

The Contrast between Mainstream and Heterodox Economics: A Misleading Controversy—“Necessary” System versus “Natural” System

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Abstract: This article focuses on a broad distinction within economic thinking and the methodological misconceptions that are implied by it. We find today, on the one hand, mainstream economics, which uses both the method of abstract rationality typical of the logical-formal sciences and the method of the natural sciences—two methodologies that, as we shall prove, are inappropriate for the study of social reality. On the other hand we find the opponents of mainstream economics, primarily heterodox economics, who emphasize methodological pluralism and lend, in the extreme, their support to the relativist view that all views may be right in their own way. Such an unconstrained pluralist attitude to method obstructs interaction and reciprocal understanding among students, the scientific appreciation of theoretical contributions and the same fecundating role of pluralism.

We shall see that methodological diffuseness is the primary factor explaining the failure of attacks against mainstream economics and we shall look for a solution to this embarrassing impotence by searching for general methodological procedure and rules fully appropriate to the scientific study of social reality.

Key words: method of economic and social sciences; heterodox economics; mainstream economics; economics and institutions

JEL codes: B40; B41; B49

1. Introduction

This essay discusses some contemporary economic theories that are currently considered important examples of scientific procedure. We refer to so-called mainstream economics and also to some important theories that have strongly opposed it. Curiously, both the dominant economic teaching and its opponents will be seen to suffer from the same, crucial shortcoming: a disregard for basic aspects of economic reality and the consequent implications that often renders misleading the works and teaching of economists.

The essay starts from some reference to the famous controversy between the two Cambridges: Cambridge U.K. and Cambridge, Massachusetts (U.S.A.); a controversy that for some while animated economic debate but which has now been confined to the history of economic thought. From here we will be led to aspects of other important theories: that of Keynes and the post-Keynesians, Schumpeter, the neo-Austrians, institutionalism and the fragmented positions that make up modern heterodox economics. Notwithstanding the vigorous attack directed from Cambridge U.K., the neoclassical school associated with Cambridge, Massachusetts and its recent

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developments, which opposes to its opponents a substantial cohesiveness and the use of prestigious and consolidated methodologies giving a strict scientific appearance, remains the dominant orthodoxy of the present. We must ask the reason for this continual dominance of the neoclassical tradition and this essay will attempt to clarify the primary reasons for the substantial failure of the attacks upon this mainstream¹ and specify some—possibly crucial—points that have been omitted from the debate.

An efficient way of performing the required analysis will be to focus primarily upon L. Pasinetti’s attempt to complete the post-Keynesian revolution and remedy the theoretical fragmentation that has by-now arisen from the multiplicity of those post-Keynesian contributions that have recently become a part of heterodox economics.

Pasinetti’s analysis establishes two important methodological principles: the realism of postulates and the so called “separation” theorem. These two principles are strictly linked to each other in that, while the first generates a substantial methodological impasse, the second provides a means of overcoming that impasse. More precisely, the first principle (realism of postulates) prohibits the “abstract rationality” implied by the method of the logical-formal sciences and, at the same time, collides with the use in social science of the method based on observation because this method is contradicted by the non-repetitiveness of the large part of social phenomena. So, the statement concerning the realism of postulates is inconsistent with the operation in social studies of current methods (abstract rationality and observation-verification).

The idea of “separation” between, so to speak, fundamental and non-fundamental variables, provides the means of overcoming such a methodological dead-end. Both Pasinetti and me share the analytical importance and necessity of “separation”, even if we have different opinions on how and where to lay down the demarcation line between “necessity” and “choice-possibility”. As we shall see, to profit from the idea of separation a deep revision of the method of the social sciences is needed. Pasinetti does not seem to perceive this exigency. He uses the “separation” principle in the context of the “natural” system of classical economists. But unfortunately, and as we shall see, such a system omits crucial aspects of modern dynamic economies, an omission that contradicts the principle concerning the realism of postulates. In sum, the separation that the natural system implies has no real methodological relevance (i.e., one aimed at avoiding the methodological dead-end previously mentioned). The use by Pasinetti of “separation” with regard to the natural system acts merely as a simplification² and we shall see that it contradicts his emphasis on the realism of postulates.

It seems to us that the failure of the attack of heterodox economics and, more particularly, of Cambridge U.K. against mainstream economics, must be attributed to the omission of a basic problem of social sciences, *viz.* the difficulties inflicted upon the method of social thought by the non-repetitiveness of observed events. In fact, further developing such methodological difficulty and consideration seems to be the only way to show the weakness of mainstream micro-economics, which is indeed very clever and accurate in using the current methodologies.

Let us immediately proceed to clarify, in section 2, the methodological issues sketched above. Then, section 3 will show that both the classical natural system and Walrasian economics omit the same crucial economic variables, thus falling in what we call the “abstract rationality” standard. In section 4 we shall insert in the representation some indispensable variables of dynamic economies, and in section 5 a “necessary” system will be

¹Of course, this does not intend to deny, for instance, the successful criticisms against the neoclassical aggregate function of production and the aggregate notion (and hence measurement) of capital.

² It acts as “An analytical device to face complexity”, see L. L. Pasinetti, *Keynes and the Cambridge Keynesians*, Cambridge University Press, 2007, p. 322.

set out together with a distinction between “necessity” and “choice-possibility-creativity” able to provide a more fecund and reliable “separation”, as suggested by the proposal on method set out in section 2. Finally, section 6 draws some implication of our theoretical construction.

2. Some Considerations on the Method of the Social Sciences

In order to make clear the foundation of what follows, a preliminary and basic distinction is indispensable, i.e., the distinction between the method of the logical-formal sciences and the method based on the observation of reality.

