Book Reviews

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How to Argue with an Economist

Lindy Edwards

Cambridge, Cambridge University Press, 2002, 172 pp., Australian $27.95, ISBN 0 5215 25322 pbk; Australian $79.95, ISBN 0 5218 19032 hbk

This book provides a dissident insider's view of recent Australian public policy debate, and it mounts a further attack on the influence of 'economic rationalism' within the coordinating agencies of the Commonwealth government. It is directed unashamedly at a general audience. In the process, Lindy Edwards has achieved the rare distinction of being described as a self-anointed guru whose book 'is one of the most irrational books ever written. Nearly every word in it is wrong'.[1] This particular critic, an economist, goes on to claim that her understanding of economics is unique. A book that has the capacity to stir up such strong negative emotions clearly deserves to be read.

Edwards claims that the 'economic rationalist' perspective has become the lens through which all matters in Australian public life are viewed. This is not a new claim. Numbers of eminent scholars like J. K. Galbraith and Peter Self have made similar claims, often in a far less accessible form. It is a claim that resonates with many Australians, including many within government service; so much so that even the current Prime Minister has felt the need to try publicly to distance himself from economic rationalism. And I don't doubt that there are many similar critics in other countries, bemoaning the influence of what I would prefer to call 'economic fundamentalism' on their public life.

For Edwards, the consequence has been that a political impasse, a policy vacuum, has arisen in Australian politics. Edwards optimistically claims that this policy drift is the dead patch at the change of the tide. It is the picture that economic rationalists have of human nature, and their view of justice, that is the cause of this impasse. There is a growing divide between the Australian people and their policy makers. And she cites recent Australian political experience including the rise of One Nation, and the social research of Hugh Mackay, in support of this thesis.[2] Political leaders are caught between the values of a small insular policy elite strategically placed in central coordinating agencies, who have been setting the policy agenda and are certain that they are right, and the values of the general public. She believes that policy elites have wrongly attributed the electorate's disenchantment to the pain of economic adjustment and to the failure of the community to understand 'the great economic wisdom'. Consequently, there has

been little recognition among them that people are angry because no one represents their values.

Edwards goes on to argue that we must convince economists that their framework is not the value-free science they like to think it is. This belief reflects a poverty in economic teaching. She then argues that economics is both a science and an ideology. While economics has always tried to align itself with the natural sciences, social scientists have a much tougher job than natural scientists, being unable to isolate the event they are studying and to escape from personalities, culture and history. Thus she tries to distinguish between economics as a grand theory and economic rationalism as its ideological offshoot. It is the latter which has become the worldview of central agency bureaucrats. Conventionally, economists try to distinguish between 'positive' and 'normative' economics, the former being seen as science and the latter being the application of economics to policy problems and calling for moral judgement. Edwards seems to be pointing beyond this distinction to a more radical critique, but she does not develop this theme at length. Rather she cuts to the chase; in practice, it is simple rules of thumb and broad assumptions about how the world works that drive policy decisions, not the more sophisticated parts of neo-classical economics.

Edwards then contrasts this world view with the values that she believes are widely held in Australia. After questioning the usefulness of the notion of rational self-interest, she contrasts the economist's belief in natural economic laws with the view that there is no such natural order, and that we are authors of our societies. Along the way she briefly criticises the public choice attack on the role of government and maintains that markets are more about the use and abuse of power and the manipulation of choice than consumer sovereignty. Consequently, she is concerned about an undue emphasis on economic efficiency in contemporary policy decisions.

In addition, Edwards believes that economic rationalism represents a threat to our self-understanding, to our levels of social trust and to our ability to pull together and to collectively manage ourselves. This is because our relationships with government and each other are being redefined, so that the market becomes the basis for organising our communities. Consequently, government has faltered in protecting the weak, while our obligations to other people have been usurped by commercial obligations. Further, there has been a failure to recognise that means matter and that there is a tension between economic efficiency and the other sources of quality in life.

This book did not set out to argue these issues at great depth and that might disappoint some readers. However, to have done so would have resulted in a much larger volume that would not have been accessible to the audience to which it was directed. Nevertheless, it is well written and strongly argued. In my view Edwards is correct in asserting that central coordinating agencies have played a strong role in promoting economic rationalism in Australia, and in viewing economic rationalism as a threat to social cohesion. Surprisingly, for someone accused of having a unique understanding of economics, Edwards includes an orthodox account of the problem of scarcity, the tenets of neo-classical economics, and of the concept of market failure. She uses this knowledge to illustrate the sorts of policy conclusions usually drawn by economic rationalists. Her failure is not in her understanding of what economists are saying, but in her failure to agree with their policy prescriptions. Consequently, this book provides a useful and accessible introduction into this important debate for the general reader and for undergraduate

students. Such students should, however, be encouraged to then move on to more sophisticated critiques of neo-classical economics and public choice theory such as those provided by Etzioni, Granovetter and Self. As for being a self-appointed guru, any author, particularly one who argues a point of view contrary to a prevailing orthodoxy, potentially exposes herself to such ill-mannered criticism. Such risk taking lies at the heart of public discourse and we should be grateful that Lindy Edwards, and our authors more generally, are prepared to expose themselves to such ridicule, even when we disagree with what they say.

