

recognised women and its names and pieces of biographical and collective data will provide valuable starting points for other researchers. For me, its historical chapters are the most valuable and carefully researched. In its attempt to embrace so many strands of activity, as well as present and potential developments in science, the book loses cohesive force. But its title is a portent. The study of women in the history of Australia's science is burgeoning: we are on the edge of discovery.

Ann Moyal
Canberra

Information and Communication in Economics edited by Robert E. Babe (Kluwer Academic Publishers, Boston, Dordrecht and London, 1994), pp.xv + 347, US\$99.95, ISBN 0-7923-9358-9.

This book draws contributions from a number of areas within the social sciences. Its provenance is predominantly North American but it includes papers and commentaries from Australia and the United Kingdom. Coverage ranges over information economics on the one hand, and media and communication on the other. Current preoccupations with convergence notwithstanding, one would have preferred a focus on one or other of these fields. It is hard to see where contributions on the 'the politics of newsworthiness' and 'the political economy of communications research' fit into this volume. These doubts were reinforced when the final chapter concluded that "Communication and economics ...stand in a contradictory relation to one another ... they are ... mutually exclusive activities". (p. 325) Accordingly in the space available, one will concentrate on those papers which more directly addressed the theme of information economics.

Despite its less than total coherence, this book makes rewarding reading. Most of the papers use as a starting point the traditionally limited treatment of information with mainstream neoclassical economics, an approach that has viewed the price system itself as a sufficient information mechanism, with individual economic agents seeking to maximise utility on the basis of perfect information. While addressing a spectrum of topics from 'commodities' as sign systems to 'African economic development', the contributing authors are as one in their criticism of the neoclassical approach. The thrust of this volume would emphasise the wider social and communal, as opposed to narrow individual, significance of information economics, and its implications for social and economic development and for organisational and cultural change. The result is a stimulating and refreshing exploration of information economics which roams far from the reductionism of information as a mere dispeller of uncertainty and as a facilitator of exchange relationships within markets, to recognition of its implications for both economic analysis and public policy.

The collection starts with a comprehensive review of the changing role of information in economic thought by Don Lamberton. Lamberton is more restrained in his criticism of neo-classicism than are most of his fellow authors in this volume. Nevertheless, he does ascribe economists' reluctance to become involved in the study of either technology or internal organisation to a liking for optimal rather than non-optimal outcomes. He stresses the need for attention to complementarities between physical investment and human and social capital, and urges that definitions of infrastructure should include organisation as well as of more physical resources. He raises the question of asymmetries both in information gathering and in information use, and of the importance not just of organisational learning but of the learning manager as embodiment of a form of organisational capital. Lamberton urges cau-

tion in the use of terms such as convergence and global, on the grounds that they both lack precision, an interesting observation given the extent to which both themes recur throughout this collection.

In his commentary, Gilles Paquet describes Lamberton's contribution as 'conservative', and his proposed research agenda — demand for information, role of information in the decision process, group versus individual information needs — as unlikely to lead to a new framework capable of reintegrating the full life of communication and learning into analyses of the information economy. More telling is the criticism that Lamberton deals with the central problems of perception and cognition only in passing.

Robert Babe ('The place of information in economics') focuses on the essential weakness of a neoclassical paradigm that insists on treating information as a commodity. This approach obscures many essential properties of information and ignores its critical shortcomings as a candidate for commodity status. There are difficulties of information appropriation and of ownership, stemming from its public good characteristics and not least, of measurement. Economists have not and cannot quantify information.

In the event says Babe, rather than trying to 'force fit' information into the commodity mode, it makes sense to regard commodity as but one form or function that information can take. From this perspective, neoclassical notions of market, price, value and so on are but specialised instances of broader communicatory phenomena. This implies attention to interaction between the cultural and economic settings and to issues of content and equity in information activity. By freeing information from the restrictive bonds of commoditisation, economics would become more attuned to events in the real world where, rather than being simply autonomous actors engaged in rational maximisation of individual welfare, buyers and sellers participate in dialogue and are susceptible to the wider interpersonal and community influences. In effect, economics itself would be transformed into political economy.

This need for transformation of the discipline is taken up again in Ian Parker's paper on 'Commodities as sign systems'. Commodities have referential, semiotic, informational and communicative significance over and above simple neoclassical utilitarianism. This semiotic or meaning-bearing character of commodities is reinforced by the increasingly central role of commoditised information within the global political economy. Consumption is not the ultimate and sole end of economic activity; nor does it occur in a vacuum. In any social-economic system where utility levels are interpersonally interdependent, the competitive exchange economy as conventionally modelled is necessarily incapable on its own of generating Pareto efficient patterns of distribution and consumption. In such cases, the free market myth is economically and socially bankrupt.

Vincent Mosco ('The political economy of communication') argues for a return to the broader concept of political economy, in which social relations and cultural values are given equal weight with exchange values. He contrasts the recognition by Adam Smith and Karl Marx of the role of individual morality in shaping the form and social use of technology, with current views of information and communication technologies as shapers of the vision of future society. In a time of global economic restructuring and of new corporate structures and relationships, not least the market power of media and communication conglomerates, it is time to go back to basics. What are the communication and information needs of people in an electronic services society? The moral, cultural and spiritual domain should be the central subject of analysis; the information age is inflected with the moral dimension of our life.

