

**Ralph Frederick Breyer: Contemporary Theory and Method in a Distant Past?
A Review Essay of Ralph Breyer's *Commodity Marketing* 1931, and its relation to
his book *The Marketing Institution* 1934**

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Abstract

A review of two key texts by Ralph Breyer in the 1930s reveals a view of the structure and functioning of the marketing system that resonates well with modern theories of business ecology and complexity. I use the review to raise a number of issues regarding the nature of marketing systems, how marketing should be taught and the nature of the strategic problems confronting managers operating in complex adaptive systems. The more holistic perspective on marketing taken by Breyer and others of his time have messages from modern marketing scholars that stand the test of time and underscore the relevance of macromarketing analysis.

Introduction

When Stan Hollander asked me to review this book I was intrigued and willingly agreed to do it. I have recently completed a major historical paper (well major for me anyway) on the history of marketing channels and network thinking in marketing in the 20th Century (Wilkinson 2001) and knew of Breyer's work. In this article I referred to his next book published in 1934 *The Marketing Institution*, which provides a conceptual structure to organize the material covered in the 1931 book, as well as to his work on channel costing. But I had not come across his 1931 book.

I will begin with a little about the man himself. Accounts of the history of marketing at Wharton, where Ralph Frederick Breyer was on the faculty for many years, tell us that his work formed the basis for much of the early research focus:

“The Marketing Department was created in 1935 when Reavis Cox was made its first chairman, but Professor Ralph F. Breyer's work on ‘channels’ became the mainstay of marketing studies at Wharton. Even Cox's subsequent output on installment buying, marketing of house-building materials, and his major work on *Distribution in a High-Level Economy* all followed Breyer's lead in investigating the actual channels of economic flow.” (www-marketing.wharton.upenn.edu/news/info/dept_history.html)

On a more personal note it seems Ralph Breyer had a difficult life. He was borne on October 7th, 1897 and died on May 1st, 1974. When he was a young academic he suffered a stroke that made him deaf and, although he became quite skilled at lip reading, his ability to interact with others was limited. Also, his wife had a series of health problems that further complicated his life. Evidently he was able to handle his classes quite well and there

were never any rumors of attempts to take advantage of his handicap in classes. His last major scholarly undertaking, *Quantitative Systemic Analysis*, developed an elaborate system of notation for channel activity that few were able to completely master. It was eventually published in mimeograph form in 1949 (Breyer 1949).

The first problem I faced is how to review a book published over 70 years ago. So if you are inspired by this review, don't rush to your local bookstore or Amazon.com because I doubt they have it in stock (although a version of his book *The Marketing Institution*, edited by Henry Assael, was published in 1979 and his *Quantitative System Analysis* was republished in 1978). Of what relevance is Breyer's book today? Is it only a piece of history that forms part of our intellectual heritage or is it more important than that? Ostensibly it is a book scholars have classified as in the "Commodity" approach to marketing, as opposed to the "Functional" or "Institutional" approaches in which descriptive accounts of marketing were organized by activity or function, or by type of marketing organisation, as opposed to commodity type. As I read through the book I came to see that this book should not be easily pigeonholed as some historical descriptive account of marketing practices in different types of industries and commodities. Indeed, he is at pains in the introduction to avoid such simple classifications of the study of marketing.

The Nature of Marketing

Marketing, in his view, is an economic institution, which has functions to perform and a structure that arises to carry them out. These functions relate to its purpose of getting goods into the hands of the ultimate buyers who consume them and stems from the specialization of economic actors and to the exchanges that have to take place as a result. "Now we do not garner this tremendous advantage of the vastly larger production under the scheme of specialization (division of labour) without paying a price Which goes by the name 'marketing.'" (Breyer 1934 p3)