Notes and References

1. Alex Robson, *The Canberra Times*, 11 July 2002, p. 17.
2. Hugh Mackay, *The Mind and Mood of Australia*, Mackay Research Pty Ltd, Sydney, 1999.t

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From Followers to Leaders: Managing Technology and Innovation

Naushad Forbes and David Wield

London, Routledge, 2002, xiv + 214 pp., £16.99 pbk, ISBN 0-415-25175-3 hbk, 0-415-25176-1 pbk

Where one reads influences one's opinion of *what* one reads. In prison, any distraction is treasured; in bed, soporific is desirable. But the airport departure lounge presents a special challenge, really only met by the tomes of the management gurus—the horrors of modern transportation meet the horrors of modern literature. So, here we are, separated from the Borneo jungle by a runway and a mob angry because it has paid for a trip to Jeddah and no plane has materialised. The home of Prince Jeffri, the fellow who spent years squandering more than a million pounds a day, is an unfortunate place for Forbes and Wield to sing the praises of one Lakshmi Mittal. They give Lakshmi Mittal as an example of a follower from the developing world becoming a leader in the developed world, an example to follow. Mittal? Now would that be Tony Blair's mate, generous benefactor of governments the world over, both practitioner and advocate of a distinctive and somewhat controversial management style? Indeed it would.

Part of this book's fascination is that it eschews Technology Policy. The developing world must focus on the firm for its innovation, wherein lies what the authors call 'indigenous technological capability'. With foreboding that this ITC will be but the first of many acronyms, it is dutifully memorised. Technology Management, we are told, and especially Knowledge Management, has replaced Technology Policy, and a primary function of Technology Management is to identify the ITC that will make leaders out of followers. Great stuff; we are off at a cracking pace and Mr Mittal is almost forgotten.

There follows a section on firms that have discovered their ITC—a Mexican cement company, a Tanzanian brewer, Indian software companies—all hugely successful despite their location in the developing world. But what's this? Having dismissed Technology Policy, the section closes with a tribute to the importance of the government's role, and the whole of the next chapter is concerned with

this very subject. To prove the importance of policy, the entrepreneurial reader is offered the choice of setting up a firm in the USSR of 1981 or the US of 2001. Easy enough, and proof positive that policy matters, but how about, say, the US of 1981 or the Russia of 2001, the former paranoid about international competitiveness and turning to the cargo cult of high technology for salvation, and the latter crippled by the excesses of criminal capitalism? Such tricky decisions—requiring the likes of Mr Mittal—are evaded here with the undemanding observation that the implementation of the right policy in the right way at the right time is a good thing.

Also good is shop-floor innovation, by which is meant radical change of the sort for which the Japanese were once renowned, but stopping well short of the fads of the fops in the management consultant trade. Inevitably, it seems, this leads on to the Process–Product–Proprietary Grid (PPP), a matrix association in which the second 'P' is preferable to the first, and the third to either of the others. Let the maquiladora forms of Mexico be a lesson to those who would stick on the first 'P'. Fair enough, but what about Mr Mittal? Did he learn which was the best 'P' by listening to the word from the shop-floor?

There follows a long chapter that re-defines research and development (R&D) as what the alert, fast-footed firm does, which is certainly more useful, if less measurable, than anything recommended by Frascati. This R&D inspires all sorts of good things beginning with 'C'—co-ordination, co-operation, creativity, concurrent engineering. Design, though it does not begin with a 'C', is another good thing and for product innovation, developing countries must look to Development and Design (D&D) rather than R&D. It is as important for the country as the firm to have a reputation for good design.

Chapter 8 insists that culture matters, no doubt very true, depending on what culture is. The definition here is the classic 'the way we do things round here'. The authors deal rather effectively with cultural stereotypes at the national level, though it is at the firm level that culture might be expected to change. This requires—obviously—a willingness to learn, but also—mysteriously—what the authors call a 'shared sense of backwardness'. 3M is the exemplar, its employees allowed '15% of time without any rules' so that they can be creative. The company's accountants would certainly seem to have been afforded this facility.

Despite the wide scope of their material and argument, and the location of Forbes and Wield in different continents, their book is surprisingly local. Few of the authors they cite can be unknown to the others cited. We have, then, a single perspective on a broad subject, which perhaps makes the volume more suitable as a textbook than a monograph. It does not do to confuse the students these days. And yet, the book's provision of lots and lots of current examples may do just this. While such examples are interesting and grab the attention, they are doomed to be dated before the print is dry. The authors might have taken advantage of this by acknowledging their plight and offering it as an example of the problems of dealing with rapid change. Instead, they leave the impression that, while the world may change, their pronouncements about the world changing can be writ in stone.

The book concludes by questioning the inevitability of the developing world's technology being determined by multinationals. Firms in the developing world might have to be drones, but they should aim to be competent drones, clawing their way up the value chain by improving their process capabilities. From this position they should work on their product innovation and ultimately the

development of proprietary products. Despite the early insistence that the firm, rather than the state, should be the focus of attention, much is made of the role of government policy in making all this happen, a theme that has reared its head throughout the book. Here, though, the authors are much more explicit about the role of the state: it is to provide whatever the market says the entrepreneur needs. Now, infrastructure is one thing: the state responding to market signals intended for the entrepreneur is quite another and one wishes the authors had expanded on this curious political view. What role does this leave the entrepreneur? Surely the entrepreneur is meant to do rather more than fill the coffers of political parties, the example with which the book started. Perhaps not, for the book ends with another strange example, that of Mahathir Mohammed as a man of vision. The transition from follower to leader involves risks beyond those the authors identify and associate with innovation, risks to democracy and human dignity. Mussolini was a man of vision. And in Brunei, where all mention of Prince Jeffri's shenanigans is banned, one cannot help but reflect on what Forbes and Wield have banned from their book. Their vision is clear and stimulating, but it is also prescriptive and it ignores costs likely to outweigh by far the benefits PPP might bring.

