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Towards an enrichment of the IMP concept of 'adaptations'

Authors

Ross Brennan

Middlesex University

The Burroughs

Hendon

NW4 4BT

United Kingdom

mubsemails@aol.com

Louise Canning

The Birmingham Business School

The University of Birmingham

Edgbaston

Birmingham B15 2TT

United Kingdom

l.e.canning@bham.ac.uk

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Abstract

The concept of inter-firm adaptations was enshrined at a very early stage in IMP lore. However, there remain certain problems of conceptualisation, notably whether there is a substantial degree of (or total) overlap between adaptations and the concept of transaction-specific investments. The inspiration for the concept of adaptations is the evolutionary metaphor. In an attempt to enrich the concept of adaptations we explore evolution in biological and economic systems. Interesting new directions for research emerge.

Introduction

Adaptation is a concept that was enshrined in the original Interaction Model (Håkansson, 1982) yet it could be argued that it is no more than a synonym for the concept of transaction-specific investments, which was in use long before what Brennan and colleagues call 'dyadic adaptations' were born (Brennan, Turnbull, & Wilson, 2003). We believe that the concept of adaptations is substantially more complex than that of transaction-specific investments, and is grounded in the biological metaphor of evolution. The purpose of this paper is to enrich the concept of inter-organisational adaptation within networks by returning to the original metaphor. We examine evolutionary processes in both biological and economic systems, and the meaning of adaptation within such processes.

Adaptation in industrial relationships and networks

The concept of adaptations in buyer-seller relationships has been a part of IMP thinking since the early days. In *International Marketing and Purchasing of Industrial Goods* (Håkansson, 1982) adaptations were discussed in some detail. They may occur in either the elements exchanged or in the process of exchange; they occur during the process of a single, major transaction or over time during an extended relationship involving many transactions. It is claimed that 'the manipulation of different aspects of adaptation is *of course* a critical marketing and purchasing issue' (Håkansson, 1982 page 18, emphasis added). Adaptations may be implemented by both the buying and the selling party, and a taxonomy of adaptations is suggested. Adaptations can either be part of a conscious relationship strategy, or may be 'unconscious' (cf. the concepts of 'ad hoc' and 'tacit' adaptations proposed by Brennan and Turnbull (1997)). The descriptive case studies presented in *International Marketing and Purchasing of Industrial Goods* provide a rich source of examples of adaptations, for example: 'An extreme example of "informal adaptations" based on trust and commitment exists in the UK relationship. Belter designs and develops products specifically for this customer. The development costs are carried by Belter, but there is no contractual obligation on the customer's part to buy the subsequent product …' (Håkansson, 1982 page 108).

The concept of adaptations is certainly well-established in the interaction and networks literature. Adaptations by relationship partners for each other were *described* in early case study work (Håkansson, 1982; Turnbull & Cunningham, 1981; Turnbull & Valla, 1986), while later Hallen, Johanson & Seyed-Mohamed (1991) sought to *explain* adaptations by recourse to resource dependence theory and social

exchange theory. More recent work has focused primarily on the *processes* involved in bringing about adaptations, both the intra-organizational and inter-organizational processes (Brennan & Canning, 2002).

We seem to know quite a lot about the nature of adaptations, their causes, and the processes involved in bringing them about. Adaptations are implemented both by buying organizations and by selling organizations, are often positive acts (such as the adoption of a specific logistics system to interface with a customer), but may also be "tacit" (for example, foregoing a contract with a third party which might jeopardize the focal relationship). They vary greatly in scale and formality, and play an important role in aligning the resources (broadly defined) of the parties to a relationship. However, we have yet to convincingly differentiate adaptations from related concepts such as transaction-specific investments and (inter-)organisational learning. It may be that such differentiation cannot be done (a possibility that we will investigate in the future, but which is not the topic of this paper). Our suspicion is that the uniqueness of the IMP concept of adaptation should be sought in its metaphorical origins in biology and economics, to which we now turn.

Adaptation in biology and economics

Darwinian evolution

The concept of the evolution of plants and animals through their adaptation to environmental conditions has a long history in the natural sciences, stretching back well before the time of Charles Darwin (Gribbin, 2002). Darwin's formulation of the theory of evolution is clearly now the most widely accepted, despite the controversies that rage around specific processes (Sterelny, 2001). Dawkins (1989, page 1) argues

that: ‘Today the theory of evolution is about as much open to doubt as the theory that the earth goes round the sun’. Darwinism can be defined as ‘the view that biological species evolve primarily by means of chance variation and natural selection’ (Audi, 1995). Adaptation plays a central role in Darwinism. An adaptation is considered to be a useful trait, arising from natural selection, which fits an organism to its environment. Key aspects of Darwinism include the idea that adaptations arise through the accumulation of numerous, small variations, implying that evolution is gradual, and that – even though the natural world gives the impression of having been designed - chance plays a large part in the evolutionary process.

The Darwinian biologist Smith (1993) gives a threefold classification of adaptation – genetic adaptation, physiological versatility, and developmental flexibility. The first creates unchanging characteristics suited to a particular environment (e.g. the colour of a mouse’s fur). The second enables the organism to make appropriate and rapid adjustments to environmental conditions (e.g. the pigmentation in a flounder’s skin). The third enables the organism to adjust, quite slowly, to a new set of environmental conditions (e.g. trout cannot change their colour with the facility of the flounder, but given time can readjust their body colour to a new riverbed). Smith (1993, p36) also argued that ‘the brain in higher animals has evolved a remarkable capacity to undergo adaptive modifications in the course of the lifetime of an individual, the result of these modifications being to alter the animal’s behaviour in such a way as to increase its chance of survival’. Such a claim is surprisingly close to the argument that business organisations (which are, of course, composed of individuals) can adapt their procedures to increase their chances of survival.