But there are many and important variations in the structure and functioning of marketing "caused largely by the wide variations in the character of the commodities and the nature of the market conditions" (Breyer 1931 p1). It is the purpose of his book to reveal these variations and to identify their causes. Hence Breyer's approach is more macro in focus. He is not focusing exclusively on marketing from the perspective of a marketing manager of a firm, although this necessarily forms a part of his analysis. His classification of marketing functions is generic and divorced from a classification of what particular marketing actors do, which is in contrast to older style descriptive accounts of institutions and their manifold activities. For example, in his 1934 book he distinguishes between the contactual and negotiation tasks, functions or services, rather than buying and selling because "the searching work and the negotiation rather than who performs them (seller or buyer) are fundamental, distinctive characteristics of the marketing task involved, and selling and buying are merely two different aspects of these primal types of activities" (p8). The other tasks he distinguishes are storage, measurement, quality-determination, packing, transport, payment, financing, and risk bearing. These are in turn related directly or indirectly to the various utilities that are created to satisfy wants i.e. form, possession, time and place.

Further, his approach is not normative. He is not seeking to identify best practice or to analyse the deficiencies of existing processes and structures, though these are commented upon. He is not seeking to develop better tools for analysis, planning or implementation for managers or policy makers, though his accounts of marketing necessarily comment on the way participants go about their business.

The Nature of Marketing Systems

The study of any phenomena has three basic dimensions: context, theory and methodology. Breyer's 1931 book is a study of marketing in different contexts; of how marketing varies according to different market conditions related to the types of products and services exchanged. And context matters. For example, Geoff Easton (2002) in a recent paper in the *Journal of Business Research* advocates a critical realist approach, based on the work of a modern philosopher of science Andrew Sayer (1992). In this he argues that the role of contingency in marketing theory and teaching has been neglected and that, in order to uncover the deep processes that drive marketing phenomena, we need to include contingency more explicitly. We now have several different sub-disciplines of marketing that focus on marketing in different contexts such as industrial or business-to-business marketing, consumer marketing, services marketing, and international marketing. These necessarily bring into focus the effect of different contexts on the nature and relative importance of different issues and problems and how they are dealt with. This is precisely Breyer's approach and he distinguishes contexts based on the type of product involved and the associated market conditions, while recognizing that variation within these categories is also significant. He is explicit on this: "The peculiar conditions of individual commodity markets give many distinctive forms to their distribution systems. True, the underlying principles occur and reoccur as each system is studied, but always under new conditions, with new exceptions, and *with new problems of application*" (p v, emphasis in original). Moreover, Breyer argues that a study of such variations in conditions is a more effective way of mastering the principles than a study of the bald principles themselves.

Breyer's view of context is not a mechanical a-theoretic exercise but one that is sensitive to the variance in important types of antecedent factors, as more modern parlance would describe it.

"To obtain a definite idea of these variations, to see the causes underlying them, to understand their reactions upon other phases of marketing, and to master the difficulties and intricacies of the problems of application of the general principles of marketing to practical conditions in actual markets, it becomes necessary to study the marketing systems used for a fairly broad and representative group of individual commodities" (p2).

As a result the importance of a commodity in terms of its value is considered secondary to diversity of marketing conditions. This diversity is reflected in factors such as similarities and differences in the scale of production versus consumption and how this affects the nature of the marketing problems facing participants. Or, the differences between shopping,

convenience and specialty goods, perishables versus non-perishables, consumer and producer goods etc. Or, differences due the spatial and temporal structure of demand and supply. These distinctions affect dimensions of the marketing problem made explicit in his 1934 text when he distinguishes between the types of utilities to be created and the problems of matching producer and consumer requirements in time, space and quantity. In sum, what Breyer presents to us is an exercise in comparative marketing systems analysis, one in which a quasi experimental design is used to select case studies of marketing situations that vary in important ways in terms of their market conditions and which lead to different types of solutions to perennial types of marketing problems in terms of behaviour and organisation.