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Bandwagon Effects in High-Technology Industries

Jeffrey H. Rohlfs

Cambridge, MA, MIT Press, 2002, xiv + 256 pp. US$34.95, ISBN 0-262-18217-3

This book tells two stories of innovation and diffusion. The first is about a series of high-technology products that displayed a bandwagon effect, which is defined as 'a benefit that a person enjoys as a result of others' doing the same thing that he or she does. In particular, a consumer may enjoy bandwagon effects as others consume the same product or service that he or she does. The consumer then enjoys a "rational exuberance" as the user set expands' (p. 1). The word *bandwagon*, with its implication of momentum, comes from the ornately decorated wagon that carries musicians in a parade but has passed into general usage, as in political campaigns.

The second story is of the author's invention of the concept of network externalities. In the Foreword, Hal Varian (University of California, Berkeley) gives Jeff Rohlfs the credit for inventing the term and provides a graph of the citations to a 1974 *Bell Journal* paper in which he first presented his model of network effects.

From his career with Bell Labs, Rohlfs was well-placed to write the story of these high-technology products: early telephone, Picturephone, compact-disc players, VCRs, personal computers, TV, and the Internet. Each faced the start-up problem of reaching critical mass. Some ended up in a ditch. Some were aided by public funding because of a perception that they would be valuable national (and international) resources, e.g. the Internet. Others made it without such assistance, e.g. fax machines. Some were aided especially by the adoption of their technology standards as the industry standards.

The world of economics is not only peaceful; it is a world where the use of products and services by individuals depends upon their individual tastes. The existence of network externalities undermines this simplicity as interlinking becomes vitally important in the adoption and diffusion processes. It is necessary to distinguish both demand-side scale economies that benefit each consumer as the user set expands and supply-side economies that benefit suppliers as output expands (p. 14). But there may not be sufficient integration and coordination to create strong enough expectations to push ahead with either the initial product or with complementary products.

This is an important book, elegantly written so that the sense of complex ideas is conveyed effectively. Would that all economics authors could as successfully merge those two strands in economics tales: the narrative and the optimizing solution to problems.

There is a third story of innovation antecedent to these two. Others will no doubt have their thoughts of anticipations of the network externality concept. For my own part, I went back to Edith Penrose's *The Theory of Growth of the Firm*.[1] Her concept of economies of expansion and growth brought her ever so close to Rohlfs' concept but she was too sharply focussed on the firm.

Interestingly, it is among the narrative writers that I find a riveting account of a genuine high-technology product with network externalities. I refer readers to an apposite chapter title, 'My Time is Your Time', in David Landes' *Revolution in Time: Clocks and the Making of the Modern World*.[2] Rohlfs judges '[t]he largest and most successful bandwagon, apart from telephone services, has been the Internet' (p. 5). I suggest the watch is a rival candidate. Time measurement was not only essential to industrial technology and organization; it had its share of network externalities.

So my third story is that time measurement and communication technologies and their products and services have always created network externalities. Musical notation, scientific classification, and printing are illustrations. We need to keep in mind 'the shoulders of giants' on which others have stood—like Guido of Arezzo, Gutenberg, Huygens and Harrison, and Linnaeus.[3] Jeff Rohlfs' book brings that third story up to date. It will be required reading along with *Revolution in Time* for my research students and should be read by a much wider audience—especially policy makers and industry management.

Notes and References

1. Edith T. Penrose, *The Theory of Growth of the Firm*, Basil Blackwell, Oxford, 1959 (2nd edition 1980).
2. David S. Landes, *Revolution in Time: Clocks and the Making of the Modern World*, 2nd edition, Viking, London, 1998.
3. See Alfred W. Crosby, *The Measure of Reality Quantification and Western Society, 1250–1600*, Cambridge University Press, Cambridge, 1997; M. Kranzberg and C. W. Pursell Jr, *Technology in Western Civilization*, Vol. I, Oxford University Press, New York, 1967; A. Van der Kraan, 'The Dutch East India Company, Christiaan Huygens and the marine clock', *Prometheus*, 19, 1, 2001, pp. 279–98; and D. R. Headrick, *When Information Came of Age Technologies of Knowledge in the Age of Reason and Revolution, 1700–1850*, Oxford University Press, Oxford, 2000.t

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What's the Matter with the Internet?

Mark Poster

Minneapolis, University of Minnesota Press, 2001, 214 pp., ISBN 0-8166-3835-7 pbk

Poster's most recent works seem to have been motivated by the questions raised by Walter Benjamin's notion of machinic reproducibility and Jurgen Habermas' ideal public sphere. Though he believes that Benjamin got it wrong (see 'Benjamin's Challenge': http://culturemachine.tees.ac.uk/frm_f1.htm) and that Habermas is too much in the Enlightenment tradition to be able to theoretically incorporate feminist and postmodern insights, he nevertheless respects the need to deal with these issues. So, what is the matter with the Internet? Well, we never really find out. Though Poster covers some useful territory in the meantime, one or two chapters, such as 'Virtual Ethnicity', could have been trimmed or presented as essays.

Without doubt, Poster is a significant thinker, intelligently weaving postmodernist and critical theory (which I regard as largely antithetical). This book naturally develops the concerns of his 1995 book, *The Second Media Age*, where he asserted that 'a critical understanding of the new communications systems requires an evaluation of the type of subject it encourages, while a viable articulation of postmodernity must include an elaboration of its relation to new technologies of communication' (Ch. 2). What postmodern thought contributes, Poster argues in *What's the Matter*, is to desist 'ontologizing any form of the subject' insisting 'on the constructedness of identity' and resisting 'new age' claims especially if this is supposedly induced by technological development (pp. 174–5). Though Poster pleas for 'indulgence with the limitations of the postmodern position' (p. 175), he still adopts a critical perspective in the sense that he recognizes that Internet technologies are commodities subject to the usual capitalist imperatives of profit, and also the sense that there is an underlying teleology of equitable relations of power and wealth and of universal justice.

