

## Obituary

### Aiming for a ‘Higher Prize’ Paul Anthony Samuelson (1915–2009)

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Paul Anthony Samuelson was born on 15 May 1915 in the steel town of Gary, near Chicago. He died on 13 December 2009 at his home in Belmont, MA. He was one of the most influential academic economists of the second half of the twentieth century. A revised version of his Ph.D. thesis (1941) was published in 1947 entitled *The Foundations of Economic Analysis* (Samuelson 1947). In the introduction to the enlarged edition of the book, published in 1983, Samuelson characterised its accomplishment as consisting in ‘formulating a general theory of economic theories’, that is, a sort of metatheory (Samuelson 1983: xxvi). The *Foundations*, he emphasized, ‘finally achieved for economics a synthesis of Cournot’s Newtonian calculus method of maximizing with Walras’s equations of general equilibrium’ and ‘began the systematic use of *finite inequalities* in modern economics’ (xvii)<sup>1</sup>; it effectively freed ‘classical mathematical analysis from its calculus corsets’ (xviii). The *Foundations*, Samuelson surmised, is in fact three books. The first one (chapters I–VII) is based on the hypothesis ‘that individuals or firms act to maximize specifiable functions’ (xix). It changed the style of economics to one in which economic problems are typically framed as problems of optimization subject to constraints. The second book (chapter VIII) deals with welfare economics, starting from Abram Bergson’s 1938 article in the *QJE*. The third book (chapters IX–XII) deals with dynamic economic theory. The role of the *Foundations* can hardly be overrated. To paraphrase a famous saying of Keynes: it conquered the subject as completely as the Holy Inquisition conquered Spain.

One year after the *Foundations* Samuelson published a textbook, *Economics: An Introductory Analysis* (Samuelson 1948). It became one of

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<sup>1</sup> Unless stated otherwise, all emphases in quotations are in the original.

the best-sellers in economics of all time: up until now it has seen nineteen editions, the most recent in 2010 (beginning with the twelfth edition the book was co-authored by William Nordhaus), it was translated into more than forty languages and more than four million copies of it have been sold. It incorporates Keynesian ideas into a neoclassical framework – viz. the so-called ‘neoclassical synthesis’ – and spread Samuelson’s conviction that market systems ‘can be kept breathing healthily by the Keynesian palliatives of fiscal and monetary policy’ (CSPPAS I: 1512). He was highly critical of Chicago economists, who slighted Keynes’s important insights into the (mal)functioning of the modern economic system. As he put it in his Nobel autobiography with typical Samuelsonian twist: ‘My Chicago-trained mind resisted tenaciously the Keynesian revolution; but reason won out over tradition and dogma’ (Samuelson 2003).

Samuelson contributed pathbreaking articles to many fields of economics and with regard to some fields he could be called, if not their founding father, at least a sung hero whose work pushed back the frontiers of economic knowledge and inspired many people. His several hundred essays, articles and notes are conveniently made available in presently altogether five volumes of *The Collected Scientific Papers of Paul A. Samuelson* (CSPPAS 1968 et seq.). Two more volumes covering the period 1986–2009 are currently in preparation. There is hardly a field in economics to which Samuelson did not contribute. His main attention, though, focused on the following subjects: consumer theory, especially the theory of revealed preferences; the pure theory of capital and growth; dynamic economic theory, especially the multiplier-accelerator model; the problem of stability of economic equilibrium and the ‘overlapping generations model’; the theory of international trade, including the Heckscher-Ohlin-Samuelson theory, the factor price equalisation theorem and the Samuelson-Stolper theorem; welfare economics with the ‘Bergson-Samuelson Social Welfare Function’; the pure theory of public goods with the ‘Samuelson Rule’, equating the marginal rates of substitution between public and private goods with the respective marginal rates of transformation between the two types of goods; the theory of public expenditure; the theory of speculative markets and portfolio selection; mathematical biology and the economics of population; the stochastic theory of economics; and the theory of money and inflation. In addition he published numerous papers and comments on current economic problems, on economic and social policy issues, on mathematical problems, etc. In 1970 Samuelson received the Nobel Prize in economics. His exceptional productivity has not waned with age. He was one of the most original and prolific writers in economics ever.