(a) The method of the logical-formal sciences (that we refer to as the “abstract rationality” method) consists in the deduction of logical implications of postulates that abstract from the given reality. The theoretical results yielded by this method may seem logical fictions or even jokes but, as a consequence of such intense abstraction, this method can lead to explanations of great generality and the solution of unexpected problems. Boolean algebra and non-Euclidean geometries offer important examples in this regard; born as mere logical abstractions they subsequently showed their value in computational technology and the exploration of sidereal space.

(b) The method based on the observation of the considered reality can be represented by the series O-H-O_c (initial observation—theoretical hypotheses—new control observations intended to verify the validity of the formulated theory); but Popper’s falsificationism limits the procedure to the series H-O_c (from an initial theoretical hypothesis—that may be derived even by chance—an observation-verification is established in the process of submitting the theory to an extremely rigorous experimental procedure that may lead to its falsification even as a result of the presence of a single contradictory fact).

We can see that in both the procedures (O-H-O_c and H-O_c) the control-verification of the theories under consideration is based on a strict confrontation with reality. But such a verification method implies the hypothesis that events (in our case, social events) are repetitive, thus allowing the derivation of laws of motion from the accurate observation of facts (or experiments).

This method is appropriate to the study of natural phenomena, even if these demonstrate rare and random innovations, as is the case in biology (Darwinian evolutionism); but it is useless and misleading if the hypothesis of repetitiveness is violated by the frequent and substantial innovations typical of social phenomena, particularly in the economy, where innovation is fostered by competition. In sum, with regard to the social world, method (b) can be referred only to the quasi-stationary societies that dominated human history prior to the modern age.

It must be underlined, however, that a large part of those studies that are based on the accurate observation of social reality reject the hypothesis of repetitiveness of the considered phenomena and events. But this observational attitude, to make sense, is obliged to intend reality as “necessity” (what happened had to happen). This “weak” observational standard, i.e., excluding repetitiveness, has driven the work of the major students of human societies (Marx and Weber among others). Statistical and observational data are, however, useful in studies concerning the historical period of time to which they refer. But if things change due to constructive and innovative human work, statistical data will prove misleading.

A primary expression of the prevalent observation-experimental attitude of economic thought is the current distinction between economics, which as so conceived defines the observational discovery of the laws of motion of the economy, and political economy, which latter concerns intervention in the economy on the basis of those laws. In fact, such a distinction is substantially absent in Keynesian thought, which has a basic organizational

(much more than observational) feature even if, being one simply centered on the principle of effective demand, this makes unilateral (as we shall see) Keynesian teaching.

It must be frankly recognized that the method of social thought exists within a great confusion that has grown over time. There is no space here to present a critical review on method³. Pareto's work provides one of the main examples of the analytical ambiguities generated by this methodological confusion. Pareto, as an economist, founds the model of general equilibrium on the method (a) of abstract rationality, but he uses the method (b) of observation-verification in stating the invariance of his alpha coefficient concerning income distribution. Moreover, his sociological inquiry uses a third methodology, based upon the notions of *residual* and *derivation*, in an attempt to capture the irrational content of human behaviors. This third method amounts to an impressive illustration of *observational blindness*: even such a great rationalist as Pareto could forget that a main task of social science is to unmask and prevent the effects of behavioral irrationalities in the organization and functioning of human societies and instead accepted those irrationalities as inescapable, as Pareto's sociological inquiry in fact does.

An important part of social thought that disapproves methods sub (a) and (b) opposes to them a *constructivist* approach based on *doing* but largely disregarding *being*. This approach, mainly distinguished by a programmatic feature, was considered with attention from the beginning of the second half of last century by important students⁴ and largely characterized economic and social planning. But this constructivist methodological proposal has been discredited by its tendency to supplant *being* in the name of *doing*.

Methodological confusions and ambiguities are so diffuse and well-rooted that some important social students (*in primis* P. Feyerabend) have even denied the relevance of method (methodological anarchism). But some different attitude of heterodoxy is at work. J. B. Davis emphasizes the alternance in social thought between pluralism and dominance⁵. This alternance expresses indeed a physiologic feature of the process of knowledge. But the pathology of social thought is different; it consists in some well rooted methodological misconceptions that afflict the whole history of social theories and that, to be reversed, need a real methodological rebuilding able, *inter alias*, to meet two main peculiarities of social reality that Davis underlines: the difficulty of experimentation and the value-ladenness in economics. This need of rebuilding is not achieved by the multiplicity of recent methodological developments (behavioral and experimental economics, neureconomics, happiness and subjective well being research, agent based modeling, evolutionary thinking, computational economics, etc.) that Davis refers⁶. For its part, the Salanti and Screpanti's reference to methodological pluralism, sociological understanding, the complementary of methods and the distinction between pluralism of academy and of methods by one researcher⁷ is no less insufficient with regard to the need of defining some methodological procedures and rules that are shaped around the basic features of social reality, i.e., a method (c) that replaces, in social studies, both the methods (a) and (b) and remedies the drawbacks of methodological pluralism expressed by some dominant practices of modern heterodoxy, a veritable methodological Babel that obstructs interaction and communication among students and consequently injures the same fruitfulness of pluralism and the cumulative advance of

³ A critical review of this kind can be found in A. Fusari (2004).

⁴ R. Frish, J. Tinbergen, L. Johansen and, in a sense, V. Leontief among the others.