The effects of the Internet, he asserts, should be viewed not so much as a technology ('the order of the hammer'), but at the social level: how are new forms of interaction instantiated, what are the new relations of power between people? Disappointingly Poster gets distracted towards the end of the book with a discussion about new forms of identity in Internet chats. Who cares what some sadly socially disabled members of the Western bourgeoisie do with their spare time? More importantly, there are the big Habermasian issues of the public sphere and the issues of social construction through the Internet first intimated in McLuhan. To be fair, Poster deals with these in considerable detail.

Ultimately Habermas' concept of the public sphere—'a domain of uncoerced conversation oriented toward a pragmatic accord'—fails essentially because of the structural weakness of the autonomous rational subject as an agent in the process, a criticism originally voiced by Lyotard (1984) in *The Postmodern Condition*. Poster also agrees with Negt and Kluge's (1993) (to my mind, obvious) criticism in *Public Sphere and Experience* that dialectical discourse is as likely as a dialogical one in the public sphere. The Internet, then, Poster surmises, though without strong conviction, may help to facilitate the 'plurality and heterotopia of discourses'.

Although Poster sees little use for Heidigger, especially his apocalyptic view of technology, his notion of 'enframing' leads Poster to posit five theses about technology (pp. 30–3): that culture is invisible to its members; that this can be rendered visible by studying another culture (in this instance, Ancient Greece);

that, stripped of the subject/object dyad, humans can be 'authentically' perceived in terms of their being; fourth, this philosophical transcendentalism 'affords an understanding of technology as culture'; and fifth, all technologies are 'modes of revealing', but modern technology reveals as 'enframing'. Enframing provides an effective orientation with which to view technology, Poster claims, because it leads us to an understanding of the relation of being that technology within a particular culture will engender (the McLuhan question). However, because Heidigger fails to differentiate technologies, his theorizing is inadequate. Equipped with this orientation, Poster then sets about dealing with the Internet not as a technology, though he is clearly familiar with the micro-details of various Internet applications. Rather, it is the manner in which the Internet is deployed within multiple cultural frameworks and the various manifestations of the subject that emerge, through Internet use, within those frameworks.

Although Poster grapples with the concept of the Internet being under-determined, he never quite nails it. By this he means that when an object materializes in a particular social space through an Internet device 'it remains an invitation to a new imaginary'. Virtualization enables subjects and objects increasingly to appear in configurations of space and time, mind and body, human and machine that disaggregate the real/actual into constellations of indetermi-nate—not amorphous—complexity (p. 18).

Another useful contribution that Poster makes is the political economy of the Internet, or more particularly, when capitalism took a linguistic turn so that 'production processes depend upon symbolic processes' (p. 49). In particular, he identifies the Internet as 'a socially constructed public good' (p. 57). From this, Poster speculates how the Internet, 'as an economy of sharing' with an infinite technical capacity to replicate not just the objects (e.g. MP3; the Benjamin interest) but the actual software itself, might subvert the very tenets of capitalism and the concomitant legal framework, especially in IP.

Perhaps the weakest feature of the book is Poster's theorization about the digital author (Chapters 4 and 5). Traditional authorship in producing original material (the Benjamin question) is an analogic technology, 'a conviction that what was printed in the book [though it may be any other written text] was a direct representation of the author's intention' (p. 65). Drawing on Foucault's (and Barthes') evisceration of the author's role as text producer, Poster maintains that Foucault unwittingly predicted the 'electronic author'. This digital author 'disrupts the existing arrays of power' (p. 70) and changes the material practices of writing. Yet the evidence for altering power structures is unconvincing. Poster claims that 'digital authorship is about the performance of self-constitution' (p. 75). But how is this different from any textual utterance, written or spoken. Communication ethnog-raphy, systemic linguistics, and speech act theory, to name a few communication paradigms, are founded on the assumption that any textual utterance performs at once the dual role of informational or affective exchange, and the (re-)constitution or maintenance of an interpersonal relationship. Beyond that, I think that Poster takes a rather tortuous path to the conclusion that the new technology's capacity to cut-and-paste makes texts 'mobile and changeable'. Consequently to claim that the 'temporal instantaneity of digital texts undermines their spatial stability' and that 'the author of digital texts loses the assurance of their spatial continuity' (p. 92) is a rather prolix way of stating something relatively straightforward.

Despite this criticism, Poster's encyclopedic grasp of philosophy, cultural studies, technology, and his primary discipline of history is well deployed here to

provide a critical and intellectually generous survey of contemporary thinking about the social, economic, and political implications of the Internet. The density of thought slows the reader, but gives us much to think about along the way.t

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Endless Propaganda. The Advertising of Public Goods

Paul Rutherford

Toronto, University of Toronto Press, 2000, xvi + 365 pp., £42.00,
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Rutherford 'investigates how advocacy advertising colonized the political, social, and moral realms of the public sphere in the affluent democracies during the past three decades' (p. xiii). Mainstream economic theory practitioners reluctantly acknowledge that the 'benevolent model' does not fit the facts but then take refuge in a minor aberration story. J. K. Galbraith would have none of this: 'That the producing firm reaches forward to shape and thus subsume the consumer sovereignty it is assumed to serve is patently clear. Even the most austere of economic scholars watch television'.[1] Recent events involving, e.g. Enron and WorldCom, lend support to Galbraith's reasoning that 'the self-service of the management of the enterprise, not the service of the public, is the reality that the established doctrine conceals'.[2] So a 'malevolent' model is needed to cope with the 'politicization of economic activity as a result of the rent-seeking of powerful interests groups'.[3]

Galbraith popularized the notion of the military–industrial complex and paved the way for awareness of the 'highest form of self-sanctioned, self-serving economic and bureaucratic power'.[4] Rutherford shows that this power has grown and captured new territory during decades in which privatization and deregulation have prospered over much of the globe.

