Prometheus, Vol. 21, No. 1, 2003

Carfax Publishing
Taylor & Francis Group

Book Reviews

The Internet Galaxy: Reflections on the Internet, Business and Society

Manuel Castells

Oxford, Oxford University Press, 2001, xi + 292 pp., £14.99 (bound), ISBN 0-19-923153-8 hbk

Manuel Castells' *The Internet Galaxy*, based on a series of management lectures given at the Said Business School, presents a wealth of new material on the new economy, e-commerce, digital politics, virtual communities and the digital divide. One of the central arguments is that the new economy was driven primarily by the IT-based productivity rises which began to appear in the US from around 1996.[1] Electronic transactions matter in the new economy because they reduce transaction costs, expand the circulatory sphere and quicken the pulse of global capitalism. For Castells, the 'new' economy represents a real and significant shift in the basis of production, and it cannot be dismissed as an illusory effect of the dot.com phenomenon.

The advent of the Internet gave rise to a highly speculative literature on the 'death of distance', and the triumph of 'space over place'. This book sheds some much-needed empirical light on the geography of Web-based communications. The knowledge-intensive services most closely associated with the Web—finance, insurance, consulting, legal services, accounting, advertising and marketing—far from being adrift in cyberspace are firmly anchored to specific locations and are, moreover, found in highly concentrated places. The same is true of the world's media, entertainment, art, fashion and publishing industries. Most working individuals have places of employment that they go to regularly. Many work from home—but they do so not instead of, but in addition to their usual workplace. Castells cites recent work by Gillespie and Richardson[2] which demonstrates that the 'reduced demand for travel scenario' (widely canvassed by BT and other telecoms giants) may offer a highly misleading picture of the changes which are now underway:

> Not only are communication technologies expanding the 'activity spaces' within which work takes place, leading to longer distances travelled, but in addition, journey patterns associated with new ways of working are becoming more diffuse and less nodal, and hence more difficult to accomplish by public

Prometheus ISSN 0810-9028 print/ISSN 1470-1030 online © 2003 Taylor & Francis Ltd
http://www.tandf.co.uk/journals
DOI: 10.1080/0810902032000050000

> transport. This effect is exacerbated by . . . a reduction in demand for conventional city centre offices and an increase in demand for office space in office park environments with high levels of accessibility to the motorway system. At the same time the substitution of tele-mediated for face to face banking and other services risks further undermining the role of city centres and high streets as branch offices are closed . . . Teleworking and tele-activities are, then, perhaps better understood not as developments which suppress the demand for mobility, but, rather, as forms which might best be described as 'hypermobility' (p. 235).

One of Castells' central arguments in *The Rise of the Network Society*[3] was that the new information and communications technologies (ICTs) were synonymous with both the historic demise of bureaucracy and with the advent of new and more innovative 'networked' organisational forms. But both *The Network Society* and *The Internet Galaxy* highlight the key role played by large government bureaucracies in the formation of the Internet. Moreover, Castells' new work on e-commerce cites evidence to the effect that leading exemplars of the network form such as Cisco outsource 90% of their production, but retain strategic (and highly centralised) control over core functions such as design, prototyping, quality and branding. The joint stock firm remains at the hub of capital accumulation, property rights and strategic management—and Castells now sees 'endogenous' R&D activities as an essential precondition for long term competitiveness of large corporations. These developments suggest that the author may have abandoned the 'end of organisation' thesis in favour of a more subtle reading of the part played by networks in the innovating firm.

The Internet Galaxy is a *tour d'horizon* of some recent developments in the Internet and related technologies. It also offers reflections on some of the complex changes now underway within the advanced industrial societies, and it is in these broader terms that its contribution should be assessed. The author is a noted social theorist and one of the world's best-known computer intellectuals. Readers should be aware, however, that Castells is but one voice amongst many in this complex and fast moving field. A growing body of commentators have taken issue with currently influential accounts of the 'knowledge society' and the 'information society', arguing that these coinages offer neither a coherent view of contemporary restructuring nor a viable conception of technological change. Some have argued, moreover, that the case for an IT-based shift in the fundamental basis of production is inherently weak and that the US productivity figures for the 1996–2000 period are historically unexceptional.[4] Castells is himself highly equivocal about the capacity of the new economy to offer a definitive shift away from the vagaries of market capitalism: the US stock market finances high risk innovation, but:

> growth and wealth creation go hand in hand with potential sharp downturns and wealth destruction (p. 111).

The very idea of a 'new' economy, based on a technology-based paradigm shift, has been undermined not just by recent events in the US, but also by academic work which shows the significance of institutions and 'communities of practice' in understanding how technological change actually occurs.[5] Castells' earlier work on the 'information turbulence' generated by deregulation and electronic trading[6] puts the institutional dimension at the centre of policy attention, highlighting the

part played by social interests in shaping information networks. *The Internet Galaxy* offers a highly distinctive antidote to the teleology and hype which has surrounded discussion of the Internet and other ICTs—but its author stops short of explaining these technologies in overtly 'political' terms, relying on the power of the network metaphor to unravel the complexities and contradictions of the digital age.