⁵ This author writes: “it might not be too much to argue that dominant research programs create conditions for their subsequent fragmentation, whereas periods of pluralism create conditions for the re-emergence of new dominant approaches”, see J. B. Davis, “The turn in recent economics and return of orthodoxy”, *Cambridge Journal of Economics*, 2008, p. 32.

⁶ See J. B. Davis and D. Wade Hands (2011).

⁷ See Salanti A. and E. Screpanti (1997).

scientific knowledge.

We shall attempt to propose a method (procedure, rules and classification criteria) appropriate to an inquiry into non-repetitive reality. In attempting to do so we are obliged to begin from a basic consideration: social reality is a product of humanity, in contrast to natural reality, which latter is pre-existing to humanity and on which humanity merely exerts an interactive action based on the knowledge of the contents of the natural world and its laws of motion. This means that a method of inquiry into social reality cannot confine itself to *being* but must be able to consider and represent also the constructive and organizational activity of humanity (*doing*). So, if we are to arrive at an understanding of *becoming*, our sought after method must combine *being* and *doing*. It follows that the extensive use of econometrics by empirical economists is exaggerated and misleading, with the exception of reference to highly aggregated variables. Moreover, it follows that Hume’s statement on the logical impossibility of moving from *being* to *doing* cannot be referred to social inquiry; it concerns only natural reality, but simply because in this case *doing* is meaningless.

The first step of the method that we are going to propose is that—just as Pasinetti recommends—we start from *realistic postulates*, i.e., postulates expressing relevant aspects of the considered reality, *and derive from them all implications*. It is evident that such a procedure combines being and doing. The real and basic problem concerns the selection of postulates. In fact, the impossibility, due to the non-repetitiveness of social reality, of verifying and corroborating with the help of statistical inference the theories deduced negates the usefulness of a hypothetical generation of theories (that Popper’s observational falsificationism even suggests to propose by chance). In sum, the impossibility of verifying theories (via observation) points to a decisive role, in warranting reliability and fruitfulness to theoretical deductions, for the definition of rules concerning the formulation and classification of “realistic postulates” in order to replace the unreliable role at present pertaining (in economic modeling) to the econometric control of hypotheses. Those rules and classifications express the core of our proposal on method.

At least four possible classifications of realistic postulates (with the implied rules) can be set forth:

(a) Postulates directed to the deduction of general principles demanded for pressing reasons of organizational efficiency; these principles will act as strong attraction and gravitational points of social processes. The postulates must express very significant features of the “general conditions of development”; therefore, they are long-lasting, a product of the path of history, and they exclude specific ideological, technological and naturalistic aspects and innovations. We denominate *functional imperatives* the general organizational principles deduced from assumptions and postulates sub a⁸.

(b) Postulates expressing conditions of nature that have important institutional and organizational implications. These conditions are local and were decisive in characterizing the societies of the past (for instance desert, steppe, agricultural or seafaring peoples). Technological development has greatly reduced their influence (and hence importance), mainly through the increasing role of artifacts and the tremendous speed of communications.

(c) Postulates that *specify aspects indispensable to the unfolding of human evolutionary potentialities*, i.e., of the *natural* human ability to develop. They are decisive for the operation and development of those potentialities, and have a very general character, more general and more enduring than those of point (a); but they can also be violated over very long periods of time (and often have been in closed societies, not only in primitive age but,

⁸ Note that those functional imperatives have a completely different meaning from T. Parsons’ notion of functional imperative.

even more, in the best structured and advanced empires of the past) since their violation does not affect organizational coherence and can even enforce this. *These postulates express the true dynamic principle and engine of social development.* In a sense, they are halfway between the postulates (a) and (d) *and we denominate their implications ontological imperatives.* These imperatives mainly express important ethical values that, as such, assume an objective (not relativistic) content. For instance, the tolerance principle and pluralism (i.e., the free confrontation of ideas and inspirations), the role and dignity of the individual and the respect for his initiative are principles indispensable to the efflorescence of creativity and the valorization of human diversified skills and evolutionary potential. It is important to underline that, in the modern dynamic society, ontological imperatives also become functional imperatives, that is, in such a society they are demanded by pressing reasons of coherence and efficiency. It may be useful to make a distinction relating to two very important aspects of this postulate sub c about human evolutionary capabilities.

c'. “Human rational skills”. An excess of rational drive with respect to creative drive may hasten scientific progress and social development.

c”. “Human creative skills”. The excess of creative drive with respect to rational drive may cause social disintegration.

The realistic postulates sub a and sub b with their implications give the field of “necessity” in the organization of social systems (but, of course, not with regard to individual decisions, where what is necessity under some circumstances may be choice under others). In modern dynamic society (which is the object of this essay), also the postulates sub c with their implications must be added as a component of the field of “necessity”.

(d) Postulates concerning ideological aspects and choices and creative events. The organizational and institutional forms deriving from them define the field of “choice-possibility-creativity”. They do not pertain, therefore, to the field of “necessity”, even if the most important of them, i.e., the choices of *civilization*, are characterized by long duration and pervasiveness. This makes it clear that the usual identification of durability with “necessity” is erroneous.

So we have the methodological succession and procedure CRP-TD (classification of realistic postulates - theoretical deductions), instead of O-H-O_c (observation-hypotheses-control observation) typical of the observational inductive and deductive methods, or H-O_c typical of the Popperian hypothesis-falsification.

The rules and classifications above show the methodological feature and importance of the “separation” between “necessity” and “choice-possibility” in social sciences. These summary rules alone, however, cannot guarantee appropriate selection of postulates. The fruitfulness of the selection depends also on the scholar's own intellect and sense of reality.