Rutherford's 'book belongs to that amorphous school sometimes called the New Cultural History' (p. xiv). It will be unfortunate if the cultural theory label discourages economists from careful reading of the evidence that supports his main argument. Rutherford focuses on the corporate, social, issue, and political advertising that has been closely linked to the advance of television. The propaganda fashioned and popularized 'a dizzying array of new public goods (such as clean air, family values, the healthy body, and women's rights) and warned against a collection of social risks (drug abuse, AIDS, environmental disaster, lung cancer)' (p. xvi). In all, he surveyed 10,000 advertisements from the past 40 years, concluding that the 'boom in civic advocacy has worked to subject politics, social behaviour, and public endeavour to the philosophy and discipline of marketing' (p. xvi).

This book makes a strong case for the making of policy to be seen in its broader social context, with special attention being given to the knowledge base of policy proposals and the ways in which that base and its interpretations are manipulated to serve individual and corporate profit-seeking.

Public provision of information has advantages. Public agencies have greater information creating, gathering and disseminating capabilities. The advantages

seem clear enough in cases like a technology awareness program, drawing attention to foreign markets, or persuading a population to accept an immunization program. However, over-zealous promotion of an organizational objective can be but a first stage in transforming a public-spirited effort into what is no better than old-fashioned profit maximization.

Perhaps it is useful to turn back to the writings of Adam Smith whose 'invisible hand' notion is held responsible—depending on one's inclinations—for the triumph of capitalism or 'the tyranny of the market'. Emma Rothschild in her book, *Economic Sentiments*,[5] shows that there were two pillars on which the Smithian edifice rested: first, the market guided by the 'invisible hand'; second, regard to 'the public interest'. Weakness of this second pillar is in no way new. In a superb review of *Economic Sentiments*, Alan Ryan points out that confronted by 'judicial terrorism' that led in some cases to transportation to penal colonies, those who favoured public discussion of the principles of government and the reform of institutions had to tread warily. Dugald Stewart, the pioneer of teaching of political economy, for example, felt obliged to defend Smith's *Wealth of Nations* as 'a piece of speculative theorizing, which had fastidiously been addressed not to the multitude but to those who had political power. Their authority was not to be called in question; the humble economist was to offer only suggestions for the better conduct of affairs, it being unquestionable that they had nothing at heart but the welfare of their subjects'.[6]

Perhaps preserving the public interest has become even more important in the Information Society. Rutherford challenges us with the important question whether television and the rest of the modern communication package has, by extending the marketing capability to the public sphere, made achieving that objective more difficult, as it no doubt is already in non-affluent, non-democratic developing countries. Perhaps too, if the Internet's planned use to facilitate communication between government agencies and citizens becomes reality,[7] that will accentuate these trends.

Notes and References

1. J. K. Galbraith, 'The sting of truth', *Scientific American*, 264, 5, May 1991, p. 96.
2. *Ibid.*
3. See J. T. Young, 'Adam Smith's two views of the market', in P. L. Porta *et al.* (eds), *Knowledge, Social Institutions and the Division of Labour*, Edward Elgar, Cheltenham, UK, 2001. A case can be made for writing 'profit' instead of 'rent' and covering public organizations as well as individual and business gains.
4. *Ibid.*
5. Emma Rothschild, *Economic Sentiments: Adam Smith, Condorcet, and the Enlightenment*, Harvard University Press, 2001.
6. Alan Ryan, 'Review of Emma Rothschild, *op. cit.*', *New York Review of Books*, XLVIII, 11, July 2001, p. 44.
7. See review of C. R. Neu *et al.*, *Sending Your Government a Message. E-mail Communication Between Citizens and Government*, RAND Science and Technology, 1999, *Prometheus*, **18**, 2, 2000, pp. 197–8.

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Information Technologies and Global Politics

James N. Rosenau and J. P. Singh (Eds)

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This collection of papers deals with how the rise of information networks has been facilitated by changes in technology. The central notion is a shifting of power and the locus of authority away from the state. Major conclusions are: (1) the nation-state must now confront, support, or coexist with other international actors, e.g. non-governmental and inter-governmental organizations, multinational corporations, transnational social movements, and individuals; (2) understanding of instrumental and structural powers must be reconfigured to account for the digital information technologies; and (3) information technologies are reconstituting actor identities and issues.

The Introduction by J. P. Singh aims to put the rest of the volume 'in a theoretical and, where necessary, a historical, perspective' (p. 2). Those chapters are written by well-known authors[1] and support the claim in the blurb that this is 'the most authoritative academic volume now available on the speculative interface between information technologies and global politics'. The editors recognize the prevailing uncertainty about what will happen next but hope that the book 'provides a few reasonable conjectures' (p. 27).