Notes and References

1. US productivity growth was 1.4% in 1985–95 and 2.8% in 1996–2000.
2. A. Gillespie and R. Richardson, 'Teleworking and the city: myths of workplace transcendence and travel reduction', in J. Wheeler *et al.* (eds), *Cities in the Telecommunications Age: The Fracturing of Geographies*, Routledge, London, 2000.
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5. C. Prichard *et al.* (eds), *Managing Knowledge: Critical Investigations of Work and Learning*, Macmillan, Basingstoke, Hants, 2000.
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Frontiers of Evolutionary Economics: Competition, Self-Organization and Innovation Policy

John Foster and J. Stanley Metcalfe (Eds)

Cheltenham, UK, Edward Elgar, 2001, xii + 397 pp., £75.00, ISBN 1 8 4064 525 3 hbk

Economics has always seemed to be a discipline uncertain of itself, attempting, as do some other social disciplines, to be an exact science. Assumptions of perfection, such as the existence of perfect information, make it possible to theorise and to validate the theory through a variety of mathematical techniques and thus attain academic status, if not a perfect view of the world. Yet, economies are full of imperfect people who seem to behave emotionally as often as not rather than with an assumed mathematical rationality. Out of Smith's philosophical speculation that economies grow because individuals are driven by self-interest, that is greed, emerged the concept of an economy composed of atomised digits capable of endless computation to which the computer added higher levels of algorithmic sophistication. The desire to be considered as a science continues to be endemic as is revealed in a quote in the preface to this collection:

> many economists in largely rejecting non-linear dynamic perspectives on modelling ... are falling well behind natural scientists, with important implications for the scientific status of economics.

Nevertheless, in spite of this motivation, evolutionary economics is a revolutionary movement because it does represent a very real attempt to break away from the abstract theories which currently dominate. As Joe Stiglitz[1] has demonstrated, there is a need to reach an understanding of the actuality of socio-economic development as the basis of policy formulation and decision making rather than abstract and sterile theory. Evolutionary economics emerged from the economics of information and knowledge which, led by academics such as Shackle, was itself a revolutionary movement. Shackle and other thinkers posited as their central thesis that information rather than capital and labour is the main input into economic development. This was at last a recognition that the fundamental activity of humans as individuals and even more as communities and social organisations is the communication, acquisition and evaluation of information and knowledge. As Shackle argued, information is always incomplete and decision making is therefore always uncertain. The acquisition of information significant to an innovative development or to decision making, as he stated and many others have found, is largely by chance, listening to the radio, hearing a remark in a bar, in the book next to the book sought, or talking in the canteen. It is relatively infrequently found by deliberate search.

Evolutionary economics was introduced in a 1981 book of that title by Kenneth Boulding, a pioneer in the economics of information and knowledge. As the preface to this volume states, evolutionary economics has been a growing area of research and comment for more than two decades but it has not yet reached any degree of maturity as the editors of this collection aver, it is a field of theory and theorising which is still evolving. Its past focus was primarily the very Darwinian one of selection mechanisms. Now, the focus is the complexity of the environment within which selection mechanisms are themselves selected and operated. The creation and shaping of this environment are conducted by complex interactions of technological and institutional innovation and change, human knowledge and interpersonal information flows, precise decisions in the face of an imprecise future and many other factors. The editors decided to hold a workshop in Brisbane in 1999 to 'evaluate work in progress and to highlight the frontier issues that now confront evolutionary economists' with the goal of providing an integrated analysis of both selection and self-organisation which is uniquely economic. What direction is the research of some leading evolutionary economists likely to take? This book is the outcome of the workshop's formal and informal deliberations. It contains eight papers each with a commentary together with two stand alone papers and the introductory overview.

The papers are not expositions as such of various facets of evolutionary economics but are intended to indicate where further theoretical work is needed and as such they are addressed to an audience of academic economists. In fact, some of the papers are valuable reading not only for academics but also for policy makers and practitioners in a wide range of activities such as technology and innovation, economic and business management, and indeed in the field of sustainable development. Escaping from the past is not easy. Grappling with theory and theorising are still main considerations of many in their pursuit of scientific status. But there are evolutionary economists in this collection who give one a feel for the significance of information and knowledge and the ways in which societies and social organisations adapt to external change and themselves bring about change through technical and organisational innovation. At the centre is the concept that economies are complex socio-economic self-organising systems

evolving in order to survive and prosper in a continuously changing environment. The economic system is the product of an evolutionary process which is analogous to evolution in natural bio-systems. Just as the systems of nature are restless so also are economic systems. They are interactive systems with one web of interactivity overlaying another and another and having multi-layered interdependencies. The horizontal interactivity produces the creativity of positive change as well as coordinating the social institutions in the process of change.

There is, however, a tendency of some to concentrate on the economy without highlighting that the system is one determined by the culture of the society of a particular place. This is the reasoning behind the concept of sustainable development. The socio-cultural element of sustainable development determines the innovations which bring about change and enable the community to progress and prosper. The economy which is shaped is the means to achieve progress providing the wealth and the tools of technological and organisational innovation with which to create the wealth. The community shapes and is shaped by the environment within which it lives and the environment is itself an evolutionary system both locally and globally having its own dynamics of change but also being changed by the dynamics of socio-cultural.

Understanding this complex system is fundamental to active participation in the process at whatever level or in whatever role and thereby to achieving prosperity whether by leadership or by active following. For better or worse, each individual as an information gatherer and disseminator is an active agent in the learning and creating processes of the community or social groupings, the formal and informal institutions of which he or she is a member. The sum of these processes is progressive development or decline. As the editors state in the first chapter, one must accept that restless systems are coordinated but know no equilibria and that the nature of creative processes is that they are inherently unpredictable.

They are unpredictable because innovation is the outcome of the conjunction of two notions, bits of information and/or knowledge, which have not previously been brought together. The unexpected conjunction happens by chance but is not an accident because it occurs within a social system which has autonomously so organised itself that information exchanges are continuous within a group and with other groups or social units. Self-organising is organising for which some or all of the information required is supplied by the constituent agents themselves. The primary interactions within the socio-economic system are exchanges of information. Where there are continuous flows of information there are continuous flows of innovations to adapt to change and to create change. There are continuous flows because the economic system is embedded in the social system in which people talk to one another. The frequency and diversity of the interactions and the flows of information which they produce as what is heard in one place is passed on in another are determinants of the creativity of the new information generated and of the innovative outcome. Or as the editors state (p. 4):

> economic and human activity changes knowledge both directly and indirectly and every change in knowledge opens up the conditions for changes in activity and, thus, further changes in knowledge *ad infinitum*.

