

Nell, Edward J.; Rochon, Louis-Philippe

Article

Interview with Edward J. Nell: 'A great deal of neoclassical theory is set in cloud-cuckoo-land'

European Journal of Economics and Economic Policies: Intervention (EJEEP)

Provided in Cooperation with:

Edward Elgar Publishing

Suggested Citation: Nell, Edward J.; Rochon, Louis-Philippe (2016) : Interview with Edward J. Nell: 'A great deal of neoclassical theory is set in cloud-cuckoo-land', European Journal of Economics and Economic Policies: Intervention (EJEEP), ISSN 2052-7772, Edward Elgar Publishing, Cheltenham, Vol. 13, Iss. 1, pp. 1-9,
<https://doi.org/10.4337/ejeep.2016.01.01>

This Version is available at:

<https://hdl.handle.net/10419/277343>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

‘A great deal of neoclassical theory is set in cloud-cuckoo-land’

Interview with Edward J. Nell



Edward J. Nell attended Princeton University, USA, and then Oxford University, UK, as a Rhodes Scholar. He taught at Wesleyan University, USA, and then at the University of East Anglia, UK. He became Professor at the Graduate Faculty of the New School for Social Research, USA, in 1969 – making him the youngest full professor in the Economics profession (superseded rapidly by Joe Stiglitz, however) – and he remained there until his retirement in 2014. He was awarded the Malcolm B. Smith Chair as Professor of Economics in 1990, and served for many years as the Chair of the Economics Department. He is currently the chief economic advisor to the CEO of Recipo Corp, a trading company that issues a special-purpose currency.

How and why did you get interested in economics, and what authors influenced your thinking at the early stages?

Authors are easy: Keynes and Marx, first. Then Sraffa. After that, many; perhaps especially Walras and Wicksell. Joan Robinson, of course. Why did I get interested? I have always been interested in public policy and in what might be called the public philosophy, to use the phrase that Walter Lippmann popularized long ago. I have always been very skeptical of individualism and the alleged importance of individualism in establishing a market system as a basis for a good life. So, partly in reaction to conservative individualism and partly as a positive response to the opportunities for defining effective state action, I planned my studies in the belief that I might become an actively involved diplomat or government official or else a representative of labor unions. I began studying public policy when I was in Princeton and then when I went to Oxford, I continued, but also became much more interested in theory, in philosophy, and in Keynes and Marx, both of whom saw a large role for philosophy in determining the foundations of economics.

You mentioned Keynes, Marx and Oxford, and I wondered, did you have any personal relationships or friendships with some of the bigger names in heterodox economics? How did that influence your thinking and approach to economics? How did they influence you on a personal level?

I studied PPE (Politics, Philosophy, and Economics) at Magdalen, and then I went to Nuffield for 3 years. At Magdalen my tutors were Frank (Fritz) Burchardt, and David Worswick. I also met Lawrence Klein there, at the Institute for Statistics and Economics, and became interested in Econometrics, though I was skeptical. At Nuffield I studied for a time with a conservative development economist, Ian Little. D.C. Champernowne was

there for a year but then went back to Cambridge. Luigi Pasinetti was a student of Nuffield at the same time that I was, and he introduced me to Sraffa, and then through the Hall family – Margaret Hall and Sir Robert Hall – I met Joan Robinson.

I had quite a lot of correspondence with Joan Robinson and I kept in touch with her over the years. Sir Roy Harrod was my tutor for a while, as was David Worswick. They were of course very opposite kinds of people. But, I think Oxford was critical and largely Keynesian in one aspect or another. Worswick was a left-wing Keynesian and Harrod was a kind of right-wing Keynesian, but they were both Keynesians, and in the Oxford conversation there was a role for Marx. Of course, Marx was regarded with great discomfort because this was the Cold War era and it was almost like we were deliberately putting ourselves outside the arena of public discussion by talking about Marx. Yet, Joan Robinson did it, and did it very well. Marx brought an historical dimension to economics in a way that nobody else did. Keynes was aware of history, Marshall was aware of history and Marshall's Appendix A (Marshall 1890 [1920]) is in fact a grand historical vision of how the economy developed. But it's an appendix and it does not figure in his work in any integral way. If you look at Marshall's own models of the economy, or the many Marshallian models developed after, you don't find any role for things that are discussed in Appendix A. But for Marx, history – driven by the economy and affecting the economy – is deeply embedded in the very core of his argument.

