Theories of the Information Society

Third edition

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Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 1995
by Routledge
Second edition published 2002
This third edition published 2006
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
270 Madison Avenue, New York, NY 10016

Routledge is an imprint of the Taylor & Francis Group

This edition published in the Taylor & Francis e-Library, 2006.

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British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data
A catalog record for this book has been requested

ISBN 0-203-96282-6 Master e-book ISBN

ISBN 10: 0–415–40632–3 (hbk)
ISBN 10: 0–415–40633–1 (pbk)

ISBN 13: 978–0–415–40632–1 (hbk)
ISBN 13: 978–0–415–40633–8 (pbk)

Contents

	Acknowledgements	viii
1	Introduction	1
2	What is an information society?	8
3	Post-industrial society: Daniel Bell	32
4	Regulation School theory	60
5	Network society: Manuel Castells	98
6	Information and the market: Herbert Schiller	124
7	Information and democracy: Jürgen Habermas	161
8	Information, reflexivity and surveillance: Anthony Giddens	203
9	Information and postmodernity	228
10	The information society?	263
	Notes	274
	Bibliography	277
	Index	304

CHAPTER ONE

Introduction

It seems to me that most people ask themselves, at one time or another, what sort of society is it in which we live? How can we make sense of what is going on with our world? And where is it all taking us? This is a daunting and frequently bewildering task because it involves trying to identify the major contours of extraordinarily complex and changeable circumstances. It is, in my view, the duty of social science to identify and explain the most consequential features of how we live now, the better that we may see where we are headed, so that we might influence where we are going. Some people quickly give up on the task, frankly admitting confusion. Still others, encountering disputation, retreat into the comforting (and lazy) belief that we see only what we choose. Fortunately, most people stick with trying to understand what is happening in the world, and in so doing reach for such terms as 'capitalism', 'industrialism', 'totalitarianism' and 'liberal democracy'. Most of us will have heard these sorts of words, will have voiced them ourselves, when trying to account for events and upheavals, for important historical occurrences, or even for the general drift of social, economic and political change.

In all probability we will have argued with others about the appropriateness of these labels when applied to particular circumstances. We will even have debated just what the terms might mean. For instance, while it can be agreed that Russia has moved well away from Communism, there will be less agreement that the transition can be accurately described as a shift to a fully capitalist society. And, while most analysts see clearly the spread of markets in China, the continuation of a dictatorial Communist Party there makes it difficult to describe China in similar terms as, say, we do with reference to Western Europe. There is a constant need to qualify the generalising terminology: hence terms like 'pre-industrial', 'emerging democracies', 'advanced capitalism', 'authoritarian populism'.

And yet, despite these necessary refinements, few of us will feel able to refuse these concepts or indeed others like them. The obvious reason is that, big and crude and subject to amendment and misunderstanding though they be, these concepts and others like them do give us a means to identify and begin to understand essential elements of the world in which we live and from which we have emerged. It seems inescapable that, impelled to make sense of the most consequential features of different societies and circumstances, we are driven towards the adoption of grand concepts. Big terms for big issues.

The starting point for this book is the emergence of an apparently new way of conceiving contemporary societies. Commentators increasingly began to talk about 'information' as a distinguishing feature of the modern world thirty years or so ago. This prioritisation of information has maintained its hold now for several decades and there is little sign of it losing its grip on the imagination. We are told that we are entering an information age, that a new 'mode of information' predominates, that ours is now an 'e-society', that we must come to terms with a 'weightless economy' driven by information, that we have moved into a 'global information economy'. Very many commentators have identified as 'information societies' the United States, Britain, Japan, Germany and other nations with a similar way of life. Politicians, business leaders and policy makers have taken the 'information society' idea to their hearts, with the European Union urging the rapid adjustment to a 'global information society', thereby following in the tracks of Japan which embraced the concept of information society in the early 1970s (Duff, 2000).

Just what sense to make of this has been a source of controversy. To some it constitutes the beginning of a truly professionalised and caring society while to others it represents a tightening of control over the citizenry; to some it heralds the emergence of a highly educated public which has ready access to knowledge while to others it means a deluge of trivia, sensationalism and misleading propaganda. Among political economists talk is of a novel 'e-economy' in which the quick-thinking knowledge entrepreneur has the advantage; among the more culturally sensitive reference is to 'cyberspace', a 'virtual reality' no-place that welcomes the imaginative and inventive.

Amidst this divergent opinion, what is striking is that, oppositional though they are, all scholars acknowledge that there is something special about 'information'. In an extensive and burgeoning literature concerned with the information age, there is little agreement about its major characteristics and its significance other than that – minimally – 'information' has achieved a special pertinence in the contemporary world. The writing available may be characteristically disputatious and marked by radically different premises and conclusions, but about the special salience of 'information' there is no discord.

It was curiosity about the currency of 'information' that sparked the idea for the first edition of this book, which I wrote in the early 1990s. It seemed that, on many sides, people were marshalling yet another grandiose term to identify the germane features of our time. But simultaneously thinkers were remarkably divergent in their interpretations of what form this information took, why it was central to our present systems, and how it was affecting social, economic and political relationships.

This curiosity has remained with me, not least because the concern with information persists and has, if anything, heightened – as has the variability among analysts about what it all amounts to. While I was writing the first edition of this book discussion appeared stimulated chiefly by technological change. The 'microelectronics revolution', announced in the late 1970s and early 1980s, launched a fleet of opinion about what information technology (IT) was set to do to us. Then favoured topics were 'the end of work', the advent of a 'leisure society', the totally

'automated factory' in which robots did everything. These subjects went out of style somewhat as full employment returned and persisted, but the enthusiasm for technologically driven changes remains. Today's agenda concerns the Internet especially, the 'information superhighway' and cybersociety brought about now by information and communications technologies (ICTs). Hot topics now are electronic democracy, virtual relations, interactivity, personalisation, cyborgs and online communities. Much comment now seizes on the speed and versatility of new media to evoke the prospect of radical transformations in what we may do. Thus when a tsunami enveloped large parts of South East Asia on 26 December 2004, the phones went down, but e-mail and the Internet rapidly became the means to seek out lost ones. And when, on 7 July 2005, terrorists bombed the London underground and bus system, the phone system shut (probably for security reasons), yet people quickly turned to the Internet for news and mutual support, while the photographic facilities on many mobile phones displaced traditional media to provide vivid pictures of the immediate devastation.

At the same time, however, in some quarters at least there had been a switch away from technology to what one might consider the softer sides of information. Among leading politicians and intellectuals there is an increased concern for 'informational labour', for the 'symbolic analysts' who are best equipped to lead where adaptability and ongoing retraining are the norm. Here it is people who are the key players in the information society, so long as they have been blessed by a first-rate education that endows them with the informational abilities to survive in a new and globalised economy. Now deal-makers, managers, software engineers, media creators and all those involved with the creative industries are seen as key to the information society. This shift in analysis from technology to people, along with a persistence of general concern for information, encouraged me to produce this third edition of *Theories of the Information Society*.

I focus attention on different interpretations of the import of information in order to scrutinise a common area of interest, even though, as we shall see, interpretations of the role and import of information diverge widely, and, indeed, the closer that we come to examine their terms of reference, the less agreement even about the ostensibly common subject matter – information – there appears to be.

Setting out to examine various images of the information society, this book is organised in such a way as to scrutinise major contributions towards our understanding of information in the modern world. For this reason, following a critical review of definitional issues in Chapter 2 (consequences of which reverberate through the book), each chapter thereafter looks at a particular theory and its most prominent proponents and attempts to assess its strengths and weaknesses in light of alternative theoretical analyses and empirical evidence. Starting with thinkers and theories in this way does have its problems. Readers eager to learn about, say, the Internet and online–offline relations, or about information flows in the Iraq War, or about the consumption of music that has accompanied the spread of MP3 players, or about politics in an era of media saturation, will not find such issues considered independently in this book. These topics are here, but they are incorporated into chapters organised around major thinkers and

theories. Some readers might find themselves shrugging here, dismissing the book as the work of a dreamy theorist.

I plead (a bit) guilty. As they progress through this book readers will encounter Daniel Bell's conception of post-industrial society which places a special emphasis on information (Chapter 3), the contention that we are living through a transition from Fordist to post-Fordist society that generates and relies upon information handling to succeed (Chapter 4), Manuel Castells's influential views on the 'informational capitalism' which operates in the 'network society' (Chapter 5), Herbert Schiller's views on advanced capitalism's need for and manipulation of information (Chapter 6), Jürgen Habermas's argument that the 'public sphere' is in decline and with it the integrity of information (Chapter 7), Anthony Giddens's thoughts on 'reflexive modernisation' which spotlight the part played by information gathered for surveillance and control purposes (Chapter 8), and Jean Baudrillard and Zygmunt Bauman on postmodernism and post-modernity, both of whom give particular attention to the explosion of signs in the modern era (Chapter 9).

It will not escape notice that these thinkers and the theories with which they are associated, ranging across disciplines such as sociology, philosophy, economics and geography, are at the centre of contemporary debates in social science. This is, of course, not especially surprising given that social thinkers are engaged in trying to understand and explain the world in which we live and that an important feature of this is change in the informational realm. It is unconscionable that anyone should attempt to account for the state of the world without paying due attention to that enormous domain which covers changes in mass media, the spread of information and communication technologies, new forms of work and even shifts in education systems.

Let me admit something else: because this book starts from contemporary social science, it is worth warning that some may find at least parts of it difficult to follow. Jürgen Habermas is undeniably challenging, Daniel Bell – outside popularisations of his work – is a sophisticated and complex sociologist who requires a good deal of effort to appreciate, and postmodern thinkers such as Jean Baudrillard are famously (and irritatingly) opaque in expression. So those who are confused will not be alone in this regard. It can be disconcerting for those interested in the information age to encounter what to them can appear rather alien and arcane social theorists. They know that there has been a radical, even a revolutionary, breakthrough in the technological realm and they want, accordingly, a straightforward account of the social and economic consequences of this development. There are paperbacks galore to satisfy this need. 'Theory', especially 'grand theory' which has ambitions to identify the most salient features of contemporary life and which frequently recourses to history and an array of other 'theorists', many of them long dead, does not, and should not, enter into the matter since all it does is confuse and obfuscate.

But I must now assert the value of my 'theoretical' starting point. I *intentionally* approach an understanding of information via encounters with major social theorists by way of a riposte to a rash of pronouncements on the information age. Far too much of this has come from 'practical' men (and a few women) who,

impressed by the 'Information Technology Revolution', or enthused by the Internet, or unable to imagine life without e-mail, or enraptured by bloggers, or captivated by 'virtual reality' experiences that outdo the mundane, have felt able to reel off social and economic consequences that are likely, even inevitably, to follow. In these frames work will be transformed, education upturned, corporate structures revitalised, democracy itself reassessed – all because of the 'information revolution'.

Such approaches have infected – and continue to infect – a vast swathe of opinion on the information society: in paperback books with titles such as *The Mighty Micro*, *The Wired Society*, *Being Digital* and *What Will Be*, in university courses designed to consider the 'social effects of the computer revolution', in countless political and business addresses, and in a scarcely calculable amount of journalism that alerts audiences to prepare for upheaval in all aspects of their lives as a result of the information age.

An aim of approaching information from an alternative starting point, that of contemporary social theory (at least that which is combined with empirical evidence), is to demonstrate that the social *impact* approaches towards information are hopelessly simplistic and positively misleading for those who want to understand what is going on and what is most likely to transpire in the future. Another aim is to show that social theory, combined with empirical evidence, is an enormously richer, and hence ultimately more practical and useful, way of understanding and explaining recent trends in the information domain.

While most of the thinkers I examine in this book address informational trends directly, not all of them do so. Thus, while Daniel Bell and Herbert Schiller, in their very different ways and with commendable prescience, have been insisting for over a generation that information and communication issues are at the heart of post-war changes, there are other thinkers whom I consider, such as Jürgen Habermas and Anthony Giddens, who give less direct attention to the informational domain. I hasten to say that this is neither because they have nothing to contribute to our understanding of information nor because they do not consider it to be important. Rather it is because their terms of debate are different from my focus on the subject of information. For this reason I have felt free to lead off from discussion of, say, Habermas's notion of the public sphere or from consideration of arguments surrounding an alleged shift from Fordism to post-Fordism, before moving towards my interest in informational issues. Since I am not trying to provide a full exposition of particular social theories but rather to try to understand the significance of the information domain with the best tools that are available, this does not seem to me to be illegitimate.

It needs to be said, too, that, throughout this book, there runs an interrogative and sceptical view of the information society concept itself. One or two commentators complained that the earlier editions of *Theories of the Information Society* were so critical of the notion of an information society that there seemed no point in writing a whole book about it. I return to that point in Chapter 10, but state here that it seems appropriate to give close attention to a term that exercises such leverage over current thought, even if one finds it has serious shortcomings. The information society might be misleading, but it can still have

value in a heuristic sense. At the same time, a major problem is that the concept 'information society' often carries with it an array of suppositions about what has and is changing and how change is being effected, yet it is used seemingly unproblematically by a wide section of opinion. Recognition of this encouraged me in my choice of title since it meant at least that people would see instantly, at least in very broad terms, what it was about. Nonetheless, I do hope to shake some of the confidence of those who subscribe to the notion of the arrival of a novel information society in what follows. I shall be contesting the accuracy and appropriateness of the concept in many of its variants, though I do find it useful in some respects. So readers ought to note that, though I am often critical of the term, on occasions I do judge it to be helpful in understanding how we live today.

In my second chapter I subject the concept 'information society' to some scrutiny and, there, readers will come across major definitional problems with the term, but at the outset I would draw attention to a major divide that separates many of the thinkers whom I consider in this book. On the one side are subscribers to the notion of an information society, while on the other are those who insist that we have only had the *informatisation* of established relationships. It will become clear that this is not a mere academic division since the different terminology reveals how one is best to understand what is happening in the informational realm.

It is important to highlight the division of opinion as regards the variable interpretations we shall encounter in what follows. On the one hand, there are those who subscribe to the notion that in recent times we have seen emerge information societies which are marked by their differences from hitherto existing societies. Not all of these are altogether happy with the term 'information society', but in so far as they argue that the present era is special and different, marking a turning point in social development, I think they can be described as its endorsers. On the other hand, there are scholars who, while happy to concede that information has taken on a special significance in the modern era, insist that the central feature of the present is its continuities with the past.

The difference between information society theorists and those who examine informatisation as a subordinate feature of established social systems can be one of degree, with thinkers occupying different points along a continuum, but there is undeniably one pole on which the emphasis is on change and another where the stress is on persistence.

In this book I shall be considering various perspectives on 'information' in the contemporary world, discussing thinkers and theories such as Daniel Bell's 'post-industrialism', Jean-François Lyotard on 'postmodernism', and Jürgen Habermas on the 'public sphere'. We shall see that each has a distinct contribution to make towards our understanding of informational developments, whether it is as regards the role of white-collar employees, the undermining of established intellectual thought, the extension of surveillance, the increase in regularisation of daily life, or the weakening of civil society. It is my major purpose to consider and critique these differences of interpretation.

Nonetheless, beyond and between these differences is a line that should not be ignored: the separation between those who endorse the idea of an

information society and those who regard informatisation as the continuation of pre-established relations. Towards one wing we may position those who proclaim a new sort of society that has emerged from the old. Drawn to this side are theorists of:

- *post-industrialism* (Daniel Bell and a legion of followers)
- *postmodernism* (e.g. Jean Baudrillard, Mark Poster, Paul Virilio)
- *flexible specialisation* (e.g. Michael Piore and Charles Sabel, Larry Hirschhorn)
- *the informational mode of development* (Manuel Castells)

On the other side are writers who place emphasis on continuities. I would include here theorists of:

- *neo-Marxism* (e.g. Herbert Schiller)
- *Regulation Theory* (e.g. Michel Aglietta, Alain Lipietz)
- *flexible accumulation* (David Harvey)
- *reflexive modernisation* (Anthony Giddens)
- *the public sphere* (Jürgen Habermas, Nicholas Garnham)

None of the latter denies that information is of key importance to the modern world, but unlike the former they argue that its form and function are subordinate to long-established principles and practices. As they progress through this book, readers will have the chance to decide which approaches they find most persuasive.