Each chapter (or chapters) describes the marketing system for a particular type of commodity based on an extensive review of published material, government reports, trade publications and interviews with key people. The marketing systems considered are as follows:

- 1) Bituminous Coal (chapters 1 and 2)
- 2) Anthracite (chapters 3 and 4)
- 3) Crude Petroleum (chapter 5)
- 4) Refined Petroleum (chapters 6 and 7)
- 5) Iron Ore (chapter 8)
- 6) Pig Iron (chapter 9)
- 7) Rolled Steel (chapter 10)
- 8) Portland Cement (chapter 11)
- 9) Meats (chapters 12 and 13)
- 10) Cotton Textiles (chapters 14 and 15)
- 11) Tobacco Products (chapter 16)
- 12) Farm Equipment (chapters 17 and 18)
- 13) The Industrial Market (chapter 19)
- 14) Passenger Automobiles (chapters 20 and 21)
- 15) Electric Public Utilities (chapters 22 and 23)
- 16) Telephone Services (chapters 24 and 25).

The book is impressive in its breadth and depth; 25 chapters covering 16 major sectors of the US economy. Together, they allow us to see the way major parts of the economy are organized as well as some of the links between different sectors, including both the primary and ancillary value chains¹ involved (Wilkinson et al 2000). The *primary value chain* focuses on the systems involved in transforming and transferring raw materials through various production stages to the final distribution to end consumers. He covers various stages of primary value chains in his chapters. One is the sequential stages involved in converting oil in the ground, to crude petroleum (chapter 5), which then gets refined and distributed (chapters 6 and 7) to those buying passenger automobiles (chapters 21 and 22). Another is the sequence of stages involved in converting minerals into iron ore (chapter 8), pig iron (chapter 9), rolled steel (chapter 20) and its use to make machinery (chapters 17,

¹ Strictly speaking Porter used value chain to refer to the interlinked activities within firms and value systems to refer to the links between firms, but it is common today to use the term value chain to refer to both.

18, 20, 21 and 22). Other primary value chains are described in individual chapters such as those on coal and anthracite (chapters 1 to 4), cement (chapter 11), meat (chapters 12 and 13), cotton (chapters 14 and 15) and tobacco (chapter 17).

Associated with primary value chains are various types of *ancillary value chains* that enable and constrain the primary chain. These comprise the systems involved in supplying various additional types of inputs required by the primary value chain at different stages, apart from raw material inputs. They include production equipment, technical know-how, power and specialized services. Breyer discusses the marketing systems for various types of ancillary value chains in his account of the marketing of farm equipment (chapter 17), industrial machinery (chapter 20), electricity (chapters 23 and 24) and telephone services (chapter 25). In addition, he discusses parts of other ancillary value chains when they play an important role in a particular marketing system. For example, the railroads and shipping lines play an important role in transporting coal, oil and automobiles as well as, in some cases, becoming directly involved in primary value chain processes. In other cases Breyer mentions the services supplied by specialist firms like advertising agencies, financial institutions and the media but these are not center stage in his account of marketing systems. This not unexpected because it has been common in discussions of channel systems to relegate “facilitating agencies” to some imprecise limbo land. Yet an understanding of the structure and dynamics of the marketing system requires inclusion of these types of players and the role they play.

Each account of a marketing system is structured in the same way. First, he examines the demand and supply conditions that determine the types of tasks and problems marketing must confront, paying particular attention to the spatial, temporal and size distributions of each. His analysis of demand conditions includes consideration of the nature and processes of buying and consuming. For example, his discussion of industrial products includes analysis of the people involved, both within and outside the firm, in making purchase decisions and using products, and the often multiplex relations between suppliers and customers in these markets. Of course, he does not use modern terminology but I don't think I am stretching the truth as a result of hindsight to say his work covers most of the issues we consider today.

Following on from his analysis of supply and demand conditions, he describes the marketing system that has arisen to match demand and supply. His framework for analyzing the marketing system is in terms of the different types of marketing activities, services or functions carried out and the marketing machinery (i.e. organisation structures) that has arisen to carry out these activities in the particular context. Broader environmental factors and their impacts are woven into the analysis. He considers both the nature of the competitive strategies and processes employed in terms of the types of demands served by different actors and how they differentiate themselves from each other. Both direct and indirect forms of competition are considered, as when he examines the nature and role of substitutes for a product both technologically and in terms of consumer demand. He also considers dimensions of what I term the cooperative dimensions of strategy. This includes a consideration of the ownership and control of production outlets, degrees of vertical integration and relations with suppliers and key customers as well as the organisation of the marketing channels linking supply and demand.

