

# Knowledge, Space, Economy

*Edited by*

John R. Bryson, Peter W. Daniels,  
Nick Henry and Jane Pollard



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# Knowledge, Space, Economy

We are now living through a period of knowledge capitalism in which, as Manuel Castells puts it, 'the action of knowledge upon knowledge is the main source of productivity'. In the face of such transformation, the economic, social and institutional contours of contemporary capitalism are being reshaped. At the heart of this process is an emergent set of economies, regions, institutions and people central to the flows and translations of knowledge.

This book provides the first interdisciplinary review of the triad of knowledge, space, economy on entering the twenty-first century. Drawing on a variety of disciplinary backgrounds, the first part of the book comprises a set of statements by leading academics on the role of knowledge in capitalism. Thereafter, the remaining two parts of the book explore the landscape of knowledge capitalism through a series of analyses of knowledge in action within a range of economic, political and cultural contexts.

Bringing together contributions from across the social sciences, this book provides both a major theoretical statement on understanding the economic world and empirical exemplification of the power of knowledge in shaping the spaces and places of today's economy and society.

**John R. Bryson** is Senior Lecturer in Economic Geography, **Peter W. Daniels** is Professor of Geography and **Jane Pollard** is Lecturer in Economic Geography, all at the University of Birmingham. **Nick Henry** is Reader in Urban and Regional Studies at the University of Newcastle upon Tyne.

# Acknowledgements

It will probably seem strange for our acknowledgements to begin with the editors thanking each other. However, the project could not have got off the ground unless there had been the sort of lively discussion that characterises the regular meetings of the Developed Market Economies Research Group in the School of Geography at Birmingham. During 1997 it became apparent that members of the Group had, and indeed continue to have, research interests about aspects of economic geography that are linked by a common thread. This takes the form of the role of knowledge and/or information in the production and consumption of goods and services, and its implications for spatial patterns of development. We were also aware of the developing interest and debates in the social sciences about the nature of knowledge and its impacts on power relations or the role of the state as a 'gatekeeper' in knowledge society. Our pooled interest, the willingness of the group to share ideas and information, and the belief that it would be timely to attempt to produce an interdisciplinary collection reflecting some of the current thinking about the complex interactions between space, knowledge and the economy encouraged us to begin discussions about an edited interdisciplinary collection.

We began by drafting a proposal that could be used to encourage/persuade invited contributors from a range of disciplines that this was a worthwhile exercise. This involved several 'brainstorming' sessions during which one of the editors had the unenviable task of trying to record the thoughts of his colleagues (with faster minds than his) on a laptop computer. A rather absent-minded approach to saving what had been drafted caused much consternation amongst the more computer literate of the editors but the finished product seemed a fair reflection of the pooled thoughts of the group!

Subsequent events depended very much upon the initial encouragement for the project that was received from Manuel Castells. We are indebted to him for his support and encouragement. We are also very grateful to all those contributors who initially signed up to the project and especially to those who, at a later stage and at short notice, agreed to fill gaps created when it proved necessary for some of the initial contributors to withdraw because they were unable to meet their commitments. The balance of the book would have been adversely affected had the latter not been prepared to fill the breach. The reviewers of the initial book proposal made some very helpful suggestions that were incorporated in the final version. We would also like to acknowledge the constructive comments made by the two reviewers, one from the UK and the other from the US, who undertook the task of scrutinising the manuscript prior

to its acceptance for publication. Responsibility for the final content of the book does, of course, rest with the editorial team.

Edited books are about teamwork and their production involves numerous individuals. The contributors willingly and constructively responded to feedback on their draft chapters and dealt quickly with various queries along the way. We would particularly like to thank Claire Clarke in the School of Geography and Environmental Science office who assisted with typing, collating and printing various sections of the manuscript. Kevin Burchill in the School's Drawing Office re-drew some of the diagrams. Some of the ideas about knowledge and its implications that are explored in the various contributions by the editors were shared with postgraduate students in the School taking the MSc World Space Economy course; we appreciated their interest and thoughtful comments. Finally, we would like to thank Sarah Carty at Routledge who originally commissioned the book. Andrew Mould has subsequently taken up the reins, ably supported by Ann Michael who has demonstrated much patience as deadlines have slipped past and the excuses have become ever more imaginative. Such is the joy of publishing!