CHAPTER TWO

What is an information society?

If we are to appreciate different approaches to understanding informational trends and issues nowadays, we need to pay attention to the definitions that are brought into play by participants in the debates. It is especially helpful to examine at the outset what those who refer to an information society mean when they evoke this term. The insistence of those who subscribe to this concept, and their assertion that our time is one marked by its novelty, cries out for analysis, more urgently perhaps than those scenarios which contend that the status quo remains. Hence the primary aim of this chapter is to ask: what do people mean when they refer to an 'information society'? Later I comment on the different ways in which contributors perceive 'information' itself. As we shall see – here, in the very conception of the phenomenon which underlies all discussion – there are distinctions which echo the divide between information society theorists who announce the novelty of the present and informatisation thinkers who recognise the force of the past weighing on today's developments.

Definitions of the information society

What strikes one in reading the literature on the information society is that so many writers operate with undeveloped definitions of their subject. It seems so obvious to them that we live in an information society that they blithely presume it is not necessary to clarify precisely what they mean by the concept. They write copiously about particular features of the information society, but are curiously vague about their operational criteria. Eager to make sense of changes in information, they rush to interpret these in terms of different forms of economic production, new forms of social interaction, innovative processes of production or whatever. As they do so, however, they often fail to establish in what ways and why information is becoming more central today, so critical indeed that it is ushering in a new type of society. Just what is it about information that makes so many scholars think that it is at the core of the modern age?

I think it is possible to distinguish five definitions of an information society, each of which presents criteria for identifying the new. These are:

1 technological
2 economic

3 occupational
4 spatial
5 cultural

These need not be mutually exclusive, though theorists emphasise one or other factors in presenting their particular scenarios. However, what these definitions share is the conviction that quantitative changes in information are bringing into being a qualitatively new sort of social system, the information society. In this way each definition reasons in much the same way: there is more information nowadays, therefore we have an information society. As we shall see, there are serious difficulties with this *ex post facto* reasoning that argues a cause from a conclusion.

There is a sixth definition of an information society which is distinctive in so far as its main claim is not that there is more information today (there obviously is), but rather that the character of information is such as to have transformed how we live. The suggestion here is that *theoretical knowledge/information* is at the core of how we conduct ourselves these days. This definition, one that is singularly qualitative in kind, is not favoured by most information society proponents, though I find it the most persuasive argument for the appropriateness of the information society label. Let us look more closely at these definitions in turn.

Technological

Technological conceptions centre on an array of innovations that have appeared since the late 1970s. New technologies are one of the most visible indicators of new times, and accordingly are frequently taken to signal the coming of an information society. These include cable and satellite television, computer-to-computer communications, personal computers (PCs), new office technologies, notably online information services and word processors, and cognate facilities. The suggestion is, simply, that such a volume of technological innovations must lead to a reconstitution of the social world because its impact is so profound.

It is possible to identify two periods during which the claim was made that new technologies were of such consequence that they were thought to be bringing about systemic social change. During the first, the late 1970s and early 1980s, commentators became excited about the 'mighty micro's' capacity to revolutionise our way of life (Evans, 1979; Martin, 1978), and none more so than the world's leading futurist, Alvin Toffler (1980). His suggestion, in a memorable metaphor, is that, over time, the world has been decisively shaped by three *waves* of technological innovation, each as unstoppable as the mightiest tidal force. The first was the agricultural revolution and the second the Industrial Revolution. The third is the information revolution that is engulfing us now and which presages a new way of living (which, attests Toffler, will turn out fine if only we ride the wave).

The second phase is more recent. Since the mid-1990s many commentators have come to believe that the merging of information and communications

technologies (ICTs) is of such consequence that we are being ushered into a new sort of society. Computer communications (e-mail, data and text communications, online information exchange, etc.) currently inspire most speculation about a new society in the making (Negroponte, 1995; Gates, 1995; Dertouzos, 1997). The rapid growth of the Internet especially, with its capacities for simultaneously promoting economic success, education and the democratic process, has stimulated much commentary. Media regularly feature accounts of the arrival of an information 'superhighway' on which the populace must become adept at driving. Authoritative voices are raised to announce that 'a new order . . . is being forced upon an unsuspecting world by advances in telecommunications. The future is being born in the so-called *information superhighways* . . . [and] anyone bypassed by these highways faces ruin' (Angell, 1995, p. 10). In such accounts a great deal is made of the rapid adoption of Internet technologies, especially those that are broadband-based since this technology can be always on without interrupting normal telephony, though on the horizon is wireless connection whereby the mobile phone becomes the connector to the Internet, something that excites those who foresee a world of 'placeless connectivity'– anywhere, anytime, always the user is 'in touch' with the network. Accordingly, data is collected on Internet take-up across nations, with the heaviest users and earliest adopters such as Finland, South Korea and the United States regarded as more of information societies than laggards such as Greece, Mexico and Kenya. In the UK by summer 2005 almost six out of ten households could access the Internet (http://www.statistics.gov. uk/CCI/nugget.asp?ID=8&POS=1&COIR), putting it several points behind leading nations such as Denmark and Sweden that had 80 per cent household connectivity, but still far ahead of most countries (http://europa.eu.int/rapid/pressReleasesAction.do?referenec=STAT/05/143). The spread of national, international and genuinely global information exchanges between and within banks, corporations, governments, universities and voluntary bodies indicates a similar trend towards the establishment of a technological infrastructure that allows instant computer communications at any time of day in any place that is suitably equipped (Connors, 1993).

Most academic analysts, while avoiding the exaggerated language of futurists and politicians, have nonetheless adopted what is at root a similar approach (Feather, 1998; Hill, 1999). For instance, from Japan there have been attempts to measure the growth of Joho Shakai (information society) since the 1960s (Duff *et al.*, 1996). The Japanese Ministry of Posts and Telecommunications (MPT) commenced a census in 1975 which endeavours to track changes in the volume (e.g. numbers of telephone messages) and vehicles (e.g. penetration of telecommunications equipment) of information using sophisticated techniques (Ito, 1991, 1994). In Britain, a much respected school of thought has devised a neo-Schumpeterian approach to change. Combining Schumpeter's argument that major technological innovations bring about 'creative destruction' with Kondratieff's theme of 'long waves' of economic development, these researchers contend that information and communications technologies represent the establishment of a new epoch (Freeman, 1987) which will be uncomfortable during its earlier phases, but over the longer term will be economically beneficial. This new

'techno-economic paradigm' constitutes the 'Information Age' which is set to mature early in this century (Hall and Preston, 1988; Preston, 2001).

It has to be conceded that, commonsensically, these definitions of the information society do seem appropriate. After all, if it is possible to see a 'series of inventions' (Landes, 1969) – steam power, the internal combustion engine, electricity, the flying shuttle – as the key characteristic of the 'industrial society', then why not accept the virtuoso developments in ICT as evidence of a new type of society? As John Naisbitt (1984) puts it: 'Computer technology is to the information age what mechanization was to the Industrial Revolution' (p. 28). And why not?

It may seem obvious that these technologies are valid as distinguishing features of a new society, but when one probes further one cannot but be struck also by the vagueness of technology in most of these comments. Asking simply for a usable measure – In *this* society *now* how much ICT is there and how far does this take us towards qualifying for information society status? How much ICT is required in order to identify an information society? – one quickly becomes aware that a good many of those who emphasise technology are not able to provide us with anything so mundanely real-worldly or testable. ICTs, it begins to appear, are everywhere – and nowhere, too.

This problem of measurement, and the associated difficulty of stipulating the point on the technological scale at which a society is judged to have entered an information age, is surely central to any acceptable definition of a distinctively new type of society. It is generally ignored by information society devotees: the new technologies are announced, and it is presumed that this in itself heralds the information society. This issue is, surprisingly, also bypassed by other scholars who yet assert that ICT is the major index of an information society. They are content to describe in general terms technological innovations, somehow presuming that this is enough to distinguish the new society.

Let me state this baldly: Is an information society one in which everyone has a PC? If so, is this to be a PC of a specified capability? Or is it to be a networked computer rather than a stand-alone? Or is it more appropriate to take as an index the uptake of iPods or BlackBerries? Is it when just about everyone gets a digital television? Or is individual adoption of such technologies of secondary significance, the key measure being organisational incorporation of ICTs? Is the really telling measure institutional adoption as opposed to individual ownership? Asking these questions one becomes conscious that a technological definition of the information society is not at all straightforward, however self-evident such definitions initially appear. It behoves those who proclaim adoption of ICTs to be the distinguishing feature of an information society to be precise about what they mean.

Another objection to technological definitions of the information society is very frequently made. Critics object to those who assert that, in a given era, technologies are first invented and then subsequently *impact* on the society, thereby impelling people to respond by adjusting to the new. Technology in these versions is privileged above all else, hence it comes to identify an entire social world: the Steam Age, the Age of the Automobile, the Atomic Age (Dickson, 1974).

The central objection here is not that this is unavoidably technologically determinist – in that technology is regarded as the prime social dynamic – and as such an oversimplification of processes of change. It most certainly is this, but more important is that it relegates into an entirely separate division social, economic and political dimensions of technological innovation. These follow from, and are subordinate to, the premier force of technology that appears to be self-perpetuating, though it leaves its impress on all aspects of society. Technology in this imagination comes from *outside* society as an invasive element, without contact with the social in its development, yet it has enormous social consequences when it *impacts* on society.

But it is demonstratively the case that technology is not aloof from the social realm in this way. On the contrary, it is an integral part of the social. For instance, research-and-development decisions express priorities, and from these value judgements particular types of technology are produced (e.g. military projects received substantially more funding than health work for much of the time in the twentieth century – not surprisingly a consequence is state-of-the-art weapon systems which dwarf the advances of treatment of, say, the common cold). Many studies have shown how technologies bear the impress of social values, whether it be in the architectural design of bridges in New York, where allegedly heights were set that would prevent public transit systems accessing certain areas that could remain the preserve of private car owners; or the manufacture of cars which testify to the values of private ownership, presumptions about family size (typically two adults, two children), attitudes towards the environment (profligate use of non-renewable energy alongside pollution), status symbols (the Porsche, the Beetle, the Skoda), and individual rather than public forms of transit; or the construction of houses which are not just places to live, but also expressions of ways of life, prestige and power relations, and preferences for a variety of lifestyles. This being so, how can it be acceptable to take what is regarded as an asocial phenomenon (technology) and assert that this then defines the social world? It is facile (one could as well take any elemental factor and ascribe society with its name – the Oxygen Society, the Water Society, the Potato Age) and it is false (technology is in truth an intrinsic part of society) and therefore ICT's separate and supreme role in social change is dubious.

Economic

This approach charts the growth in economic worth of informational activities. If one is able to plot an increase in the proportion of gross national product (GNP) accounted for by the information business, then logically there comes a point at which one may declare the achievement of an information economy. Once the greater part of economic activity is taken up by information activity rather than, say, subsistence agriculture or industrial manufacture, it follows that we may speak of an information society (Jonscher, 1999).

In principle straightforward, but in practice an extraordinarily complex exercise, much of the pioneering work was done by the late Fritz Machlup (1902–83)

of Princeton University (Machlup, 1962). His identification of information industries such as education, law, publishing, media and computer manufacture, and his attempt to estimate their changing economic worth, has been refined by Marc Porat (1977b).

Porat distinguished the primary and secondary information sectors of the economy. The primary sector is susceptible to ready economic valuation since it has an ascribable market price, while the secondary sector, harder to price but nonetheless essential to all modern-day organisation, involves informational activities within companies and state institutions (for example, the personnel wings of a company, the research and development [R&D] sections of a business). In this way Porat is able to distinguish the two informational sectors, then to consolidate them, separate the non-informational elements of the economy, and, by reaggregrating national economic statistics, conclude that, with almost half the United States GNP accounted for by these combined informational sectors, 'the United States is now an information-based economy'. As such it is an 'Information Society [where] the major arenas of economic activity are the information goods and service producers, and the public and private (secondary information sector) bureaucracies' (Porat, 1978, p. 32).

This quantification of the economic significance of information is an impressive achievement. It is not surprising that those convinced of the emergence of an information society have routinely turned to Machlup and especially to Porat as authoritative demonstrations of a rising curve of information activity, one set to lead the way to a new age. However, there are difficulties, too, with the economics-of-information approach (Monk, 1989, pp. 39–63). A major one is that behind the weighty statistical tables there is a great deal of interpretation and value judgement as to how to construct categories and what to include and exclude from the information sector.

In this regard what is particularly striking is that, in spite of their differences, both Machlup and Porat create encompassing categories of the information sector which exaggerate its economic worth. There are reasons to query their validity. For example, Machlup includes in his 'knowledge industries' the 'construction of information buildings', the basis for which presumably is that building for, say, a university or a library is different from that intended for the warehousing of tea and coffee. But how, then, is one to allocate the many buildings which, once constructed, change purpose (many university departments are located in erstwhile domestic houses, and some lecture rooms are in converted warehouses)?

Again, Porat is at some pains to identify the 'quasi-firm' embedded within a non-informational enterprise. But is it acceptable, from the correct assumption that R&D in a petrochemical company involves informational activity, to separate this from the manufacturing element for statistical purposes? It is surely likely that the activities are blurred, with the R&D section intimately tied to production wings, and any separation for mathematical reasons is unfaithful to its role. More generally, when Porat examines his 'secondary information sector' he in fact splits every industry into the informational and non-informational domains. But such divisions between the 'thinking' and the 'doing' are extraordinarily hard to accept. Where does one put operation of computer numerical control systems or the

line-management functions which are an integral element of production? The objection here is that Porat divides, somewhat arbitrarily, within industries to chart the 'secondary information sector' as opposed to the 'non-informational' realm. Such objections may not invalidate the findings of Machlup and Porat, but they are a reminder of the unavoidable intrusion of value judgements in the construction of their statistical tables. As such they support scepticism as regards the idea of an emergent information economy.

Another difficulty is that the aggregated data inevitably homogenise very disparate economic activities. In the round it may be possible to say that growth in the economic worth of advertising and television is indicative of an information society, but one is left with an urge to distinguish between informational activities on qualitative grounds. The enthusiasm of the information economists to put a price tag on everything has the unfortunate consequence of failing to let us know the really valuable dimensions of the information sector. This search to differentiate between quantitative and qualitative indices of an information society is not pursued by Machlup and Porat, though it is obvious that the multi-million sales of *The Sun* newspaper cannot be equated with – still less be regarded as more informational, though doubtless it is of more economic value – the 400,000 circulation of the *Financial Times*. It is a distinction to which I shall return, but one which suggests the possibility that we could have a society in which, as measured by GNP, informational activity is of great weight but in terms of the springs of economic, social and political life is of little consequence – a nation of couch potatoes and Disney-style pleasure-seekers consuming images night and day?

Occupational

This is the approach most favoured by sociologists. It is also one closely associated with the work of Daniel Bell (1973), who is the most important theorist of 'post-industrial society' (a term synonymous with 'information society', and used as such in Bell's own writing). Here the occupational structure is examined over time and patterns of change observed. The suggestion is that we have achieved an information society when the preponderance of occupations is found in information work. The decline of manufacturing employment and the rise of service sector employment is interpreted as the loss of manual jobs and its replacement with white-collar work. Since the raw material of non-manual labour is information (as opposed to the brawn and dexterity plus machinery characteristic of manual labour), substantial increases in such informational work can be said to announce the arrival of an information society.

