capital relationship. In fact, Walras's above-mentioned opinions on co-operative movements illustrate that, without such reflections, he persisted in negating a 'moral' attribute of labour exchange and the labour–capital relationship. Indeed, he substantially excluded them from his topics of social economics. In this, he embraced the subsumption of wage–capital profit distribution under market exchange and labour–capital harmony. Thus, the theory of labour exchange presented in Walras's pure economics afforded a basis for his social economics.

V Concluding Remarks

This study critically examined Walras's thoughts on labour, as presented in his pure, applied and social economics.

14 Walras (1990a, 27; 1990b, 212; 1990c, 126–27; 1996a, 200–02) observed that actual heavy taxes imposed on wages forced workers to lead difficult lives and this caused labour strikes.

In his theory of pure economics, Walras incorporated labour exchange into his general equilibrium system. Notwithstanding his distinction between personal faculties and labour, and his emphasis on the freedom of human will, Walras disregarded worker subjectivity towards labour performance and the resulting variability in the substance of labour, thereby arguing for the determination of labour exchange on the market. Thus, Walras's theory of pure economics espoused that labour exchange too is 'moral-free,' that is, not involved with inter-personal relationships, and therefore, independent of socio-political influences.

In addition, Walras held that 'moral' factors do not concern the scope of applied economics regarding industries. This perspective corresponds to his 'moral-free' and production-covering theory of pure economics. Consequently, Walras contended that production activities, including the labour–management relationship, generally should be subject to free competition. However, he *de facto* perceived that this norm tends to be invalidated, as represented by the need for the state regulation of labour time. Nevertheless, he opposed the minimum wage system and denounced strikes for wage increases. As a result, Walras adhered to his own theory of labour exchange incurring serious inconsistencies within his expositions.

Walras stressed the 'moral' characteristics of social economics dealing with distributional issues in light of justice, unlike pure and applied economics. His writings on social economics show the profound influence of Auguste, especially in their own way of defending labour-based property rights. Consequently, Walras proposed land nationalisation. However, his 'socialism' was never anti-capitalistic. Like Auguste, Walras justified the acquisition of capital profit as well as wages determined in a competitive market economy and denied a conflict between labour and capital. Hence, he persisted in negating a 'moral' attribute of labour exchange and the labour–capital relationship, and substantially excluded them from the topics of social economics. Thus, the theory of labour exchange presented in Walras's pure economics also afforded a basis for his social economics.

In this manner, Walras's arguments in his trilogy advocated the market determination of labour exchange embracing its subsumption of production and distribution and labour–management and labour–capital harmony. However, this step emasculated the human traits of labour, and so, negated the distinctiveness of labour exchange and contradicted its nature. On the other hand, like Walras's contemporary economists, such as Jevons and Pareto, who advanced similar ideas on labour exchange, Walras made fair observations about the realities of industrial relations that were at variance with his own theory. Nevertheless, like these other economists, Walras downplayed the former and clung to the latter

without a serious attempt to resolve the discrepancies. Thus, his ideas were moulded into what grew to be the neoclassical principle of labour exchange. The fact that Walras had a hand in this prior to the establishment of the marginal productivity doctrine and despite his 'socialism' underscores *a fortiori* that this principle had already constituted the central kernel of neoclassical economic thought at its inception. Walras's writings, all the more for their prominent systematism, revealed the features of this theoretical formation more clearly than those of his contemporaries. Hence, revisiting Walras's thoughts on labour in his trilogy provides an important clue in comprehending the root of the flaw inherent in the neoclassicist attitude towards labour exchange, which has yet to be rectified.

(Motohiro Okada: Faculty of Economics, Konan University)