Reflecting on Marx and Keynes led me to realize that there is no such thing as equilibrium growth. Growth is fundamentally and always *transformational*; that is, growth changes the character of the economy; the proportions of the sectors are changed and so are the roles and duties of the agents in the economy. Growth brings technical change in its wake – new products and new processes both – and it stimulates even more technical changes; technical change is unavoidable because there is always an incentive to control and reduce cost. This, I think, is what drives the economy.

We will return to transformational growth. But let me ask this: you mentioned Keynes and Robinson; but you did not mention Kaldor.

His granddaughter was a very good friend of my son and indeed they wrote a couple of articles together when they traveled to Russia in the 1990s. They were both at Balliol. But I knew the Kaldor family from early on. I taught Prelims for Somerville, and Frances was a pupil of mine for a short time. I knew Nicky, of course, from economic conferences, and from time spent at Cambridge. He was a wonderful person to listen to – not quite so easy to talk to, but you could certainly listen and learn a great deal from him. I thought he was wonderful. He was not a systematic theorist, but he was a brilliant generator of ideas and insights. It was more or less for others to really work them out, but his ideas were marvelous. Willi Semmler and I organized a conference on his work at the New School in 1987 and produced a very good book out of it in 1991.

Let's fast-forward a bit. How did you end up teaching at the New School and what kind of economics was being taught at the time?

I had been for a couple of years in the University of East Anglia and a semester basically in Cambridge. I came to the New School in September 1969 at the invitation of Robert Heilbroner and Adolph Lowe, who was the teacher of my former tutor, Frank Burchardt, at Magdalen. Both were concerned that the New School was drifting into what might be called a left oriented, critically oriented, but nevertheless largely neoclassical position. Lowe and Heilbroner wanted to maintain a critical orientation in another sense, part of it historical. Lowe represented analytical thinking but he was sympathetic to the German

historical school. Heilbroner was a student of Lowe's and, in fact, *The Worldly Philosophers* originated in Heilbroner's notes on Lowe's lectures, which he wrote up and showed to Lowe who said we must publish it.

I have heard this story many times from Heilbroner.

Both Lowe and Heilbroner were intrigued by the success of the Cambridge School, especially the capital critique which was at that time very much in the forefront of discussion in economics. They wanted an historical dimension to economic thinking and they also wanted a Keynesian dimension – instability, uncertainty, money. As I said, I started from Keynes and Marx and I have been close to both of them ever since. So, I had the historical dimension and the Keynesian dimension, but I also represented the critique of neoclassicism from an analytical point of view.

How did you get involved with the Cambridge capital controversies and what is your assessment of them 50 years later?

I met Sraffa through Luigi Pasinetti. I visited him a number of times, and had dinner with him and Dobb at Trinity College. One summer I spent a long afternoon walking with Sraffa and we talked a lot; he was exhausting to talk to. But I came back a couple of times more; also to talk with Joan Robinson. In the 1960s and early 1970s, I spent quite a lot of time in Cambridge. I was more interested, at that point, in the fundamental model presented in the first few chapters of Sraffa (1960) because it seemed to me that it gave us a different concept of price. Price, in neoclassical economics, is a measure of relative scarcity. That's what Walras always told us, and it applies to prices of factors of production too. Factor prices and product prices both reflect scarcity in somewhat different ways. Walras lays it out quite well.

Sraffa's conception of a price is completely different. It is a measure of the extent to which a given good participates in reproduction, given a pattern of distribution, and it does not have a scarcity dimension to it. The point is reproduction. What is the significance of this point? This is something to think about carefully; there is a connection here with some branches of philosophy. If you look around the room, everything you see is man-made and everything that is man-made wears out. So, if it is to be permanent or semi-permanent, it must be reproduced. The world we live in, every part of it, everything that we wear, eat, sit on or walk on or travel in, is made by a production process. In a capitalist country, that production process is guided by the structure of capitalism, and driven by the profit motive; and the reproduction of the everyday world is brought about in a market place in which transactions are governed by money and credit.