There is prima facie evidence for this: in Western Europe, Japan and North America over 70 per cent of the workforce is now found in the service sector of the economy, and white-collar occupations are now a majority. On these grounds alone it would seem plausible to argue that we inhabit an information society, since the 'predominant group [of occupations] consists of information workers' (Bell, 1979, p. 183).

An emphasis on occupational change as the marker of an information society has gone some way towards displacing once dominant concerns with technology. This conception of the information society is quite different from that which suggests it is information and communications *technologies* which distinguish the new age. A focus on occupational change is one which stresses the transformative power of information itself rather than that of technologies, information being what is drawn upon and generated in occupations or embodied in people through their education and experiences. Charles Leadbeater (1999) titled his book to highlight the insight that it is information which is foundational in the present epoch. 'Living on thin air' was once a familiar admonition given by the worldly wise to those reluctant to earn a living by the sweat of their brow, but all such advice is now outdated; Leadbeater argues that this is exactly how to make one's livelihood in the information age. *Living on Thin Air* (1999) proclaims that 'thinking smart', being 'inventive', and having the capacity to develop and exploit 'networks' is actually the key to the new 'weightless' economy (Coyne, 1997; Dertouzos, 1997), since wealth production comes, not from physical effort, but from 'ideas, knowledge, skills, talent and creativity' (Leadbeater, 1999, p. 18). His book highlights examples of such successes: designers, deal-makers, image-creators, musicians, biotechnologists, genetic engineers and niche-finders abound.

Leadbeater puts into popular parlance what more scholarly thinkers argue as a matter of course. A range of influential writers, from Robert Reich (1991), to Peter Drucker (1993), to Manuel Castells (1996–8), suggest that the economy today is led and energised by people whose major characteristic is the capacity to manipulate information. Preferred terms vary, from 'symbolic analysts', to 'knowledge experts', to 'informational labour', but one message is constant: today's movers and shakers are those whose work involves creating and using information.

Intuitively it may seem right that a coal miner is to industrial as a tour guide is to information society, but in fact the allocation of occupations to these distinct categories is a judgement call that involves much discretion. The end product – a bald statistical figure giving a precise percentage of 'information workers' – hides the complex processes by which researchers construct their categories and allocate people to one or another. As Porat puts it: when 'we assert that certain occupations are primarily engaged in the manipulation of symbols. . . . It is a distinction of degree, not of kind' (Porat, 1977a, p. 3). For example, railway signal workers must have a stock of knowledge about tracks and timetables, about roles and routines; they need to communicate with other signal workers down the line, with station personnel and engine drivers; they are required to 'know the block' of their own and other cabins, must keep a precise and comprehensive ledger of all traffic which moves through their area; and they have little need of physical strength to pull levers since the advent of modern equipment (Strangleman, 2004). Yet the railway signaller is, doubtless, a manual worker of the 'industrial age'. Conversely, people who come to repair the photocopier may know little about products other than the one for which they have been trained, may well have to work in hot, dirty and uncomfortable circumstances, and may need considerable strength to move machinery and replace damaged parts. Yet they will undoubtedly be classified as 'information workers' since their work with New

Age machinery suits Porat's interpretations. The point here is simple: we need to be sceptical of conclusive figures which are the outcome of researchers' perceptions of where occupations are to be most appropriately categorised.

A consequence of this categorisation is often a failure to identify the more strategically central information occupations. While the methodology may provide us with a picture of greater amounts of information work taking place, it does not offer any means of differentiating the most important dimensions of information work. The pursuit of a quantitative measure of information work disguises the possibility that the growth of certain types of information occupation may have particularly important consequences for social life. This distinction is especially pertinent as regards occupational measures since some commentators seek to characterise an information society in terms of the 'primacy of the professions' (Bell, 1973), some as the rise to prominence of an elite 'technostructure' which wields 'organised knowledge' (Galbraith, 1972), while still others focus on alternative sources of strategically central information occupations. Counting the number of 'information workers' in a society tells us nothing about the hierarchies – and associated variations in power and esteem – of these people. For example, it could be argued that the crucial issue has been the growth of computing and telecommunications engineers since these may exercise a decisive influence over the pace of technological innovation. Or one might suggest that an expansion of scientific researchers is the critical category of information work since they are the most important factor in bringing about innovation. Conversely, a greater rate of expansion in social workers to handle problems of an ageing population, increased family dislocation and juvenile delinquency may have little to do with an information society, though undoubtedly social workers would be classified with ICT engineers as 'information workers'.

We can better understand this need to distinguish qualitatively between groups of 'information workers' by reflecting on a study by social historian Harold Perkin. In *The Rise of Professional Society* (1989) Perkin argues that the history of Britain since 1880 may be written largely as the rise to pre-eminence of 'professionals' who rule by virtue of 'human capital created by education and enhanced by . . . the exclusion of the unqualified' (p. 2). Perkin contends that certified expertise has been 'the organising principle of post-war society' (p. 406), the expert displacing once-dominant groups (working-class organisations, capitalist entrepreneurs and the landed aristocracy) and their outdated ideals (of co-operation and solidarity, of property and the market, and of the paternal gentleman) with the professional's ethos of service, certification and efficiency. To be sure, professionals within the private sector argue fiercely with those in the public, but Perkin insists that this is an internecine struggle, one within 'professional society', which decisively excludes the non-expert from serious participation and shares fundamental assumptions (notably the primacy of trained expertise and reward based on merit).

Alvin Gouldner's discussion of the 'new class' provides an interesting complement to Perkin's. Gouldner identifies a new type of employee that expanded in the twentieth century, a 'new class' that is 'composed of intellectuals and technical intelligentsia' (Gouldner, 1978, p. 153) which, while in part self-seeking and

often subordinate to powerful groups, can also contest the control of established business and party leaders. Despite these potential powers, the 'new class' is itself divided in various ways. A key division is between those who are for the most part technocratic and conformist and the humanist intellectuals who are critical and emancipatory in orientation. To a large extent this difference is expressed in the conflicts identified by Harold Perkin between private and public sector professionals. For instance, we may find that accountants in the private sector are conservative while there is a propensity for humanistic intellectuals to be more radical.

My point here is that both Gouldner and Perkin are identifying particular changes within the realm of information work which have especially important consequences for society as a whole. To Gouldner the 'new class' can provide us with vocabularies to discuss and debate the direction of social change, while to Perkin the professionals create new ideals for organising social affairs. If one is searching for an index of the information society in these thinkers, one will be directed to the quality of the contribution of certain groups. Whether one agrees or not with either of these interpretations, the challenge to definitions of an information society on the basis of a count of raw numbers of 'information workers' should be clear. To thinkers such as Perkin and Gouldner, the quantitative change is not the main issue. Indeed, as a proportion of the population the groups they lay emphasis upon, while they have expanded, remain distinct minorities.

Spatial

This conception of the information society, while it does draw on economics and sociology, has at its core the geographer's stress on space. Here the major emphasis is on information networks which connect locations and in consequence can have profound effects on the organisation of time and space. It has become an especially popular index of the information society in recent years as information networks have become prominent features of social organisation.

It is usual to stress the centrality of information networks that may link different locations within and between an office, a town, a region, a continent – indeed, the entire world. As the electricity grid runs through an entire country to be accessed at will by individuals with the appropriate connections, so, too, may we imagine now a 'wired society' operating at the national, international and global level to provide an 'information ring main' (Barron and Curnow, 1979) to each home, shop, university and office – and even to mobile individuals who have their laptop and modem in their briefcase.

Increasingly we are all connected to networks of one sort or another – and networks themselves are expanding their reach and capabilities in an exponential manner (Urry, 2000). We come across them personally at many levels: in electronic point-of-sale terminals in shops and restaurants, in accessing data across continents, in e-mailing colleagues, or in exchanging information on the Internet. We may not personally have experienced this realm of 'cyberspace', but the information ring main functions still more frantically at the level of international banks, intergovernmental agencies and corporate relationships.

A popular idea here is that the electronic highways result in a new emphasis on the flows of information (Castells, 1996), something which leads to a radical revision of time–space relations. In a 'network society' constraints of the clock and of distance have been radically relieved, the corporations and even the individual being capable of managing their affairs effectively on a global scale. Academic researchers no longer need to travel from the university to consult the Library of Congress since they can interrogate it on the Internet; the business corporation no longer needs routinely to fly out its managers to find out what is happening in their Far East outlets because computer communications enable systematic surveillance from afar. The suggestion of many is that this heralds a major transformation of our social order (Mulgan, 1991), sufficient to mark even a revolutionary change.

No one could deny that information networks are an important feature of contemporary societies: satellites do allow instantaneous communications round the globe, databases can be accessed from Oxford to Los Angeles, Tokyo and Paris, facsimile machines and interconnected computer systems are a routine part of modern businesses. News coverage nowadays can be almost immediate, the laptop computer and the satellite videophone allowing transmission from even the most isolated regions. Individuals may now connect with others to continue real-time relationships without physically coming together (Wellman, 2001; http://www.chass.utoronto.ca/~wellman). Yet we may still ask: why should the presence of networks lead analysts to categorise societies as information societies? And when we ask this we encounter once again the problem of the imprecision of definitions. For instance, when is a network a network? Two people speaking to one another by telephone or computer systems transmitting vast data sets through a packet-switching exchange? When an office block is 'wired' or when terminals in the home can communicate with local banks and shops? The question of what actually constitutes a network is a serious one and it raises problems not only of how to distinguish between different levels of networking, but also of how we stipulate a point at which we have entered a 'network/information society'.

It also raises the issue of whether we are using a technological definition of the information society – i.e. are networks being defined as technological systems? – or whether a more appropriate focus would be on the flow of information which for some writers is what distinguishes the present age. If it is a technological definition, then we could take the spread of ISDN (integrated services digital network) technologies as an index, but few scholars offer any guidance as to how to do this. And if it is on the flow of information, then it may reasonably be asked how much and why more volume and velocity of information flow should mark a new society.

Finally, one could argue that information networks have been around for a very long time. From at least the early days of the postal service, through to telegram and telephone facilities, much economic, social and political life is unthinkable without the establishment of such information networks. Given this long-term dependency and incremental, if accelerated, development, why should it be that only now have commentators begun to talk in terms of information societies?

Cultural

The final conception of an information society is perhaps the most easily acknowledged, yet the least measured. Each of us is aware, from the pattern of our everyday lives, that there has been an extraordinary increase in the information in social circulation. There is simply a great deal more of it about than ever before. Television has been in extensive use since the mid-1950s in Britain, but now its programming is pretty well round-the-clock. It has expanded from a single channel to five broadcast channels, and continuing digitalisation promises very many more. Television has been enhanced to incorporate video technologies, cable and satellite channels, and even computerised information services. PCs, access to the Internet and the palm-held computer testify to unrelenting expansion here. There is very much more radio output available now than even a decade ago, at local, national and international level. And radios are no longer fixed in the front room, but spread through the home, in the car, the office and, with the Walkman and iPod, everywhere. Movies have long been an important part of people's information environment, but movies are today very much more prevalent than ever: available still at cinema outlets, broadcast on television, readily borrowed from rental shops, cheaply purchased from the shelves of chain stores. Walk along any street and it is almost impossible to miss the advertising hoardings and the window displays in shops. Visit any railway or bus station and one cannot but be struck by the widespread availability of paperback books and inexpensive magazines. In addition, audio-tape, compact disc and radio all offer more, and more readily available, music, poetry, drama, humour and education to the public. Newspapers are extensively available, and a good many new titles fall on our doorsteps as free sheets. Junk mail is delivered daily.

All such testifies to the fact that we inhabit a media-laden society, but the informational features of our world are more thoroughly penetrative than this list suggests. It implies that new media surround us, presenting us with messages to which we may or may not respond. But in truth the informational environment is a great deal more intimate, more constitutive of us, than this suggests. Consider, for example, the informational dimensions of the clothes we wear, the styling of our hair and faces, the very ways in which nowadays we work at our image. Reflection on the complexities of fashion, the intricacy of the ways in which we design ourselves for everyday presentation, makes one aware that social intercourse nowadays involves a greater degree of informational content than previously. There has long been adornment of the body, clothing and make-up being important ways of signalling status, power and affiliation. But it is obvious that the present age has dramatically heightened the symbolic import of dress and the body. When one considers the lack of range of meaning that characterised the peasant smock which was the apparel of the majority for centuries, and the uniformity of the clothing worn by the industrial working class in and out of work up to the 1950s, then the explosion of meaning in terms of dress since is remarkable. The availability of cheap and fashionable clothing, the possibilities of affording it, and the accessibility of any amount of groups with similar – and

different – lifestyles and cultures all make one appreciate the informational content even of our bodies.

Contemporary culture is manifestly more heavily information-laden than its predecessors. We exist in a media-saturated environment which means that life is quintessentially about symbolisation, about exchanging and receiving – or trying to exchange and resisting reception – messages about ourselves and others. It is in acknowledgement of this explosion of signification that many writers conceive of our having entered an information society. They rarely attempt to gauge this development in quantitative terms, but rather start from the 'obviousness' of our living in a sea of signs, one fuller than at any earlier epoch.

Paradoxically, it is perhaps this very explosion of information which leads some writers to announce, as it were, the death of the sign. Blitzed by signs all around us, designing ourselves with signs, unable to escape signs wherever we may go, the result is, oddly, a collapse of meaning. As Jean Baudrillard once put it: 'there is more and more information, and less and less meaning' (1983a, p. 95). In this view signs once had a reference (clothes, for example, signified a given status, the political statement a distinct philosophy). However, in the post-modern era we are enmeshed in such a bewildering web of signs that they lose their salience. Signs come from so many directions, and are so diverse, fast-changing and contradictory, that their power to signify is dimmed. Instead they are chaotic and confusing. In addition, audiences are creative, self-aware and reflective, so much so that all signs are greeted with scepticism and a quizzical eye, hence easily inverted, reinterpreted and refracted from their intended meaning. Further, as people's knowledge through direct experience declines, it becomes increasingly evident that signs are no longer straightforwardly representative of something or someone. The notion that signs represent some 'reality' apart from themselves loses credibility. Rather signs are self-referential: they – simulations – are all there is. They are, again to use Baudrillard's terminology, the 'hyper-reality'.

People appreciate this situation readily enough: they deride the poseur who is dressing for effect, but acknowledge that it's all artifice anyway; they are sceptical of politicians who 'manage' the media and their image through adroit public relations (PR), but accept that the whole affair is a matter of information management and manipulation. Here it is conceded that people do not hunger for any true signs because they recognise that there are no longer any truths. In these terms we have entered an age of 'spectacle' in which people realise the artificiality of signs they may be sent ('it's only the Prime Minister at his latest photo opportunity', 'it's news manufacture', 'it's Jack playing the tough guy') and in which they also acknowledge the inauthenticity of the signs they use to construct themselves ('I'll just put on my face', 'there I was adopting the "worried parent" role').

As a result signs lose their meaning and people simply take what they like from those they encounter (usually very different meanings from what may have been intended at the outset). And then, in putting together signs for their homes, work and selves, happily revel in their artificiality, 'playfully' mixing different images to present no distinct meaning, but instead to derive 'pleasure' in parody

or pastiche. In this information society we have, then, 'a set of meanings [which] is communicated [but which] have no meaning' (Poster, 1990, p. 63).