The sections that will follow go beyond the great abstraction above and give, with reference to economics, various examples of “necessity” and “choice-possibility” and, more in general, of applications of the methodological procedure that we have briefly set out.

It might be shown that the interaction between “ontological imperatives”, “functional imperatives” and “civilizations” is precious for the interpretation of social-historic development: the degree of satisfaction, by each civilization, of ontological imperatives (i.e., concerning the unfolding of human evolutionary potentialities) determines the degree of variation over time of the general conditions of development and the consequent advent of new functional imperatives that will imply a tormented change of the civilizations inconsistent with them.

The variation of functional imperatives can be taken as expressing an objective criterion of distinction of historical ages. Capitalism is a civilization consistent with the functional imperatives of the present age and will

be forced to disappear by the advent, with the variation of the general conditions of development, of new functional imperatives inconsistent with capitalist civilization.

3. Limits and Omissions of Pasinetti’s “Natural System” and Their Similarity with Those of Neoclassical General Equilibrium Models

We come back now more specifically to economics, primarily to Pasinetti theoretical approach aimed at challenging the orthodoxy dominating economics. Following the tradition of classical thought, he opposes the production paradigm to the exchange paradigm, the latter of which he takes as the basic feature of neoclassical thinking and which he criticizes for its multitude of unrealistic assumptions and implications. Coherently with such reproach, *he underlines that a main task of economic theory is to found itself on initially realistic hypotheses*. More precisely, Pasinetti opposes the neoclassical scheme with one that combines Sraffa’s equations of prices (and production equations) and the Keynesian principle of effective demand⁹. In developing this opposition, he points out the basic relations that are treated as “natural” by classical economists (the natural system), distinguishing them from the contingent ones (for instance, natural from market prices). Pasinetti’s modeling intends, in this way, to make evident the objective and fundamental variables of an industrial economy that logically precede every institutional asset. This “natural system” is taken as expressing optimal positions, both in terms of efficiency and social equity.

According to Pasinetti, the exponents of the school of Cambridge (U.K.) have failed to separate the fundamental relations from the institutional side of economic life, and this is a main cause of their failure to formulate a comprehensive and unified theoretical system able to prevail against the neoclassical mainstream. Pasinetti’s formalization incorporates, in the system of equations, both exogenous technical progress and the long run dynamics of consumptions, thereby deriving prices, production and employment. The institutional side, as well as the policy decisions of political economy, should be derived in compliance with this “natural system”. A comparison between effective results and “natural” configurations would provide a criterion by which to judge the actually existing institutional mechanisms of a society. Unfortunately, this approach forgets Pasinetti’s emphasis upon the need for realistic postulates and thereby falls into the trap of what we can denominate “abstract rationality”. A comparison between the Walrasian model of general equilibrium and Pasinetti’s “natural system” will help to clarify the point.

Contrary to the claim of Pasinetti (and objection to Langlois),¹⁰ Walras’ general equilibrium model does not necessarily need free market (and capitalist) institutions. This is clearly proved by two well known applications of Walras’ model: that of E. Barone in his essay “The ministry of production in the collectivist state”; the other by Lange-Lerner-Taylor in the course of a debate on market socialism in the 1930s. Barone demonstrated that the problem of prices and optimal allocation of resources is identical in both socialist and capitalist economies, and can be solved by a ministry of production operating through trial and error. For their part, Lange-Lerner-Taylor showed that the simple decisional rule marginal cost = price allows the entrepreneur’s role to be eliminated. Both approaches postulate a stationary-repetitive economy, with something similar to the market but in which the

⁹ Something similar was performed by using the Leontief’s dynamic model to determine sectoral quantities and prices in the preparation, at the end of sixties, of the reference framework of the second Italian Economic and Social Plan.

¹⁰ Pasinetti states: “The [neoclassical] model is—with regard to institutions—very demanding; or, we may say, from another point of view, very constraining and exclusive”, see: R. Delorme, K. Dopfer & Edward Elgar (Eds.), *The Political Economy of Diversity*, 1994, p. 37.

entrepreneur does not exist by definition. In fact, the manager of a socialist economy responsible for implementing the rule $\text{marginal cost} = \text{price}$ has nothing to do with the role of the entrepreneur in meeting (as we shall see) radical uncertainty and introducing innovation.

As with Walrasian economic theory, so Pasinetti's pure and pre-institutional economics is intended to be applicable to both capitalism and socialism. In fact, Pasinetti suggests that the reader who entertains some doubt about the very idea of a “natural system” should “think first in terms of a centrally planned economy then extend the results to the case of a market economy”.¹¹ Indeed, the “natural system” has immediate reference to a centralized economy: the profit, exogenous innovation and accumulation abstracted from the innovative entrepreneur in Pasinetti's natural model make sense with reference to central planning and, more generally, to the extended reproduction of a stationary economy in which there is no place for the entrepreneur and profit properly understood. Put another way, this “natural system” can explain growth not development.

One point to take from all this is that serious shortcomings may affect excessively pure theories. If a pure model can be reconciled with institutional and organizational forms inconsistent with the modern world (as socialist centralization certainly is) then, clearly, it lacks something indispensable that would exclude those absurdities from its application. To avoid those implications, which obscure and damage the usefulness of the idea of “separation”, we must integrate into the marriage of Keynes and the neo-Ricardians some further indispensable additions or, more precisely, some basic aspects ignored by both Walrasian and “natural” systems and that the principle of realism of postulates requires.

In order to better explore this subject, a brief consideration of the “less pure” content of Pasinetti's proposal may be useful, specifically: the Keynesian demand led approach and the classical notion of natural prices.