Now think of the textbooks: this is a different conception of the economic problem from that of neoclassical economics. Furthermore, this process of reproduction exhibits different characteristics in systematically different historical phases and that brings us to transformational growth. But the first thing that interested me in Sraffa was the connection between understanding the system of production and seeing how that is at the very core of the existence of the world we live in.

Your latest book is Rational Econometric Man with Karim Errouaki. What was the purpose of that book?

One was to fill in some things that didn't get into *Rational Economic Man* with Martin Hollis. We left some things out because we were not sure of them and perhaps they still need work. But they provide a powerful basis for macroeconomics and for macroeconometrics. The first part of *Rational Econometric Man* is devoted to the philosophical

problems of econometrics. Consider measurement; if you are going to measure something, you have to be able to define it. You have to say what it is – which is the problem of existence again. So, the cover design of the book shows the three poles of inquiry, required, we argue, for examining the economic question. This is again very different from neoclassical theory. Required are theory (or conceptual analysis), relevance (or applicability) and measurement; and the three interact. Theory without applicability floats in the air, which is the case with a great deal of neoclassical theory. It is cloud-cuckoo-land. Applicability is a question that itself has to be examined analytically, drawing on the analysis of the relevant concepts. Then the empirical side of applicability is measurement and once we have measurement, we can then reconfirm our theory to see if it is making sense. So these three interact and a model must be fully developed in all three. Econometrics was an effort to fill that in. These were problems that agitated and bothered the early econometricians and still agitate and bother some of the leading econometricians of today.

What do you mean by claiming that neoclassical theory is set in 'cloud-cuckoo-land'?

'In the clouds' means that it is detached from reality, ungrounded, unrealistic, based on assumptions that are practically impossible. 'Cuckoo': someone who is cuckoo can't see straight, gets everything distorted – think of comic-book characters. In *Rational Economic Man* we argue that models must, first, be consistent with the general conditions for the regular reproduction of the economic system, and second, must be based on realistic information about the agents and institutions under analysis – information gathered by fieldwork. Abstracting is OK, as long as you don't abstract from essentials. But it is never OK to distort or postulate the impossible or unsustainable.

Having been in Ottawa and McGill, Paul Davidson's concept of uncertainty was very much in my mind. I remember bringing that up in John Eatwell's class at the New School and Eatwell said to me, 'you should go on to psychology or philosophy if you want to study uncertainty.' So you have these two very different approaches to heterodox economics. You have the Sraffian or Eatwellian view and the Davidson sort of short run.

'Long-period position' is not easy to understand. It is definitely an equilibrium idea, but it is also evidently counterfactual. And how widely does it apply? What is the long period equilibrium of the stock market? What is the long-period equilibrium in Las Vegas? Yes, statistics can help us but statistics cannot reduce uncertainty to information bits. This is the point that we argue on a number of different grounds in the recent book with Karim Errouaki, but that does not mean that you can't model them. You have to model the uncertainty aspect. That is what we are trying to do in order to show the kind of interaction there is between the stable and the uncertainty parts of the economy. Davidson does not really ever do that. He is so upset by the fact that people go on continuing to make the same mistakes by trying to replace uncertainty with risk which is manageable using probabilities. Look at what happened in 2007. So Davidson ended up, I think, defending his position with more rhetoric than analytics. What we have been trying to do is to bring back uncertainty into the modeling. For example, I consider the multiplier to be reliable if the patterns of living are established. We can study that sociologically. The patterns of household use of commodities are based on technology and so, of course, are those of industry – the structure of the input–output system; these kinds of things can be modeled quite reliably and we can calculate multipliers. These multipliers are Goodwin–Leontief-type multipliers, that is, input–output multipliers, augmented by

the spending patterns of the different social classes – some spend all their incomes, others have definite patterns of saving which are relatively stable.

Let us go back to transformational growth. How does transformational growth fit with post-Keynesian economics or how does post-Keynesian economics fit with transformational growth?

I will say that post-Keynesian economics is today's version of Keynesian economics. I do not think the New Keynesians are real Keynesians. What they try to do is to establish that realistically there are a lot of barriers and imperfections in the economy that make it work to create Keynesian problems; that is, because of these imperfections a general equilibrium system works through clumsy quantity adjustments rather than by efficient price adjustments. Prices and wages are sticky and because of that the adjustments have to come about quantitatively so you get Keynesian-type results. That seems to me to be theoretically foolish because the original model really does not apply to the economy.