Experientially this idea of an information society is easily enough recognised, but as a definition of a new society it is more wayward than any of the notions we have considered. Given the absence of criteria we might use to measure the growth of signification in recent years it is difficult to see how students of postmodernism such as Mark Poster (1990) can depict the present as one characterised by a novel 'mode of information'. How can we know this other than from our sense that there is more symbolic interplay going on? And on what basis can we distinguish this society from, say, that of the 1920s, other than purely as a matter of degree of difference? As we shall see (Chapter 9), those who reflect on the 'postmodern condition' have interesting things to say about the character of contemporary culture, but as regards establishing a clear definition of the information society they are woeful.

Quality and quantity

Reviewing these varying definitions of the information society, what becomes clear is that they are either underdeveloped or imprecise or both. Whether it is a technological, economic, occupational, spatial or cultural conception, we are left with highly problematical notions of what constitutes, and how to distinguish, an information society.

It is important that we remain aware of these difficulties. Though as a heuristic device the term 'information society' is valuable in exploring features of the contemporary world, it is too inexact to be acceptable as a definitive term. For this reason, throughout this book, though I shall on occasion use the concept and acknowledge that information plays a critical role in the present age, I express suspicion as regards information society scenarios and remain sceptical of the view that information has become the major distinguishing feature of our times.

For the moment, however, I want to raise some further difficulties with the language of the information society. The first problem concerns the quantitative versus qualitative measures to which I have already alluded. My earlier concern was chiefly that quantitative approaches failed to distinguish more strategically significant information activity from that which was routine and low level and that this homogenisation was misleading. It seems absurd to conflate, for example, the office administrator and the chief executive. Just as it is to equate pulp fiction and research monographs. Here I want to raise the quality–quantity issue again in so far as it bears upon the question of whether the information society marks a break with previous sorts of society.

Most definitions of the information society offer a quantitative measure (numbers of white-collar workers, percentage of GNP devoted to information, etc.) and assume that, at some unspecified point, we enter an information society when this begins to predominate. But there are no clear grounds for designating as a new type of society one in which all we witness is greater quantities of

information in circulation and storage. If there is just more information, then it is hard to understand why anyone should suggest that we have before us something radically new.

Against this, however, it may be feasible to describe as a new sort of society one in which it is possible to locate information of a qualitatively different order and function. Moreover, this does not even require that we discover that a majority of the workforce is engaged in information occupations or that the economy generates a specified sum from informational activity. For example, it is theoretically possible to imagine an information society where only a small minority of 'information experts' hold decisive power. One need look only to the science fiction of H. G. Wells (1866–1946) to conceive of a society in which a knowledge elite predominates and the majority, surplus to economic requirement, are condemned to drone-like unemployment. On a quantitative measure – say, of occupational patterns – this would not qualify for information society status, but we could feel impelled so to designate it because of the decisive role of information/knowledge to the power structure and direction of social change.

The point is that quantitative measures – simply more information – cannot of themselves identify a break with previous systems, while it is at least theoretically possible to regard small but decisive qualitative changes as marking a system break. After all, just because there are many more automobiles today than in 1970 does not qualify us to speak of a 'car society'. But it is a *systemic* change which those who write about an information society wish to spotlight, whether it be in the form of Daniel Bell's 'post-industrialism', or in Manuel Castells's 'informational mode of development', or in Mark Poster's 'mode of information'.

This criticism can seem counter-intuitive. So many people insist that ongoing innovation from ICTs has such a palpable presence in our lives that it *must* signal the arrival of an information society. These technologies, runs the argument, are so self-evidently novel and important that they must announce a new epoch. Adopting similar reasoning, that there are so very many more signs around than ever before *must* mean that we are entering a new world. We may better understand flaws in this way of thinking by reflecting for a while upon food.

Readers will agree, I presume, that food is essential to life. A cursory analysis shows that nowadays we have access to quantities and ranges of food of which our forebears – even those of just fifty years gone by – could scarcely have dreamed. Supermarkets, refrigeration and modern transport mean we get access to food in unprecedented ways and on a vastly expanded scale. Food stores today typically have thousands of products, from across the world, and items such as fresh fruits and flowers the year round.

This much is obvious, but what needs to be added is that this food is remarkably cheap by any past comparison. To eat and drink costs us a much smaller proportion of income than it did our parents, let alone our distant ancestors who all had to struggle just to subsist. This surfeit of food today, at vastly reduced real prices, means that, for the first time in human history, just about everyone in affluent nations can choose what they eat – Italian tonight, Indian tomorrow, vegetarian for lunch, Chinese later on and so on. For most of human history people ate what they could get, and this diet was unrelentingly familiar. Today,

owing to a combination of agribusiness, factory farming, automation, genetic engineering, globalisation, agrichemicals and so forth (cf. Lang and Heasman, 2004), each of us has ready access to a bountiful supply at massively reduced cost (so much so that obesity is a major health problem now in the advanced parts of the world). My conclusion is blunt: food is unquestionably vital to our livelihood, as it is to our well-being and sensual experiences, and it has become available recently at enormously reduced costs, yet no one has suggested that we live now in the 'Food Society' and that this marks a systemic break with what went before. Why, one must ask, is information conceived so differently?

What is especially odd is that so many of those who identify an information society as a new type of society do so by presuming that this qualitative change can be defined simply by calculating how much information is in circulation, how many people work in information jobs and so on. The assumption here is that sheer expansion of information results in a new society. Let me agree that a good deal of this increase in information is indispensable to how we live now. No one can seriously suggest, for instance, that we could continue our ways of life without extensive computer communications facilities. However, we must not confuse the indispensability of a phenomenon with a capacity for it to define a social order. Food is a useful counter-example, surely more indispensable to life even than information, though it has not been nominated as the designator of contemporary society. Throughout, what needs to be challenged is the supposition that quantitative increases transform – in unspecified ways – into qualitative changes in the social system.

Theodore Roszak (1986) provides insight into this paradox in his critique of information society themes. His examination emphasises the importance of qualitatively distinguishing information, extending to it what each of us does on an everyday basis when we differentiate between phenomena such as data, knowledge, experience and wisdom. Certainly these are themselves slippery terms – one person's knowledge attainment (let's say graduation degree) can be another's information (let's say the pass rate of a university) – but they are an essential part of our daily lives. In Roszak's view the present 'cult of information' functions to destroy these sorts of qualitative distinction which are the stuff of real life. It does this by insisting that information is a purely quantitative thing subject to statistical measurement. But to achieve calculations of the economic value of the information industries, of the proportion of GNP expended on information activities, the percentage of national income going to the information professions and so on the qualitative dimensions of the subject (is the information useful? is it true or false?) are laid aside. '[F]or the information theorist, it does not matter whether we are transmitting a fact, a judgement, a shallow cliché, a deep teaching, a sublime truth, or a nasty obscenity' (Roszak, 1986, p. 14). These qualitative issues are laid aside as information is homogenised and made amenable to numbering: '[I]nformation comes to be a purely quantitative measure of communicative exchanges' (p. 11).

The astonishing thing to Roszak is that along with this quantitative measure of information comes the assertion that more information is profoundly transforming social life. Having produced awesome statistics on information activity

by blurring the sort of qualitative distinctions we all make in our daily lives, information society theorists then assert that these trends are set to change qualitatively our entire lives. To Roszak this is the mythology of 'information' talk: the term disguises differences, but in putting all information into one big pot, instead of admitting that what we get is insipid soup, the perverse suggestion is that we have an elixir. As he says, this is very useful for those who want the public to accede to change since it seems so uncontentious:

> Information smacks of safe neutrality; it is the simple, helpful heaping up of unassailable facts. In that innocent guise, it is the perfect starting point for a technocratic political agenda that wants as little exposure for its objectives as possible. After all, what can anyone say against information?
>
> (Roszak, 1986, p. 19)

Roszak vigorously contests these ways of thinking about information. A result of a diet of statistic upon statistic about the uptake of computers, the data-processing capacities of new technologies and the creation of digitalised networks is that people come readily to believe that information is the foundation of the social system. There is so much of this that it is tempting to agree with those information society theorists who insist that we have entered an entirely new sort of system. But against this 'more-quantity-of-information-to-new-quality-of-society' argument Theodore Roszak insists that the 'master ideas' (p. 91) which underpin our civilisation are not based upon information at all. Principles such as 'my country right or wrong', 'live and let live', 'we are all God's children' and 'do unto others as you would be done by' are central ideas of our society – but all come *before* information. Roszak is not arguing that these and other 'master ideas' are necessarily correct (in fact a good many are noxious – e.g. 'all Jews are rich', 'all women are submissive', 'blacks have natural athletic ability'). But what he is emphasising is that ideas, and the necessarily qualitative engagement these entail, take precedence over quantitative approaches to information.

It is easy to underestimate the importance of ideas in society. They may appear insubstantial, scarcely significant, when contrasted with matters such as technology, increases in productivity, or trillion-dollar trading in the currency markets. Yet consider, with Roszak in mind, the import of the following idea:

> We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that amongst these are Life, Liberty, and the Pursuit of Happiness.
>
> (Declaration of Independence, 4 July 1776)

These words have echoed round the world, and especially through American history, where the idea that 'all men are created equal' has galvanised and inspired many who have encountered a reality that contrasts with its ideal. Abraham Lincoln recalled them on the field of Gettysburg, after a three-day battle that had cost thousands of lives (and a Civil War which to this day cost more

lives than all US war casualties combined since – some 600,000 men died then). Abraham Lincoln evoked the idea of 1776 to conclude his short speech:

> Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal . . . we here highly resolve that the dead shall not have died in vain; that this nation, under God, shall have a new birth of freedom; and that government of the people, by the people, for the people, shall not perish from the earth.
>
> (Abraham Lincoln, Gettysburg Address, 19 November 1863)

One hundred years later, in Washington at the Lincoln Memorial, Martin Luther King recollected Lincoln's idea. Speaking to a vast crowd of civil rights campaigners, on national television, at a time when black people in America were beaten and even lynched in some states, Luther King proclaimed:

> I have a dream that one day this nation will rise up and live out the true meaning of the creed: 'We hold these truths to be self-evident – that all men are created equal' . . . I have a dream that one day on the red hills of Georgia the sons of former slaves and the sons of former slave owners will be able to sit down together at the table of brotherhood . . . I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character.
>
> (Martin Luther King, address to the March on Washington for Jobs and Freedom, 28 August 1963)

It is hard to imagine a more powerful idea in the modern world than this assertion that 'all men are created equal'. Though a mountain of information can be found that demonstrates that this is not so, Roszak is surely correct to insist that this and similar ideas are more foundational to society than any amount of accumulated information. Accordingly, his objection is that information society theorists reverse this prioritisation at the same time as they smuggle in the (false) idea that more information is fundamentally transforming the society in which we live.

What is information?

Roszak's rejection of statistical measures leads us to consider perhaps the most significant feature of approaches to the information society. We are led here largely because his advocacy is to reintroduce qualitative judgement into discussions of information. Roszak asks questions like: Is more information necessarily making us a better-informed citizenry? Does the availability of more information make us better-informed? What sort of information is being generated and stored and what value is this to the wider society? What sort of information occupations are expanding, why and to what ends?

What is being proposed here is that we insist on examination of the meaning of information. And this is surely a commonsensical understanding of the term. After all, the first definition of information that springs to mind is the *semantic* one: information is meaningful; it has a subject; it is intelligence or instruction about something or someone. If one were to apply this concept of information to an attempt at defining an information society, it would follow that we would be discussing these characteristics of the information. We would be saying that information about *these* sorts of issues, *those* areas, *that* economic process, are what constitutes the new age. However, it is precisely this commonsensical definition of information which the information society theorists jettison. What is in fact abandoned is a notion of information having a semantic content.

The definitions of the information society we have reviewed perceive information in non-meaningful ways. That is, searching for quantitative evidence of the growth of information, a range of thinkers have conceived it in the classic terms of Claude Shannon and Warren Weaver's (1949) information theory. Here a distinctive definition is used, one which is sharply distinguished from the semantic concept in common parlance. In this theory information is a quantity which is measured in 'bits' and defined in terms of the probabilities of occurrence of symbols. It is a definition derived from and useful to the communications engineer whose interest is with the storage and transmission of symbols, the minimum index of which is on/off (yes/no or 0/1).

This approach allows the otherwise vexatious concept of information to be mathematically tractable, but this is at the price of excluding the equally vexing – yet crucial – issue of meaning and, integral to meaning, the question of the information's quality. On an everyday level when we receive or exchange information the prime concerns are its meaning and value: is it significant, accurate, absurd, interesting, adequate or helpful? But in terms of the information theory which underpins so many measures of the explosion of information these dimensions are irrelevant. Here information is defined independent of its content, seen as a physical element as much as is energy or matter. As one of the foremost information society devotees puts it:

> *Information exists*. It does not need to be *perceived* to exist. It does not need to be *understood* to exist. It requires no intelligence to interpret it. It does not have to have *meaning* to exist. It exists.
>
> (Stonier, 1990, p. 21, original emphasis)

In fact, in these terms, two messages, one which is heavily loaded with meaning and the other which is pure nonsense, can be equivalent. As Roszak says, here '*information* has come to denote whatever can be coded for transmission through a channel that connects a source with a receiver, regardless of semantic content' (1986, p. 13). This allows us to quantify information, but at the cost of abandonment of its meaning and quality.

If this definition of information is the one which pertains in technological and spatial approaches to the information society (where the quantities stored, processed and transmitted are indicative of the sort of indices produced), we

come across a similar elision of meaning from economists' definitions. Here it may not be in terms of 'bits', but at the same time the semantic qualities are evacuated and replaced by the common denominator of price (Arrow, 1979). To the information engineer the prime concern is with the number of yes/no symbols, to the information economist it is with their vendability. But, as the economist moves from consideration of the concept of information to its measurement, what is lost is the heterogeneity that springs from its manifold meanings. The 'endeavour to put dollar tags on such things as education, research, and art' (Machlup, 1980, p. 23) unavoidably abandons the semantic qualities of information. Kenneth Boulding observed in the mid-1960s that

> The bit . . . abstracts completely from the content of information . . . and while it is enormously useful for telephone engineers . . . for purposes of the social system theorist we need a measure which takes account of significance and which would weight, for instance, the gossip of a teenager rather low and the communications over the hot line between Moscow and Washington rather high.
>
> (Boulding, 1966)

How odd, then, that economists have responded to the qualitative problem which is the essence of information with a quantitative approach that, reliant on cost and price, is at best 'a kind of qualitative guesswork' (ibid.). 'Valuing the invaluable', to adopt Machlup's terminology, means substituting information content with the measuring rod of money. We are then able to produce impressive statistics, but in the process we have lost the notion that information is *about* something (Maasoumi, 1987).

Finally, though culture is quintessentially about meanings, about how and why people live as they do, it is striking that with the celebration of the non-referential character of symbols by enthusiasts of postmodernism we have a congruence with communications theory and the economic approach to information. Here, too, we have a fascination with the profusion of information, an expansion so prodigious that it has lost its hold semantically. Symbols are now everywhere and generated all of the time, so much so that their meanings have 'imploded', hence ceasing to signify.

What is most noteworthy is that information society theorists, having jettisoned meaning from their concept of information in order to produce quantitative measures of its growth, then conclude that such is its increased economic worth, the scale of its generation, or simply the amount of symbols swirling around, that society must encounter profoundly meaningful change. We have, in other words, the assessment of information in non-social terms – it just *is* – but we must adjust to its social consequences. This is a familiar situation to sociologists who often come across assertions that phenomena are aloof from society in their development (notably technology and science) but carry within them momentous social consequences. It is inadequate as an analysis of social change (Woolgar, 1985).