References

- Blaug, M. 1996. *Economic Theory in Retrospect*, 5th ed. Cambridge, UK: Cambridge University Press.
- Boson, M. 1951. *Léon Walras: fondateur de la politique économique scientifique (Léon Walras: Founder of the Scientific Economic Policy)*. Paris: R. Pichon & R. Durand-Auzias.
- . 1963. *La pensée sociale et coopérative de Léon Walras (Léon Walras's Social and Co-operative Thought)*. Paris: Institut des Études Coopératives.
- Cirillo, R. 1980. The 'Socialism' of Léon Walras and His Economic Thinking. *American Journal of Economics and Sociology* 39(3): 295–303.
- Diemer, A. 2006. Auguste Walras, les premiers pas de l'économie scientifique (Auguste Walras, First Steps to Scientific Economics). *Économies et Sociétés (Economies and Societies)*, 《 Histoire de la Pensée Économique (History of Economic Thought) 》 PE (38): 1753–76.
- Dockès, P. 1996. *La société n'est pas un pique-nique: Léon Walras et l'économie sociale (Society Is not a Picnic: Léon Walras and Social Economics)*. Paris: Economica.
- . 2006. Léon Walras: la vérité, l'intérêt et la justice réconciliés (Léon Walras: Truth, Interest and Justice Reconciled). *Économies et Sociétés (Economies and Societies)*, 《 Histoire de la Pensée Économique (History of Economic Thought) 》, PE (38): 1777–813.
- Frambach, H. A. 1993. *Die Evolution moderner ökonomischer Kategorien (The Evolution of Modern Economic Categories)*. Berlin: Duncker & Humblot.
- Jaffé, W. 1983. *William Jaffé's Essays on Walras*, ed. by D. A. Walker. Cambridge, UK: Cambridge University Press.
- Jolink, A. 1996. *The Evolutionist Economics of Léon Walras*. London and New York: Routledge.
- Misaki, K. 1998. *Walras no Keizai Shisou: Ippan Kinkou Riron no Shakai Vision (Walras's Economic Thought: The Social Vision of His General Equilibrium Theory)*. Nagoya: University of Nagoya Press.
- Morishima, M. 1977. *Walras's Economics: A Pure Theory of Capital and Money*. Cambridge, UK: Cambridge University Press.

- Nakakubo, K. 1979. Léon Walras to Kyodo Kumiai Undo (Léon Walras and Co-operative Movements). *Rokkodai Ronshu* (Kobe University) 25 (4): 40–58.
- . 1986. Léon Walras no 'Kagakuteki Shakai Shugi' (Léon Walras's 'Scientific Socialism'). *Onomichi Tanki Daigaku Kenkyu Kiyo* (*Bulletin of Onomichi Junior College*) 35 (2): 1–23.
- Okada, M. 2011. Marx versus Walras on Labour Exchange. *Keizaigakushi Kenkyu* (*History of Economic Thought*) 52 (2): 46–62.
- . 2012a. A Reappraisal of Jevons's Thought on Labour. *Keizaigakushi Kenkyu* (*History of Economic Thought*) 53 (2): 21–40.
- . 2012b. Carl Menger on Labour. *Konan Keizaigaku Ronshu* (*Konan Economic Papers*, Konan University) 52 (3–4): 95–152.
- . 2014. A Reassessment of Marx's Thought on Labour Exchange. *Review of Political Economy* 26 (3): 408–25.
- . 2015. Vilfredo Pareto on Labor: A Critical Re-examination. *Forum for Social Economics*. <http://dx.doi.org/10.1080/07360932.2015.1036764>. Forthcoming in Print.
- Pagano, U. 1985. *Work and Welfare in Economic Theory*. Oxford: Basil Blackwell.
- Pareto, V. 1984. Lettera a Maffeo Pantaleoni, li 22 luglio 1893 (Letter to Maffeo Pantaleoni, 22 July 1893). In *Vilfredo Pareto œuvres complètes* (*Vilfredo Pareto Complete Works*), XXVIII, 1, ed. by G. de Rosa. Geneva: Librairie DROZ, 386–88.
- Pirou, G. 1946. *Les théories de l'équilibre économique Walras et Pareto* (*The Economic Equilibrium Theories of Walras and Pareto*). Paris: Éditions Domat Montchrestien.
- Potier, J.-P. 1998. Léon Walras and Applied Science: The Significance of the Free Competition Principle. In *Studies in the History of French Political Economy: From Bodin to Walras*, ed. by G. Faccarello. London and New York: Routledge, 369–403.
- . 2006. Léon Walras et les exceptions au principe de la libre concurrence (Léon Walras and the Exceptions to the Principle of Free Competition). *Économies et Sociétés* (*Economies and Societies*), « Histoire de la Pensée Économique (History of Economic Thought) », PE (38): 1813–26.
- . 2011. Marché du travail et législation sociale dans la pensée de Léon Walras (Labour Market and Social Legislation in Léon Walras's Thought). *Oeconomia* 1 (3): 437–58.
- Rugina, A. N. 1982. Léon Walras: The Pure Scientist versus the Social Reformer. *International Journal of Social Economics* 9 (3): 3–40.
- Sato, S. 1981. Auguste Walras no Tochi Kokuyu Ron (Auguste Walras's Theory of Nationalization of Land). *Keizaigaku Kenkyu* (*Economic Studies*, Hokkaido University) 30 (4): 129–47.
- Schaller, F. 1971. Réflexion sur la pensée politique et sociale de Léon Walras (Reflection on Léon Walras's Political and Social Thought). *Revue d'Économie Politique* (*Review of Political Economy*) 81 (3): 443–62.
- Van Daal, J. 1999. Léon Walras et le capitalisme (Léon Walras and Capitalism). *Revue Européenne des Sciences Sociales* (*European Review of Social Sciences*) (37): 83–99.
- Walker, D. A. 1996. *Walras's Market Models*. Cambridge, UK: Cambridge University Press.
- . 2006. *Walrasian Economics*. Cambridge, UK: Cambridge University Press.
- Walras, A. 1990a. De l'abolition de l'impôt, et de l'établissement de la loi agraire, telle qu'elle peut être conçue et pratiquée au XIX^e siècle (On the Abolition of Tax and the Establishment of Agrarian Law, Such That It Can Be Conceived and Practiced in the Nineteenth Century). In *ALWÆEC**, I: 1–20.
- . 1990b. De la nature de la richesse et de l'origine de la valeur (On the Nature of Wealth and the Origin of Value). In *ALWÆEC**, I: 34–233.