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John R. Bryson  
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Birmingham, May 2000

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# 1 Introduction

*John R. Bryson, Peter W. Daniels,  
Nick Henry and Jane Pollard*

The knowledge-driven economy is not only a new set of high-tech industries such as software and biotechnology, which are built on a science base. Nor is it only a set of new technologies – information technology and the Internet. It is about a set of new sources of competitive advantage that apply to all industries, high-tech and low-tech, manufacturing and services, retailing and agriculture. The key to our competitiveness is how we combine, marshal and commercialise our know-how.

*(Observer, 30 July 1998)*

Capturing some of the more populist representations of current economic transformation, the writer in *The Observer* reflects one of a number of recent appeals to the growing significance of knowledge in contemporary capitalism (see, for example, Coyle 1997; Drucker 1993; Leadbeater 1999). A key argument developed in these literatures is the suggestion that economic competitiveness is now bound up not with new materials *per se* but with new ways of producing, using and combining diverse knowledges; the same ingredients, in essence, can be rearranged in new, and better, recipes. In similar vein, these arguments are to be found in academic commentaries on economic transformation. A selection of these might include, for example, Lash and Urry (1994) on economies of sign and space, Lundvall and Johnson (1994) on the learning economy, Quah (1996) on dematerialisation and Thrift (1998a) on soft capitalism. It is now clear that in a number of disciplines, including geography, sociology, economics, cultural studies, management, psychology and policy studies, there is a growing acceptance that flows and translations of knowledge are integral to understanding contemporary global capitalisms.

The recognition of knowledge as a factor in the production and reproduction of economies and societies can be traced to the influential work of Daniel Bell (1973) which was informed by the perceived shift from manufacturing to services. More recently, the work of Manuel Castells (1996) on 'informational capitalism' has focused further attention on the growing importance of knowledge in contemporary capitalist societies. His 'informational capitalism' signals the importance of innovation, knowledge and learning in a globalising, rapidly evolving economy. Castells has been a key advocate, arguing that while information and knowledge have always been important for economic growth, we have entered an era in which the ability of firms, regions, nations and labour to produce, circulate and apply knowledge are fundamental to their competitiveness. Indeed, information and knowledge are now viewed as components and products of production processes in numerous sectors, not

only in so-called 'high-technology' sectors. Thus, 'informational capitalism' is not about the growth of a post-industrial information processing sector (à la Bell's sectoral approach). Rather, all departments, sectors and sub-sectors of the economy are, or are becoming, informational in the sense that information and knowledge are widely embodied in the work process and accessed through the increasing powers of information technologies.

An ubiquitous feature of this literature is the nagging recognition that knowledge is a very slippery concept. What is knowledge? What is it to know? What differentiates knowledge from information? Has the importance of various knowledges altered over the last 20 years, and if so in what ways? All of these are key questions to which it is only possible to construct partial answers.

In this volume, we focus on the nexus of knowledge, space and economy. In so doing, we concentrate on three themes. First, we examine *different forms* of what are construed as 'economic knowledges', that is knowledges that are deemed central to constructing competitive advantage in contemporary capitalism. Such a remit leads into several areas of inquiry: what forms do economic knowledges take?; how are different knowledges – geopolitical, regulatory, technical, consumer and genetic, to give only a few examples – made economic either indirectly (through their production, appropriation and use by firms) or directly through their commodification?; how is the production and circulation of economic knowledges mediated by power?

Second, if economic knowledges are being made, then *they are made in space and place*. How do space and place make knowledges 'economic'? What are the spatialities of different economic knowledges? How are different forms of economic knowledge produced, mobilised and translated? What are the geographies of these processes? What are the geographies of the knowledge-space-economy?