In the enlarged edition of the *Foundations* we read: ‘working scientists, to tell the simple truth, have neither the time nor the patience to bother with

the history of their subject: they want to get on with making that history' (Samuelson 1983: xvi). Yet a few pages later he provided a cogent argument for a different view:

Admittedly, it is easier on the ego to develop what is already in the air while nurturing the self-deception of subjective originality. But early on I decided that the *higher prize* was to get on with the subject's advancement by utilizing and acknowledging whatever was already to be found in the literature, eschewing what Gunnar Myrdal acidly called 'unnecessary Anglo-Saxon "originality"'. Then, if one could leap a cubit from those ethereal heights the fulfillment was the greater. (Samuelson 1983: xxv; emphasis added)

Samuelson was conscious of standing on the shoulders of giants and himself raised the level from which posterity could climb further. His vivid interest in the history of economic thought therefore cannot come as a surprise.<sup>2</sup> When he became the president of the American Economic Association in 1961, it is telling that he devoted his presidential address to the theme 'Economists and the history of ideas' (Samuelson 1962a). In it he pointed out that while mathematics was a powerful tool in economics, there were many cases of its misuse. He then had a closer look at what he called the 'great *political* economists as against just great economists' (*CSPPAS* 2: 1505). In his telescope Adam Smith, whom he considered to be underrated as an economic theorist, 'stands on a pinnacle' (1505). However, as a political economist his impact does not compare with that of David Ricardo, John Stuart Mill or Karl Marx. Ricardo is said to be 'par excellence an economist's economist' (1506) and 'the darling both of the liberal economists who followed in his direct line and of the Marxian critics of capitalism' (1508). The handicap of John Stuart Mill, to whom we owe 'an analytical contribution of the first magnitude', was 'to be flexible, eclectic, and prolific': 'if you want your name to go down in the history books: get known for one idea, however farfetched it may be' (1509).<sup>3</sup> Seen from the point of view of pure economic theory, Marx is said to have been 'a minor post-Ricardian' (1510), whose greatest analytical achievement was his theory of simple and expanded reproduction, which elaborated on François Quesnay's *Tableau économique* and foreshadowed input-output analysis. While according to Samuelson Marx had fruitfully tied up technological change and capital accumulation with business cycles, he is accused of having erroneously thought that both the general rate of profit

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2 A student of two major historians of economic thought, Jacob Viner and Joseph Alois Schumpeter, it can also safely be assumed that an interest in the history of the subject was instilled into him from the beginning of his academic career.

3 He provides two illustrations: the view of his teacher Joseph A. Schumpeter that the rate of interest has to be zero in the stationary state and the Physiocratic doctrine that land is the source of all value.

and real wages can simultaneously fall. Yet with technological progress and rising productivity of labour this is impossible ‘once Marx jettisons Ricardo’s emphasis on the scarcity of land and the law of diminishing returns’. This, Samuelson insists, ‘is the real Achilles’ heel of the Marxian theory of distribution’ (1511). Alfred Marshall is considered the ‘prototype as *political economist*’ (1513) of the marginalist group. However, Marshall did not have the public notice of the aforementioned economists and his contemporaries at Cambridge, U.K., at any rate tended to despise him as a man.

The truth economists have to offer, Samuelson was convinced, ‘is an uncertain truth and economic scholars are humble about its precision – but our humbleness is built out of knowledge, not out of ignorance’ (1516). (One would wish that this humble attitude was more widespread amongst economists nearly half a century later.) ‘In the long run, the economic scholar works for the only coin worth having – our own applause.’ He concluded that this might request ‘running against “the spirit of the times”’ (1516).

Samuelson’s presidential address provides a neat summary account of his assessment of major economists. In numerous papers he expounded his views in greater detail. Here it must suffice to mention some of his most influential and widely debated contributions to the history of economic analysis.

