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Evolutionary economics and the markets-as-networks approach

Ross Brennan *

Middlesex University, Middlesex University Business School, Department of Marketing, The Burroughs, Hendon NW4 4BT, United Kingdom

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Abstract

The paper analyzes the similarities and differences between the markets-as-networks (or IMP) tradition in industrial marketing and evolutionary economics. Five analytical dimensions are used: unit of analysis, methodological practice, core frameworks and models, key assumptions, and theoretical antecedents and origins. Evolutionary ideas have long been incorporated into economic theorizing. This paper concentrates on the new evolutionary economics associated particularly with a research tradition centred on the work of Nelson and Winter [Nelson, R.R., & Winter, S.G. (1982). *An evolutionary theory of economic change*. Cambridge, Mass.: Harvard University Press]. There are several important parallels between this research tradition and the IMP or markets-as-networks tradition. It is proposed that the markets-as-networks tradition could be enriched by seeking explicitly to incorporate elements of an evolutionary process into the dynamics of change within inter-firm relationships and networks. Evolutionary economics would benefit from explicit consideration of the likelihood that *inter-organizational routines*, rather than individual firm-based routines, play an important part in the evolutionary process.

Keywords: Markets-as-networks; Evolutionary economics; Institutional economics; Routines; Evolution

1. Introduction

> We must act in the space between optimality and randomness. (Loasby, 2001, p. 4)

Brian Loasby expresses with great economy an idea that is important to theoreticians from both the evolutionary economics (EE) and markets-as-networks (NW) research traditions. He rejects fully rational, optimizing economic behavior on the grounds that this makes untenable assumptions about human knowledge. However, in rejecting optimality, he does not advocate neo-Darwinian evolutionary models of economic behavior, which exclude human purpose as a factor in economic change. Rather, economic action takes place somewhere between these two extremes. This economic "space between" has been investigated for several decades by researchers from both the new evolutionary economics school and from the IMP or markets-as-networks school. Yet these streams of research have run virtually on parallel courses, never crossing, and with little cross-referencing. The purpose of this paper is to compare and contrast these two bodies of knowledge in order to establish what each has to learn from the other, and by doing this to identify new avenues for research within both schools of thought. A fundamental assumption of the paper is that, since both research traditions are concerned with explaining phenomena in the socio-economic world, in particular the way in which industrial systems function, there is a prima facie case for making a comparison between them.

Researchers from the NW field, notably Mattsson (1997) and Araujo (2004), have previously found merit in investigating the potential for cross-fertilization with other schools of thought in management studies and the social sciences. Mattsson compared the NW approach with relationship marketing, while Araujo investigated ideas in economic sociology associated with Callon (Callon, Méadel, & Rabeharisoa, 2002; Miller, 2002). The aims of Mattsson (1997) and Araujo (2004) were to use the different lenses provided by alternative theoretical approaches to gain new perspectives on markets, business relationships, and business networks. Similarly, the fundamental contention of this paper is that further comparison between the NW literature and other

* Tel.: +44 20 8411 5861.
E-mail address: r.brennan@mdx.ac.uk.

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research traditions in the social sciences that investigate the same or related phenomena will yield new insights. Specifically, in this paper, the focus is upon the new evolutionary economics, particularly that branch associated with Nelson and Winter (1982).

It is not difficult to make a *prima facie* case for the legitimacy of a comparison of NW and EE. In a recent article in the *Journal of Evolutionary Economics*, Fagerberg (2003, p. 150) explained that:

> …evolutionary economics–and in particular the formal literature–looks at the social and economic consequences of interaction within populations of heterogeneous actors.

The fundamental purpose of the NW project is to understand interaction within networks of heterogeneous business organizations. As we will see, both schools of thought emerged from a sense of dissatisfaction with the orthodox theory of the latter half of the twentieth century. In the case of EE, this was quite explicitly neoclassical economics, while for NW theory this was the marketing mix paradigm, which itself owes a large intellectual debt to neoclassical economics.