Both Keynesian and post-Keynesian theories attribute a “residual character to real wages”, that is: the labor market determines money wages while the price level (and price variations) determine real wages. With a literary parallel, we may say that this postulate of Keynesian and post-Keynesian economics and the post-keynesian idea of endogenous money supply resemble to don Circostanza trick¹². In fact, the bargaining for money wages reproduces don Circostanza's expedient attributing to antagonist parts more than the available water. In the presence of money illusion, a modest inflation is enough to make don Circostanza successful. But this is not if the deceit of money wages starts to be detected so that the object of the bargain becomes real wages.

The idea that demand is the cause of production subtends (i.e., requires) the hypothesis of a “residual character to real wages” (that is, trade unions bargaining concerns only nominal wages while real wages results from price variations) that avoids persistent pressures deriving from the side of distribution, and a money supply that follows the demand for money; moreover, such an idea of demand led production does not apply in the presence of diffused territorial and social dualisms (and, in the short run, in the presence of structural bottlenecks) obstructing the demand impulse to production. Therefore, the hypothesis of a demand led system (shared by Keynesians, Post-Keynesians, and Leontievians) suffers from a remarkable lack of generality. Also Sraffa's system of prices, which supposes an exogenous profit rate or exogenous money wage rate, implies the above mentioned residual character of real wages, as these depend on the solution of price system.

¹¹ See Pasinetti L. L. (1981), *Structural Change and Economic Growth: A Theoretical Essay on the Dynamics of Wealth of Nations*, Cambridge, Cambridge University Press, p. 25.

¹² Don Circostanza was an intriguer and opportunist lawyer that, in defense of Fontamara peasants' against mayor's pretence to deprive them of the water of the brook, proposed to attribute $\frac{3}{4}$ of the water to each one of the two conflicting parts. With this trick, he succeeded in placating people's protest that intended to preserve at least more than one half of the available water. See Ignazio Silone, *Fontamara* (1990).

Some objection must also be made against the classical notion of “natural prices”¹³. The reproducibility of goods is essential to such notion, but reproducibility is made largely evanescent by innovation. In fact, goods resulting from innovation become reproducible not immediately after their appearance, but only after the diffusion of the innovation; before that, the new goods can only be reproduced by the respective innovator. In the meantime, some other innovation can be introduced that may substitute for the previous innovation. So, what about the hypothesis of reproducibility? The classical price of production, based on the hypothesis of reproducibility, does not indeed contain much sense in the presence of considerable flows of innovation. The “natural” system of prices (and production) is plainly applicable only to stationary economies or, let repeat, to economic growth not development.

In sum, both Pasinetti’s post-Keynesian and neoclassical models are consistent only with the introduction of exogenous technical progress and/or a merely something accumulation process. The two models ignore or treat expeditiously some crucial and distinguishing features of modern dynamic economies, *in primis* endogenous innovation and radical (i.e., non probabilistic) uncertainty. As a consequence, they also ignore the real substance of both the entrepreneurial role and the profit rate. Pasinetti maintains that only the financing of accumulation justifies profits. But as a matter of fact, accumulation could be fueled by the banking system on some such basis as the degree of an entrepreneur’s success as expressed by the actual (and/or expected) profit rate, this intended not as a mere surplus (or interest rate), but precisely as an accountability (not necessarily a distributive) variable¹⁴.

4. Indispensable Extensions of the Analysis

We now extend the “natural system” by attempting to incorporate some basic realistic premises that are also ignored by Walras’ general equilibrium model. Schumpeter’s notion of competition based on the introduction of innovations (creative destruction) will provide us with a helpful start. Schumpeter’s idea of “dynamic competition” implies the existence of temporary monopolies and corresponding profits, due to the possible success of innovation. Moreover, and although this implication was neglected by Schumpeter (as it had been before by the classical economists), the notion of competition based on innovation underlines the importance of radical (i.e., non probabilistic) uncertainty, a variable that is both the product of innovation and inseparable from innovation. Radical uncertainty, together with the connected idea of expectations, plays a crucial role in Keynes’ macro explanation of the deficiency of effective demand. What about its implications at the micro level? These have been emphasized by members of the neo-Austrian school, primarily Kirzner and Hayek; but in a way that violates scientific objectivity, as we shall see.

There can be no doubt as to the theoretical value of combining the Schumpeterian idea of innovative entrepreneurship and the neo-Austrian idea of what may be called adaptive entrepreneurship aimed at taking advantage of profit opportunities offered by market disequilibria (neo-Austrian adaptive competition). Such an analytical combination provides a, so to speak, full representation of dynamic processes and dynamic competition centered on the interaction between innovative entrepreneurship, which causes disequilibria and uncertainty, and adaptive entrepreneurship that, in the effort to take profit from disequilibria, implicitly tends to eliminate such

¹³ P. Garegnani has denominated “core system” the Sraffian system of these prices, and “outside variables” the variables concerning surplus; this is analogous to Pasinetti’s separation between natural system and institutional side and hence shares the limitations of such a separation.

¹⁴ See Ekstedt and Fusari (2010), chapter 8.

disequilibria and reduce uncertainty, thus preparing the conditions for a new innovative wave.¹⁵ Such theoretical context illustrates the importance of rethinking the phenomenon of radical uncertainty in a way that avoids framing it simply as a *fog* (as many heterodox economists do) but instead makes evident the possibility of measuring it;¹⁶ a measurement that would be of incalculable value to may understand and govern the process of innovation-adaptation described above and business cycle.

