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LUIGI PASINETTI
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Writing these lines is extraordinarily difficult. Luigi Pasinetti is my mentor, but above all I was bound to him by a deep affection. I will miss him tremendously.

I met him for the first time at the end of 2006. At the time, I was writing my master's thesis in Political Economy, in Pavia. I had hated practically everything I had studied in those five years; I was in a hurry to graduate and find a job, and I asked the only professor whose course I had attended with interest to be my supervisor: Gianni Vaggi. He changed everything.

He gave me Pasinetti's 1981 book to read, and tasked me with comparing the theoretical framework with that of (neoclassical) endogenous growth models. I knew nothing of this contraposition – I had taken Giorgio Lunghini's introductory course in the first year of my three-year degree, but at the time I did not know enough to grasp certain theoretical aspects.

I discovered a whole alternative approach that was much more convincing to me than the one I had been forced to study for five years. There were, however, many things I was struggling to understand; having discovered that Pasinetti was Professor Emeritus at the Catholic University, I decided to write to him and ask some questions.

He answered me that very same day. The following week, we were having lunch together at the canteen in Via Necchi. A few months later, as soon as I graduated, I started helping him with the proofreading of 'Keynes and the Cambridge Keynesians' (2007) and with the book on the theory of value that was his last endeavour.

I will always remember those years with great tenderness and gratitude.

We have been talking about a variety of subjects – politics, economic theory, anecdotes from Cambridge, his mountaineering with Angelo Reati. The plane he caught with Leontief from Rome to London after the conference '*The Econometric Approach to Development Planning'*. The journey to Cambridge in Goodwin's sports car.

Luigi Pasinetti's contributions to economic theory deal with a variety of issues. For a complete survey, I refer readers to Joseph Halevi's excellent review,[1] which lists them exhaustively, divided into three periods – corresponding to as many phases of his intellectual journey – from the 1960s to the present day: the Cambridge-Sraffa stage; the (hyper-)vertical integration stage; and the reaction to recent economic crises.

For me, Pasinetti's most fundamental contribution was his 1981 book – along with the 1988 *Cambridge Journal of Economics* article providing the input-output generalisation of the analytical framework. Growing subsystems can certainly be seen as an extension of Sraffa's subsystems – and from a logical point of view they are. Pasinetti, however, does not develop his theory starting from Sraffa – whom he met before the 1960s, but with whom he first merely discussed the mathematical formulation of Ricardo's theory – but on the basis of the Cambridge macro-dynamic models of the 1950s and Leontief's Input-Output framework.

During his PhD, Pasinetti had the opportunity to spend time at Harvard. There, he was given the task by one of his supervisors to prepare a paper to be presented at a seminar within the Harvard Economic Research Project. The supervisor in question was Wassily Leontief; the article, published in 1959, was 'On Concepts and Measures of Changes in Productivity' - a response to the famous article published by Solow two years earlier: Technical Change and the Aggregate Production Function.

Pasinetti argues that Solow's approach to the analysis of technical progress, based on the aggregate production function, does not take into account the reproducibility of capital, and the fact that technical progress occurs in the production not only of consumer goods, but also of productive capacity. By comparing productivity changes (which Pasinetti always defines in terms of labour content) in the production of consumer goods and the corresponding productive capacity, he then develops an index of the direction of technical progress based on Harrod's taxonomy. It is at this stage that Pasinetti begins to develop the concept of vertically (hyper-)integrated sectors.

Pasinetti also criticises Solow for mistakenly identifying capital intensity with the capital/labour ratio, which Pasinetti calls the degree of mechanisation, instead of the capital/output ratio – a distinction that becomes key in his 1981 book.

Later during his doctorate, Pasinetti became the youngest member of the *Secret Seminar*, and presented his critique of Kaldor's distribution theory, in which he identified a 'logical slip': if workers save, they must also get remuneration; they are therefore entitled to receive, in addition to wages, a share of the profits proportional to the amount of loans given to the owners of the means of production – the proportion factor being, of course, the interest rate. By incorporating this observation, one could arrive at the same results that Kaldor obtained only by introducing the hypothesis that workers do not save – $s_w = 0$.

By the age of 30, Pasinetti had generalised the Kaldorian theory of income distribution. He had also elaborated the profit rate theory underlying his 'natural system'. Ultimately, Pasinetti's multi-sectoral scheme in its hyper-integrated version is nothing else than the subdivision of the economic system into many perfectly self-sufficient growing subsystems, each of which can be considered as a small system of its own, characterised by its own equilibrium profit rate in the Kaldor-Pasinetti sense: the natural profit rate.