The interpersonal interactivity coordinates the various agents and inputs and outputs of the system but within a state of constant and unpredictable change.

Recognition of the embeddedness of the economic system in the social interactivity in dynamic communities led to the concept of social capital as the central capital resource, a concept which unifies both the information and the process of information exchange. Strangely, the concept of social capital does not appear in the chapters of this volume; no doubt an example of how academic workers in adjacent social disciplines fail to hear one another and to practice the concepts which they discuss and elaborate.

The interactions within a complex system are typically local and social capital is the level of intensity of the interactions within a local socio-economic community. Furthermore, innovation derives primarily from the interactions between firms, interactions which are embedded in the social interactions. The strength of the social capital of a locale is indicated by the intensity of the relations of each agent or community member with other members and agents of the community and has been found to influence directly the structure of firms in a way which leads one to speculate on the concepts of self-organisation and coordination as activated or suppressed by the forms of industrial organisation in a particular locale. Workers in the field of social capital such as Granovetter and Herrigel have observed that where there are intensive personal interrelationships and a high level of skills, that is a strong presence of knowledge and know how, firms remain small or relatively small because they need to be closely integrated in the webs of intense interrelationships between the firms of their locality. Conditions of uncertainty as Shackle averred are always with us. Their need is to be continuously learning and innovating. There is always knowledge and information to be gained and therefore 'the need to utilise outside cognition is greater'. Finding such webs of interaction in England amongst small and medium sized firms led Marshall to the concept of industrial districts. In these whilst the individual firm may suffer lower returns, the district as a whole functions as an externality creating large gains within the district.

Where there is as lack of personal interrelationships and a low or unskilled labour market, firms integrate their information activities and grow into large hierarchical firms. Or they follow the transaction cost theory and integrate their functions or follow classic management theory. Whichever theory is followed they integrate to become wholly self-supporting in satisfying their information and knowledge needs and stand aloof from the surrounding webs of firms. They cease to learn and therefore cease to evolve through change. The classic example of this phenomenon seems to be the computer firms of Massachusetts which failed to perceive the next stage of computer development to the desk top which was taken up by the semi-conductor industrial district of Silicon Valley. Thus one can see that transaction cost economics are a theory and nothing more, as one author believes. Pursuit of them is more likely to lead to decline than growth.

To return to Darwinism, selection was early a concern of evolutionary economists since it was a fundamental of Darwin's theory of evolution. And this remains the most difficult area of evolutionary economics as is evident from those papers which deal with this area. Humans are not pre-ordained by their genes to follow particular patterns in pursuit of welfare and happiness. They must, on the basis of incomplete knowledge and information, guess what direction to take, guess whether this idea which has occurred to one or more in one or more communities will lead to a better livelihood and a better life. How to have a successful economy? Is it through a Darwinian trial and error process or by some other means of organising the knowledge and information available? How is it that second-rate

technologies become the dominant ones such as the internal combustion engine and MS DOS? The consequences of the ICE has been that it has massively increased prosperity but the question before society now is whether it will lead to the destruction of society or like the dinosaurs simply succumb to environmental factors. To what degree is MS DOS a parallel, its own success crushing innovation and the potential for customised diversity of IT? Evolution and the process of selection are complex processes. All that can be said with certainty is that it is the intensive free exchange of news, ideas, technologies and experience between humans who live in a particular place and who trust one another which leads to positive change and evolution to higher levels of human welfare. Interference with this freedom and trust leads only to decline or further degradation.

This compilation by leading protagonists is a must for a greater understanding of the world we are living in and wanting to see change for the better.

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Information Feudalism: Who Owns the Knowledge Economy?

Peter Drahos and John Braithwaite

London, Earthscan, 2002, 253 pp., AUS$40 pbk, ISBN 1 85383 917 5

Back in 1995, Peter Drahos wrote a futuristic article called 'Information feudalism in the information society'.[1] It took the form of an imagined history of the information society in the year 2015. Drahos provided a pessimistic vision of the future, in which the information age was ruled by the private owners of intellectual property. He ended with the bleak, Hobbesian image:

> It is unimaginable that the information society of the 21st century could be like this. And yet if abstract objects fall out of the intellectual commons and are enclosed by private owners, private, arbitrary, unchecked global power will become a part of life in the information society. A world in which seed rights, algorithms, DNA, and chemical formulas are owned by a few, a world in which information flows can be coordinated by information-media barons, might indeed be information feudalism (p. 222).

This science fiction assumed that a small number of states would dominate the emerging international regulatory order set up under the World Trade Organisation.

In *Information Feudalism: Who Owns the Knowledge Economy?*, Peter Drahos and his collaborator John Braithwaite reprise and expand upon the themes first developed in that article. The authors contend:

> Information feudalism is a regime of property rights that is not economically-efficient, and does not get the balance right between rewarding innovation and diffusing it. Like feudalism, it rewards guilds instead of inventive individual citizens. It makes democratic citizens trespassers on knowledge that should be the common heritage of humankind, their educational birthright. Ironically, information feudalism, by dismantling the publicness of knowledge, will eventually rob the knowledge economy of much of its productivity (p. 219).

Drahos and Braithwaite emphasise that the title *Information Feudalism* is not intended to be taken at face value by literal-minded readers, and crudely equated with medieval feudalism. Rather, the title serves as a suggestive metaphor. It designates the transfer of knowledge from the intellectual commons to private corporation under the regime of intellectual property.