We can see, therefore, that the entrepreneur, uncertainty and profit must take on a central and *essential* role in a dynamic representation of economic processes (where dynamics means more than simply the introduction of time).¹⁷ Moreover, the analytical value of the *accountability* role of the profit rate becomes clear, that is, the rate of profit intended as a measure of the degree of success of entrepreneurial decision making. It is easy to show that such a role cannot be replaced by other quantitative indicators. Various economic theories maintain that the entrepreneur is interested in total profit, not in the profit rate. But total profit is not a ratio of return; therefore, it does not represent an indicator of entrepreneurial success. The search for total profit demands that investments be ranked on the basis of their earning *rate* if the global activity of the firm is constrained (as it always is) by the availability of some factor of production; this clearly appears from the formulation of a problem of optimization under the constraint of the available entrepreneurial skills (or some other scarce factor). But the profit rate is a good indicator of success only if it is obtained in a competitive (or dynamic competition) market, not through institutional monopoly.

Our extension is indispensable if we are to derive any real profit from Pasinetti’s “separation” idea and, in particular, to supply clarifications regarding the institutional side. The entrepreneur and profit, being necessary and irrefutable elements of a dynamic economy (i.e., with innovation, uncertainty etc.), must pertain to the left or “natural” side of the separation. But it is not necessary that they take a capitalist form; they can also be related to public firms operating in the market and directed by managers endowed with entrepreneurial responsibilities. This means that the choice between public and private entrepreneurship pertains to the right-hand institutional side of the “separation”.

The questions considered in this section also clarify some serious and frequent equivocations that mar the teaching of important economists, for example: Schumpeter’s forecast of a convergence upon socialism by way of the great managerial firm, an idea resumed by J. K. Galbraith; the appeal of this forecast was premised upon an ignoring of the phenomenon of radical uncertainty that allowed Schumpeter and Galbraith to negate the necessity of the entrepreneurial function (“innovation is reducing to a *routine*”¹⁸). For their part, neo-Austrians based the legitimization of capitalism on the necessary role of the entrepreneur in the presence of radical uncertainty, ignoring the possibility that the entrepreneur partake of a non-capitalist substance.

¹⁵ This mechanism of interaction is drawn in A. Fusari, “A model of the innovation-adaptation mechanism driving economic dynamics: a micro representation”, *Journal of Evolutionary Economics*, 2005.

¹⁶ For a discussion of this topic, see A. Fusari, “Radical uncertainty, dynamic competition and a model of business cycle: The implications of a measure and explanation of what is supposed non-measurable and non-explainable”, *International Journal of Business and Management*, Vol. 8, No. 12, 2013, pp. 8-28.

¹⁷ This representation does not necessarily require a micro specification but can be represented at the sectoral level as in: A. Fusari and A. Reati, “Endogenizing technical change: Uncertainty, profits, entrepreneurship—A long-term view of sectoral dynamics”, *Structural Change and Economic Dynamics (SCED)*, Vol. 24, 2013, pp. 76-100. See also the formal model in chapter 5 of Ekstedt and Fusari, Routledge 2010.

¹⁸ See J. A. Schumpeter, *Capitalism, Socialism and Democracy*, Universale Etas, Milan, 1977, p. 128.

5. “Necessity” and “Choice-Possibility” in the Organization of the Economy: The “Necessary” System

We acknowledge that an important merit of Pasinetti’s idea of ‘separation’ is to provide a precious analytical tool for distinguishing necessity from choice-possibility in the organization and management of social systems. Here we shall try to provide, in line with our considerations on method set out in section 2, a better expression of Pasinetti’s ideas of “separation”. The building of any social system always involves institutions; therefore, speaking of a pre-institutional nucleus can be inappropriate. Classical economists asserted the “natural” character of the market (intending the capitalist market). But history teaches us that in the past the market has often been but a very minor institution, and that it was harshly opposed in the most advanced societies of the ancient world, represented by the great bureaucratic-centralized empires. Today, in our modern dynamic societies, in which competition based on the introduction of innovations prevails, along with the associated forms of radical uncertainty and entrepreneurship, the market has become an “organizational necessity”.

At this point, the methodological procedure, classifications and rules set out in section 2 can be recalled to exemplify and profit of its usefulness for a clear and rigorous solution of the problems that we are facing, mainly with regard to “separation”. The existence, in the present historical epoch, of economies (general conditions of development) that have moved far beyond the quasi-stationary state necessitates and/or implies: the market, the entrepreneur, profit, innovation and radical uncertainty. These phenomena first became “necessary” aspects of economic and social life in medieval Italian and Flemish communes. They imply a number of ethical values that henceforth assume an objective as opposed to a relative character.¹⁹ In the modern world the negation of these values and the institutions that stand behind them leads to social disaster, as demonstrated by the twentieth-century experiments of “real socialism”; this clearly states the “necessity” of those values and institutions.

The above institutions and values can be called *functional imperatives* of modern dynamic economies and some of the mentioned ethical values are also *ontological imperatives* (i.e., requested by the expression and operation of the evolutionary potential of humanity and that also become functional imperatives in the present age), see section 2. They constitute the aspect of “necessity”, together with some basic character of modern dynamic economies such as radical uncertainty.

Substituting the term “fundamental” for “natural” in Pasinetti’s system improves clearness very little. In fact, the “necessities” (or “fundamental elements”) considered above are, for the most part, institutional elements and hence concern that side of Pasinetti’s division opposed to the “natural-fundamental”. In sum, fundamental (“necessary”) and institutional aspects are tightly mixed. Therefore, the “separation” needed is different from that which Pasinetti proposes; it requires some accurate analyses and, as we saw in section 2, can be expressed through the terms “necessity” and “choice-possibility-creativity”.