Just as the *New Economy* concept has lost some of its shine, so too have some of these technological trajectories—and here I include organizational innovation because new ways of organizing are new technology and should be recognized as such if we wish to attach meaning to the *Information Revolution*. A. N. Wolfe documented the changing supranational organization of production some 25 years ago.[2] His perspective was an evolutionary one that is still appropriate.

How real is the shift away from the state? To answer this we must look closely at the extent of globalization. Measured in terms of the ratio of world exports to GDP, the story is the familiar rise and rise but only to a low level. Markets need a favourable cultural and institutional context that permits low transaction costs. While the new technologies can contribute to a lowering of costs, this has to be an evolutionary process.

In the meantime, the state is not withering. Free trade is still advocated and achieved by those who see it in their interests and have the power to bring it about. As economist Joan Robinson wrote: 'The hard-headed Classicals made no bones about it. They were arguing against the narrow nationalism of Mercantilists in favour of a more far-sighted policy, but they were in favour of Free Trade because it was good for Great Britain, not because it was good for the world'.[3]

The playing field has undergone some change but it has been by no means levelled. Just as Keynes worried about a situation where the whole of Europe had been drawn into the 'industrial orbit' of a major power,[4] an appropriate modelling today is one that recognizes such a network can exist. A powerful state can still pursue a wider nationalism through a network of multinational firms and international organizations. A multiplicity of actors is no guarantee against the exercise of long-lasting power by a dominant nation.[5] The ceding of some traditional policy instruments, e.g. monetary and exchange rate policies, may well encourage efforts to seek rejuvenation on the international stage.

The ICT did not fall as manna from heaven; it was shaped and nurtured by powerful interests. Therefore, scenarios need to find a significant role for demand aspects of

technological change. Most discussion seems to see any obstacles to ICT as minor, even costless. However, given the imperfections and limits of world markets, the contradictions between the systems of private property and of information acquisition and dissemination may bring unintended consequences.[6]

Rosenau and Singh have set the stage for interesting debates.

Notes and References

1. Jonathan Aronson, Karen Litfin, Sandra Braman, Ronald Deibert, Sangbae Kim and Jeffrey Hart, Edward Comor, Mark Zacher, Stephen McDowell plus J. P. Singh and James Rosenau. See also Richard Joseph, 'Review of J. P. Singh, *Leapfrogging Development?: The Political Economy of Telecommunications Restructuring* [Albany NY, State University of New York Press, 1999]', *Information Economics and Policy*, 13, 2001, pp. 113–6.
2. A. W. Wolfe, 'The supranational organization of production: an evolutionary perspective', *Current Anthropology*, 18, 4, 1977, pp. 615–35.
3. Joan Robinson, *Economic Philosophy*, Penguin Books, 1964, p. 117.
4. J. M. Keynes, *The Economic Consequences of the Peace*, Labour Research Department, Westminster, 1920, p. 15.
5. See, for example, the erosion of the multilateral intentions of TRIPS (Peter Drahos, 'BITS and BIPS Bilateralism in Intellectual Property', *Journal of World Intellectual Property*, 4, 6, 2001, pp. 791–808). In the very long term, all things are possible. While '[h]istory offers no examples of indestructible empires, . . . most peoples are convinced that what happened to previous empires cannot happen to their own. In so doing they just show a lack of imagination, a naïve incapacity to imagine new situations for which their tastes, inclinations and institutions will grow progressively inadequate' [Carlo M. Cipolla (ed.), 'Introduction', in *The Economic Decline of Empires*, Methuen, London, 1970, p. 14].
6. See K. J. Arrow, 'Technical information and industrial structure', *Industrial and Corporate Change*, 5, 1996, p. 651.t

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Process Think: Winning Perspectives for Business Change in the Information Age

Varun Grover and William Kettinger (Eds)

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Process Think: Winning Perspectives for Business Change in the Information Age, edited by Varun Grover and William Kettinger, presents the work of prominent authors, mainly from the United States and the United Kingdom, who offer pragmatic and authoritative thinking pertaining to change management in the information age. The editors identify five themes within the book's 17 chapters: change management strategies, the methods of change, the multidimensionality of change, the contingent nature of change and the information age, and the future. Divided into four parts, the publication is designed to provide insights into a range of business change perspectives: (I) Change Strategies that Work; (II) Process Management Nuts and Bolts; (III) The Multidimensional Evolution of Process Management; and (IV) A Window into the 21st Century. The book offers the reader a collection of articles encompassing the stretch from intellectual roots to visions for the future. It

presents change management practices for the twenty-first century—dynamic solutions, flexibility, sustainability and strategic direction—in a valuable volume for academics and professionals.

Kettinger and Teng's chapter (Conducting Business Process Change: Recommendations from Studies of 25 Leading Approaches) is an excellent introduction to Part I. The opening statement 'business process change is maturing' clearly defines the chapter's focus. Building on the relationships between phases, activities and tasks, the method the authors describe addresses a shift from Business Process Reengineering (BPR) to business process 'regeneration'. The method is 'broad', embracing approaches and activities throughout the organisation.

The second chapter (Strategies for Business Process Reengineering: Evidence from the Field) comprises Earl, Sampler and Short's theory-oriented discussion of business process reengineering (BPR). It proposes a framework of analysis using four theoretical perspectives: organisational processes, strategy, Information Systems (IS), and change management. In an interesting contribution to the book, the authors outline theory-based perspectives and examine emerging practice that can be expected from the serious application of strategies for BPR.

Addressing organisations that are in the midst of 'planned revolutions' or transformations, Stoddard and Jarvenpaa (Chapter 3: Business Process Redesign: Tactics for Management Radical Change) contrast change tactics that promote radical change with tactics that promote incremental change. Change tactics observed comprise leadership, employee involvement, communication, the motivation for BPR, milestones, change of current structure, culture, and IT changes.