The Nature of His Contribution

His contribution can be seen as one of theory building. It is in the spirit of modern grounded theory or case study methodology, in which we seek to see the general in the particular by a careful study of a phenomena in context. This is in contrast to a more variables based approach which attempts to develop quantitative measures of certain aspects of a phenomena and perhaps its context and test theories of how these measures interrelate (Emirbayer 1997). There is nothing wrong with the latter but it cannot capture the nature of the multifaceted context, embedded in a history and involving both economic and non-economic dimensions, that impacts on the problems participants face and on the way they can and do respond. Marketing always happens in the particular even though we can discern some general principles from an analysis of these particulars.

Seen in this way his studies are just as relevant today in identifying and even testing some theories of marketing. Just because the marketing systems he describes no longer exist they still represent examples of the way marketing systems adapt to their environments. It is but another type of comparative marketing systems analysis in which we compare systems under different conditions. Moreover, we may gain additional insight into the links between context and practice because history contains examples of situations that do not and cannot exist today. Hence the variance in our variables of interest is greater when we include historical contexts. I believe that a useful study could be conducted just using Breyer's book. This would involve developing a taxonomy of demand and supply conditions so that the various systems studies can be grouped in meaningful ways, developing a way of characterizing the marketing systems described in terms of various dimensions and using cross case analysis to test various hypotheses about the effects of context on marketing system structure and conduct.

Breyer's book is not a case study book because it is not focused on the micro-marketing issues that confront a particular organisation. It is focused on the context in which such issues arise. The modern equivalent of Breyer's work is perhaps Porter's *Competitive Strategy* and his *Competitive Advantage of Nations*, which both use studies of business systems in different industrial and national contexts to identify and highlight underlying principles of relevance to participants in such systems as well as policymakers. In a sense it goes beyond Porter's *Competitive Strategy* because it is not restricted to a narrow industry definition but to the network of interrelated firms spanning trade, manufacturing and input suppliers as well as other complementary organisations involved in matching supply and demand for particular types of products.

As a result of reading the book I have decided to try using his approach in my introductory postgraduate marketing subject. We usually ask students to develop a marketing plan as part of the course but instead they are asked to analyse the marketing system for a particular type of product or service much along Breyer's lines and to discuss the implications in terms of opportunities for existing and new players and the marketing principles (and their limitations) that are revealed by their analysis. I may even going to use one of Breyer's chapters as an example of the kind of analysis I want!

Of course, there are limits to Breyer's coverage of contexts. First, it is US domestic market focused, ignoring international trade except in so far as imports and exports feature as part of the domestic industry. But he does not develop these aspects. He also ignores agricultural products as they are the subject of other textbooks. His aim is to describe a representative group of non-agricultural. Second, services are excluded except for electricity and telephone services, though others are necessarily included in accounts of particular marketing systems because of the important role they play. For example transport systems are an important cost element in moving raw and semi processed materials such as coal, iron ore, steel and oil. Financial services play an important role in large equipment and machinery purchases by firms and farms and in the purchase of consumer durables such as electric appliances and cars. Technical support and advice are important in advising distributors and final customers in both industrial and consumer goods industries e.g. machinery use, cement and concreting methods, electricity and phone systems.