- . 1997 a. La vérité sociale par un travailleur (Social Truth by a Worker). In *ALWÆEC**, II: 29–105.
- . 1997 b. Théorie de la richesse sociale (Theory of Social Wealth). In *ALWÆEC**, II: 107–70.
- . 1997 c. Théorie de la propriété (Theory of Property). In *ALWÆEC**, II: 171–89.
- . 1997 d. Examen critique et réfutation du livre de Monsieur Thiers sur la propriété (Critical Examination and Refutation of Mr Thiers's Book on Property). In *ALWÆEC**, II: 191–440.
- . 1997 e. De l'impôt sur le revenu (On Income Tax). In *ALWÆEC**, II: 441–98.
- Walras, L. 1965. Letter to Louis Ruchonnet, Sep. 6, 1870. In *Correspondence of Léon Walras and Related Papers*, vol. I, ed. by W. Jaffé. Amsterdam: North-Holland Publishing, 204–12.
- . 1987 a. L'industrie moderne et l'économie politique (Modern Industry and Political Economy). In *ALWÆEC**, VII: 135–52.
- . 1987 b. La loi fédérale sur le travail dans les fabriques (The Federal Law on Labour in the Factories). In *ALWÆEC**, VII: 219–29.
- . 1988. Éléments d'économie politique pure (Elements of Pure Economics). In *ALWÆEC**, VIII.
- . 1990 a. Les associations populaires de consommation, de production et de crédit (The Popular Associations of Consumption, Production and Credit). In *ALWÆEC**, VI: 15–89.
- . 1990 b. Discussion sur les coalitions et les grèves à la Société d'économie politique de Paris (Discussion on the Coalitions and the Strikes in the Society of Political Economy of Paris). In *ALWÆEC**, VI: 209–12.
- . 1990 c. Études d'économie sociale (Studies in Social Economics). In *ALWÆEC**, IX.
- . 1992. Études d'économie politique appliquée (Studies in Applied Economics). In *ALWÆEC**, X.
- . 1993 a. Théorie mathématique de la richesse sociale (Mathematical Theory of Social Wealth). In *ALWÆEC**, XI: 1–309.
- . 1993 b. Application des mathématiques à l'économie politique (Application of Mathematics to Political Economy). In *ALWÆEC**, XI: 313–409.
- . 1996 a. Cours d'économie sociale (Lectures on Social Economics). In *ALWÆEC**, XII: 43–381.
- . 1996 b. Cours d'économie politique appliquée (Lectures on Applied Economics). In *ALWÆEC**, XII: 383–714.
- . 2000 a. Du sens esthétique. De l'art. Des opinions en matière d'art (On Aesthetic Sense, Art and Opinions about Art). In *ALWÆEC**, XIII: 19–46.
- . 2000 b. Paradoxe économique—que le point de vue économique est le point de vue social par excellence (Economic Paradox—the Economic Point of View is Typically the Social Point of View). In *ALWÆEC**, XIII: 165–84.
- . 2000 c. Notes pour « Ruchonnet et le socialisme scientifique » (Notes for 'Ruchonnet and Scientific Socialism'). In *ALWÆEC**, XIII: 649–52.
- . 2001 a. L'Économie politique et la justice (Political Economy and Justice). In *ALWÆEC**, V: 75–313.
- . 2001 b. Théorie critique de l'impôt précédée de souvenirs du congrès de Lausanne (Critical Theory of Tax Preceded by Memories of the Congress of Lausanne). In *ALWÆEC**, V: 341–432.
- . 2001 c. De l'impôt dans le canton de Vaud (On Tax in the Canton of Vaud). In *AL-*

WÆEC*, V: 433–503.

Wolff, J. 1981. *Les grandes œuvres économiques: III—Walras et Pareto* (*The Great Economic Works: III—Walras and Pareto*). Paris: Éditions Cujas.

* ALWÆEC = *Auguste et Léon Walras œuvres économiques complètes* (*Auguste and Léon Walras Complete Economic Works*), ed. by P. Dockès et al. Paris: Economica