Each volume of his *Collected Scientific Papers* contains at least one part with historical papers, and there is hardly a paper without observations on the history of the theme under discussion. Part IV of volume 1 contains four papers (*CSPPAS* 1: 339–422): ‘Wages and interest: a modern dissection of Marxian economic models’ (Samuelson 1957a), a reply to a critic (Samuelson 1957b), and his essay ‘A modern treatment of the Ricardian economy’ in two instalments, the first dealing with ‘The pricing of goods and of labor and land services’ (Samuelson 1959a) and the second with ‘Capital and interest aspects of the pricing problem’ (Samuelson 1959b). When the first paper drew criticisms, Samuelson admitted openly: ‘I must assert agreement with the view that my paper on Marxian economic models did not do justice to Marx’s own formulations of the issues treated. Nor was it ever intended to undertake such a task’, whose ‘extreme difficulty’ he emphasized. The task was rather to clarify ‘the methodological background to the earlier discussion’ and to check the consistency of arguments in terms of modern analytical methods and terminology (*CSPPAS* 1: 370 and 372).

Part XVI of volume 2 (*CSPPAS* 2: 1497–1615), ‘Essays in the history of economics’, contains eight papers dealing inter alia with John Maynard Keynes, Joseph A. Schumpeter, Harold Hotelling and Dennis Robertson.

Volume 3 has two parts belonging to historical subjects. Part IV consists of four papers (*CSPPAS* 3: 264–314) and is once again devoted to Ricardo and Marx. It carries the essay ‘Understanding the Marxian notion of exploitation: a summary of the so-called transformation problem between Marxian values and competitive prices’ published in the *Journal of Economic Literature* (Samuelson 1971). Samuelson introduces his paper with the words: ‘there is no excuse for mystery or partisan polemics in dealing with the purely logical aspects of the problem’ (Samuelson 1971: 154). His answer to the problem at hand reads: ‘Contemplate two alternative and discordant systems. Write down one. Now transform by taking the eraser and rubbing it out. Then fill in the other one. *Voilà!* You have completed your transformation algorithm’ (154).<sup>4</sup> Part XVI of volume 3 contains ten papers (*CSPPAS* 3: 638–710), including one on ‘Irving Fisher and the theory of capital’. In it he corroborates Schumpeter’s prophecy that Irving Fisher’s ‘name will stand in history ... as the name of this country’s [the US] greatest scientific economist’ (*CSPPAS* 3: 673).

In part III of volume 4, ‘On Marxian economics’, there are seven papers (*CSPPAS* 4: 229–306), five of which are replies to critics of his *JEL* essay. 19 papers, notes and reminiscences of important economists are collected in part X, ‘Essays on the evolution of economics’ (*CSPPAS* 4: 841–945).

The eleven papers of part II and the seven papers of part V of volume 5 are respectively devoted to ‘Marx, Keynes, and Schumpeter’ (*CSPPAS* 5: 259–394) and ‘Classical economics’ (*CSPPAS* 5: 573–694). The latter part contains two influential essays: ‘The canonical Classical model of political economy’ (Samuelson 1978) and ‘Thünen at two hundred’ (Samuelson 1983). The first essay presents a summary account of Samuelson’s interpretation of the classical economists and seeks to show that there

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4 In response to a review of his 1960 book, Sraffa in his hitherto unpublished papers expressed a somewhat different view (with respect to single product systems). He stated: ‘if we want to follow in Marx’s footsteps and pass from values to prices of production and from rate of surplus value to rate of profits, the Standard System is a necessary adjunct: for that passage implies going through certain averages and if these are calculated without weights (or with the weights of the real system), a result which is only approximately numerically correct is obtained. If an *exact* result is wanted the proportions of the St[andard] Syst[em] of eq[uation]s  $q$ ’s [quantities] must be applied as weights. – This is not stated explicitly in the book, but is implied.’ (See Sraffa’s Papers D3/12/111: 118.) Sraffa then composed a manuscript (see D3/12/111: 127–130) in which he investigated how the general rate of profits can be an exact weighted average of the different industries’ rates of profit, calculated for the industries on the basis of the labour values of the products and the role that the Standard Commodity may play in it. See Kurz and Salvadori (2010).

are no fundamental differences between their doctrines and those of the later neoclassical or marginalist authors. Samuelson was in fact convinced that there is a fundamental *unité de doctrine* across all ‘schools’ of economic thought, once each particular doctrine has been purged of concepts that lack clarity, errors of reasoning and special assumptions. While Samuelson had influential followers in this regard, including John Richard Hicks, he also drew criticisms from numerous scholars coming from different fields and orientations in economics. The second essay throws new light on the important achievements of Johann Heinrich von Thünen, to Samuelson the ‘founding god’ of economic geography and location theory and one of the founders of marginal productivity theory.