In this engaging and accessible book, Drahos and Braithwaite trace the deal-making at the General Agreement on Tariffs and Trade (GATT) that led to intellectual property becoming a part of the World Trade Organisation. The authors seek to solve a fundamental conundrum about the development of the Trade Related Aspects of Intellectual Property Rights (TRIPSs) Agreement stating that:

> One of the puzzles this book sets out to solve is why states should give up sovereignty over something as fundamental as the property laws that determine the ownership of information and the technologies that so profoundly affect the basic rights of their citizens. The puzzle deepens when it is realized that in immediate trade terms the globalization of intellectual property really only benefitted the US and to a lesser extent the European Community (p. 11).

A number of explanations are advanced to solve this mysterious turn of events. Chapter 6 charts how the United States used Special 301 actions to discipline recalcitrant states into complying with intellectual property standards. Such threats were an important impetus for countries to enter into bilateral and multilateral agreements. Chapter 7 charts the disillusionment of the private sector in the United States which became disillusioned with the World Intellectual Property Organisation as a forum for standard-setting in the field of intellectual property. Drahos and Braithwaite paraphrase this dissatisfaction amongst companies based in the United States: 'The endless dialogue at WIPO would never produce the rules needed for a new knowledge game' (p. 65). Chapter 8 focuses upon the effort of the United States and the European Union to include a comprehensive code on intellectual property in the GATT round. Chapter 9 focuses upon the translation of the deals of the TRIPS negotiations into the form of treaty language. The authors note: 'The basic rule for negotiators was to find very clear language to describe the deals favourable to them, while striving to set in ambiguous language those deals in which they had made concessions' (p. 139).

The book is based upon interviews that Drahos and Braithwaite conducted with 500 key informants as part of their epic project, *Global Business Regulation*.[2] The authors observe: 'Our purpose in conducting so many interviews has been to reveal what the formal language of international intellectual property agreements does not: the informal dynamic of power that determines the choice of words,

their meaning and subsequent utilization' (p. ix). The majority of the informants remain anonymous. The book is filled with the susurrus of the murmuring voices who provide insider's insights into the deliberations behind the formation of international treaties. However, a few dominant personalities stand out in the book.

A small number of visionaries and entrepreneurs were responsible for the development of the TRIPs agreement. The chairman of pharmaceutical drugs company, Pfizer, Edmund Pratt, was a central figure in the globalisation of intellectual property rights (pp. 68–9). He provided the impetus to draw together trade, investment, and intellectual property. The eminence griese, Jack Valenti of the Motion Picture Association, was a public propagandist for the cause of copyright owners. His theatrical performances served to galvanise Congress into linking intellectual property to the trade regime. The sweet-talking chairman of the TRIPs Group, Lars Ansell, played an important role as a broker and a go-between in negotiations between developed countries and developing countries (pp. 139–40). His diplomacy was instrumental in the development of the TRIPs agreement.

Drahos and Braithwaite provide a number of corporate case studies to illustrate the thesis of the book. Chapter 3 holds up DuPont as an exemplar of corporate research and development. The company integrated scientific labour into processes of industrial production and market competition. It was successively involved in the production of nylon, plutonium, and transgenics. Chapter 4 provides a brilliant portrait of the pharmaceutical drugs company, Pfizer. It suggests that the manufacturer was prompted to become a champion of intellectual property and trade in response to declining markets in developing countries. Chapter 10 suggests that chemical and pharmaceutical cartels were instrumental in pushing for the patenting of biotechnology. Drahos and Braithwaite observe: 'Obtaining patents in new technological processes was a basic strategy of insurance even if the product pipeline coming from these new processes was uncertain' (p. 165). Chapter 11 considers the history of IBM and its change of tack in relation to intellectual property. After initially making its source code available to computer programmers, IBM became a strong advocate of copyright protection for computer software, and subsequently focused upon patents in relation to computer programs and business methods.

In this account, the authors are sometimes a little too fond of neologisms. 'Biogopolies' appears to be an awkward way of labelling private patent monopolies in the field of biotechnology in Chapter 10. Similarly, 'infogopolies' seems to be an ungainly phrase to describe the behaviour of information technology companies, such as IBM and Microsoft in Chapter 11.

Drahos and Braithwaite are particularly interested in the operation of the patent office—what Albert Einstein, a one-time Swiss Patent Examiner, once called a 'secular cloister'. The historical discussion of German chemical patents is instructive (pp. 54–6). The patent attorneys drafted the specifications as broadly as possible so as to achieve the maximum coverage of chemical science, but also sought to minimise the disclosure of the invention. Indeed, many of the specifications were designed to mislead inquiring minds as to the manner in which certain products were manufactured—sometimes to the extent of being dangerous to unwary scientists.

In contemporary times, patent offices have become increasingly dependent upon funding their operations from patent fees collected from applicants. As a

result, they have undergone a cultural change, in which they have become beholden to multinational companies (p. 161). The development of the TRIPs agreement has put pressure on developing countries to set up intellectual property offices. For instance, South Korea has set up the 'Korean Patent and Anti-Piracy Office' to placate the demands of the United States (p. 20). The authors conclude that a number of measures are necessary to prevent the capture of patent offices and courts by multinational corporations (p. 205). They advise that non-governmental organisations should demand effective application of the tests of patentability in the public interest, and insist on denial of patents to companies which do not adequately document the know-how needed to work the invention. Furthermore, there is a need for human rights and competition rules to be taken seriously by patent administrations.

Drahos and Braithwaite also stress the importance of copyright law during the negotiations of the TRIPs agreement. They play upon the irony that the United States of all countries should push for multilateral agreements, after a long history of hostility towards the Berne Convention. The authors observe that the coalition of United States corporate interests was put under great stress by conflicting interests:

> A key question was whether the US domestic coalition would hold together. Hollywood, as we saw earlier, under no circumstances wanted TRIPs to strengthen the moral rights of authors, something that the Berne Convention did do. At the same time, the US computing industry did not want the standards in the Berne Convention to be globalized. The copyright industries and semiconductor chip industry were worried that a new multilateral dispute resolution process might neuter the 301 process that had brought the US such bilateral success (p. 132).