By contrast, the post-Keynesians try to examine the working of the economy with, generally speaking, a two-class model – capitalists and workers or sometimes business firms and workers – but you have two kinds of income, profits and wages, and generally speaking, an assumption that most of the wages, maybe all, are spent on household consumer goods and most of the profits go to either finance capitalist consumption or to underwrite investment. The active force in this tends to be investment.

Typically, at this point, most or many post-Keynesians make a mistake: Kalecki was pretty clear on the fact that there are two stages to investment. On the one hand, there is the *investment plan* where you choose the product and the target market for the product, you choose the method of production and you cost it out and you figure out what you can do; then, at a second stage, there is *investment spending* where you carry out the plan. The timing of investment spending and indeed the degree to which you carry out the whole plan is dependent on a lot of short-run variables – whereas, by contrast, only long-run variables are relevant to the investment plan. If you make this distinction, a number of very popular post-Keynesian ideas now, especially the idea of profit-led versus wage-led growth, don't really work anymore. The 'investment functions' are mis-specified. It is really crucial to recognize that there are aspects of planning for market, product, and capital development which depend on long-run considerations and do not depend at all on short-run considerations. On the other hand, the availability of finance, the ease or costliness of credit and things like that really do matter and matter quite a lot to investment *spending* even though they have little or no effect on long-run considerations and planning. This is an important area in which, it seems to me, post-Keynesian writing today goes off the rails.

Otherwise, post-Keynesian writings constitute an effort to study how the economy really works. Oversimplified, no doubt, but let us get the oversimplified version working pretty well and then we can complicate it. I have one other major problem though. Post-Keynesians have developed the theory of 'endogenous' money, which I applaud. But post-Keynesians have not taken up the Theory of Circulation, a subject I began to work on in the 1960s, in a critique of Wicksell. An advantage of this approach is that it makes it easy to separate money used in production and distribution, that fuels the multiplier process, from money as an asset, opening the way for new policy approaches to control speculation; and to understanding the issuance of new forms of money (one of which I am involved with). It also leads to a critique of many of them, e.g., Bitcoin. It also makes it possible to derive the Quantity Equation, explaining how profits are monetized (a problem defined well but handled badly by the Circuitists), and showing that money must be understood as endogenous. This is a big topic.

A classmate of mine at the New School, Marianna Mazzucato, is doing incredibly well with her book, The Entrepreneurial State (Mazzucato 2013). She argues that the State plays a key role in the transformation of markets, an idea that could well fit with transformational growth.

I certainly think so.

Her argument is that the iPhone, computers, all these are government funded.

The Internet was invented by the interactions of universities working for the Defense Department; it was pulled together by a Congressional subcommittee chaired by Al Gore.

I mean GPS on our phones, all of these things, she said they were government-funded research; then someone took it on the private sector and made it.

Yes. But that was true of the railroads, atomic energy, jet airplanes; many major innovations were started by government and then turned over to private business. So, it goes back very far in American history. If you remember the clash between Obama and Romney in the elections: Romney praising the business world, and saying the businessmen made their money themselves, whereas Obama said, no, you built your businesses on the back of the State. The point was the community, the society, the state all lie behind these successful businesses. This is very important in transformational growth. An important feature of the post World War II economy in the advanced world is the growth of externalities. It is a little hard to measure, but once you see it, you find it everywhere: namely, the very dramatic increase in the public-good and externality aspects of both consumption and investment. Once upon a time, we could describe most of household consumption as private or personal individual consumption. Not so when we get into education, health care, for instance the measles and vaccination problem, entertainment, transportation: all of these have public-good dimensions and externalities and as the world becomes more crowded and as technologies become more complex, the size of these externalities increases even though it is difficult to measure this. Think of the pollution problems and of course the climate problem. As economists we have to remember that we were taught by Marshall and Pigou that private markets do not handle externalities and public goods very well. We are in a stage of development in which, for technological reasons, for population pressure reasons, for social organization reasons, we now all live in cities, which makes it much more crowded and makes externalities much more intense. If everybody lives in spread-out rural areas the problems of pollution and externality are much less severe. The market system is less and less capable of managing this. In fact, it is liable to make externalities worse.