Doubtless being able to quantify the spread of information in general terms has some uses, but it is certainly not sufficient to convince us that in consequence of an expansion society has profoundly changed. For any genuine appreciation of what an information society is like, and how different – or similar – it is to other social systems, we surely should examine the meaning and quality of the information. What sort of information has increased? Who has generated what kind of information, for what purposes and with what consequences? As we shall see, scholars who start with these sorts of questions, sticking to questions of the meaning and quality of information, are markedly different in their interpretations from those who operate with non-semantic and quantitative measures. The former are sceptical of alleged transitions to a new age. Certainly they accept that there is more information today, but because they refuse to see this outside its content (they always ask: what information?) they are reluctant to agree that its generation has brought about the transition to an information society.

Another way of posing this question is to consider the distinction between *having information* and *being informed*. While being informed requires that one has information, it is a much grander condition than having access to masses of information. Bearing in mind this distinction encourages scepticism towards those who, taken by the prodigious growth of information, seem convinced that this signals a new – and generally superior – epoch. Compare, for instance, nineteenth-century political leaders with those of today. The reading of the former would have been restricted to a few classical philosophers, the Bible and Shakespeare, and their education was often inadequate and brief. Contrasted with George W. Bush (US President 2000–8), who has all the information resources imaginable to hand, thousands of employees sifting and sorting to ensure that there are no unnecessary information gaps, and the advantage of a Princeton education, the likes of Abraham Lincoln (President 1861–5) and George Washington (1789–97) look informationally impoverished. But who would even suggest that these were not at least as well-informed, with all that this conjures regarding understanding and judgement, as the current President of the United States of America?

Theoretical knowledge

There is one other suggestion which can contend that we have an information society, though it has no need to reflect on the meanings of the information so developed. Moreover, this proposition has it that we do not need quantitative measures of information expansion such as occupational expansion or economic growth, because a decisive qualitative change has taken place with regard to the ways in which information is used. Here an information society is defined as one in which theoretical knowledge occupies a pre-eminence which it hitherto lacked. The theme which unites what are rather disparate thinkers is that, in this information society (though the term 'knowledge society' may be preferred, for the obvious reason that it evokes much more than agglomerated bits of information), affairs are organised and arranged in such ways that theory is prioritised. Though this priority of theoretical knowledge gets little treatment in information society

theories, it has a good deal to commend it as a distinguishing feature of contemporary life. In this book I return to it periodically (in Chapters 3, 5 and 8, and in the concluding chapter), so here I need only comment on it briefly.

By theoretical knowledge is meant that which is abstract, generalisable and codified in media of one sort or another. It is abstract in that it is not of direct applicability to a given situation, generalisable in so far as it has relevance beyond particular circumstances, and it is presented in such things as books, articles, television and educational courses. It can be argued that theoretical knowledge has come to play a key role in contemporary society, in marked contrast to earlier epochs when practical and situated knowledge were predominant. If one considers, for instance, the makers of the Industrial Revolution, it is clear that these were what Daniel Bell (1973) has referred to as 'talented tinkerers' who were 'indifferent to science and the fundamental laws underlying their investigations' (p. 20). Abraham Darby's development of the blast furnace, George Stephenson's railway locomotive, James Watt's steam engines, Matthew Boulton's engineering innovations, and any number of other inventions from around 1750 to 1850 were the products of feet-on-the-ground innovators and entrepreneurs, people who faced practical problems to which they reacted with practical solutions. Though by the end of the nineteenth century science-based technologies were shaping the course of industry, it remained the case that just a century ago

> vast areas of human life continued to be ruled by little more than experience, experiment, skill, trained common sense and, at most, the systematic diffusion of knowledge about the best available practices and techniques. This was plainly the case in farming, building and medicine, and indeed over a vast range of activities which supplied human beings with their needs and luxuries.
>
> (Hobsbawm, 1994, p. 525)

In contrast, today innovations start from known principles, most obviously in the realms of science and technology (though these principles may be understood only by a minority of experts). These theoretical principles, entered in texts, are the starting point, for instance, of the genetic advances of the Human Genome Project and of the physics and mathematics which are the foundation of ICTs and associated software. Areas as diverse as aeronautics, plastics, medicine and pharmaceuticals illustrate realms in which theoretical knowledge is fundamental to life today.

One ought not to imagine that theoretical knowledge's primacy is limited to leading-edge innovations. Indeed, it is hard to think of any technological applications in which theory is not a prerequisite of development. For instance, road repair, house construction, sewage disposal or motor car manufacture are each premised on known theoretical principles of material durability, structural laws, toxins, energy consumption and much more. This knowledge is formalised in texts and transmitted especially through the educational process which, through specialisation, means that most people are ignorant of the theoretical knowledge outside their own expertise. Nonetheless, no one today can be unaware of the

profound importance of this theory for what one might conceive as everyday technologies such as microwave ovens, compact disc players and digital clocks. It is correct, of course, to perceive the architect, the water engineer and the mechanic to be practical people. Indeed they are: but one ought not to overlook the fact that theoretical knowledge has been learned by these practitioners and in turn integrated into their practical work (and often supplemented by smart technologies of testing, measurement and design which have incorporated theoretical knowledge).

The primacy of theoretical knowledge nowadays reaches far beyond science and technology. Consider, for instance, politics, and one may appreciate that theoretical knowledge is at the core of much policy and debate. To be sure, politics is the 'art of the possible', and it must be able to respond to contingencies, yet, wherever one looks, be it transport, environment or the economy, one encounters a central role ascribed to theory (cost–benefit analysis models, concepts of environmental sustainability, theses on the relationship between inflation and employment). In all such areas criteria which distinguish theoretical knowledge (abstraction, generalisability, codification) are satisfied. This theoretical knowledge may lack the law-like character of nuclear physics or biochemistry, but it does operate on similar grounds, and it is hard to deny that it permeates wide areas of contemporary life.

Indeed, a case can be made that theoretical knowledge enters into just about all aspects of contemporary life. Nico Stehr (1994), for example, suggests it is central to all that we do, from designing the interior of our homes to deciding upon an exercise regime to maintain our bodies. This notion echoes Giddens's conception of 'reflexive modernisation', an epoch which is characterised by heightened social and self-reflection as the basis for constructing the ways in which we live. If it is the case that, increasingly, we make the world in which we live on the basis of reflection and decisions taken on the basis of risk assessment (rather than following the dictates of nature or tradition), then it follows that nowadays enormous weight will be placed upon theoretical knowledge to inform our reflection. For instance, people in the advanced societies are broadly familiar with patterns of demography (that we are an ageing population, that population growth is chiefly from the southern part of the world), of birth control and fertility rates, as well as of infant mortality. Such knowledge is theoretical in that it is abstract and generalisable, gathered and analysed by experts and disseminated in a variety of media. Such theoretical knowledge has no immediate application, yet it undoubtedly informs both social policy and individual planning (from pension arrangements to when and how one has children). In these terms theoretical knowledge has come to be a defining feature of the world in which we live.

It is difficult to think of ways in which one might quantitatively measure theoretical knowledge. Approximations such as the growth of university graduates and scientific journals are far from adequate. Nonetheless, theoretical knowledge could be taken to be the distinguishing feature of an information society as it is axiomatic to how life is conducted and in that it contrasts with the ways in which our forebears – limited by their being fixed in place, relatively ignorant, and by the forces of nature – existed. As I have said, few information society thinkers

give theoretical knowledge attention. They are drawn much more to technological, economic and occupational phenomena which are more readily measured, but which are only loosely related to theory. Moreover, it would be difficult to argue convincingly that theoretical knowledge has assumed its eminence just in recent decades. It is more persuasive to regard it as the outcome of a tendential process inherent in modernity itself, one that accelerated especially during the second half of the twentieth century and continues in the twenty-first, leading to what Giddens designates as today's 'high modernity'.

Conclusion

This chapter has raised doubts about the validity of the notion of an information society. On the one hand, we have encountered a variety of criteria which purport to measure the emergence of the information society. In the following chapters we encounter thinkers who, using quite different criteria, can still argue that we have or are set to enter an information society. One cannot have confidence in a concept when its adherents diagnose it in quite different ways. Moreover, these criteria – ranging from technology, to occupational changes, to spatial features – though they appear at first glance robust, are in fact vague and imprecise, incapable on their own of establishing whether or not an information society has arrived or will at some time in the future.

On the other hand, and something which must make one more sceptical of the information society scenario (while not for a moment doubting that there has been an extensive 'informatisation' of life), is the recurrent shift of its proponents from seeking quantitative measures of the spread of information to the assertion that these indicate a qualitative change in social organisation. The same procedure is evident, too, in the very definitions of information that are in play, with information society subscribers endorsing non-semantic definitions. These – so many 'bits', so much economic worth – are readily quantifiable, and thereby they alleviate analysts of the need to raise qualitative questions of meaning and value. However, as they do so they fly in the face of commonsensical definitions of the word, conceiving information as being devoid of content. As we shall see, those scholars who commence their accounts of transformations in the informational realm in this way are markedly different from those who, while acknowledging an explosion in information, insist that we never abandon questions of its meaning and purpose.

Finally, the suggestion that the primacy of theoretical knowledge may be a more interesting distinguishing feature of the information society has been mooted. This neither lends itself to quantitative measurement nor requires a close analysis of the semantics of information to assess its import. Theoretical knowledge can scarcely be taken to be entirely novel, but it is arguable that its significance has accelerated and that it has spread to such an extent that it is now a defining feature of contemporary life. I return to this phenomenon periodically in what follows, though would emphasise that few information society enthusiasts pay it much attention.

This French philosopher argues that knowledge and information are being profoundly changed in two connected ways. First, increasingly they are produced only where they can be justified on grounds of efficiency and effectiveness or, to adopt Lyotard's terminology, where a *principle of performativity* prevails. This means that information is gathered together, analysed and generated only when it can be justified in terms of utility criteria. This may be conceived of as a 'systems' orientation which determines what is to be known, the 'programme' of the 'system' insisting that information/knowledge will be produced only when it is of practical use. In this regard information/knowledge takes on computer-like characteristics (and is in addition translated wherever possible into data – performance indicators – so that it can be most easily quantified and its performativity most readily measured), the mechanism dedicated to 'optimisation of the global relationship between input and output – in other words, performativity' (Lyotard, 1979, p. 11). Furthermore, like other systems, it features a self-perpetuating loop: knowledge/information is required for it to perform, and performance determines what knowledge/information will be generated.

Second, Lyotard argues – and here his (distant) Marxist background reveals itself – that knowledge/information is being more and more treated as a *commodity*. Endorsing a theme we have already seen to be prominent in the work of Herbert Schiller, he contends that information is increasingly a phenomenon that is tradable, subject to the mechanisms of the market that has a determining effect on judging performativity.

The consequences of these twin forces are sufficient even to announce the emergence of a postmodern condition. First, the principle of performativity when applied means that information/knowledge that cannot be justified in terms of efficiency and effectiveness will be downgraded or even abandoned. For example, aesthetics and philosophy cannot easily be justified in terms of performance, while finance and management are straightforwardly defended. Inexorably the former suffer demotion and the latter promotion, while within disciplines research in areas that are defensible in terms of use will be treated more favourably than others. For instance, social science investigations of technology transfer have practical implications for markets and hence are seen as worthy of support from research funding bodies such as the ESRC (Economic and Social Research Council), the 'mission' of which now requires that the research it sponsors contributes to the competitiveness of industry. Conversely, the social scientist whose interest is in the exotic or impractical (as judged by performativity criteria) will be sidelined. As a government minister, Norman Tebbit, put it in the early 1980s when called upon to justify switching funds from arts, humanities and social sciences to the more practical disciplines, money was to be taken away 'from the people who write about ancient Egyptian scripts and the pre-nuptial habits of the Upper Volta valley' and given to subjects that industry thought useful. Today this is the orthodoxy as regards funding social science research in the UK.

Second – and a sign of the collapse of modernism – knowledge development is increasingly shifting out of the universities where, traditionally, a cloistered elite had been ensconced with a vocation to seek the 'truth'. Challenging the

dominance of the traditional university is an array of think tanks (Cockett, 1994), research and development sections of private corporations and pressure groups that generate and use information/knowledge for reasons of efficiency and effectiveness. For instance, commentators now speak of the 'corporate classroom' that is as large and significant as universities and colleges inside the United States. It is easy to list a roll-call of some of the major players: Bell Laboratories, IBM's R&D sections and Pfizer's employment of scores of PhDs appear to many observers to be 'just like a university' – except that they have different priorities and principles which guide their work.

Moreover, that personnel move with increasing ease between universities and these alternative knowledge/information centres indicates that higher education is being changed from within to bring it into line with performativity measures. Any review of developments in higher education in any advanced economy highlights the same trends: the advance of the practical disciplines and the retreat of those that find it hard to produce 'performance indicators' which celebrate their utility. Boom subjects in British higher education over the last generation have been the likes of law, computing, and business and management; every British university now boasts a clutch of sponsored professorships – in a restricted range of disciplines; it is becoming common for universities to offer training programmes for corporations and even to validate privately created courses; there are sustained pressures to make education 'more relevant' to the 'real world' of employment by inducting students in 'competencies' and 'transferable skills' which will make them more efficient and effective employees.

Lyotard extends this argument to the whole of education, insisting that it is motivated now by criteria such as 'how will it increase my earnings potential?' and 'how will this contribute to economic competitiveness?' This is a transformation that not only has an impact on schools and universities but also changes the very conception of education itself. In the view of Lyotard, performativity criteria mean there will be a shift away from education perceived as a distinct period in one's life during which one is exposed to a given body of knowledge towards ongoing education throughout one's life, to be undertaken as career and work demands so dictate. In the words of Lyotard (1993), 'knowledge will no longer be transmitted *en bloc*, once and for all . . . rather it will be served "à la carte" to adults who are either already working or expect to be, for the purpose of improving their skills and chances of promotion' (p. 49). This is to repeat the orthodoxy of current educational policy, where 'lifelong learning' and 'flexibility' are dominant refrains.

Third, and a consequence of this redefinition of education, established conceptions of truth are undermined, performativity and commodification leading to definitions of truth in terms of utility. Truth is no longer an unarguable fact and the aspiration of the university; rather truths are defined by the practical demands placed on the institution. This development is a defining element of postmodernism, since the replacement of TRUTH with a 'plurality of truths' means that there are no longer any legitimate arbiters of truth itself. The upshot is that, to quote Lyotard (1988), truth is merely a matter of a 'phrase regime', something defined by the terms in which one talks about it.

In this respect the undermining of traditional universities (which had been regarded as definers of legitimate knowledge) and, connectedly, intellectuals is central (Bauman, 1987). According to Lyotard, intellectuals must pursue knowledge in terms of a 'universal' ambition, be it humanity, the people, Enlightenment, the proletariat or whatever. It scarcely needs saying that many intellectuals resist the rise to prominence of performance-defined expertise, scorning those guided in the development of information/knowledge by practicality as 'mere technicians'. Against these latter who function only within the boundaries of an 'input/output . . . ratio relative to an operation' (Lyotard, 1993, p. 4), intellectuals usually aspire to research, write and teach for a wider constituency.

However, the intellectuals' justifications sound increasingly hollow within and without education. This is partly a result of lack of resources, the distribution of which is difficult and the inevitable squabbling demeaning. More fundamentally, however, it is a consequence of the collapse of intellectuals' *raison d'être* since at least the post-war period. The point is that it is precisely the intellectuals' claims to have privileged access to truth, to have a totalising vision, which have been destroyed. Lyotard, the one-time communist, identifies the collapse of Marxism in the wake of revelations about the Gulag amidst its manifest economic inadequacies as especially significant in this regard. Marxism's claim for universal truth no longer holds any credibility, and neither do the superiorities of other intellectuals, whether they be couched in terms of the value of the classics, of history or of great literature. Today, if one argues that a particular discipline, vocation or aspiration is superior to others, then it is widely regarded as no more than a partisan proposition, a 'phrase regime' with no more (and probably less) legitimacy than anything else. As degrees in Tourism, Public Relations and Business Administration proliferate in British universities, any proposal from other academics that their disciplines – Philosophy, English or Ancient Civilisation – have more value because they offer students greater access to truth, more understanding of the 'human condition' or more profundity is greeted with at least derision or, more commonly, the accusation that this is expressive of an unworldly and useless snobbery.