Hollywood successfully opposed the introduction of moral rights and performer's rights under the TRIPs agreement, and Silicon Valley has been consoled that the Special 301 Process has been used with a vengeance even after the advent of the TRIPs agreement. However, the TRIPs agreement has rebounded back upon the United States in some respects. In an action brought by the European Union, a dispute resolution panel of the World Trade Organisation has found that the United States was in contravention of the TRIPs accord in relation to exemptions for the public performance of music under the *Fairness In Music Licensing Act* 1998 (US).

There is surprisingly little in the book about trademark law and other distinctive signs, probably as a result of space considerations. Drahos and Braithwaite seize upon the debate over geographical indications during the TRIPs agreement. However, the authors only briefly touch upon the link between trademarks and globalisation. In an unexpected bestseller, *No Logo: Taking Aim at the Brand Bullies*, Canadian journalist Naomi Klein considers the treatment of well-known brands and trademarks—such as Nike, MacDonalds, and Starbucks.[3] She considers resistance to brands through rogue websites, culture-jamming, and the 'No Logo' movement. Ironically, this book was published by multinational publisher Harper Collins. In response, *The Economist* magazine carried a series of articles on branding under the banner *Pro Logo* and the tag line 'Why brands are good for you'.[4] The *Economist* complained:

> Brands have thus become stalking horses for international capitalism. Outside the United States, they are now symbols of America's corporate power, since most of the world's best known brands are American. Around them accrete all the worries about environmental damage, human-rights abuses and sweated labour that anti-globalists like to put on their placards. No wonder brands seem bad.[5]

The Economist defends trademarks in terms of their original objectives, as badges of origin:

> Brands are derided by opponents of capitalism. Naomi Klein in her best-selling *No Logo* argued that they oppress, exploit and homogenise. The idea is utterly wrong-headed. Brands do not rule consumers; consumers rule brands.[6]

Meanwhile, the debate over the TRIPs agreement has been revisited in the fierce argument over patent law and access to essential medicines. A number of pharmaceutical drugs companies challenged the validity of the legislation passed by the South African Government to permit compulsory licensing and parallel importation of essential medicines. However, they were forced to back down in the face of international attention led by non-government organisations such as the Treatment Access Campaign, Oxfam, and Medecins Sans Frontieres. At a recent talk, the self-styled public intellectual John Ralston Saul summed up the controversy in a cursory form:

> And the, finally, intellectual property—I can do this in about three minutes . . . But look at the pharmaceutical companies. It was said you couldn't do anything about the price of medication—AIDS medication, for example. Nothing. And yet a little group of citizens—not even the government, of South Africa started a campaign and in a short time became so powerful that the government of South Africa joined in with them and within a short period of time the cartel of pharmaceutical companies said: 'We give in, but it's not a precedent'. Two weeks later, or something, Brazil introduced a law which said: 'If you charge us more than we want to pay, we're going to make them our way—cheap'. And they gave in. A couple of weeks later, France introduced somewhat the same legislation. These are paper tigers. They're very, very fragile—as soon as citizens stand up. And for a very simple reason and that is they, unlike you, live from consumption.[7]

The story of the Treatment Access Campaign, though, cannot be told in such a summary form. No doubt there is a sequel to *Information Feudalism* waiting to be written about the politics of the battle between the South African Government and the pharmaceutical drugs companies, and the Doha Declaration on TRIPs and Public Health at the WTO Ministerial Council in November 2001.

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Making and Selling Cars: Innovation and Change in the U.S. Automotive Industry

James M. Rubinstein

Baltimore, MD, 2002, ix + 401 pp., £33.50, ISBN 0-8018-6714-2 hbk

This book takes a complex subject, motor vehicles from the late nineteenth to the early twenty-first centuries, and presents a series of complementary perspectives on how making and selling these vehicles has affected the societies we live in. The author thus incorporates both production and consumption in his analysis, focusing primarily on US workplaces and markets, but acknowledging European and Asian manufacturers and societies as he brings the story into the modern era. This focus on the US experience of motorised vehicles is justified by the author through an emphasis on the developmental role of US society. Thus, for example, he notes that manufacturers in the US played a small role in inventing the key technological processes or components involved; mass production was imported to the US from Europe. But the techniques of production were certainly refined more quickly in the US than anywhere else, and the effect that cars have had on patterns of consumption in North America is unparalleled. The analysis is based largely on historical and secondary sources, demonstrating a breadth of understanding that brings together organisational analysis, science and technology studies, economics, and social or cultural critiques of the industry.

However, it is difficult to capture the nature of this book through a description of its structure and theoretical underpinnings. The depth of detail that the author has extracted from primary and secondary data sources, the use of drawings and photographs, and the richness of the description of the early years of production in particular, all combine to form a whole that transcends its parts. It impresses as a scholarly work, entertains as a narrative of an industrial product that we are all familiar with as a cultural icon, and has the potential to inform research and teaching across a range of disciplines.

An ambiguous feature of the book is the organisation of the material and analysis. Part 1 is made up of six chapters; three of which deal with early production innovations in the motor industry, while the remainder examine recent changes in production methods. Part 2 then explores changing means of selling vehicles and developing an understanding of the role of the consumer, again through comparison of initial formulations and late twentieth

century market dynamics in alternating chapters. From the author's point of view, such a structure might have been intuitively attractive as a way of making sense of the wealth of documentary and academic material available, but for readers, the book becomes rather disjointed. In addition, the periods of transition and change, potentially rich empirically and analytically, are not emphasised, leaving the reader with a sense that the industry has really only passed through two phases: US-based Fordism and Japanese-inspired lean production.