Walter Adams and James Brock ('Economic theory: rhetoric, reality, rationalisation') argue that neoclassicism fails to confront the central question of the political economy of power: who determines the options from which, in a Pareto optimal situation, consumers are

permitted to choose. This, they assert, has the effect of legitimising coercion and is tantamount to defining consumer welfare and efficiency as equivalent to whatever outcomes private power commands. It amounts to a form of economic Darwinism and to the dictum that public policy ought not concern itself nor interfere with, the outcome of demand for social wants and the social costs of meeting them. By failing to recognise the crucial distinction between government intervention that makes the competitive market work, for example through antitrust policy, and that which subverts it, for example, by disproportionate lobbying from economic and political power blocs, social Darwinists both risk the destruction of the private enterprise system they proclaim to protect and beget the kinds of government policies they so vehemently deplore.

Mark Hepworth ('The information economy in a spatial context') examines the growing competition between cities for new jobs and investment, and the impact of technological and organisational change on the form and functioning of organisations. Current competition within the European Union, seems likely to pale beside that which is anticipated from the former eastern bloc and low wage countries in Asia. The growth of information super-highways and especially activities on the private networks of multinational corporations, threatens both cities and their information-based organisations. Downsizing, delayering, new information-intensive methods of manufacturing and distribution, and the impact of politically motivated institutional reforms aimed at fostering the growth of private information services all pose problems for metropolitan information-based economies.

Hepworth, sees the possibility of cities such as London, developing not as production centres for information technology goods, but as knowledge-based centres for high value added information technology-based services. He advocates the development of new engines of growth that would link telematics with social overhead capital, notably in the form of high quality transport infrastructures. For this to happen, however, will require a rejection by governments of current market driven ideologies and a return to Keynesianism.

Barry Litman and Scott Sochay ('The emerging mass media environment') look at the impact of globalisation and particularly at the key areas of conglomeration, cross-media overlap and synergy. They conclude that on the whole the financial performance of giant media conglomerates has been no better than that of the component elements before the mergers took place. Allowing for the impact of legal and regulatory restrictions, as well as availability of capital, globalisation appears to be having some effect on cross-media ownership and with privatisation expanding outward from Europe to eastern Europe and beyond, and with continuing technological improvements, new opportunities are expected to present themselves. Although examples of synergy can be found, they are scarcely plentiful, and the indications are that on the whole while some global media conglomerates were able to develop synergies in their premerger form, there was no significant growth of synergies following merger. Indeed, some organisations, and News Corporation and Bertelsmann are examples, have on occasion declined the opportunity for synergism, preferring to outsource products and services that could have been provided in-house.

In his commentary, Nicolas Garnham takes issue with Litman and Sochay, arguing that in fact new combinations of technology and business structure have not altered the communications landscape nor blurred the once clear lines that separated communications media from each other. If, says Garnham, the trend towards conglomeration is economically irrational, and research and the literature strongly suggest that it is, then it could well turn out to be cyclical in nature, and claims for a radical restructuring of the communication landscape will be seen to be premature. It is also important to be careful with claims for technologically-driven globalisation and restructuring. In fact, it is difficult to exaggerate the slowness with which the communication landscape changes. In the end it all comes down to politics and to a choice between free market and interventionist policies.

Jill Hills ('Communication, information and transnational enterprise') examines the way in which the United States and United Kingdom governments have sought to alter physical infrastructures, information flows and regulation in favour of their transnational companies. She skilfully traces the development of such mercantilist policies in a global economy in which to be rich in information resources is to be powerful. This is most obviously seen in the North-South divide over free flow, sovereignty and, with the increasing ability of multinational corporations to bypass national telecommunications networks, the remaking of international networks in an American image — a situation of fragmented public and private provision in which the private pays nothing towards the public. In the final analysis, the losers will be sovereign nations, the rural population in the developing countries and the citizen everywhere.

Bernard Dasah ('Application of neoclassical economics to African development') argues that neoclassicism, which views human relations in a commodity exchange mode is inappropriate to the needs of the economic culture of Africa. It is important that we attempt to reconcile some of the traditional African values of family and kinship, social bonding and group solidarity with the imperatives of economic efficiency and accumulation. Here again, the case is made for economic progress to be viewed as but special instances of more general communication processes: economic activities are exchange activities and all exchange activities are social behaviours, defining spheres of influence and power. Consequently, certain activities that may appear irrational according to the economist's individualistic model, may be quite rational and beneficial from the community point of view.

Bill Martin

Royal Melbourne Institute of Technology

The British Industrial Revolution: an Economic Perspective edited by Joel Mokyr (Westview Press, Boulder, Colorado, 1993), pp. xi + 362, US\$55.00 hc., 18.95 pb., ISBN 0-8133-8509-1/5.

The term "Industrial Revolution" has long been a source of controversy among economic historians. This collection of essays seeks to illuminate the debates of recent years, applying the methods of the New Economic History or Cliometrics — that is, bringing to the traditional qualitative and judgmental approaches to history the theoretical approaches of economics and the measuring instruments of econometrics. About one matter at least there seems little argument, namely that the British economic experience of the time is a matter of compelling interest to economic historians, as witness the fact that all five contributors to the book are based outside the United Kingdom, in North America.

Though the term "Industrial Revolution" was coined by a Frenchman towards the end of the eighteenth century, it is perhaps appropriate to consider what we understand by the key term: the Oxford Dictionary defines revolution as a "complete change, turning upside down, great reversal of conditions, a fundamental reconstruction". In these contexts, the American,