The solid grounds on which intellectuals once belittled 'technicians' have turned to sand – and this is widely appreciated. No one, attests Lyotard, recourses any more to the Enlightenment justification for education, that more education leads to better citizens, though this was once a popular universalistic claim. History has destroyed its legitimacy: nowadays '[n]o-one expects teaching . . . to train more enlightened citizens', says Lyotard (1993), 'only professionals who perform better . . . the acquisition of knowledge is a professional qualification that promises a better salary' (p. 6).

Fourth, and finally, performativity criteria when applied to information/knowledge change ideas about what is considered to be an educated person. For a long while to be educated meant to be in possession of a certain body of knowledge; with computerisation, however, it is more a matter of knowing how to access appropriate databanks than to hold a content in one's head. In the postmodern age performativity decrees that 'how to use terminals' is more important than personal knowledge. Therefore, competencies such as 'keyboard skills' and

'information retrieval' will displace traditional conceptions of knowledge (and student profiles will certify that these and other competencies have at least equivalent recognition to more orthodox academic attainments) as '[d]ata banks [become] the Encyclopaedia of tomorrow' (Lyotard, 1993, p. 51).

Moreover, databanks and the competencies to use them further undermine the truth claims of traditional elites. Indeed, they announce 'the knell of the age of the Professor' since 'a professor is no more competent than memory banks in transmitting established knowledge' (p. 53) and, indeed, is poorer at using that in a versatile and applied manner than the *teams* of employees that are increasingly required in the world of work (and in preparation for which students will be trained and credited in 'skills' such as 'working in groups', 'leadership' and 'problem-solving').

What all of this returns us to is the relativism of knowledge/information. To Lyotard performativity, commodification and the manifest failure of 'grand narratives' have resulted in a refusal of all notions of privileged access to truth. Some intellectuals might despair at this, but, as with postmodern devotees Baudrillard and Vattimo, Lyotard (1993) considers that this can be liberating because the decline

> of the universal idea can free thought and life from totalizing obsessions. The multiplicity of responsibilities, and their independence (their incompatibility), oblige and will oblige those who take on those responsibilities . . . to be flexible, tolerant, and svelte.
>
> (Lyotard, 1993, p. 7)

With this, yet again, we are deep within postmodern culture.

Critical comment

Each of those discussed above is a convinced postmodern thinker as well as being persuaded that there is nowadays something one can reasonably call a postmodern condition. My difficulty is that I can accept a good deal of the latter diagnosis (without agreeing that this marks a new type of society), but cannot endorse the former position, something which, in turn, profoundly influences my response to the depiction of a postmodern condition. Postmodern thinkers do have interesting and insightful things to say about the character and consequences of informational developments. I do not think anyone can try seriously to understand the contemporary world without some awareness of the centrality and features of signification today (Baudrillard), without some consideration of changes in modes of communication (Poster), without some recognition of the diversity and range of world views made available by modern media (Vattimo), and without some attention to the import of performativity criteria and commodification for the informational realm (Lyotard).

However, postmodern thought's dogged determination to relativise all knowledge, to insist that there is no truth but only (an infinity of) versions of truth, has

to be jettisoned. Not least because it is inherently contradictory, betraying the ancient Cretan paradox that 'all men are liars'. How can we believe postmodernism's claims if it says that all claims are untrustworthy? This is, in the words of Ernest Gellner (1992), 'metatwaddle' (p. 41), something that fails to acknowledge that there is truth beyond the 'discourses' of analysts.

That is, against postmodern thinkers one may pose a *reality principle*, that there is a real world beyond one's imaginings (Norris, 1990). This is not to say that there is TRUTH out *there* shining its light like a star. Of course it must be established in language since truth is not revealed to us. But this does not subvert the fact that truth is more than just a language game. Moreover, though we may never grasp it in any absolute and final sense, we can develop more adequate versions of reality by demonstrating better forms of argumentation, more trustworthy evidence, more rigorous application of scholarship and more reliable methodological approaches to our subjects. If this were not so, then the revealed 'truth' of the religious zealot must be put on a par with that of the dispassionate scholar (Gellner, 1992), a collapse into relativism with potentially catastrophic consequences (Gibbs, 2000).

It is this insistence on absolute relativism that reduces Baudrillard's commentary often to downright silliness. To be sure, he is right to draw attention to the manufacture of news and to remind us that this construction of signs is the only reality that most of us encounter, say, of events in Iraq, Kosovo or Kashmir. However, it is when Baudrillard continues to argue that news is a simulation *and nothing more* that he exaggerates so absurdly as to be perverse. He is absurd because it is demonstrably the case that all news worthy of the term retains a representational character, even if this is an imperfect representation of what is going on in the world, and this is evidenced by either or both comparing alternative news presentations of the same issues and events and also realising that there is indeed an empirical reality towards which news gatherers respond. It is surely necessary to retain the principle that news reports are, or can be, representational so that one can, with reliability if with scepticism, judge one news story as more accurate, as more truthful, than another. As we undertake this comparative task, we also realise that we are engaged in discriminating between more and less adequate – more or less truthful – representations of events, something that gives the lie to the postmodern assertion that there is either a 'truth' or an infinity of 'truths'.

More urgent than retaining the principle that news coverage has a representational quality, however, is the need to remind ourselves that the news reports on an empirical reality. It may not do this terribly well, but unless we remember that there is a real world we can finish in the stupid and irresponsible position of Baudrillard (1991) when he insisted, before the shooting started, that the Gulf War (1991) never happened since it was all a media simulation or, after the event, merely a war-game simulation of nuclear war (Baudrillard, 1992, pp. 93–4).

This is by no means to deny that the First Gulf War was experienced by most of the world solely as an informational event, or that this was the most extensively reported war until the Kosovan invasion during 1999, the Afghan War in

2001 and, of course, the Second Gulf War of 2003. Nor does this ignore the fact that much media coverage was – and still is – deeply partisan and even propagandistic. On the contrary, it was just because the news of these wars was widely perceived to be flawed that we may point to the possibility of representational news being produced about it and of the possibility of discriminating between types of coverage to identify the more reliable from the less so. For instance, it is widely agreed that, during the 2003 invasion of Iraq, the US media were considerably more favourable towards their forces and the attack itself than were European news media, and to this degree their coverage generally failed to question the administration's legitimation of the assault in terms of allegations that Saddam possessed weapons of mass destruction, or to pay attention to the destruction that was to be wreaked on Iraqis by the invading forces. This is not a matter of opinion, but a reasoned conclusion that follows from systematic analysis, production of evidence and comparison of the coverage in different countries (Tumber and Palmer, 2004; Tumber and Webster, 2006). Furthermore, leading news organisations within the United States, notably the *New York Times* and the *Washington Post*, came to much the same conclusion and a few months later took themselves to task for their inadequacies during the early months of 2003. To follow Baudrillard's line of argument we would have to say that these different versions amount to nothing more than different versions, with the jingoistic Fox News no better or worse than the reportage of *The Independent*. This is a demonstrably specious argument.

It is also deeply irresponsible. The late Hugo Young (1991) made a point devastating to such as Baudrillard when he warned readers, during the First Gulf War, to beware 'the illusion of truth' that came from 'wall-to-wall television' reportage. Alerting his readership to the fact that 'nobody should suppose that what they hear in any medium is reliably true', he continues to identify the crucial issue: 'that we are consigned to operate with half-truths' demands that 'we journalists should hang on to it'. That is, we ought to be sceptical indeed of the reportage, but this must make us all the more determined to maximise access to reliable information. If we end up believing that all war coverage is equally fabricated and equally unbelievable, then we are surely incapable of doing anything about the conflicts since they are reduced to language games.

Baudrillard's strictures on the implausibility of seeking the authentic have an easy appeal in an age of 'virtual reality' technologies which can precisely simulate experiences such as flying an aircraft and driving a car (and, potentially, having intimate relations) and in a society such as England where the heritage industry is determinedly reconstructing historical landscapes. But, once again, the problem with Baudrillard is his rampant relativism that refuses to discriminate between degrees of authenticity. To suggest that this may be undertaken is not to say there is some core, some eternally genuine article, but it is to argue that one can, through critique, discriminate between phenomena to identify the more authentic from the less so (Webster, 2000).

Finally, Baudrillard's assertion that we are left only with 'spectacles' that are to be experienced but not interpreted reflects again his disdain for empirical evidence. It is undeniable that, in the contemporary world, we are subject to a

dazzling array of fast-changing signs, but there is no serious evidence that this results in the abandonment of meaning. To be sure, it makes clear-cut interpretation of signs exceedingly difficult, but complexity is no grounds for asserting that, with interpretation being variable, interpretation itself is lost. People are not yet sign-struck, not yet the gawking 'silent majorities' Baudrillard imagines.

Mark Poster echoes a good deal of Baudrillard's assertions, and much the same objections to his work are pertinent. In addition, however, one can remark on features of his historical analysis. Poster's tri-part history – oralism, writing and electronic exchange – is deeply technological determinist and subject to the familiar objection that it is historically cavalier (Calhoun, 1993).

Gianni Vattimo is, of course, correct to draw attention to the multiperspectivism that the expansion of media can bring. Television has brought to our homes experiences from other cultures and, indeed, from within our own society (Meyrowitz, 1985) which can challenge and disconcert. However, a glance at the mountain of empirical evidence must reveal the marked limitations of this perspectivism since it shows clearly that some perspectives – notably American and, to a lesser extent, European – are a great deal more exposed than others (Tunstall, 1977). To say that Hollywood dominates the world's movies, that US television accounts for large chunks of most other nations' programming, or that rock music originates in the main in London, Los Angeles and New York, is not to argue that alternative perspectives are ignored. Quite the contrary, it is easily conceded that other cultures are noticed and even given voice here – consider, for instance, rap music or the urban movies which might show life through the eyes of ethnic minorities.

However, to accept that media have opened out to include other ways of seeing, at the same time as they have expanded exponentially, is by no means the same as agreeing that they offer 'multiple realities'. On the contrary, it is surely the case, as scholars such as Herbert Schiller demonstrate time and again, that what perspectives are to be included are subject to ideological and economic limits. That is, while some cultures may be given voice, it is an inflected one which is, as a rule, packaged in an appropriate and acceptable way for media corporations and, above all, it must be – or be made – marketable, something which limits the potential of, say, Chinese or Ukrainian ways of seeing to get much air time.

A fundamental objection to Vattimo, as well as to other postmodern commentators, is that his account is devoid of an empirical analysis that endeavours to assess the realities of media output. His point that a profusion of media has led to inclusion of some 'alternative realities' is well made. However, analysis needs to go beyond this truism, to demonstrate the variation in perspectives (and the discernible limits placed on that which gets access to media) and the differential exposure of these perspectives. That requires, of course, a determined analysis of power, something which postmodern thinkers resolutely ignore (even while they proclaim that power is everywhere).

This same absence is also noticeable in the work of Lyotard, though his account of the influence of performativity criteria and the commodification of information/knowledge is revealing. One can readily discern, in an enormous

range of spheres, the influence of performativity and commodification: in publishing, where 'how to' and 'blockbusters' predominate; in television, where the 'ratings' are the critical measure of success since these bring in advertising revenue; in research and development activity where 'marketable solutions' are sought by investors, where scientists are compelled to sign copyright waivers, and where 'intellectual property' is protected in patent submissions. Above all, perhaps, Lyotard refocuses attention on the educational sphere, surely a quintessential, but often downplayed, element of the 'information society', to demonstrate the intrusion of performativity criteria and the increased commercialisation of affairs (Robins and Webster, 1989; 2002).

The main problem with Lyotard, however, is that he concludes from all of this that the reliability of all knowledge is lost and that an appropriate response is to celebrate our release from the 'tyranny' of truth. This gay abandon appears oblivious to the power and interests that have guided and continue to direct the spread of performativity and commodification. Moreover, were one to identify the processes and agencies of power and interest, this would be to describe a reality that implies the possibility at least of alternative ways of arranging matters: 'This is as it is and why it is so – we can make it different.' In short, it would be to uphold the Enlightenment ideal of pursuing an alternative, and better, way of life.

A postmodern condition?

Postmodern thought has undeniably influenced a broad range of reflection on contemporary life, not least amongst analysts of informational matters. It has permeated a good deal of Sociology, Cultural Studies and Communications scholarship where such as Lyotard and Baudrillard – and most eminently Foucault – are frequently referenced. It will be clear that I acknowledge this contribution and influence, though I am also deeply unsympathetic to postmodern thought. Too often it seems smart-alec and irresponsible, manifesting a radical delight in mischievously questioning anything and everything while being incapable of discriminating between the pertinence of questions and qualities of evidence. Thereby postmodernism reveals a profound conservatism, being all talk with no consequence (other than to leave things alone), something akin to the court jester during the medieval period. This is why Jürgen Habermas (1981) was correct, years ago, to identify postmodernism as neo-conservative, in spite of the radical chic appeal of Foucault and his acolytes. In addition, postmodernism's relativism, where *difference* is everything and all interpretations are interpretations of interpretations, is inconsistent, self-denying and fundamentally irresponsible. It can be amusing, even revealing, when musing on the complexities of small-scale interaction, but when relativism is applied to matters such as war, militant religious cults and the massacre of almost two hundred schoolchildren in Beslan in September 2004 by ruthless terrorists its intellectual and political bankruptcy is evident.

My lack of sympathy with postmodern thought ought not to be taken as denial that there is something that one might reasonably describe as a postmodern

condition. It is quite consistent to argue that we inhabit a postmodern society without subscribing to postmodern thinking. What may be taken to be postmodern lifestyles are manifested in hedonistic, self-centred (and maybe even decentred) behaviours, in scepticism about definitive 'truth' claims, in ridicule and hostility towards 'experts', in delight in the new, in pleasure in experiences, and in a penchant for irony, pastiche and superficiality. All such may be taken as indicative and even characteristic of postmodernity.

Zygmunt Bauman (b.1925) is the pre-eminent analyst of the postmodern condition. Since the late 1980s he has published a remarkable series of studies identifying and examining postmodern society. Though he marshals little empirical evidence, his insights into contemporary society are perceptive. Bauman depicts modernity as a time characterised by a search for order, a society seeking stability and control under the aegis of nation states which looked after their citizens, a period in which there was confidence in planning, and where it was imagined that reason would bring about greater surety as to how we might best arrange things. In contrast, postmodernity brings instability and insecurity, a retreat of the state and the triumph of the globalising market which promotes freedom of choice but leaves people apprehensive about their futures, suspicious of reason itself and noticeably of the experts who make special claims for their own access to it, replacement of control by the state by the 'seductions' of consumerism, and a need for people to live with ambivalence and uncertainty (Bauman, 1997). This 'liquid life' (Bauman, 2005) is one of constant reinvention and possibility, full of potentials but with no criteria by which these might be judged to be achieved and hence corrosively dissatisfied at every level, from the intimate (Bauman, 2003) to the global where faith in a better future is absent though it is widely acknowledged that humans are creating a changed environment (Bauman, 2006).