Notwithstanding, the analysis within the book moves understandings of the industry in a number of new directions. First, central to the first section on the production of vehicles is the story of Henry Ford as an individual, examining the gradual degeneration of the eponymous company he co-founded through the 1920s and 1930s. This version of the Ford story brings to light the increasing paranoia of Ford the person, and the effect on corporate performance that a series of disastrous executive decisions and employee alienation had. Second, the relentless drive towards vertical integration that Henry Ford insisted on, reaching an apotheosis in the River Rouge production complex in Michigan (with 110,000 employees, processing raw materials into finished vehicles), along with Ford corporate ownership of railroads, coal or iron ore mines, and ocean-going transport vessels, provides a further fascinating perspective on this iconic corporation. The contrast with the system of multiple tiering of suppliers that the six largest motor corporations currently operate, described in the following chapter, is striking.

Despite the breadth and depth of the author's reading and synthesis, the treatment of the industry does suffer from thinness in some areas. The role of technology, for example, in promoting change in the structure and culture of vehicle production does not feature strongly beyond functional description; and other vertical, non-local conditions of operation (such as state regulation) are treated as peripheral to the main story of industrial change. This is particularly evident in the chapters that deal with the management of labour, in which a deskilling/reskilling dichotomy is proposed, but this takes little notice of continuing debates about the experience of work in corporations that persist in applying 'early industrial' organisational and managerial techniques. A more nuanced and theorised analysis in relation to these dynamics would have improved the book significantly, and the author certainly had the empirical and conceptual materials at his command to achieve this.

At its root, however, the book embodies an achievement that should ensure its extensive use in both research and teaching. The length of the perspective taken (over 100 years), the breadth of disciplines that the author draws on, and the attractive writing and visual presentation of the book, all combine to provide readers with a valuable source text, And as the very brief conclusion emphasises, the motor vehicle has proven remarkably resilient—both as a means of transport and as a measure of status. There will be challenges to the nature of the thing, to the ways in which it is produced, and to the corporations that oversee production, but it appears that the motor vehicle will remain central to experiences and understandings of contemporary society.

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Managing the Global: Globalization, Employment and Quality of Life

Donald Lamberton (Ed.)

London and New York, I.B. Tauris and Toda Institute for Global Peace, 2002, xix + 268 pp., £35, ISBN 86064 706 5 hbk

This volume is a compendium of papers presented at a conference on globalization held in Sydney, Australia. There are 15 chapters, carefully arranged and edited by Donald Lamberton, which present diverse and stimulating views on the pros and cons of globalization. Coverage of the theme is comprehensive and includes some tangential perspectives. The book is divided into two parts.

Part I focuses extensively on the impact of globalization. Donald Lamberton, who is the acclaimed doyen of Information Economics, examines the economic reasoning underlying the inevitability of the globalization process. He argues that globalization may erode differences in comparative advantage and undermine the basis of international trade. In a previous work, Lamberton[1] asserted that domestic policy and trade interests are tied to the process and awareness of international patterns of change. Continued change has become the major trend for globalization. A decade ago, India and China were outside the mainstream of Asia–Pacific communications, whereas today they are both participating in the new MIT Media Lab located in Mumbai. Meanwhile, the large private Indian conglomerate, Tata Sons, has become a major shareholder in Intelsat, and its Consultancy Services operation has opened an office in Shanghai. Lamberton emphasizes that such examples illustrate a 'public and private sector form of organizational capital' (p. 8) that is not part of the WTO charter.

Walden Bello concentrates on the impact of globalization on the Asian Financial Crisis (1997–98) and maintains that the blame should not be laid at the door of crony capitalism in Asia. Since Bello wrote the chapter, we have been witnessing a different kind of malfeasance in First World countries, illustrated by large multinationals such as Enron, Arthur Andersen, and WorldCom. This has global consequences for unemployment and losses sustained by small investors. As Bello affirms, the instant transmission of information facilitates real-time linkages between the downturn on Wall Street and stock exchanges across the world.

The impact of globalization on labor markets is presented by Frank Stilwell, who rightly contends that downsizing is one of the costs of globalized competitiveness (p. 37). Rifkin[2] had claimed that the culture of hypercapitalism spreads to developing countries through product chains, causing unemployment in semi-skilled and unskilled labor markets. Stilwell maintains that there is an integral relationship between globalization, downsizing, and technological change. Together they create inequality, instability and insecurity.

In an analysis of quality of life issues, Hazel Henderson argues emphatically that the global ascendancy of markets, initiated by Margaret Thatcher in 1979, has vastly improved the quality of life for millions in Britain. Henderson justifiably claims that today we can expect 'greater dominance of the price system over diverse traditional values, cultures and institutions' (p. 55). She further stresses that globalization and electronic markets drive the search for dynamic economic models. However, it is common knowledge that multinationals exploit workers in low-income countries by paying sweatshop wages, contributing to the now widely discussed Digital Divide. Several meetings of the G-8 countries are attempting to tackle this problem.

Whereas the preface by Majid Tehranian indicates that this volume deals with 'social and economic insecurities resulting from globalization', Walter Hudson in Part II defines globalization as a phenomenon that cannot be construed as merely negative; it may give rise to new systems of global governance and global civil society, even though the current evidence is less plentiful (p. 104). A similar idea is expressed by Richard Taylor[3] in a recent paper concerned with the emergence of an information-oriented economy and the creation of new challenges for global governance, in which the borderless nature of the new economy raises fundamental questions about the working of international order.

Continuing this trend, James Rosenau credibly argues that the dynamics of economic globalization, new technologies and global norms clash with powerful local dynamics, thereby creating 'globalized space' in the frontier between domestic and foreign affairs. Rosenau foresees 'a profound transformation', which will usher in an underlying change, 'in every country, in every walk of life, and across all layers of class and community that comprise global affairs' (p. 106).