The concept of evolution is also commonly employed in the field of economics; indeed, it is understood that Darwin's own theory of evolution was influenced by the work of economists Adam Smith and Thomas Malthus (Gribbin, 2002; Hodgson, 1993; Loasby, 1999). Hodgson (1993, page 55) remarked that: 'The two-way relationship between biology and economics dates from the very emergence of these modern sciences in the eighteenth and nineteenth centuries. This is nowhere more clearly illustrated than in the case of the development of the ideas that were eventually published by Charles Darwin in the *Origin of Species*. The flow of ideas from 'natural economy' to 'political economy' was in both directions, illustrating some key conceptual resonances between these two disciplines'.

Alchian (1950) argues, from the perspective of evolutionary economics, that organisational success can occur either by chance, or as a result of conscious adaptation. He pointed out that consistent success cannot be treated as prima facie evidence for a non-random process since, in a large population of organisations, some members would make consistently successful decisions purely by luck. The chance process – comparable to Darwinian evolution – Alchian calls 'adoption' by the environment of organisms with suitable characteristics. The term 'adaptation' is reserved for a conscious process of adapting the organisation to particular environmental conditions.

Punctuated equilibrium theory

Punctuated equilibrium theory, based on the observation in the fossil record of rapid periods[1] of species evolution followed by lengthy periods of relative stasis, proposes

[1] Of course the periods of time alluded to are 'rapid' and 'lengthy' in geological terms, not everyday terms.

that evolutionary change occurs in rapid bursts over geologically short periods of time (Somit & Peterson, 1992). According to Mayr (1992, page 156): 'No one denies adaptation. But if punctuated equilibrium theory does anything, it downplays the significance of natural selection and (especially) adaptation.' Rather than being the principal mechanism by which species become adjusted to their environments, in punctuated equilibrium theory adaptation becomes a minor adjustment process within an evolutionary system that is largely driven by some other mechanism (Mayr, 1992).

A debate has arisen in the social sciences about the applicability of punctuated equilibrium theory. Boulding (Boulding, 1978; 1992) contends that there is a very close parallel between biological evolution and evolution in social systems. He cites the taxonomy of objects into species, ecological intervention, the existence of competitive, cooperative and predative relationships between entities, and the processes of mutation and selection, as common to both biological and social systems. Boulding also strongly supported the idea of 'punctuationism' in both types of system: 'The historical record is dominated by the time when highly improbably events happen … Evolution often goes into a new gear with such changes, sometimes very rapidly … The evidence for punctuationism in biological evolution, which is very strong, is reinforced by the study of societal evolution.' (Boulding, 1992, page 171).

Gowdy (1985, page 322) supports the position that the theory of punctuated equilibrium can be directly applied to economics: 'This same sort of process, punctuated equilibrium, is common in economic history. Economic entities persist more or less intact for relatively long periods only to be replaced by sweeping new

innovations'. On the other hand Somit and Peterson (1992) believe that the theoretical framework of punctuated equilibrium has only modest explanatory power in explaining human behaviour, and favour the metaphorical use of punctuated equilibrium in the social sciences, rather than the literal application of the theory.

Conclusion and implications

The central message of this paper is that the IMP concept of adaptation is a metaphor with its origins in biology and economics, but that the metaphorical origins of the term have been largely neglected in the literature. As a result, the conceptual richness of the metaphor has been neglected and some of the complexity of the concept of adaptation has been lost.

Researchers have tended to assume that adaptations are conscious, goal-directed behaviour. However, we learn about adaptations by studying the 'survivors', who are naturally inclined to attribute their survival/success to their own strategic actions. Alchian (1950) provides a range of other adaptive economic processes, including chance, imitation and trial and error. These are closer to the Darwinian conception of evolution, in which random factors play a substantial role.

The brief review of adaptation in biological and economic evolution generates some ideas for further research, of which we identify four that seem of particular interest.

1. The relative importance of chance processes and design processes in inter-firm adaptation. To what extent are the selection processes in inter-organisational networks driven by intentional strategy, and to what extent is it the case that

organisations which simply 'happen' to have the right characteristics thrive in particular network environments?

2. Darwinian evolution proposes that species evolve through the gradual accumulation of small changes over long periods of time. The process of adaptation through natural selection is central to this version of evolution. Punctuated equilibrium theory, without contradicting the basic principles of evolution, suggests that evolution occurs in relatively short bursts, with intervening periods of stasis. Adaptations play a central role in Darwinian evolution and a lesser role in punctuated equilibrium theory. Does one or other theory apply better to inter-firm adaptations within networks? Are there network or environmental conditions that promote one or other adaptation process?
3. Smith (1993) provided a threefold classification of adaptations – genetic adaptation (irrevocable), physiological versatility (reversible, rapid adjustment), and developmental flexibility (reversible, slow adjustment). Intuitively this taxonomy seems applicable to inter-firm adaptations within networks. Should it be elaborated theoretically, and perhaps investigated empirically?
4. At a more abstract level, in biology, the eventual result of accumulated adaptations is the evolution of new species. Can a similar outcome be envisaged within inter-organisational networks, and what are the ramifications of such a perspective?

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