In introducing his description of marketing systems for electricity and telephone services he is careful to identify some of the main distinguishing characteristics of services. He points out that services are intangible and cannot be stored and that they may be classified in terms of the extent of personal involvement required. He distinguishes three types of services: those where no personal contact is required, as in electricity and other utilities; those involving moderate degrees of personal contact such as telegraph and transport services; and those in which the personal element is most important (Breyer 1931 p. 428). Moreover, he notes that for telephone services each transaction has to be "made to order" i.e. customized. His thinking here is in keeping with modern texts on service marketing, although things have changed in terms of the nature of some of these services. The degree of personal attention one gets from the phone company is a long way from the personal telephone operator of his era – unless of course you count the interminable automatic voices and menus of number choices we all have to go through to get to speak to a real live person these days!

Finally his focus is essentially static. He seeks to understand things as they are in the 1920s and how marketing activities and organisation are adapted to market conditions, rather than to provide any account of the dynamics and evolution of marketing systems.

The Nature of Nature: Business Ecosystems

At the same time as I was reading Breyer I was reading Simon Levin's *Fragile Dominion* (Levin 1999), which is an account of research in ecology. This is part of my general interest in modern research on complexity and the evolution and modeling of complex adaptive systems and how they relate to the study of marketing. Levin's focus is on the types of ecologies of species that arise in the world that maintain themselves and how they differ across domains. It occurred to me that this is similar to what Breyer is providing in his book. Rather than looking at island communities or other circumscribed geographic areas to show the way the complex adaptive systems of nature have self-organised into a steady state web of interacting species, what we have are rudimentary descriptions of various types of business ecologies focused on different value production systems that have evolved. Of

course these business ecologies are not isolated from each other and to other parts of the socio-economic system in which they operate, including biological ecologies (Moore 1996).

But there is a rough analogy here. It focuses our attention on the interacting sets of actors, schemas, activities and resources that together co-produce the marketing system involved in producing and delivering values associated with particular types of products and services (Wilkinson and Young 2002). It also stresses the direct and indirect networks of relations and interactions between the actors, including competitive, cooperative, complementary and other types of interactions and relations, that together produce and reproduce the on-going pattern of actors, interactions, resources and schemas that characterise a particular marketing system ecology (Welch and Wilkinson 2002). These networks of interacting business species co-construct themselves in a self-organizing way. They are not a machine put together by an engineer, even though we sometimes assume the existence of such an actor when we talk about channel captains and network leaders. As Kant described it, in a machine the parts only exist for each other, in the sense of supporting each other within a functional whole. In an organism the parts also exist by means of each other in the sense of producing one another. Therefore, “we must think of each part as an organ that produces the other parts (so that each reciprocally produces the other)” (cited in Capra 1997 p22).

I began pondering whether Breyer’s rich pictures of business life in various product based marketing systems were equivalent to different types of business ecologies. In a sense they are a reflection of the systems that have evolved to exploit a particular environmental niche, to serve a particular demanded set of values or utilities and to exploit a particular resource be that a natural resources and/or a particular segment of consuming spending power. The business ecologies that Breyer describes for different commodities are not independent of each other and as a result, we are not be able to explain the existence or evolution of particular types of firms (species?) without understanding the role that play across different marketing systems. I have already mentioned the ways the marketing systems are linked to each other in primary and ancillary value chains.

Other examples of interactions among marketing systems are the existence of retailers and wholesalers and joint production systems that reap various types of scale and scope economies, or network externalities that cross product system boundaries, and the interactions among complementary products and services. Many examples are to be found throughout Breyer’s book. In his description of distribution systems for coal, cement, tobacco products and gasoline we see the way wholesalers and retailers specialize in different assortments of products and services in order to seek a viable niche and the way distribution of the focal product can play a more or less important role. Joint production issues arise in the refinement of petroleum into many types of products, in the cutting up of meat, in the processing of coal and anthracite into different size groups and the production of cotton textiles of different grades. Each poses problems in terms of matching supply and demand leading to problems in the relations between distributors, suppliers and customers.