In an interestingly novel approach to the theme, Stuart Rees asserts that learning from the experience of globalization requires a new curriculum to raise awareness of conflicting ideas that have created a semblance of fatalism among students, policy makers and peoples' lives in low-income countries. Rees considers the assertion and implementation of human rights is 'one way to combat fatalism about economic globalization' (p. 126).

Michael Pusey lucidly deals in depth with economic rationalism and quality of life in advanced societies. He explores the effects of what is termed 'pancapitalism' (p. 135) and structural change, both of which bring about an interaction of local and national cultures. At the local level, structural adjustments are called for as the protection afforded by governments to individuals is weakened. Individuals on the rim of social change are left without the benefits of national change. A similar concept was expressed by the NTIA Report 1999 titled *Falling Through The Net*,[4] which ushered in international debate about the Digital Divide. While the Doha conference of 2001 enforced further trade liberalization to boost development in poor countries, Pusey maintains that such liberalization would increase unemployment, falling incomes and falling welfare provisions and produce ghettos (p. 137). Jagdesh Bhagwati, to the contrary, contends that the wickedness of rich countries is grossly exaggerated and that trade barriers erected by poor countries against one another are more significant restraints on their own development.[5]

Bharati Ray introduces the gender dimension as it applies to India. She believes that technology has marginalized women in economic activities in India and reduces their scope for learning and training (p. 149). Contradicting this gloomy scenario, one has only to glance at neighboring Bangla Desh, where the Grameen Bank and the Grameen Telephone have empowered women with micro credit as 'an effective tool for eliminating poverty as a business and not as charity'.[6] Such a scheme answers to a considerable extent the question, raised by Ray, as to who is responsible for providing basic human needs to the poor, the state or the private sector?

The next two chapters—one by Brian Easton and the other by Edna Ross—examine the globalization effects of technology and culture on development. Easton questions the belief that government spending promotes economic efficiency by citing the example of New Zealand, where the government made horizontal transfers of income from the rich to the poor instead of vertical transfers

which led to inefficiency. Edna Ross expresses concern over the growing inequity between and within countries, based on the UNCTAD Report of 1997 and the findings of the World Economic Forum at Davos in 1999. In effect she is addressing the problem of polarization, which was addressed by the Okinawa Conference of the G-8 in July 2000, and which has led to follow up meetings on the Global Digital Divide.

Akira Onishi presents a model for Global Interdependence based on trade flows, capital flows and information flows. His chapter recommends the application of his Futures Models' software developed by the Soka University in Japan. But, as the model has yet to be tested, its contribution resolving disarray in the global economy remains a matter for speculation.

A timely contribution is provided by Stuart Macdonald's scholarly exploration of the role of the corporate manager in dealing with uncertainty caused by expanding innovation. He discusses the use of information resources in managerial operations and asserts that there is 'an opportunity cost attached to the use of performance indicators' (p. 213). In recent times in the USA, managers of behemoth corporations have belied the use of performance indicators to the detriment of employees and shareholders. In these cases, the 'management method' has failed, but to quote the author, even in the bleakest situations there is hope, if the organizations could recapture their capacity to innovate and thereby increase productivity. Such analysis leaves one wondering if the current disasters of Enron and WorldCom could be attributed to globalization, or caused by the misdeeds of the managers even though their impact is global.

The last chapter of this volume shows how difficult it has become to 'manage the global' in the context of internationalization of production and its impact on economic development. Continuing the theme of innovation from the previous chapter, Jane Marceau analyses the spillover effects of new technologies in host countries. R&D is generally based in the headquarters of the multinationals and 'is an important case of non-globalization' (p. 226). Even so new ideas get generated with transfer of technology and Foreign Direct Investment. The quasi rents earned from imperfect competition can be channeled through the host economies in the form of wages and investment and they benefit from the diffusion of knowledge as in the case of the Asian NIEs.

On the whole this volume makes an impressive contribution to the concept and practice of globalization. Both the advocates and critics of this structural process have dealt with the social dynamics of its complexity in the context of developing countries. However, the rise of the Internet and of the networked world order have received scant attention, which on the one hand creates opportunities for business growth and on the other, generates risks of economic inequalities. Daniel Yergin, co-author of *The Commanding Heights: The Battle for the World Economy* commented that one of the great tests for globalization will be its inclusiveness—what it does to improve the plight of the terribly poor in the developing countries. Readers will agree that expanded trade and investment worldwide offers the most significant means of reducing poverty. Lamberton in assessing 'the new world disorder' points out that 'true globalization means that capital would flow in a roughly uniform way into all developing regions, being attracted by comparative advantage'. Since this is not the current scenario Lamberton proposes that Regionalization is a better description of world market evolution. Let the reader decide.

Notes and References

1. Donald Lamberton, *Communications and Trade*, Hampton Press, NJ, 1998, p. 13.
2. Jeremy Rifkin, *The Age of Access: the New Culture of Hypercapitalism*, 2000.
3. Richard Taylor, 'Globalization and international regime theory', *East West Center Conference on the Impact of Globalization on the Asia Pacific Community*, Kuala Lumpur, Malaysia, 1–4 July 2002.
4. Government of the USA, *Falling Through the Net*, Washington, DC, 1999.
5. 'The poor's best hope', *The Economist*, 22 June 2002, p. 24.
6. Yunus, letter to *The Economist*, 22 June 2002, p. 18.

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Technology and the Good Life?