1 https://www.ineteconomics.org/uploads/papers/WP_40-Halevi.pdf

Shortly thereafter, in February 1965, Pasinetti was as usual delivering his course at Cambridge when Harcourt called him to show him an article in the Quarterly Journal of Economics in which Levhari, Samuelson's PhD student, claimed to have refuted re-switching, the subject of the last chapter of Sraffa's book. Pasinetti immediately went to discuss this with Sraffa, who was, however, unfamiliar with the matrix algebra used by Levhari and therefore struggled to understand what the criticism actually was. One thing Sraffa was certain of: he was right, and hence Levhari was wrong. In his turn, Pasinetti was familiar with linear algebra, and began to scrutinise Levhari's article in search of the flaw. He found it.

He then picked up an example from Sraffa and translated Levhari's argument into those terms so that he could explain it to Sraffa himself, who immediately grasped the point. Pasinetti began to turn that example into an article.

In the meantime, he had been commissioned to organise a session on 'Theory of Capital and Economic Growth' at the first world congress of the Econometric Society, to be held in Rome in September. Napoleoni, who had agreed to be a speaker, had to give up at the last moment; at that point it would have been difficult to find a replacement: Pasinetti thus decided to present his notes, with the title 'Changes in the Rate of Profit and Degree of Mechanization; a Controversial Issue in Capital Theory'.

Levhari, Samuelson, and all the MIT PhD students were at the congress presenting something in one session or another; Pasinetti's presentation was like a bombshell. Back home, they all set to work hard to find a way to respond. They thought they had succeeded, and sent their remarks to Pasinetti who, according to them, picked up a special case. Pasinetti adjusted his notes by slightly modifying the example to make it general, and proved his conclusions remained valid. His modified notes were published in 1966 in a special issue of the QJE devoted precisely to the debate sparked by Pasinetti's presentation. Samuelson and Levhari had to admit they were wrong.

You can listen to the story from his viva voce thanks to the video interviews published by INET.[2] But Pasinetti did not limit himself to merely theoretical issues. Many consider him a moderate economist who has failed to make an impact in the political debate. Yet his work is a radical critique of the capitalist mode of production, which in his view is incompatible with the natural system – the ideal configuration where all the properties of dynamic equilibrium are realised, starting with the full employment of labour.

The natural – i.e. equilibrium – rates of profit are the factor by which productive capacity has to be increased (or decreased), in each sector, in order to keep the system on the balanced growth path, given the rate of change of final demand. What remains of the net product is distributed in the form of wages; all productivity increases immediately translate into an increase in real wages.

This is obviously a normative configuration: real systems by their nature tend to disequilibrium, due to a multiplicity of intrinsically destabilising factors including productivity increases, which affect different sectors asymmetrically. Ultimately, technical progress is always labour-saving, thereby generating technological unemployment.

So, what is the task of the institutions? According to Pasinetti, first and foremost, it is to aim for full employment. This also means reducing the length of the working day and/or working life in line with the average increase in productivity – always intended as the reciprocal of the labour content of the net output.

2 https://www.ineteconomics.org/perspectives/blog/economics-in-a-different-key#

Luigi Pasinetti, however, goes further: the concept of the hyper-integrated sector is based on the observation that consumer goods and capital goods are radically different: the latter remain in the circular flow; they exist only to produce the former. This asymmetry has an immediate consequence: if the decisions concerning consumption goods only have individual consequences, decisions concerning production facilities have serious collective, social effects. Thus, if private ownership of consumption goods is perfectly acceptable, *control of the means of production should be collective*.

Perhaps this might have sounded moderate in the 1960s or 1970s; today it is even MORE revolutionary.

Finally, let us not forget Luigi Pasinetti's contribution on the *folly* of the Maastricht parameters: he was certainly not afraid of expressing his opinion. He did it in a very simple way, following the usual method: he defined an 'ideal' target (in this case, non-increasing debt-to-GDP ratio) in quantitative terms starting from fundamental accounting identities. He derived the objective equilibrium condition: the interest rate on debt cannot exceed the real growth rate of the economy. He did this in an extremely simple manner, without the need to resort to abstruse econometric models that nobody but specialists could understand.

This is his main teaching, the *method* he taught us and which we are supposed to follow.

Assumptions on individual behaviours must be removed, not added. We must not try to construct a quantitative scheme that encompasses all aspects of reality; quantitative schemes mainly serve to highlight those quantitative relations that are so fundamental that they can only be derived in logical-mathematical terms from accounting identities – for example, those that Pasinetti calls pre-institutional, i.e. valid in any industrial system, where commodities are produced by means of commodities. All other issues must be investigated with other tools and other categories – those of sociology, political philosophy, history, but also engineering and organisational science.

Any quantitative scheme – *scheme*, not model – must start from accounting identities: the quantities must be objective and measurable. Not everything can be formalised.

Above all, economics is a social science. Its purpose is to provide tools to actively realise a specific objective, but it cannot say by itself what this objective is: all the quantities that Pasinetti considers exogenous are those that cannot be determined within the theoretical scheme. The very definition of equilibrium is a political stance, for which the economist takes responsibility.

I could go on writing forever, but I must stop here.

Thank you, *Professore*, for all you have done for me.

You will never be forgotten.

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