In Chapter 4 (Initiating and Implementing Business Process Change: Lesson Learned from Ten Years of Inquiry), Teng, Grover, Fiedler and Jeong focus on the organisational complexity of reengineering and recent paths of unprecedented change. They draw on the 'rich' and diverse literature to identify various elements of organisational change associated with BPR to develop a conceptual framework based on five broad phases of change.

Part I concludes with Guha, Grover, Kettinger and Teng's treatment of the challenge of leveraging existing theory and examining diverse attributes of Business Process Change (BPC) across multiple contexts. To do this, the authors examine antecedents of BPC outcomes by applying a theoretical framework that includes a wide variety of variables, consistently across three case studies. This rounds-off Part I's comprehensive coverage of different BPR strategies and useful guidelines for performance.

In Part II, the Mayer, Benjamin, deWitte, Caraway and Painter chapter (Chapter 6: Methods for Business Process Reengineering) sets the scene with an authoritative examination of a conceptual architecture for Business Process Reengineering. This is centred on the use of methods, models, and tools that can provide the necessary guidance to successful implementation. Chapter 7 (Closing the Business Process Reengineering Gap: Using the REAL Framework to Identify, Define and Understand Business Processes) enables Jasperson, Denna and Tom Perry to pose the question 'So what is a Business Process?' The theme is extended by Ould (Chapter 8: Basing an IS Strategy on the Organisation's Process Architecture) with two significant questions: 'How can we build a process architecture that is truly rooted in the business itself? How can we use that architecture to inform the development of the IS strategy?' (p. 209).

Part III begins with Davenport and Beers' interesting exploration of how leading firms use information about processes for the purpose of management and

improving those processes (Chapter 9: Managing Information about Processes). The authors develop an important 'conceptual framework for understanding process information, its types and the challenges for management' (p. 230). Marchand, in Chapter 10, presents three key reasons and a series of questions that explore the new waves of business process redesign and IT in Demand/Supply Chain Management. Chapter 11 (Enterprise Process Innovation: Strategies and Issues) by Rai, Ponce de Leon and Mecher, explores the fundamental changes to business processes by clarifying the need for tightly linking the strategy of the firm with its IT strategy and the reengineering strategy. This article encapsulates how the book as a whole frames the complexities of IT and organisational change in a manner that is creative and accessible for the reader. Chapter 12, by Siew Kien Sia and Boon Siong Neo, uses a comprehensive case study of the Inland Revenue Authority of Singapore to look at how reengineered organisations have dealt with the redesign of control. Chatfield and Born-Andersen then present a generic framework for analysing IT-enabled business process change and apply it to the specific case analysis of Japan Airlines.

Part IV changes direction to peer through 'A Window Into the 21st Century'. The authors Grover and Segars attempt to provide fundamental and higher order trends, as a basis of anticipating what the future holds. Short, in Chapter 15, draws on two different perspectives of information and information technology: the producer's and the consumer's view of information technology. In Chapter 16 (Service: The Future), Watson, Pitt and Berthon explore the proposition that 'the short history of the World Wide Web has demonstrated that the computer is the ultimate tool for delivering services and it is the elaboration of this vision that we believe will be the dominant application of IT for the next few decades' (p. 366). The chapter's stance is to justify this claim and consider the implications of the future for IT. This is the prelude to Markus' thought-provoking conclusion, in which he uses the final chapter to develop a brief historical review that illustrates why change in IT management is likely in the decades ahead.

Process Think studies the feasible future of BPR and offers the reader a unique, provocative and insightful resource. The chapters present descriptions of past developments and look into future trends. Taken as a whole, the book is a guide to understanding how information technology is impacting on the industries and markets of today. Such an ensemble of expertise creates a depth of comprehension, which warrants the reader's careful attention. The incorporation of this type of book into theoretical and methodological discourses is fundamental and refreshing. Readers might take away insights, methods and concepts that will be invaluable in leading programmes of organisational change in the information age.

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The Nature of Intelligence

Novartis Foundation Symposium 233

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This book contains the proceedings of a symposium organised by the Novartis Foundation and held in London during 1999. As such, it has neither author nor

editor and is merely credited to the foundation. It is a faithful representation of the symposium containing the 15 papers, which were given during the symposium together with what appears to be a verbatim coverage of the discussion that took place after each paper. The symposium was chaired by Sir Michael Rutter, who made the introduction and closing remarks. The topic was the nature of intelligence, as the title of the book reflects, and the participants consisted of 24 eminent academics—mostly British but a few from the USA, Australia and New Zealand—principally from the areas of psychology, psychiatry and the biological sciences. The rationale for the symposium, according to Rutter, was 'an apparent clash between the expectations of evolutionary psychologists and the claims of behavioural geneticists with respect to genetic influences on variations intelligence' (p. 1), and the purpose was to explore these differences. In setting the scene in his introduction he finished (p. 4) by posing the questions 'how does the bringing together of evolutionary and behavioural genetic perspectives help our under-standing of the nature of intelligence' but admitting that he is sceptical about the possibility of this being achieved.

In the first paper, Lubinski claims that there is a consensus among psychome-tricians concerning the construct of general intelligence and he claims that this is a ubiquitous aspect of the human condition. He further claims that the omission of this general intelligence from social science research often results in under-determined causal modelling and suggests approaches which can be taken to obviate what he describes as an error in deductive logic. The discussion afterwards raised the question of causality in the relationship between IQ and intelligence. Jensen's paper then develops the general intelligence theme with the argument that all tests of this actually measure a property of the brain. He hypothesises that the brain contains no model for general problem solving. Hence, individual differences are concerned with their speed and the efficiency of information processing, rather than physiological differences. This is supported by evidence to challenge the nature of general intelligence, as first developed by Spearman.