Eric Higgs, Andrew Light and David Strong (Eds)

Chicago and London, University of Chicago Press, 2002, xii + 392 pp., £41.00 cloth or £16.00 pbk, ISBN 0-226-33386-8 cloth or 0-226-33387-6 pbk

This book is predicated on the familiar idea that technology has changed our life forever. Its purpose is to examine the effects of technological change and to arrive at an assessment of its impact on our lives—whether for the better or in the oppressive sense of being controlled by technology's machines and systems. The text is directed towards the philosophy of technology and situates itself in a discussion of the ideas of Albert Borgmann. This dwells principally upon Borgmann's theory of the 'device paradigm', which attempts to explain the operation and consequent implications of technology. The editors argue that this is 'one of the most original, powerful and comprehensive theories in the philosophy of technology today' (p. 3). Their introduction provides a survey of the field and Borgmann's place within it. The rest of the book is based upon contributions from writers who tackle this theory from their own particular perspectives.

Some 16 chapters contribute to the discussion of Borgmann's work, four of which are written by the editors. All the authors are academics from the North American continent and, while they are eminently well qualified to make their respective contributions, it might have been both interesting and instructive to have included perspectives from other parts of the world—particularly if these were to broaden the discourse. Nevertheless, the book is worth reading as it stands. It is organised into four parts, each dealing with different aspects of Borgmann's theory.

The first part offers a broad interpretation of the state of the philosophy of technology. In the first chapter, Strong and Higgs set the background for the whole volume by describing the character of Borgmann's philosophy of technology and giving an overview of the device paradigm. They argue that his work is heavily influenced by Heidegger. For those of us who are not familiar with Borgmann, this is an essential chapter that allows us to relate his contribution to the context of

subsequent discussion. It is followed by a chapter in which Durbin presents a summary of the development of the discipline of the philosophy of technology in the two decades since its inception in 1965 and suggests several possible readings of the work of Borgmann.

Central to the work of Borgmann is his notion of 'focal things' and Part Two presents five chapters which explore this notion. Haworth explores the relationship between focal things and focal practices and helps the reader develop a better understanding of these central concepts, making good use of examples to illustrate the main points. In the next chapter, Brittan challenges Borgmann's critique of liberal democracy and argues that technology fails to provide the good life Borgmann believes we should expect from it. Instead Brittan believes that it threatens our autonomy by making us too dependent on that technology; consequently, our notion of self-sufficiency needs reinvigorating by a reform of technology. Hickman also disagrees with Borgmann and uses Dewey's work to distinguish between appropriate and inappropriate technology, situating his argument in a discussion of traditional and non-traditional forms of the family. In the next chapter, Light uses a comparison between Borgmann and Nietzsche to consider the issues that Borgmann believes any political system must address. He argues that both fail to develop full political theory and questions whether the flexibility in Borgmann's positioning is worth the risk of his ideas being misinterpreted and misused by those with different political aims. In the final chapter in this section, Mitcham outlines a problem at the centre of the reform of technology in that he argues that this will require a transformation of human character which has already been formed by that technology itself and questions the possibility of the reform of human and societal character in the manner suggested by Borgmann. This section therefore is largely critical of the theory of Borgmann, or rather the possibility of it coming to fruition, arguing that in several ways it is not fully worked out.

In the third part of the book the theory of the device paradigm is applied to practical issues and the authors variously suggest ways in which the theory can be extended. Fandozzi looks at film to show how this can be used to challenge technology and distinguishes between films which can 'bring us out of the cave of consumption into the light of day' (p. 149) and those which are merely a source of entertainment. Thompson considers farming as an exemplary focal practice. He argues that land is a large public focal material thing and should not be interpreted as a function of the things which occupy it. He further argues that a reform of technology must come to terms with production and accept an appropriate sense of it. Tatum considers design and distinguishes between technologies which centre our existence and those which enable that centre to flourish, and in doing so he considers the possibilities for the reform of technology in the design of those technologies. Higgs argues that the practice of ecological restoration forces us to give up modernist assumptions about nature, leaving us with a choice between the alternative forms of postmodernism which Borgmann elucidates and argues that there is a need for more action to reform the political economy than Borgmann acknowledges.

The final section considers extensions of Borgmann's theory and looks at alternative possibilities. Michelfinder accepts that focal things may counterbalance technological devices, but argues that the device paradigm does not always apply. With the example of the telephone, as used by women, she argues that that technology can sometimes assist focal practices and offer a promise of enhancing

democratic life. Kellner accepts that technology is a major force in postmodernity, but objects to Borgmann's claim that we are in the process of crossing from modernity to postmodernity. He argues that our present culture is more complex than this and the forces of capitalism must also be recognised. Using examples from cyberspace he shows that Borgmann sells technology short and it can help to bring about a more fulfilling life. Campbell accepts the idea that focal practices can alleviate undesirable forms of ambiguity but argues that further reform is needed to meet her concerns for social change. She introduces the idea of temporal ambiguity to supports her argument. Power argues that consumerism is due to market forces which constrain our choices and concentrates upon the reform of market forces as a way to bring about change. Feenberg argues that the essentialist theories of Borgmann and Heidegger need to recognise the differences between various forms of technology and that these theories place technology at the centre of a capitalist context. He argues that many of the negative features of technology which these theories concentrate upon are, in reality, consequences of the influence of capitalism and that technology itself has a potential for the subversion of its dominant purpose. In the final chapter, Strong challenges Borgmann to work his theory into a general philosophy and questions whether some of the religious elements of his work are consistent with his careful analysis of the physical characteristics of things.

An elegant touch is that the last chapter is written by Borgmann himself, who is thereby given the opportunity to explain his views in more details and respond to the criticisms raised by some of the authors. It is somewhat disappointing that Borgmann uses this opportunity to refute criticism, rather than to engage with discourses associated with the development of his theories. Nevertheless, this final chapter completes a rounded book that offers a wide variety of views. Each chapter is fully referenced to allow the reader to pursue any argument in greater depth and the book's index facilitates its use as a reference source. The book is well written and well presented. As such, it might appeal to those who are interested in an informed assessment of the effects of technology upon our lives.

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