The successful synthesis of Keynes, Kalecki, and Marx remains today elusive. What went wrong? Is it still worth pursuing and if so where can the younger generation begin?

Well, I would say: by reading some of my papers, because I think that several things that I have done have tried to bring these together! I am very much in favor of work on this. In fact, the most recent paper that I have done precisely brings together Marx's relationship between the wage bill of the capital-good sector and profits or revenue of the consumer-good sector and connects that to a Goodwin-type multiplier and connects that further with Kalecki's relationship that investment spending determines profits. These three are integrated into a Sraffa model of reproduction and that Sraffa model can be considered as a Sraffa subsystem. What are the conditions for reproduction with a certain distribution? What happens when the level of investment is either that of the capacity of the

system or below it, or in a credit and financial boom time, above it? You can look at these relationships which enable you to set up an investment and expenditure system and then you can work out the Keynesian results. That is what I tried to do and I think that it is difficult because most people who understand Kalecki or Keynes do not understand or care about Sraffa or the linear production models, input–output, Leontieff or Marx. Many people who care a lot about Marx care much more about the Marxian analysis of the labor theory of value than they do about a Sraffian development of the evolving structure of production, which is the Marxian problem, I think, rather than the labor theory of value. My feeling is that heterodox economists tend to specialize a little too much and therefore do not bring these different lines of inquiry together. But in the real world these things do work together, and are essential to each other. Effective demand has to be embedded in a system that reproduces itself. But for a student starting out in Economics – well, there is a tremendous amount of literature first to survey and then to master, just to get the feel of the banking system and of credit relations. Now you are supposed in addition to read Leontief, Marx, and Sraffa, and learn a lot of dynamic matrix algebra. Reasonably enough, people specialize, and so it is hard to put all these together.

So the quest for a synthesis is indeed a difficult task. But beyond that, what is the role of personalities? I have never been to the Trieste summer school, but I have heard about personality clashes, notably between Davidson and Garegnani.

That was the worst, but there were other clashes as well. Still, many people met and became good friends and developed other relationships and other places of meeting. The intellectual problem of Trieste can be put this way. Some authors interpret the solutions to the Sraffian equations as reflecting the long-run position of the economy, meaning that it is the position to which the economy would gravitate were there not obstacles in the way. So, it is counterfactual, and it is the justification for writing the equations the way we write them, with a uniform rate of profit and a uniform price for each product, whereas we know that the rate of profit is not uniform and that prices are not uniform. The justification for writing it that way is that this is what would happen were competition to have an unfettered play in the field of the market. Then the system would gravitate towards this position.

From the point of view of Keynesians or Minsky, this is impossible because there are no such stabilizing forces. The economy is inherently unstable in at least parts of its operations and therefore there cannot be a long-period position. Whatever those equations are supposed to show, it cannot be that, because there can be no such thing. To think that there is, is to think in terms that are awfully close to neoclassical thinking; it is a form of equilibrium thinking. Keynes said that ‘equilibrium is blither.’ Davidson and Minsky definitely thought this throw-away line was one of the starting points of real wisdom about the economy. So you cannot have the Sraffian equations as the basis for Keynesian analysis because the Sraffian equations, if that is how you interpret them, are the equations of a stable system, while the Keynesian analysis claims that the system is fundamentally unstable because it is built on fundamental uncertainty. Now, that is a pretty big clash. My take on it, like that of Joan Robinson, is that the Garegnani interpretation of long-period positions is simply a mistake. A stable long-period position to which the system gravitates is not what the equations show. An alternative interpretation is that the equations show how the system *ought* to work – its blueprint, so to speak. Think of the diagram of an automobile engine, or an electric circuit. Adolf Lowe argued something like this and I have developed the point in several places.

I want to end with this question: what advice do you have for young scholars today?

I would say, read and think. Read the great books and read them historically, which means you have to consider them in the context of growth and development. You have to think in terms of the pressures that lead to movement, to historical development and change – transformational growth. But, as you read the great economists, you will see that they all think in those terms, at least at times, even if they have not all been explicit about it. The economy is always changing and developing, under the pressures of innovation. Equilibrium thinking is often wholly inappropriate. That is point number one. But there is a number two: ‘be skeptical.’ Don’t believe everything you read and definitely don’t believe everything you hear. Economics is filled with hidden or half-hidden ideology, so watch out!