The next paper, by Deary, also considers the nature of intelligence, as measured psychometrically, to argue that although individual difference in mental ability can be measured these are not understood. He describes the history of research into psychometric intelligence and the problems that have arisen, including comments addressing the two types of multi-level brain functioning that research has utilised. He finishes by suggesting how ways forward may be extended. The subsequent discussion ranged around the implications of his argument for the nature of general intelligence. In the following paper, Anderson extends the discussion from human to animals, stating (p. 79) that 'animals possess the attributes we label as intelligence in humans'. Consequently, he argues that animals offer an opportunity for testing ideas about intelligence that cannot be performed on humans, without any apparent ethical dilemmas being posed. He describes the kind of testing that has been performed on animals, which chiefly seems to consist of the administering of various chemicals, and finishes by implying that there is also a cost saving benefit of using animals for this kind of testing. The subsequent discussion concerned the actual administering of tests, but made no mention of ethical problems.

Nesse, who considers the question as to whether intelligence is a single trait or many, stating that there is no consensus on this, gave the final paper of the first part of the symposium. This deals with how natural selection has influenced the nature of intelligence, stating that the mind has been shaped to both maximise reproductive success and to cope with specific challenges as unquestionable

assertions. He proceeds to argue that the various metaphors which are used for the mind are misleading and make it difficult to comprehend the mind. Thus, a minimisation of metaphorical descriptions and a focus upon functions of the mind should help future research. This paper leads to a general discussion of the proceedings so far.

The next part of the symposium starts with a paper by Brody in which he argues that general intelligence should be given hegemonic status over other constructs concerned with varying aspects of intelligence. After a review of the various criticisms of general intelligence, he argues that this is a heritable component of intelligence and that the relationship between intelligence and information processing is attributable to common genetic influences. Detterman starts his paper that there is an undisputed proof that general intelligence is the factor which defines the phenotype of intelligence functioning. As he states (p. 136) 'it predicts more and is implicated in a wider range of behaviour than any other psychological construct'. He argues however that it is not a perfect phenotype but a starting point for further research and that research into the identification of the basic cognitive functions of the brain and into how they are integrated into a complex system should be carried out. This is followed by a paper by Houle that contrasts the g of general intelligence with the f of biological fitness. He describes experimental research that shows that (p. 149) 'as predicted f is less important in populations where natural selection has had more opportunity to reshape the correlation matrix'.

Bailey states that there is only a moderate level of heritability for psychological traits, even under conditions of intense selection. Rather, a number of factors help to maintain genetic variation. His paper discusses these factors, and the likelihood that they maintain a heritable variation for intelligence, before reviewing some evolutionary hypotheses regarding variations in specific psychological traits. Whitton examines the nature of intelligence from the perspective of the evolution of intelligence in primates. He outlines the principal components of social intelligence, and the environment of social complexity it engages with, to raise questions concerning the domain specificity of such social intelligence. This domain specificity is countered by considering the hypothesis that great apes owe their advanced cognitive abilities to shared capacity for mental representations.

Flynn considers intelligence tests administered to children to argue that human groups can make massive general intelligence gains in a period that is too short to accommodate radical change in the speed and efficiency of neural processes. His stance is that these are independent of brain physiology and there can be no genetic cause for any gap in IQ between different races. Pomiankowski starts by acknowledging the suggestion that complex traits such as intelligence have a low level of heritability and explains why this hypothesis is given credence. He provides evidence to show why this may not be so, before arguing that environmental sensitivity has a genetic basis and that environmental stress enhances genetic differences. He concludes that this applies to genetic variances in intelligence also.

McGuffin argues that there is some utility, despite debate to the contrary, in the concept of general intelligence and reviews data to show that it is influenced by genes. He describes some of the main quantitative genetic models that are used to try to evaluate genetic and environmental sources of variation, before outlining current molecular genetic research in this area and concluding with predictions about the directions of future research. In the final paper in the symposium, Miller

considers sexual selection as an indicator of intelligence. He argues (p. 260) that 'many human-specific behaviours may have evolved principally to advertise intelligence during courtship', giving examples of such behaviours such as artistic ability and humour. In his paper he argues that there are mental adaptations designed to advertise intelligence though linguistic and cultural interaction and gives some new testable predictions about human intelligence which are derived from the sexual selection theory.

All the authors who contribute to this book are experts in their particular field, but one problem I find is that they take the basic tenets of their beliefs concerning intelligence as unquestioned—indeed unquestionable—facts to be accepted by all. This is perhaps why the final discussion and the concluding remarks by Rutter merely end with a platitude that there is value in all the different traditions of research expressed in the book and that a consensus does not seem to have emerged. Like many scholars, those present have simply failed to really engage with any perspectives other than their own. Nevertheless, the unfolding of these different views and the discussion between their respective holders make this an interesting and engaging book, although it is probably more interesting to someone with a general intellectual interest in the nature of intelligence. Those engaged in research in this area might have adopted their own unquestionable position. For a more general reader, the debate presented provides issues of interest and an increased understanding of the research conducted by the various contributors.

This is a well-presented book, which seems to faithfully reflect, without comment, the proceedings of the symposium. It is well indexed and fully referenced. Indeed, not only are the individual papers referenced, but also the subsequent discussions; a useful resource for anyone interested in this topic.t

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