I have just recounted some examples of “necessity”; here, then, are some elements relating to choice-possibility. Almost the whole income distribution pertains to choice-possibility, starting from interest rate. Mainstream economics maintains that the interest rate is indispensable to the equilibrium between supply and demand of capital, between saving and investment. But it is not. Indeed, saving depends on the amount of income gained and therefore on the level of production; while entrepreneurs’ demand for capital depends on levels of

¹⁹ See a contribution to the WEA online conference on “*Economics in Society: The Ethical Dimension*”, by A. Fusari, *Economics and Society: Freedom, Creativity and Social Justice*, March 2012.

entrepreneurship in relation to the state of business, which is mainly expressed by profit expectations. The argument that the rate of interest is necessary in order to prevent “over-investment” and the concomitant waste of capital is belied by the fact that such a role is as a rule fulfilled by the profit rate, i.e., entrepreneurs’ tendency (at least imposed by accountability reasons) to extract the highest rate of profit from investment. Therefore, the interest rate could be abolished, but only in real terms, what means that nominal interest rate should equate the rate of inflation as is necessary to preserve the incentive to save and to preserve the real value of saving. Of course, such abolition would require to overcome the current financial systems toward a deep reformation at the international level of the role of banking system so that to make financial system *servant* (not master) of production. It is remarkable indeed that on the shoulders of a variable as unnecessary as the interest rate has grown an enormous, complicated and rather obscure financial body primarily devoted to speculation and responsible for some serious shocks and malfunctions of the global network. For its part (and as we saw), the profit rate is necessary for accountability reasons, i.e., as a measure of the success of entrepreneurial decision making but not as a distributive variable in public firms. Finally, wages represent a “necessary” variable only for a modest part required by reasons of incentive, and an accountability variable expressing the imputation on prices of the demand and supply of various kind of labour. We can see, therefore, that a very large part of the distribution of income pertains to the side of “choice-possibility”. To this side also pertain: the composition of final demand, *specific* innovations, the sectoral division of investment, types of entrepreneurship (public, private, cooperative, individual etc.). A crucial kind of “choice-possibility” is represented by civilization forms, which constitute long enduring yet mighty options (but options) since they are well integrated in the social system and provide its physiognomy. Capitalism is a civilization expressed by a dynamic society born through long-lasting processes of trial and error. But civilizations other than capitalism are consistent with modern dynamic society, for instance, civilizations with (a) the market operating as a pure mechanism for imputing costs and efficiency, i.e., without affecting income distribution that therefore becomes exogenous, except for the provision of material incentives in the case of alienating activities; (b) the financial system operating as the *servant* as opposed to the *master* of production, that is, in the service of production.²⁰

Pasinetti’s formalization places important institutional “necessities” on the right hand side of the “separation”, as they are intended as non-fundamental. But, as just seen, institutions are to be seen as appearing in both fields, that is, in both the field of “necessity” and that of “choice-possibility”. The distinction between “necessity” and “choice-possibility” leads to the specification of a “necessary system” to be substituted to the “natural” one; this “necessary system” includes all the variables that, as previously seen, are required for (and implied by) the existence and performance of a dynamic economy: the entrepreneur, the market (also the non-competitive forms of dynamic competition, but excluding institutional monopolies, i.e., monopolies not determined by genuine scarcity but artificially created by law), uncertainty, Schumpeterian innovation, and profit, properly understood. Clearly, some of the above “necessary” variables represent important institutions. A formalization and simulation of a model very near to this “necessary” standard are in A. Fusari and A. Reati (2013) and in chapter 5 of Ekstedt and Fusari (2010)²¹. The model includes elements the absence of which, in both “natural” and Walrasian systems,

²⁰ The basic lines of an organizational model satisfying points sub a and b are set out in: *Toward a Non-Capitalist Market Economy: Spontaneous Order and Organization*, chapter 8 of the book by Ekstedt and Fusari, Routledge 2010, and also in A. Fusari 2005, *American Review of Political Economy*. These works show that the statement insisted upon by adherents of the neoclassical school, viz. that efficiency is in collision with social justice, and that *this* implies distributional inequalities, is a mistaken one, with the exception of the material incentives required by alienating jobs.

²¹ Such a model can be transformed into a “necessary” standard simply through the following operations: a) money wages must be

makes these systems misleading and consistent with both centralized and decentralized systems, as previously seen. Indeed, the absence of some of these elements also mars Keynesian, post-Keynesian, Schumpeterian, neo-Austrian and other heterodox theories, rendering them all partial and unilateral in their almost haphazard consideration of some important elements and simultaneous disregard for others that are no less important.

It seems to us that, if we are to speak of “pure theory” in a sense that is not misleading then we must consider a “necessary system”, i.e., a system that includes basic and unavoidable elements that are required by the reality considered (specifically, the elements previously considered as required by the existence and performance of a dynamic economy), among which will be found various elements constituting institutional and organizational “necessities”.

6. The Futility of Some Neoclassical Revisions to the Pure Walrasian Model: For A New Institutionalism and A Last Note on Pasinetti’s Defense of “Separation”

The institutional question is often afflicted by some basic (and sometimes selfish) misunderstandings. Many neoclassical economists, some of whom are quoted by Pasinetti, have attempted, with great bravery and by way of various stratagems, to conciliate pure neoclassical theory with important institutional and non-institutional elements of reality. Many of these—often acute—attempts to extend validity of the pure neoclassical model fall into what Pasinetti highlights as the trap of loyalty to tradition. A primary example of stumbling into such a trap is Knight’s book on uncertainty,²² a pioneering analysis the ultimate message of which is that uncertainty is only a cause of deviation around a neoclassical equilibrium.