Network externalities arise when the value of a product or service increases with the number using it. The telephone system is an obvious example and we see in Breyer’s account the way the suppliers try to expand installations and usage. It appears a form of fax was available even in those times. It was then called the “telephotograph” which transmits

photographs, halftone and line engravings, portraits, handwriting, indeed anything that can be photographed. It required dedicated equipment both ends and it took 7 minutes to send a photograph from the East to West coasts. Complementary product relations are illustrated in the relations between electricity suppliers and suppliers of appliances using electric power. Electricity suppliers set up their own factories, as well as retail stores to sell appliances and developed long term relations with particular suppliers.

In general, a business ecology is embedded in a material and technological environment as well as a socio-economic system with which is co-evolves. We can see in Breyer's book these interactions between the marketing system and these other systems in which it is embedded.

In terms of the material environment Breyer describes how the marketing systems for primary products such as coal, oil and iron ore are shaped to a large extent by the location and ease of extraction of deposits and the resulting geographic and temporal separations that arise. With regard to the general socio-economic environment we should remember that, at the time Breyer was writing, the great depression had just begun and it was a time of great strain and change in the US and indeed the world. The boom times of the early twenties had just ended with the Wall Street Crash of 1929 and the great depression was underway. However, there is little obvious evidence of the depression in his accounts of marketing systems, as he is describing systems as they existed in the 1920s. But three years later, in his 1934 book, Breyer devotes a whole section to the impact of the New Deal legislation enacted in 1933 by the incoming Democratic administration headed by Franklin D. Roosevelt.

Breyer does not delve far into the socio-economic context in which marketing systems are embedded and he restricts himself to the USA. He does mention some key factors that affect demand and supply conditions including legal systems and technological changes that affect marketing organisation and practice. Thus the break up of Standard Oil into State based firms reshaped the refined petroleum marketing system and altered its dynamics, and the invention of cracking technologies in petroleum refining changed the relationship between refiners and oil suppliers.

Levin's ecology book nicely summarises the way ecologies are complex adaptive systems in which developmental and evolutionary processes operate at various time scales and at various levels of the hierarchy of organisation characterising ecological systems. Key issues are the way in which the structure of the system is shaped by the productive energy available to exploit, which in Levin's context is the way energy from the sun is captured through photosynthesis by first level organisms that others can then build on, as well as from the way energy is recycled and transformed through the agency of various interrelated functional groups of species.

In much the same way business ecologies are built on converting the energy in nature into values in the form of products and services through a multistage complex adaptive system that has evolved over time in a self organising bottom up way. Or, is it the way they have evolved to convert the spending power of consumers into financial and other rewards for a multistage interrelated ecology of business species? In truth it is both these things and they

are interrelated. The conversion and recycling of the energy of nature itself generates directly and indirectly the purchasing power that the system seeks to “exploit.” This includes the way serving identified demands in particular ways (converting them into money energy?) creates heterogeneous intermediate and derived demands through the various multistage systems that evolve, as Breyer describes. The creation of one type of business species to “exploit” a first or second order demand in turn creates opportunities for other types of specialisation and adaptation - just as Alderson (1957, 1965) described it in terms the proliferation or opportunity and Schumpeter (1939) described it in terms of the entrepreneurial process of opportunity recognition and the consequent waves of innovation. The exploitation or serving of today’s identified demands in turn uses up and transforms nature’s energy into other forms which are for future generations the residue of past energy and labour. These can be enabling transformations in the forms of material, machinery, tools and artifacts as well as our material culture. They can also be restricting as when we deplete forests and mineral reserves and create dust bowls and polluted waterways – the stuff of macromarketing theory.

An eco-system evolves over time through the processes of variation and recombination and as a result of the various feedback processes operating, which select and reinforce some changes and not others. The more tightly coupled species are the more these feedbacks are evident, as in the case of firms adapting and differentiating their strategies and operations in various ways, experimenting with new technologies in response to changing conditions. Other feedback processes are more indirect and operate at longer time scales, as when new types of firms, technologies and channel systems arise. We are only now beginning to be able to develop models of such ecological systems so that we can understand them better.

