Prometheus
Vol. 28, No. 2, June 2010, 165–186

Routledge
Taylor & Francis Group

RESEARCH PAPER

The life and times of the Information Society

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The assessment of scholarly literature on the Information Society provided in this paper sets out and distinguishes between the analytical foundations of mainstream and critical contributions from a selection of disciplines and fields with a view to considering why there is so little reciprocal engagement among them, and whether there are new opportunities to promote a dialogue with those who hold the power to establish policies and investment practices with regard to information and communication technologies. Based on a review of hundreds of works, it is argued that a broader range of analytical frameworks needs to be considered if today's policies and strategies in this area are not to perpetuate inequality and injustice. In particular, we need to acknowledge that a plurality of visions of future information societies exists, embracing potentially conflicting values and priorities. More emphasis needs to be given to analytical approaches that privilege human well-being and inclusivity.

> It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us … (Charles Dickens, *A Tale of Two Cities*, 1859, p. 1)

Introduction

The aim of this paper is to provide a critical assessment of some of the scholarly literature within several branches of the social sciences that focus on the 'Information Society'. This assessment is based on a review of some 800 works published in English from the late 1940s to 2008 on the economic relationships of information, knowledge and society; issues of democracy, governance and regulation; and the role of information and communication technologies (ICTs) in everyday life.[1] It will come as no surprise to readers that the Information Society is a notoriously fuzzy concept. There are many critical assessments of this concept in the literature. The purpose of the present paper is to examine the analytical foundations of works that consider the 'life and times' of the Information Society, originating mainly within the disciplines of economics, politics and sociology as well as within the fields of media and communication studies, and science and technology studies.

There are many other disciplines and fields of study that have tackled information and knowledge problems. However, it is scholars from the areas surveyed here who have worked to influence the direction of policy making and actions at the institutional

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ISSN 0810-9028 print/ISSN 1470-1030 online

DOI: 10.1080/08109028.2010.503120
http://www.informaworld.com

level, intending to build societies that have come to be labelled collectively the Information Society.[2] We know from the existing literature that discussions in this area frequently embrace dystopian or utopian sentiments with respect to the possibilities offered by new technologies. The opening quotation seems to capture these, albeit in a literary form. This paper considers some of the reasons there is so little reciprocal engagement across the boundaries of relevant disciplines and fields. Or, indeed, among those who see the challenge of building the Information Society as one primarily of investment in technologies to improve the quantity, speed and reach of the circulation of information, and those for whom such investment is justified (if at all) only by the individual or societal goals that are achieved. The overall argument is that while critical scholars offer much insight into the problematic nature of the Information Society concept, we often fail to convince those who are not already persuaded that it is a problematic concept insofar as it does not provide a means for a consideration of the alternative societies that people may value. In this paper, the aim is not to search for 'the' alternative theory or set of practices that might address the problem, but rather to assess whether there are some potentially new opportunities to promote a dialogue that has greater purchase on those who hold the power to establish the policies and investment practices that will have consequences for the character of societies in the twenty-first century.

It might be expected in the light of the importance of information of all kinds in human life, that research focusing on the life and times of the Information Society would entice scholars with interests in both information production and consumption and in changes in society more generally, to undertake analysis of its meanings and implications. And indeed it has. We might expect an interdisciplinary body of intellectual inquiry to have emerged during the past 50 years or so since scholarly work started to focus on issues around information and communication control systems. This review of published works indicates, however, that there is relatively little cross-citation, although, of course, there are a few very frequently cited authors. This is unsurprising in the light of the persistence of disciplinary enclaves, but it is noteworthy that it is mainly, though not exclusively, insights arising within the discipline of economics that seem to influence policy makers, albeit indirectly, in this area.

This has major consequences because it means that many of the important social dynamics of societal change are persistently downplayed. This process of exclusion of certain issues from the agenda of policy makers is aided by the continuing dominance of what is called here the 'Information Society vision'. In the next section, the origins of the Information Society concept are reviewed, followed by a synthesis of some of the scholarly critical appraisals of the concept. The perspectives of economists who puzzle over information and knowledge are then considered and their positions juxtaposed with those of others who have sought to understand the dynamics of diverse digitally-mediated societies using frameworks based on considerations beyond the reach of the economists' analytical models. This leads to a consideration of why few arguments critical of the predominant vision of the Information Society seem to filter into policy discussions. The final section reflects on the prospects for those who are critical of the Information Society vision of making their voices heard.