In his keynote address at the History of Economics Society meeting in Boston in 1987, reflecting his metatheory concept and *unité de doctrine* point of view, Samuelson proposed a program for what he dubbed the ‘Whig history of economic science’ (Samuelson 1987). By this he meant a re-orientation of the history of economic thought ‘toward studying the past from the standpoint of the present state of economic science’ (p. 52). He motivated his proposal by asserting that there were no ‘Kuhnian breakthroughs in current economic science’ and that ‘ours is not an age of heady accomplishments and new exciting syntheses’ (p. 52). As an exemplification of the alleged cumulative character of the normal science of economics he mentioned Piero Sraffa’s edition of *The Works and Correspondence of David Ricardo* (Ricardo 1951–1973) and his reformulation of the classical approach to the theory of value and distribution (Sraffa 1960).<sup>5</sup> Here it must suffice to point out that Sraffa saw his own analysis explicitly as a return to the standpoint of the classical economists in the theory of value and distribution, which had been ‘submerged and forgotten since the advent of the “marginal” method’ and as providing the foundations of a critique of the marginal theory of value and distribution (cf. Sraffa 1960: v–vi). Sraffa thus challenged the cumulative-cum-continuous perspective maintained by the Whig history concept. In several papers Samuelson tried to refute Sraffa’s claim (see, in particular, Samuelson, 1978).<sup>6</sup> The respect he had for Sraffa and scholars working

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5 It is interesting to note that Samuelson in his paper on ‘Economists and the history of ideas’, commenting on the idea of cumulative knowledge, was explicit only in the following regard: ‘mathematical knowledge has been cumulative’ (Samuelson, 1962a, p. 5, n.2).

6 There are reasons to think that among those who disputed his view he took very seriously scholars working in the tradition of Piero Sraffa’s reformulation and generalisation of the classical standpoint in the theory of value and distribution (Sraffa 1960); see the exchange of views in Kurz (2000) and the papers by Paul Samuelson and Pierangelo Garegnani in *EJHET*, volume 14:1 (2007).

in the Sraffian tradition is well reflected by the fact that, when asked whether he would like to contribute an essay to a *Festschrift* in honour of Ian Steedman, Samuelson not only answered in the affirmative but asked to be an editor and write a preface (see Vint et al. 2010). Sadly, Samuelson was not given the chance to see the published volume.

I was not convinced by the Whig history concept and was surprised to see one of the most knowledgeable, erudite and original scholars I ever had the privilege to meet advocate it. After all, Samuelson himself had at least two souls in his breast: he was a neoclassical economist and a Keynesian at the same time. He was rightly critical of attempts to reduce irreducibly heterogeneous things to some homogeneous substance, and he knew better than most economists about the variety, diversity and frequent incompatibility of economic ideas and points of view: see, for example, his controversies with Milton Friedman. As he put it succinctly in his preface to the Steedman *Festschrift*: ‘Twenty or so chapters that are all in the Milton Friedman vein of libertarianism piques few appetites. The same holds for cooked and re-cooked Marxian stew.’ For someone with a distinguished taste for variety, a preference for unicity comes as a surprise. The Whig history concept always reminded me of the concept of the ‘surrogate production function’ (Samuelson 1962b), which was designed to show that a world with heterogeneous capital goods has the same features as a one-commodity world. Neither concept can be sustained.

Paul Samuelson served on the Editorial Board of *EJHET* for many years. He kindly accepted to referee and write papers for the journal and he supported it in many ways. He intended to give even more: About two years before he passed away he asked me the rhetorical question whether *EJHET* would be interested in a critical overall assessment of Friedrich August von Hayek’s contribution to economics by him: to see a Samuelson dissect the ideas of a Hayek! It is a pity that he was prevented from accomplishing the task.

Paul Samuelson was a generous and compassionate man, kind and supportive, open-minded and curious, highly original and remarkably prolific. Can there be any doubt that he deserves the ‘higher prize’ he aimed for?

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