Bauman sees postmodernity as related, if not reducible, to capitalism. Indeed, the rip-roaring neo-liberalism that was unleashed by the collapse of capitalism and the acceleration of globalisation is a key element of the consumer-orientated and flexible lifestyles that characterise postmodernity. Bauman is somewhat unclear just how capitalism is connected to postmodernity, but his acknowledgement of the market's continued salience sets him apart from postmodern thinkers such as Baudrillard who present postmodernism as a break with all that went before. There are still others who argue more baldly than Bauman that the postmodern condition with which we live today is a product of long-term developments in capitalist relations. That is, there are underlying features that may be identified by diligent scholars which help account for the changes we have come to call postmodernism.

Some such thinkers hesitate to suggest a definite historical cause of the postmodern condition. For instance, Fredric Jameson (1991), in a celebrated essay, refers only to postmodernism as the 'cultural logic of late capitalism'. To Jameson realist culture was a correlate of market capitalism, modernist culture (as in Surrealism, etc.) is in accord with monopoly capitalism, and now postmodernism is the culture with most affinity with consumer capitalism. Scott Lash and John Urry (1987) present a similar mode of analysis, arguing that an emergent 'service

class' of educated, career-orientated, individualistic and mobile people with little sympathy for ties of 'community' and 'tradition' has an 'elective affinity' with postmodern lifestyles.

David Harvey (1989b) does not hesitate to identify a stronger causal connection. In his view the features of postmodernism are the result of changes in capitalist accumulation. Bluntly, the flexibility that we associate with contemporary capitalism – the adaptability of employees, the capacity of companies to innovate, the acceleration of change itself – gives rise to postmodern culture. To Harvey the post-war Fordist era offered standardised products manufactured in standardised ways; today post-Fordism prevails, offering choice, variety and difference from an economic system beset by crisis, facing new circumstances (ICTs, worldwide competition, globalisation), and eager to find solutions in 'flexible production' and its essential correlate 'flexible consumption'. Postmodern culture is the outcome of these trends; as Harvey writes:

> The relatively stable aesthetic of Fordist modernism has given way to all the ferment, instability, and fleeting qualities of a postmodernist aesthetic that celebrates difference, ephemerality, spectacle, fashion, and the commodification of cultural forms.
>
> (Harvey, 1989b, p. 156)

Postmodernism accords, in other words, with the transition from Fordism to post-Fordism that we discussed in Chapter 4.

Interestingly, Daniel Bell, coming from a quite different starting point from that of David Harvey, shares a willingness to explain the postmodern condition as, in part at least, a consequence of 'the workings of the capitalist economic system itself' (Bell, 1976, p. 37). Bell suggests that the very success of capitalism to generate and sustain mass consumption, to give people cars, fashions, televisions and all the rest, has led to a culture – he did not yet call it postmodern in the mid-1970s, but that is what it amounted to – of pleasure, hedonism, instant gratification and the promotion of experience over meaning (Bell, 1990) which, paradoxically, is one that is at odds with the sobriety and efficiency-directed value system that contributed to the startling success of capitalism in the first place.

I find much of these accounts of the postmodern condition persuasive. They offer historical analyses and bring forward a wealth of empirical information to provide substance to their arguments. But, of course, a determined postmodernist thinker can dismiss them all as pretentious 'grand narratives', with Harvey interpreting the postmodern condition as the working out of the inner logic of capitalist forces and with Bell coming from a committed modernist position which regards the postmodern as a decidedly inferior culture to what went before.

To the postmodernist these accounts are unacceptable because they presume to see the truth where there is no truth to be found. Harvey, for instance, claims to see beneath the surface of postmodern culture to an underlying, but determining, economic reality, presenting a vision that is said to emanate from his own commitment to Marxist principles and which relegates those he studies – the postmodern subjects – to 'cultural dopes' because they fail to see the hidden

forces of capitalism with the learned professor's clarity (Harvey, 2003). To the postmodernist Harvey's is but one reading, one interpretation among an infinity of possibilities, and one which is rather noxious at that (Morris, 1992).

It has to be said that none of these studies is beyond criticism, not least by those who can indicate shortcomings, absences and even prejudices in the authors. Thus, for example, David Harvey would concede that his book might have benefited from a more sensitive appreciation of feminism (Massey, 1991). However, from admission of the value of critique to endorsement of the post-modern dogma that everything is but an interpretation is an unacceptable leap because in between is the matter of substantive analysis. We can readily agree that each account is partial, but it cannot be dismissed – or seen as but equal to any other 'reading' – on that account, because one must *demonstrate* how some accounts are more, and others less, partial. In other words, we are reminded of the untenability of the postmodern celebration of relativism, an assertion that subverts its own statements in the very act of denying all claims to truth.

Conclusion

As a description of the world in which we live, the term 'postmodernity' has value. Its emphasis on the ferment of change, on fluidity, on scepticism and a penchant for irony, and on the instability of relationships captures some of the distinguishing features of our times. The foremost sociologist of postmodernity, Zygmunt Bauman, illuminates core elements of contemporary existence, notably the perpetual uncertainty which underlies the surfeit of choices to be made about everything from one's hair colour to whether to support Amnesty International. Postmodernity as a condition allows greater appreciation of how much constraints have been removed from our lives today compared to those imposed on our pre-decessors, as, too, does it highlight the disturbing imperative that we must choose how we are to live now, though clear grounds for choice have crumbled. In turn, Bauman's attention to 'seduction' alerts us to the special significance of marketing, advertising, celebrity – the entire range of media and associated imagery essen-tial for a time in which previous systems of control have diminished in force. Further, the emphasis of postmodern thinkers on the sign and signification, on simulation and inauthenticity, on the transformative power of performativity criteria applied to information and knowledge, and acknowledgement of the import of electronically mediated information are all useful to students of the 'information revolution'.

However, it is doubtful that 'we are entering a genuinely new historical con-figuration' (Crook *et al.*, 1992, p. 1). Quite the contrary, most of the postmodern condition's characteristics are explicable in terms of ongoing, if accelerating, trends, ones identified and explained effectively by modernist thinkers such as Herbert Schiller, Jürgen Habermas, Anthony Giddens and David Harvey. Like post-industrial theory, postmodernism proclaims a new primacy to information and with it the arrival of a fundamentally different sort of society. And, also as with post-industrialism, the proclamation cannot be sustained in face of scrutiny.

CHAPTER TEN

The information society?

The main purpose of this book has been to examine the significance of information in the world today. It has asked how, why and with what validity is it that information has come to be perceived as a – arguably the – defining feature of our times. My starting point was to remark on this consensus among thinkers that information is of pivotal importance in contemporary affairs: it is acknowledged that not only is there a very great deal more information about than ever before, but also that it plays a central and strategic role in pretty well everything we do, from business transactions, to leisure pursuits, to government activities.

But beyond these observations consensus about information breaks down. While everyone agrees that there is more information and that this has increased in pertinence nowadays, thereafter all is disputation and disagreement. Recognising this, I have tried to identify major attempts to understand and explain what is happening in the information domain and why things are developing as they are, at once to make clear the bases of different approaches while simultaneously testing them against available evidence, against one another, and with any additional critical insight I could muster.

I have questioned, occasionally forcefully, the validity of the concept 'information society', even though it is much used in and outside the social sciences. This does not mean it is worthless. Concepts are tools to think with and as such they help to organise ways of seeing. They can help us to think more clearly. Part of that thinking involves criticising that which we use to further our understanding. And part of that critique can be to jettison the concepts with which we began in favour of more adequate terms. The information society concept has been useful in so far as it has served as what David Lyon calls, after the late Philip Abrams (1982), a 'problematic', a 'rudimentary organisation of a field of phenomena which yields problems for investigation' (Abrams, in Lyon, 1988, p. 8). The concept has helped scholars to focus attention on, and to collect together, a wide-ranging and diverse number of phenomena, from occupational shifts, to new media, to digitalisation, to developments in higher education. Despite this, the information society concept is flawed, especially in the ways it asserts that it depicts the emergence of a new type of society. I am convinced that a focus on information trends is vital to understand the character of the world today, though most information society scenarios are of little help in this exercise.

It must be in the detail of this exposition and assessment of varying 'theories of the information society' that the value of this book is to be found. So much commentary on the 'information age' starts from a naïve and taken-for-granted position: 'There has been an "information revolution", this will have and is having profound social consequences, here are the sorts of *impact* one may anticipate and which may already have been evidenced.' This sets out with such a self-evidently firm sense of direction, and it follows such a neat linear logic – technological innovation results in social change – that it is almost a pity to announce that it is simply the wrong point of departure for those embarking on a journey to see where informational trends, technological and other, are leading. At the least, recognition of the contribution of social theory moves one away from the technological determinism which tends to dominate a great deal of consideration of the issues (though, as we have seen, with some social science thinkers more subtle – and sometimes not so subtle – technological determinism lingers).

More than this, however, I think that one's appreciation of the significance of information in contemporary life is immensely deepened by encounters with the likes of Herbert Schiller, Anthony Giddens, Manuel Castells and Zygmunt Bauman. Who cannot be stimulated, for example, by Daniel Bell's arguments that it is the increase in service employment that leads to an expansion of information occupations that have most important consequences for how 'post-industrial' societies conduct themselves? Who cannot find arresting Giddens's contention that the origins of today's information societies are to be found in surveillance activities that are in large part driven by the exigencies of a world organised into nation states? Who cannot take seriously Herbert Schiller's suggestion that the information explosion of the post-war years is the consequence, for the most part, of corporate capitalism's inexorable march? Who is not disturbed and provoked by Jürgen Habermas's fear that the 'public sphere', so essential to the proper conduct of democracies and where the quality of information supplies the oxygen which determines the health of participants, is being diminished? Who would not concede the relevance to understanding information of theorists of a transition from Fordist to post-Fordist forms of socio-economic organisation? Who cannot be intrigued by Jean Baudrillard's gnomic – if exasperating – observations on signs that are simulations or Jean-François Lyotard's identification of a 'principle of performativity' underpinning the generation and application of information in the 'postmodern' era? And who, encountering these thinkers and the calibre of their work, cannot but conclude that most pronouncements on the 'information age' are hopelessly gauche?

Of course it would be disingenuous of me to stop here with the suggestion that all I have tried to do is introduce readers to a variety of interpretations of informational trends. Those who have gone this far in the book will have realised soon enough that I have found certain thinkers more persuasive than others. I have endeavoured to make this, and the reasons why I favour them, clear as I have gone along.

This approach, a close *critique* of major contributions to information matters, has worked through others' writing to reveal my own views. This exercise has involved examining the conceptual principles of thinkers as well as the salience

of empirical evidence wherever it might be brought into play. Attentive readers will have gleaned a good idea of my own position from what has gone before in this study. However, for the sake of clarity, in the following pages allow me to be more explicit about my own conclusions.

It is my belief that if one is trying to make sense of the information realm and its import in the present age, then one should be drawn primarily towards the ideas and research, above all, of Herbert Schiller, Jürgen Habermas and Anthony Giddens, as well as to the significant body of work that has been influenced by their themes. This does not for a moment mean that the contributions of Daniel Bell or of Jean Baudrillard or of Mark Poster and other scholars are negligible. Quite the contrary, I have attempted, when analysing such thinkers, to indicate and evaluate the positive elements of their work as well as to point out any weaknesses I may have found in it. Indeed, Manuel Castells's trilogy, *The Information Age*, seems to me to be the single most persuasive analysis of the world today, albeit that I remain critical of some aspects of his work (Webster and Dimitriou, 2004).

There are two major reasons for my preferences for some thinkers rather than for others. The first concerns the capacity of these approaches to illuminate what is actually going on in the world and how well their propositions stand up to empirical scrutiny. On the whole the Critical Theory of Herbert Schiller (in whose writing theory is decidedly and advantageously subordinated to a concern with substantive developments) and Jürgen Habermas, and the historical sociology of Anthony Giddens, seem to me more persuasive than the writings of post-industrial and postmodern enthusiasts. Perhaps, to state the obvious, to admit my preferences means neither that I endorse everything each of these scholars forwards nor that Schiller, Habermas and Giddens are altogether agreed on what are the salient features of the informational domain. It will be obvious to readers that Schiller's focus on the imperatives imposed by capitalism differs from Habermas's concern with the requisites of democratic debate, and both differ from Giddens's emphasis on ways in which the state especially, and particularly in its military and citizenship dimensions, influences the collection and use of information.

However, there is one crucial point of agreement within the diversity of views of these thinkers and it is something that sets them apart from those other contributions that I have found less helpful in understanding and explaining the role of information in contemporary affairs. It is this that takes me to the second reason for my preferences. What Schiller, Habermas and Giddens do share is a conviction that we should conceive of the *informatisation* of life, a process that has been ongoing, arguably for several centuries, but which certainly accelerated with the development of industrial capitalism and the consolidation of the nation state in the nineteenth century, and which moved into overdrive in the late twentieth century as globalisation and the spread of transnational organisations especially have led to the incorporation of hitherto untouched realms – far apart geographically and close to one's intimate life – into the world market.

That is, these scholars believe that informational developments must be accounted for in terms of historical antecedents and *continuities*. Each of these

thinkers therefore prioritises in their separate accounts phenomena which, over time, have shaped, and in turn have built upon, informational patterns and processes to ensure, as best they could in uncertain and always contingent circumstances, that existent social forms might be perpetuated. Thus, for instance, in Herbert Schiller's work we get a recurrent insistence that it is capitalist characteristics which predominate in the origination and current conduct of the informational realm: it is the primacy of corporate players, of market principles and inequalities of power which are most telling. Similarly, those who argue that the 'public sphere' is being diminished recourse to explaining the expansion of misinformation, disinformation, infotainment – information management in all of its guises – in terms of the historical expansion and intrusion into all spheres of life of commodification and market criteria. Hence the 'information explosion' is to these thinkers comprehensible as an integral part of the up-and-down history of capital's aggrandisement.

Again, Giddens's approach towards information is one that places its development in the context especially of the development of nation states and associated historical patterns of the making of modernity, such as the industrialisation of war and the spread of citizenship rights and obligations. A similar emphasis comes from Regulation School theorists who explain informational trends in terms of requisites and outcomes of advanced capitalism following recession and restructuring brought about by the threats and opportunities associated with the spread of globalisation.

Those who emphasise historical continuities are not alleging that nothing has changed. Quite the reverse: the very fact of *informatisation* is testament to their concern to acknowledge the changes that have taken place and that these are such as to promote information to a more central stage than previously. Nevertheless, what they do reject is any suggestion that the 'information revolution' has overturned everything that went before, that it signals a radically other sort of social order than we have hitherto experienced. On the contrary, when these thinkers come to explain informatisation they insist that it is primarily an outcome and expression of established and continuing relations, relationships that continue to resonate. It is therefore the conviction of each of these thinkers that the forces they have identified as leading to the informatisation of life still prevail as we enter the third millennium.

My reason for preferring the idea of an informatisation of life which stems from the continuity of established forces becomes clearer when we contrast it with the propositions of the likes of Daniel Bell, Gianni Vattimo and Mark Poster. Here, again amidst marked divergences of opinion and approach, is a common endorsement of the primacy of *change* over continuity. In these approaches change is regarded as of such consequence that reference is recurrently made to the emergence of a novel form of society, one that marks a system break with what has gone before. Such thinkers use various terms, from the generic information society, to post-industrial society, postmodernism, the information age and flexible specialisation.

To be sure, none of these thinkers is devoid of historical imagination, but the emphasis of their analyses is constantly one that centres on the novelty of the

information society, something that sets it apart from anything that has gone before. I have tried to demonstrate throughout this book how this proposal is unsustainable and in doing so I have found myself returning time and again to those who argue for the primacy of continuity to make my case.

It might be objected that this debate between continuity and change is misconceived and even unhelpful. It is misconceived if it is taken to mean that one must opt either for one or the other, either all continuity or all change. The pragmatist will insist, reasonably enough, that the present is a mixture of both. And one can understand the frustration of those who are keen to examine how the world actually operates and feel it is diversionary to get involved with the continuity-versus-change controversy. I have some sympathy with this position myself and would prioritise substantive analysis over argument about what is an old chestnut among social scientists.

