EVOLUTIONARY ECONOMICS AND THE COMPETITION BETWEEN SCIENTIFIC PARADIGMS

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KEYWORDS: CLASSICAL ECONOMICS, NEO-CLASSICAL ECONOMICS, EVOLUTIONARY THEORY, NEO-SCHUMPETERIAN EVOLUTIONARY THEORY

In this paper we attempt to classify some of the main areas within what has been called evolutionary economics, and to say something about how economists, philosophers, and social scientists have influenced one another's thinking.

the sudy of economics has two objectives; first, to develop theory to attempt to explain and predict human economic behaviour (economic theory), secondly to provide economic actors or agents with tools enabling them to conduct business and public operations more efficiently (applied fields). Of these, the second is the less problematic. The discipline of economics is continually providing economic agents with practical working tools to enhance organizational performance and efficiency. Much of this is done under the heading of management, and in close collaboration with practising businesspeople. It is the former objective which is a cause for concern. the larger methodological question is what basis we can found the discipline of economics on, to give its models predictive power. Are there any such models?

The choice of physics as a model for the development of economic theory, a methodological direction which has been particularly dominant since the Second World War, has increasingly been criticized by economists, and not only by evolutionary economists, but by members of a variety of schools. Many of these critics see biology as an alternative methodological direction that merits investigation. Modelling economics on biology is not a new idea; it is an attempt to revisit a number of questions which were left behind at the turn of the twentiieth century. Thus the fundamental question is whether the concept of evolutionary economics was abandoned prematurely, or for good reasons.

The French philosopher and mathematician Rene Descartes inspired two lines of scientific thought. One was abstract, mathematical, and mechanistic; it led to significant advances in knowledge thanks to men like Leibniz and Newton. The other approach explored the development of our living world with everything in it, from insect to animals. This second approach was taken forward by men like Buffon (1749), Lamarck (1809), Cuvier (1812), Wallace (1876), Darwin (1872), and Wegener (1915). In these terms we can say that evolutionary economists are trying to show where the former line of thought falls short when applied to the understanding of economic behaviour, and where the second line may be of help.

Adam smith (1776) is often used as a reference by the neoclassical or marginalist school of economic thought. We shall argue that Smith, Thomas Malthus, and Alfred Marshal (1890) were in fact all inclined towards the evolutionary approach. If that is so, it means that the neoclassicals are not so much " classical" as "neo". The "marginalist school", which is a better term for the neoclassicals, might also be called the "me"hanical approach", as compared with the evolutionary approach. the marginallist school, or marginalism, studies marginal consepts in econommics; problems related to marginal cost, marginal productivity, marginal utility, the law of diminishing rates of substitution, and the law of diminishing marginal utility. Marginal calculations were natural direction to follow once the physics paradigm had been selected.

Since Charles Darwin‟s Origin of the Species, published in 1859, the notion of evolution stands at the center of heated controversies, both in natural and social sciences, economics being no exception. This is quite natural because Darwinism suggests an overall evolutionary approach, a full-blown scientific paradigm, so important that it should not be limited to biology only (Hodgson 2006: 12). Moreover, the influence of the concept of evolution on economics gets further into the agenda as Darwin himself was influenced by Malthus‟s theory of population, as he mentions it in The Origin of the Species (Clark and Juma 1988:198). Since then, there have been different attempts to incorporate evolutionary thinking into economics. However, these attempts can be said to become even more intense in recent years, particularly after Nelson and Winter‟s celebrated work An Evolutionary Theory Of Economic Change (1982). Economists such as Dosi (1988), Metcalfe (1991;1992), Witt (1992) and Dopfer (1997) have started showing an interest on economic evolution concept, and have pioneered the development of different approaches on evolution.

Nevertheless, different strands can be distinguished within the evolutionary economics itself, each of which takes the notion of evolution from a different vantage point. At present, it seems that the unifying position of these different "evolutionists" seems to be a growing contempt with the neoclassical economics, especially to its simplifying assumptions, which take inventions, innovations and dissemination of information as external variables. This poses an important

theoretical problem since technology and, its indispensable part, innovation cannot be seen as merely external variables. Such downsizing approach by classical and neo-classical economics implies that society can be conceptualized only within the context of exchange. Evolutionary economics, by contrast, grasps the society as a whole, and handles the processes and social relations in a holistic social-theoretic framework (Sherman 2003: 75-83). Evolutionary economics is presented as an alternative to the Neo-classical school which is insufficient in explaining an important phenomenon which affects economies and institutions.

Yet, apart from a dislike towards neoclassical conception of economic reality, one can encounter important differences within different strands of the evolutionary economics, among which the definition of the notion of evolution takes a prominent place. The term "evolution", in its most general sense, is used to explain the changes which occur in the course of time. The change process attributed in this concept illustrates a circumstance in which there are no interruptions and where there is a permanent progress. This is a self-developing change which is based on internal factors rather than a change based on external factors. For this reason, evolution is an endogenous theory of change (Dosi and Nelson 1994).