Research in ecology has revealed various principles and mechanisms that nature has developed to help individual species to survive and develop. Of particular importance is the role of diversity in giving nature something to work on to adapt to new situations. This includes diversity in the population of a species, among functional groups that play equivalent roles in the functioning of an ecological system (e.g. intertype competition among business networks or channel systems) and in terms of redundancy in the numbers and types of species and systems. Ecological research has revealed ways in which species have learned to adapt to the essential uncertainty of operating in such a complex adaptive ecological system. They exhibit a certain plasticity in their behaviour repertoires and response mechanisms, develop a modular structural form in which sub-systems are self sustaining and weakly linked to other subsystems, such that a major perturbation is unlikely to permeate and threaten the whole ecological system. They exhibit a mixture of specialisation and generalisation, or exploitation and exploration, to preserve adaptive and evolutionary potential, develop different patterns of cooperative, as well as adversarial, interrelations including mutualism and altruism, which, over the long term, help to develop and maintain the ecological system that allows them to persist.

It seems to me these kinds of issues are at the forefront of more recent debates concerning the nature of business strategy and the complexity and dynamics of modern business environments. We have much to learn by utilising similar methodologies to those of ecologists to study our own marketing and business ecologies. The work of Ralph Breyer is in this spirit. In the past, biological analogies have been used to inform business thinking but

the nature of the nature game today is qualitatively different and is part of the emerging new forms of analytical and modelling approaches that place process and context to the fore and show how snapshot structural pictures and variables based research can hide quite divergent mechanisms by which interrelated system of players continually reproduce, co-evolve and co-construct the business ecologies we observe. This new perspective allows us to “see” new types of phenomena and interconnections that were hitherto only dimly recognised, if at all. The computer, with its ability to simulate evolutionary processes and interactions over time, may be compared to the telescope and microscope in its ability to reveal new realities to explain, which challenge existing theories. Indeed, in his recent book *A New Kind of Science*, Stephen Wolfram (2002) argues that programming and simulation allow us to go beyond the limits of traditional mathematical methods.

It is perhaps a stretch to link Breyer’s book to modern research on ecological systems. But he is attempting a richer description of the business ecologies we have to account for and participate in than is normally to be found in our modern day textbooks. Perhaps we need to go back and reconsider this type of approach. In marketing and business studies we are not advanced in our understanding and modeling of business ecologies and in explaining how they develop and the different types that can emerge. We have partial theories of why particular types of actors emerge such as intermediaries, and theories about the way individual actors behave and should behave, including buyers, sellers and consumers. But these are mostly of a comparative static nature (Wilkinson 1990).

But now we can do better. We can in principle now create alternative artificial business ecologies, modelled on existing ones, past ones or would be ones that will allow students and researchers to develop, hone and ground their use of marketing principles and instincts by becoming directly or indirectly participants in such artificial business life systems. Here I have in mind more than the business simulations we now use. The business games can change and co-evolve along with the strategies and behaviour of the participants.

So to conclude, I see in Breyer’s book a depth and breadth of consideration of marketing systems that we could do well to emulate more today. It has implications for the way we teach and do research in marketing. It allows us to see the work of the individual marketing actor in a broader context more clearly, something that the dominant marketing management approach has a tendency to blur. But it is not a cry for more ivory tower research of little relevance to managers and policy makers. Far from it. We are in the midst of a revolution in scientific thinking and research in which for the first time the dynamic and evolutionary processes that have always characterised business systems are more amenable to study. The study of complex adaptive systems, of which business eco-systems are an example, is a multidisciplinary endeavour based on modern computing methodologies that will reshape our study of many disciplines, including marketing. Business is fast coming to terms with these new methodologies as they seek ways to better participate and persist in such systems, to move away from centrally directed and controlled systems and organisations to more distributed self-organising control systems that co-evolve with other systems, and in which exploiting, exploring, experimenting, learning and adapting are central issues. And, as if to demonstrate my point, as I finished writing the last sentence a recent article in *The McKinsey Quarterly* was brought to my attention (Brown et al 2002). It focuses on the role of loose

coupling between and within business processes as a means to make firms more flexible and profitable!

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