If properly included in (and referred to) our “necessary system”, thereby better expressing both their implications and potential, uncertainty, and also the content of various neo-institutional analyses (Coase, Solow, Williamson) critically considered by Pasinetti, lose the equivocal limitations that derived from their reference to the neoclassical model. In sum, institutionalism needs a basic model that, as with our “necessary system”, also includes important institutional “necessities” rather than concentrating all of them on the institutional as opposed to the “natural” side. Such a “necessary” model grants theoretical and formal coherence in the specification of the institutional side, thereby saving (just as Pasinetti had hoped) institutionalism from a mere subjection to a general model (the neoclassical one) that reduces its breath. Therefore, the “necessary system” may be greatly attractive to institutional analysts.

Pasinetti writes: “The *separation theorem* suggests separating the investigation of those characteristics that lie at the foundation of the production economies...., from the investigation of the institutions.... Economic science has proceeded for too long to mix up the two stages of investigation.”²³ But such a mixing is in part inevitable. The very problem is that the “natural” system erases some “necessary” aspects in representing a dynamic economy; the substantial feature of this (innovation, uncertainty, entrepreneurship, etc.) cannot be reduced to exogenous technical progress. The natural system does not include those “necessary” variables, just similarly to the Walrasian system (as section 3 shows), thus falling in the abstract rationality standard, in

expressed only as a function of the demand and supply of the labor force and represent a mere element of the cost that firms will charge on prices, not a component of income distribution; b) by contrast, in the equation of consumption, total money wages should be replaced by a component of income distribution that substitutes for them; c) the real interest rate should be zero, and hence the nominal interest rate should equate with inflation; d) the degree of inequality in income distribution must be erased as a variable stimulating product innovations, such a stimulus being relevant in a particular social system, capitalism.

²² See F. Knight (1950), *Risk, Uncertainty and Profit*, La Nuova Italia edition

²³ See L. L. Pasinetti, *Keynes and the Cambridge Keynesians*, Cambridge University Press, 2007, pp. 322-323.

contradiction with the principle of the realism of postulates. This consideration comes before Pasinetti's discussion, from page 323 to 327 in his book on “Keynes and the Cambridge Keynesians”; it makes, in some sense, such a discussion (objections and counter-objections) non properly relevant. Pasinetti says: “If we really want a theoretical framework able to integrate institutional and economic analysis, this theoretical framework must be solid and comprehensive enough to be used as an *alternative* to the neo-classical one and to be able to support *all* institutional investigations: those of the old, or if we like ‘true’ institutionalism, as well as those of the so called ‘new’ institutionalism”.²⁴ We plainly agree with this statement, but with the proviso that some completely different specification (from Pasinetti) of the “separation theorem” is needed²⁵.

7. Conclusion

The neoclassical school of thought has demonstrated great versatility and also a far greater propensity to generalize than has its opponents. It has notched up a number of achievements with regard to the remedying of its original Walrasian purity: Don Patinkin's theory of money, the Hicksian IS-LM model, endogenous growth models, extensions to the analysis of the phenomena of reproduction and accumulation, some aspects of the thought of Schumpeter (facilitated by this economist's great admiration for Walras), even equilibria with unemployment and non-competitive equilibria,²⁶ and, last but not least, a number of down institutional analyses. These extensions and some more recent ones have allowed neoclassical theory to achieve and preserve its mainstream character.

The success has been strengthened by the accurate and extensive use of both the well developed and indeed dominating scientific methods: the methods of logic-formal sciences and of natural sciences. The resulting system of thought does not fear the criticisms of heterodox economics, with its large variety of explanatory approaches often harshly fighting each others.

For challenging orthodox economics (as modern heterodoxy is aimed at doing), it needs to set forth the foundations of a methodology more appropriate to social reality than those of logic-formal and natural sciences and offering an equally wider perspective; a methodology that conjugates a constructivist substance (as required by a reality which is the result of men's work and genius) to realism, *being* and *doing* (see section 1) and, on this basis, trying to understand becoming. Pasinetti's idea of “separation” and his principle of the “realism of postulates” can be precious in this regard, particularly in deriving, from the general conditions of development typical of the considered historical era, the organizational necessities that must be fulfilled, to which the optional and creative aspects (of the “separation”) should be combined. Those necessities are not a mere observational matter and hence cannot be captured through the method of natural sciences based on observation-verification; in fact, often result disregarded and trampled across history. Also the logic-formal abstraction typical of mathematics and logics is unable to capture those necessities.

Pasinetti admonishes that formal coherence is indispensable if a new institutionalism is to avoid ending up a merely descriptive striving after wind as was the older institutionalism of Veblen, Commons, and the like. Our

²⁴ See R. Delorme and K. Dopfer (Eds.), *The Political Economy of Diversity*, Edward Elgar, 1994, p. 40 (emphasis in original).

²⁵ Moreover, Pasinetti trusts in evolutionary economics. This is important. But sometimes evolutionary economics is afflicted by serious limitations that follow mainly from its drawing inspiration from a natural science (i.e., biology). Darwinian innovation takes very long time to occur since it depends on casual and very slow processes of selection by trial and error. Social change is a very different thing; it is not casual but is caused by systematic factors, mainly by competition based on the introduction of innovations. This implies the need for a completely different methodological base from evolutionary economics.

²⁶ See E. Zaghini (1974), R. W. Clower, etc.

“necessary model” is intended to provide, among other aims, a solution to this advocated exigency of a new institutionalism.

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