Nonetheless, even the pragmatist may be asked which is the major force, continuity or change? The question cannot easily be avoided when put like this, and nor should it be. It seems to me that it can only be answered by comparative assessment of thinkers and a judgement of the more persuasive empirical evidence. This is something that I have tried to do in this book and it is what has led me to favour continuity over change. However, there are at least two further reasons to be wary of those who emphasise the novelty of the information age. One is the trap of *presentism*, the conceit that one's own times are radically different from those that went before. Of course, to a degree this is self-evidently so: all historical circumstances are singular, so things are different today. But against this a longer-term perspective helps contain an enthusiasm for the *now* which can easily lead to an overemphasis on novelty. Alan Bennett, in his play *The History Boys* (2004), observes that 'there is no period so remote as the recent past'; he might have said the same about the here and now. Though now is urgent, palpable and compelling, Bennett reminds us that it is so engrossing that frequently we fail to put it into proper perspective. We know this in our personal lives; so should we know it about the wider contemporary realm. We ought to bear this in mind when we encounter information society claims. The second reason is that accounts which insist that the information society is a new era readily pressure others to accept and accede to the here and now. Claims that we have entered a new society fit comfortably with the view that we can do nothing about change, and that we ought accordingly to adopt and adjust to the realities. Against this, accounts that trace historical antecedents and lay stress on continuities can draw attention to ways in which the present has emerged from a past that, having been humanly made, can also be remade (cf. Burke, 2000).

It is my view that we may best appreciate information trends by situating them within the history and pressures of capitalist development. In this, history does matter, so one is not suggesting that capitalism is the same today as it ever was. The informational capitalism we have today is significantly different from the corporate capitalism that was established in the opening decades of the twentieth century, just as that was distinguishable from the period of laissez-faire of the mid- to late nineteenth century. An adequate account of contemporary capitalism would need to identify its particular features, prominent among which

are the presence of unprecedentedly large transnational corporations, an intensification of competition on a global scale (and thereby an acceleration of the pace of change within capitalist parameters), the relative decline of national sovereignty and, above all, globalisation. While it is an extraordinarily complex phenomenon, globalisation does, for the most part, shape the world in ways that bring it into conformity with Western ways. All of this is captured effectively, and in refreshingly unapologetic terms, by *New York Times* columnist Tom Friedman in his book *The Lexus and the Olive Tree* (1999). Friedman says it straight: there is 'only one game in town', and this is one in which the United States – the leanest and largest and most experienced operator – is the top seed. The current era is 'dominated by American power, American culture, the American dollar and the American navy' (p. xiv), and it is one where – precisely because globalisation expresses the United States' triumph as the leading capitalist nation – some homogenisation is unavoidable. That homogeneity means the rest of the world must adapt towards Americanisation. As Friedman puts it, globalisation means going 'from Big Macs to iMacs to Mickey Mouse' (p. 9).

In saying this, let me stress that neither Friedman nor I wish to suggest that bringing the world into line with Western ways has brought stability or that it has straightforwardly consolidated American national superiority (Friedman, 2005). On the contrary, another major feature of globalisation is an intensification of competition, as once separate realms are brought into relation with others, and this impels deep uncertainty, as well as an acceleration of change itself (Soros, 1998; Greider, 1997). Tom Friedman (1999) concurs. Indeed, the central thesis of his stimulating book concerns the tensions between living in a dynamic, ever-changing and unstable world which develops new products and processes as a matter of routine (the Lexus) and the human need for stability, roots and community (the Olive Tree). The Lexus, to Friedman, is the future.

What I do want to emphasise is that globalisation expresses, above all else, the triumph of what one might call 'business civilisation'. By this I want to underline that the world, however much variety we may witness in it, has been brought together under a common set of principles. These include:

- ability to pay will be the major criterion determining provision of goods and services
- provision will be made on the basis of private rather than public supply
- market criteria – i.e. whether something makes a profit or a loss – are the primary factor in deciding what, if anything, is made available
- competition – as opposed to regulation – is regarded as the most appropriate mechanism for organising economic affairs
- commodification of activities – i.e. relationships are regarded as being amenable to price valuations – is the norm
- private ownership of property is favoured over state holdings
- wage labour is the chief mechanism for organising work activities

To be sure, these are idealisations of what happens in practice, but what seems to be unarguable is that these principles have spread round the globe at an accelerated pace in recent decades.

There are complex reasons why this should be so, and there remain to this day important pockets of resistance to their spread, but it appears to me that we have witnessed the massive intrusion of 'business civilisation' in recent years. This has been, it may be emphasised, both an intensive as well as an extensive affair. Intensive in so far as market practices have enormously intruded into areas of intimate life hitherto relatively immune even in the West. One thinks here, for instance, of child-rearing (the plethora of diverting toys and television for the young), of the provision of everyday foodstuffs (just about everyone nowadays is reliant on the supermarket for food, while not so long ago many families self-provided, at least in large part, through gardens and allotments which allowed vegetables to be grown and useful animals to be reared) and of the decline of self-providing activities such as dressmaking and knitting (Seabrook, 1982b).

Extensively, of course, we may instance the spread of globalisation, a process that has colonised many areas that previously were self-supporting. The obvious, if underestimated, instance of this is the elimination of the peasantry from most quarters of the earth. This, by far the majority of the world's population throughout recorded time, is now on the eve of destruction (Worsley, 1984). It has been calculated that in 1900 nine out of ten people in the world were peasants (Ponting, 1999, p. 13), but the great peasant societies of 1900 – China and Russia – can no longer be described in such terms, and the peasantry has virtually disappeared from Europe itself. And the reason is clear: the peasantry is antipathetic to market civilisation. Peasants are largely self-supporting, they are sceptical of technological innovation, resistant to wage labour and distanced from market organisation. As such, their ways of life have been diminished by what Kevin Robins and myself refer to as the 'enclosure' of the earth by business practices, by which we mean the incorporation of activities once outside into the routines of the business realm (Robins and Webster, 1999).

There can be little doubt about the incorporation of informational issues within 'business civilisation'. Consider, in this respect, the spread of 'brands' in and beyond everyday life, or the heightened importance of 'intellectual property' in matters ranging from scientific research to the merchandising of sports teams. Increased commodification is manifest in the information domain where moves to charge for permission to use any piece of recorded music, each frame from a movie or indeed any piece of 'creative property' threaten to inhibit what Lawrence Lessig (2004) calls today's 'remix culture' that amalgamates pictures, music and words in a digital medium and is supplanting text-based forms of expression that once were protected by 'fair use' rules that have no provenance when it comes to visual and sound products. Of course there are countertendencies of decommodification, for instance in the spread of free government information, public service websites and digitalised collections of out-of-copyright literature. However, it is hard to interpret this as an effective countervailing tendency against the wave of corporate and legislative efforts to maximise returns to owners on investment in creative and knowledge property.

Should there be some who perceive, on reading the foregoing, nostalgia for times before the triumph of capitalism, let me stress a number of things. First of all, the penetration of market mechanisms does not, by any means, mean that

there is hardship among consumers. On the contrary, for those with the wherewithal, reliance on the store for one's food and clothes is preferable to the dreary round of home baking and having to endure ill-fitting and unfashionable clothing. Similarly, marketisation of information does mean that, so long as one has the resources to pay, its calibre and the immediacy of access are incomparably superior nowadays. In addition, compared with the lives of most peasants, even an impoverished existence inside capitalism offers an enviable standard of living. Second, the peasantry has been destroyed by various methods. Repression and dispossession certainly, but probably of more consequence has been the pull of the market society, offering change and opportunities that the peasant way of life could never match. Finally, no one should refer to the success of capitalism without acknowledging the failure of its major rival, communism. Politically discredited, communism also failed in economic matters, being incapable of matching the dynamism of the West. Together these are important qualifications to any account that might imply regret about the triumph of business civilisation. Nonetheless, what must be accepted is that capitalism has won out, and its success has meant that the world has been enclosed within its orbit, within its ways of organisation. It matters not whether one embraces this triumph or not; the key issue here is to acknowledge it.

I would also emphasise that this success – of what has been called the 'neo-liberal consensus', to underscore the ways in which this is the foundational principle of all governments around the world nowadays – represents no return to a former capitalist age. Not least, globalisation has ensured that there is no going back to the days of nineteenth-century laissez-faire. Much of business civilisation is familiar, and would be recognised by nineteenth-century free traders, but it is undeniably now in new circumstances. Prominent among these is the presence of corporations with global reach that, if they are engaged in intense and rivalrous competition among themselves, exclude from all but the fringes of activity the small-scale entrepreneurs. Today's capitalism is one dominated by huge corporations – the likes of General Motors, Shell, Matsushita and Siemens – with breathtaking research-and-development budgets, international leverage and worldwide marketing campaigns. In addition, global capitalism today is linked in real time by world financial markets – markets which trade in excess of a trillion dollars every day – the size and speed of which are unprecedented, and the consequences of which have been evident in massive upheavals of national economies. Again, today's capitalism is one which exercises global reach in many aspects of its operation, as witness the tendencies towards, and practices of, the world marketing of products, international divisions of labour and creation of global brands.

While at pains here to emphasise the novel features of the current era, it seems to me essential that we appreciate that these are consolidations and extensions of long-established principles. That is, today's global economy represents the spread and growth of capitalist ways of behaviour – witness the increased use of market mechanisms, of private rather than public provision, of profitability as the *raison d'être* of organisations, of wage labour, and of the ability-to-pay principle as the determinant of goods-and-services supply. In short, the 'global

network society' in which we find ourselves today expresses the continuation – transmutation if one prefers – of long-held capitalist principles. As Krishan Kumar (1995) concludes, the information explosion

> has not produced a radical shift in the way industrial societies are organised, or in the direction in which they have been moving. The imperatives of profit, power and control seem as predominant now as they have ever been in the history of capitalist industrialism. The difference lies in the greater range and intensity of their applications . . . not in any change in the principles themselves.
>
> (Kumar, 1995, p. 154)

The work of Herbert Schiller, frequently derided for its lack of theoretical sophistication, seems to me that which most effectively directs us to the importance of capitalism's triumph for the informational domain. It reminds us, too, that a reversal of the usual question (what is the information revolution doing to us?) can be salutary. To ask 'what are we doing to information?' puts the spotlight on globalised capitalism's need for advertising, ICTs, corporate planning and effective marketing.

Though I am convinced that we can best understand informatisation by focusing attention on the historical development of capitalism, I am not persuaded that this is the whole story. At various points in this book I have drawn attention to theoretical knowledge and the role it plays in contemporary life. Rarely discussed by information society thinkers, theoretical knowledge has little if anything to do with ICTs, tradable information, occupational shifts or information flows (though obviously each of these has an influence on theoretical knowledge). Still it is possible to see it as one of the distinguishing features of the present time. Daniel Bell introduced the term, yet he paid insufficient attention to it, preferring quantitative measures such as the growth of higher education and research-and-development employment as evidence of the emergence of an information society. Theoretical knowledge, that which is abstract, generalisable and codified, may be readily acknowledged in matters of science and technology, but Nico Stehr (1994) argues, with some success, that it is of much wider currency – indeed, that it is constitutive of how we live today. Anthony Giddens's theme of reflexive modernisation puts stress on this abstract and generalised knowledge in personal as well as social matters since it is central to decision-making, risk assessment and the control over our destinies that it brings. By this token, theoretical knowledge is at the heart of contemporary social relationships. It will be remembered that this is not to endorse claims that we inhabit an information society (though this could be argued, I think, more effectively than is done by calculations of how much ICT is in use), since Giddens is at pains to say that the origins of theoretical knowledge lie in modernity itself – what our present 'high modernity' brings is an intensification of well-rooted processes. To be sure, what is meant by theoretical knowledge can be flaky at the edges, but its primacy may well be something that does set us apart from our predecessors, most importantly perhaps in the potential it offers for us to determine our own futures. The

upshot of this is that, in my view, we can appreciate information today by locating it firmly within the context of capitalism's ongoing development, to which we need to acknowledge that reflexive modernisation and the theoretical knowledge which accompanies it provide opportunities for directing our futures in unprecedented ways.

This may be contrasted with the position of those many who argue for the emergence of an information society and recourse to highly deterministic explanations for the coming of the new age. These are considerably more sophisticated than the crude technological determinism adopted by technoboosters such as Alvin Toffler (1990), Nicholas Negroponte (1995) and Michael Dertouzos (1997). Nonetheless, there remains a strong undercurrent of technological determinism in those who conceive of a 'second industrial divide' (Piore and Sabel), a new 'mode of information' (Poster) or an 'informational mode of development' (Castells). Moreover, as Krishan Kumar (1978) definitively showed, at the back of Daniel Bell's concept of post-industrialism lies a similarly, if much more sophisticated, deterministic account of change, this time through the hidden hand of 'rationalisation' which, of course, finds its major expression in the application of improved technologies but which also is evidenced in the development of more refined organisational techniques. In the foregoing chapters I have been at pains to underline the shared way of seeing of thinkers who, however apart they might seem at first sight, hold in common certain principles. With those who assert that we are witnessing the emergence of an information society, high on that list of shared principles is technological (or in Bell's case technical) determinism.

To repeat the two major complaints about such an approach: it at once singles out technology/technique as the primary cause of change (which is oversimplistic) while – and in my view more significantly still – simultaneously presuming that this technology/technique is aloof from the realm of values and beliefs. I do not think it has been difficult to demonstrate that this is a misleading perception, but, as we have seen, it will keep infecting analyses of informational developments. Above all, it seems to me, it is an approach which misconceives social change because it desocialises key elements of social change, persistently separating technology/technique from the social world (where values and beliefs are found), only to reinsert it by asserting that this autonomous force is the privileged mechanism for bringing about change. Not surprisingly, those who envisage a dramatic but asocial 'information technology revolution' and/or radical shifts in technical efficiency, are easily persuaded that these *impact* in such a manner as to bring about an entirely novel form of society.

As I argued in Chapter 2, those who argue that an information society has arrived (or is in the process of arriving) in recent years operate with measures that are consonant with this technical determinism. That is, it is striking that they seek to identify the information society by counting phenomena which they assume characterise the new order. These may be information technologies, the economic worth of information, the increase in information occupations, the spread of information networks, or simply the obviousness (and hence not needing to be counted) of an explosive growth in signs and signification. Subscribers to the notion of an information society quantify some or other of

these indicators and then, without any justification other than that there is a lot more information and information technology around, they claim that these quantifiable elements signal a qualitative transformation – namely the emergence of an information society.

Similarly, when we press forward to examine their definition of information itself, most often we come across a related principle: information is presumed to be a quantifiable phenomenon that is separable from its content – hence it is so many 'bits', or so much 'price', or so many 'signs', seemingly anything but something which has a meaning (though, as Theodore Roszak [1986] reminds us, to most people the content of information – what it means – is of the essence). Then, having adopted a non-semantic definition of information that can more readily be quantified, we again come across the allegation that a quantifiable increase in information heralds a qualitative change in society and social arrangements (an information society).

It appears to me that those who explain informatisation in terms of historical continuities give us a better way of understanding information in the world today. This is not least because they resist artificial measures of the information society and of information itself. While of course they acknowledge that there has been an enormous quantitative increase in information technologies, in information in circulation, in information networks and what not, such thinkers turn away from such asocial and deracinated concepts and back to the real world. And it is there, in the ruck of history, that they are able to locate an information explosion that means something substantive and which has discernible origins and contexts: that *these* types of information, for *those* purposes, for *those* sorts of group, with *those* sorts of interest are developing.

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