Thank you very much, Ed.

My pleasure.

The interview was conducted by Louis-Philippe Rochon on 25 February 2015 at the Princeton Club in New York City. It was transcribed by Salewa ‘Yinka Olawoye, and it was abridged by Marc Lavoie.

SELECTED PUBLICATIONS OF EDWARD J. NELL

- Hollis, M., Nell, E.J. (1975): *Rational Economic Man: A Philosophical Critique of Neoclassical Economics*, Cambridge, UK: Cambridge University Press.
- Nell, E.J. (1967): Wicksell’s theory of circulation, in: *Journal of Political Economy*, 75(4), 386–394.
- Nell, E.J. (ed.) (1980): *Growth, Profits and Property: Essays in the Revival of Political Economy*, Cambridge, UK: Cambridge University Press.
- Nell, E.J. (1988): *Prosperity and Public Spending: Transformational Growth and the Role of the Government*, Boston: Unwin Hyman.
- Nell, E.J. (1992): *Transformational Growth and Effective Demand*, London and New York: Macmillan and New York University Press.
- Nell, E.J. (1998): *The General Theory of Transformational Growth: Keynes After Sraffa*, Cambridge, UK: Cambridge University Press.
- Nell, E.J. (ed.) (1998): *Transformational Growth and the Business Cycle*, London and New York: Routledge.
- Nell, E.J. (2002): On realizing profits in money, in: *Review of Political Economy*, 14(4), 519–530.
- Nell, E.J. (2004): Monetizing the classical equations, in: *Cambridge Journal of Economics*, 28(2), 173–203.
- Nell, E.J. (2010): On the circulation of real and fiat money in fix-price and flex-price economies, in: Birolo, A., Foley, D.C., Kurz, H.D., Schefold, B., Steedman, I. (eds), *Production, Distribution and Trade: Alternative Perspectives, Essays in Honour of Sergio Parrinello*, London and New York: Routledge, 254–285.
- Nell, E.J. (2011): The Quantity equation and the Classical theory of production and distribution, in: Ciccone, R., Gehrke, C., Mongiovi, G. (eds), *Sraffa and Modern Economics*, vol. 2, London and New York: Routledge, 186–204.
- Nell, E.J. (2012): Transformational growth: from a Marshallian neo-classical system to Keynesian growth, in: Gehrke, C., Salvadori, N., Steedman, I., Sturn, R. (eds), *Classical Political Economy and Modern Theory: Essays in Honour of Heinz Kurz*, London and New York: Routledge, 230–256.
- Nell, E.J. (2013): Reinventing macroeconomics: what are the questions?, in: Harcourt, G.C., Kriesler, P. (eds), *Oxford Handbook of Post Keynesian Economics*, vol. 1, Oxford: Oxford University Press, 362–389.

- Nell, E.J. (2014): On the causes of growing inequality: Piketty, Taylor, Pasinetti, in: *International Journal of Political Economy*, 43(3), 26–34.
- Nell, E.J. (2016): The quantity of labour, the wage rate and the standard system, in: Freni, G., Kurz, H.D., Lavezzi, A.M., Signorino, R. (eds), *Economic Theory and its History*, London and New York: Routledge, 164–184.
- Nell, E.J., Deleplace, G. (eds) (1995): *Money in Motion: The Post-Keynesian and Circulationist Approaches*, London: Macmillan.
- Nell, E.J., Errouaki, K. (2013): *Rational Econometric Man: Transforming Structural Econometrics*, Cheltenham, UK and Northampton, MA: Edward Elgar.
- Nell, E.J., Forstater, M. (eds) (2003): *Reinventing Functional Finance: Transformational Growth and Full Employment*, Cheltenham, UK and Northampton, MA: Edward Elgar.
- Nell, E.J., Semmler, W. (eds) (1991): *Nicholas Kaldor and Mainstream Economics*, London: Macmillan.

REFERENCES

- Marshall, A. (1890 [1920]): *Principles of Economics*, London: Macmillan.
- Mazzucato, M. (2013): *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*, New York: Anthem Books.
- Sraffa, P. (1960): *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory*, Cambridge, UK: Cambridge University Press.