Beyond this point, however, important differences seem to emerge. Indeed, historically speaking, the phases that evolutionary economics itself has gone through since its emergence up until today illustrate that evolutionary economics has also undergone through an evolution in itself. Different approaches which came on the scene also reveal the differences in methods and concepts employed within evolutionary economics.

Therefore, the present paper is concerned with these different stages, or different strands, that can be distinguished within the evolutionary economics itself. Having this in mind, the paper takes the three significant problems of evolutionary economics as constituting as its central core, with the belief that the answers given to these problems are useful to identify the similarities and differences among these different approaches.

The paper is structured as follows. First; evolutionary economics will be categorized under three groups in terms of the phases that it went through: traditional evolutionary economics, the Neo-Schumpeterian evolutionary theory and new evolutionary economics. In this connection, with reference to Schumpeter‟s place in evolutionary economics, three important themes or conceptual issues seem to appear. The first question is whether the notion of evolution should be understood as a causal mechanism or merely a metaphor, or an ontological presupposition that can shed light on reality. The second question has to do with the appropriate "unit" of evolutionary economic analysis. That is to say, whether the economy itself, or the society/social institutions, or just technology is subject to evolution. The third question is whether the idea of evolution can be used as a "demarcation line" to distinguish among different economic methodologies. An effort will be made to find answers to these questions in the paper. To anticipate the conclusion, we can assert that the notion of evolution should be seen as a guiding principle to understand the reality as an ensemble of emergent entities and processes, dissipative structures, self-organizational states, punctuated equilibrium conception, irreversibility, and uncertainty. Such an understanding of evolution as an ontological presupposition, which also has its own epistemological implications, would be capable of opening up new possibilities for a pluralistic approach in economics, in conformity to the tradition of Schumpeter‟s understanding

The first tangle that draws the attention, as far as the distinction in between is concerned, is their perception of evolution and the evolution theory that they deployed in their models. The classification made in this paper, excluding the one for classic evolutionary economics, perceives the evolution together with its natural extension, which is the natural selection, at the level of metaphor. This situation is clearly observed in Neo-Schumpeterian evolutionary economics models whereas the perception of natural selection at metaphor level is implicitly observed in the new evolutionary economics which does not perceive evolution in terms of Lamarckian and Darwinist concepts and which applies the second law of thermodynamic. However, the creation of information, the use of information by companies, and the existence of imitating companies illustrate that they do not exclude new evolutionary economics too much.

These approaches have basically the same answer for the question of which evolutionary theory. Veblen, the most eminent representative of traditional evolutionary economics, indicates that the evolution of the individual is Darwinian whereas the socioeconomic evolution has to follow a Lamarckian evolution due to the mechanism of habit transfers from one generation to another. The evolution of institutions or the evolution of societies remains closer to Lamarckian evolution. However, Veblen has never denied the importance of inheritance, variation and selection which belong to Darwinist evolution. Similarly, Nelson and Winter, leading economists of Neo-Schumpeterian evolution have indicated that socio-economic evolution has to be Lamarckian, but also adopted Darwinist three fundamental concepts into their works (Hodgson 1997), and opted for technology as their unit of selection.

So far, in our evolutionary economics classification it remains to be an uncertain issue into which category does the most important evolutionary economist Schumpeter exactly fall. Schumpeter‟s preference to use the word evolution only as change or development illustrates that Schumpeter excludes "Darwinist process in evolution" (Hodgson 1997: 140). Besides, it is also noticed that Schumpeter does not believe that it would be beneficial to use too much biological meta-

phors (Foster 1997). However, Schumpeter‟s deployment of biological metaphors in his development and entrepreneurial theories is undeniable (Kelm 1997).

It is true that Schumpeter‟s evolution theory is out of Lamarckian or Darwinian evolution concepts (Kelm 1997). Schumpeter used evolution to demonstrate the contrary of static, and his definition for evolution, as defined above, is not comprised of natural selection, however, none of them shows that Schumpeter is not an evolutionary economist.

The concepts that Schumpeter used have been a source of inspiration for Neo-Schumpeterian and new evolutionary economics. His indication that evolution is an endogenous change process, his equilibrium propensity, and his non-equilibrium concepts, his emphasis on uncertainty, and his indication that the nature of economics evolution is imbalanced actually demonstrate that Schumpeter could be categorized both in Neo-Schumpeterian and new evolutionary economics categories.

As a conclusion, we consider that, both within the framework of Schumpeter‟s ideas concerning evolution, and the ideas laid out by evolutionary economics, perceiving evolution at metaphor level would be beneficial for the development of evolutionary economics, and would also overcome the bottleneck created by the hesitations which derive from the ideas existing at theoretical level. In this context, evolutionary economics could go beyond without being an alternative to mainstream economy as laid out in the heading of article Hogdson 2007 „evolutionary and institutional economics as the new mainstream‟.

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SUMMARY

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