Third, although the editors' disciplinary background is economic geography, we believe it is vital to encourage an *interdisciplinary research agenda* around the notion of knowledge, space, economy. Thus, we have brought together a group of scholars from a range of social science disciplines to explore the meaning and interpretation of knowledge in the contemporary space economy. The sheer diversity of knowledges that are of economic significance, and their contested nature, is conveyed via the different disciplinary backgrounds of the contributors.

## The knowledge-space-economy nexus

Although different authors are grappling with different conceptions of knowledge and its production, there are perhaps a number of cognate features of what we might call 'knowledge economies'. Hodgson (1999: 181–2) considers five developments that have heightened the importance attached to knowledge production, use and circulation: (1) processes of production and their products are becoming more complex and sophisticated; (2) increasingly advanced knowledge and skills are being required in many processes of production; (3) there is an increasing reliance on specialist and idiosyncratic skills; (4) the use and transfer of information is becoming more extensive and important for economic activities; and (5) there is increasing uncertainty in contemporary economic life.

Knowledge economies seem to be characterised by the de-materialisation of production, a shift away from dealing with raw materials and machines toward dealing

with other minds; there is a shift from 'action-centred to intellectual skills' (Hodgson, 1999: 184). There is also a shift away from physical dexterity and skills to mental processing ability (see also Reich 1991a). The term 'knowledge economies' is also intended to capture a sense of accelerating technological change and, related to this, the need for continuous innovation. This acceleration of technological change, and the associated growth of information available to firms, organisations and other agents, is also, it seems, bound up with growing uncertainty. In a rapidly changing world of increasing complexity, predicting future events becomes ever more difficult (Beck 1992). Thus, a more 'knowledge intensive' economy is one in which the ability to learn is an important aspect of competitiveness (Porter 1990; Drucker 1993).

If it is accepted that the production and translation of different forms of economic knowledges is of increasing importance in contemporary capitalism (for a critique of this approach see Hudson 2000), then a series of key questions arise concerning the production and distribution of knowledge in economic networks. Contrary to neo-classical economic theory, there are seemingly wide variations in the capacities of firms to create, circulate and manage knowledge. Knowledges and the ability to commodify them are unevenly distributed.

Some of the early attempts to examine knowledge-based economies focused on the changing role of information technologies and the possibilities for such technologies to erode the 'friction of distance'. This would, goes the argument, lead to the spatial dispersion of many functions and, in essence, signal the 'end' of geography (see O'Brien 1992). Prioritised, implicitly and explicitly, in such writing was an emphasis on the 'hardware' of information transmission and its diminishing costs in real terms as technologies evolve rapidly. In addition to the technologically determinist bent of such writings, there was also a focus on traded flows of what is now commonly called codified or explicit knowledges, as opposed to tacit, know-how forms of knowledge.

In line with criticisms about globalisation and the end of geography, however, (see, for example, Martin 1994a), the reinvigorated importance of place in contemporary economic times has come to the fore and many have turned to knowledge-based explanations to explain agglomeration or clustering. Invoking high-tech milieu, financial and business services or craft-based industrial districts, these explanations have tended to emphasise the idiosyncratic quality to relationships or transactions between firms (see Scott 1988). More recently, there have been more explicit elaborations of the non-codified, tacit nature of productive knowledges, many of which are untraded (Storper and Salais 1997). Implicit in these arguments is the suggestion that tacit knowledges may not travel well and, significantly, that certain spatialities may help or hinder the production and translation of different forms of economic knowledge.

Many of the chapters in this volume contribute to these debates concerning knowledge-space issues and, most especially, the relationship between forms of knowledge, alternative spatialities of knowledge and different paths of knowledge territorialisation. Several contributions explore the analytical foundations of the knowledge-space-economy through discussion of, for example, the archetypal innovative high technology cluster, drawing on tacit, localised, technologically-based knowledges. Others provide analyses of a variety of economic systems tracing characteristic flows of knowledge and their implications for changing organisational geographies.