The argument proceeds as follows. The next section provides a historical background to the development of institutional and evolutionary economics, followed by a description of the approach adopted by Nelson and Winter. There is then a description of the background and main features of the NW approach. In the discussion section that follows, there is an analysis in which the EE and the NW approaches are compared and contrasted in terms of their unit of analysis, methodological practice, core frameworks and models, key assumptions, and theoretical antecedents and origins. The paper then concludes with some final observations on the legitimacy and value of undertaking a comparative analysis of the two research traditions, and the possible research directions that emerge from this analysis.

2. Institutional and evolutionary economics

2.1. Neoclassical and institutional economics

As Miller and Mair (1991) have argued, even among those trained in economics, there is a tendency to equate the entire field with the currently dominant neoclassical school of thought. Those from outside the field of economics can therefore be reasonably excused such confusion. Gee (1991, p. 71) explained that:

> There can be no doubt that the neoclassical school of economics is the dominant school of economics in the western world.

For this school of thought rational, maximizing individuals exist within an atomistic society, in an economic system that tends towards equilibrium and can therefore be analyzed fruitfully in terms of comparative statics. There is great emphasis on the use of formal, mathematical modelling, the roots of which can be traced to the mechanical analogies used by pioneers such as Jevons in the 18th century (Grattan-Guinness, 2002; Jevons, 1871/1970; Screpanti & Zamagni, 2005). The essential logic of this school of thought is not, generally, that their assumptions are a good description of how human beings actually behave. Rather, these are necessary simplifying assumptions if working models of the economic system are to be built. The pay-off for making unrealistic simplifying assumptions about individual economic agents is that one can develop models that illuminate system-wide effects. The modern critique of neoclassical economic models from within economics starts from the claim that they do not, in practice, explain or predict the working of market systems well, so that the justification for the simplifications about human behavior that they make is unsustainable. Lawson (2003) developed this argument, while focusing his primary attack on the implicit ontological assumptions that are inherent in the mathematical modelling techniques of neoclassical economics. Several alternatives to neoclassical economics have emerged, categorized under the general heading of heterodox economics. Evolutionary economics is one of these alternatives, lying within the institutional economics school of thought.

Joseph Schumpeter is probably the most frequently cited intellectual progenitor of EE. Schumpeter himself often wrote about the relevance of evolutionary thinking in economics, for example:

> Social phenomena constitute a unique process in historic time, and incessant and irreversible change is their most obvious characteristic. If by evolutionism we mean not more than recognition of this fact, then all reasoning about social phenomena must be either evolutionary in itself or else bear upon evolution. Here, however, evolutionism is to mean more than this. (Schumpeter, 1954, p, 435)

In passing, it should be mentioned that evolutionary approaches to economics have been criticized for misappropriating a biological concept and using Darwinian evolution as an ill-advised metaphor (Penrose, 1952; Rosenberg, 1994). However, the debate about the fundamental legitimacy of the evolutionary metaphor is outside the scope of this article. Hodgson (2002) has provided an excellent summary of the arguments and a strong defence of the use of Darwinian ideas in the social sciences.

Foster (1991) provided a historical account of the development of institutional economics and, within this field, of the particular emergence of Galbraith (1967), the "evolutionary dynamics" group (within which he locates Nelson and Winter) and of Williamson's new institutional economics (Williamson, 1975). He argued that institutionalism was the dominant school in the inter-war period, but was overtaken by the neoclassical school in the post-war period because of the presumed scientific superiority of mathematical methods in economics. The origins of institutionalism lie in Veblen's work (Veblen, 1898, 1899), and a critique of neoclassical economics because of its unrealistic assumptions about "Rational Economic Man", static equilibrium analysis, and neglect of economic institutions. The central problem of institutional economics is taken to be the organization and control of the economic system, on the argument that power relations take precedence over the price mechanism as the force governing economic outcomes. The archetypal "auction" assumed in neoclassical economics is but one of many different types of institution. The links between