The Information Society vision

In the early post-World War II period, a vision of what would come to be labelled the 'Information Society' began to crystallize. Scientists, engineers and mathematicians

were interested in information and communication control systems and technologies that might help them to realize their hopes for the contributions of artificial intelligence and robotics. In the same period, economists were hoping that productivity gains reaped by mechanization could be replicated by automation. Policy makers were trying to maintain full employment and growth, and information workers (such as librarians and software engineers) were attempting to increase access to knowledge by crafting better tools for accessing information. The assumption that enormous social and economic benefits could be reaped by those best positioned to build on new ICTs quickly gained currency.

The origins of an emphasis on information and communication control systems can be traced to the publication in 1948 of Norbert Wiener's *Cybernetics: Or Control and Communication in the Animal and Machine.* As Professor of Mathematics at the Massachusetts Institute of Technology (MIT), he was interested in neurological systems and information processing and feedback systems. He would later suggest that to live effectively is 'to live with adequate information … communication and control belong to the essence of man's inner life, even as they belong to his life in society' (Wiener, 1956, pp. 17–18), but his research nevertheless focussed on individual capacities for information processing. Claude Shannon, an electrical engineer and mathematician, also at MIT, and Warren Weaver, a scientist and Director of Natural Sciences at the Rockefeller Institute, published *A Mathematical Theory of Communication* in 1949. They were interested in developing control systems for both military and non-military applications. Wiener observed that 'society can only be understood through a study of the messages and the communication facilities that belong to it' (Wiener, 1956, p. 16). His view was characteristic of those working on cybernetics who emphasized both the underlying technology and a sender–receiver (S–R) model of communication. At about this time, although there were few interdisciplinary collaborations with social scientists, Bateson (1951) was an active contributor to the field. His theoretical model contextualized communicative processes in ways that highlighted many of the limitations of a simple S–R model and offered insight into the way these processes are contextualized within wider social and cultural developments. This work was a precursor to the development of theories of the communicative process that acknowledge its situatedness and context-dependency, though this work has rarely informed discussions about the Information Society.

In the United States, economists such as Machlup (1962, 1980–84) and Porat and Rubin (1977) undertook empirical work aimed at measuring the intensity of information activities in the United States' economy and the growth in information-related occupations, following in the tradition established by Shannon and Weaver. This would give rise to internationally comparative research aimed at mapping and measuring the Information Society, initially focusing on industrialized countries (Godin, 2008). Bell's (1973) *The Coming of the Post-Industrial Society: A Venture in Social Forecasting* brought the information age to the attention of a broader group of social scientists in the United States and Europe. For Bell (1979, p. 501), the sociologist, 'the axial principle of the postindustrial society … is the centrality of theoretical knowledge and its new role, when codified, as the director of social change'. He said that the variables it was crucial to study were information and knowledge,[3] and that it was necessary to focus on business and management issues as well as broad societal concerns. For Bell, Drucker (1969), and others, the challenge was to forge a strong commitment to technological innovation as the mobilizer of economic and social progress.

McLuhan (1962) had popularized the term 'global village'[4] in his *Gutenberg Galaxy: The Making of Typographic Man*, extending the work of Innis (1950, 1951), and emphasizing the different features of communication in the written and oral traditions. McLuhan (1960, p. 567) suggested that 'the advent of a new medium often reveals the lineaments and assumptions, as it were, of an old medium', sparking a vociferous debate – which continues – about whether specific ICTs are causally related to certain societal configurations. A growing fascination with the linkages among technology, information and communication was not centred only in North America. In the 1970s research in Japan by Masuda, for example, was also leading to a vision of the Information Society. He referred to a 'computopia' (Masuda, 1980, p. 147), a society that would 'function around the axis of information values rather than material values' and, rather idealistically, as one that would be 'chosen, not given'.

Notwithstanding the strong association between social transformation and technological innovation in much of this early scholarship, the main orientation of what would become the pervasive dominant vision of the Information Society is strongly informed by the idea that if better versions of the underlying technologies could be built, they should be developed in order to drive economic growth and to augment military strength. ICTs, enabling faster and cheaper information processing, are expected by many of those who champion this vision to underpin a new productivity strategy, stimulating growth and improving productivity in the manufacturing sector and leading to the expansion of new information and service-related industries. In short, if everyone invests in each new innovative development in ICTs as a matter of priority, this will lead to: 'the best of times … the epoch of belief … the season of Light … the spring of hope' (Dickens, 1859, p. 1).

A problematic vision

The hegemony of the singular construction – the Information Society – should not go unchallenged.[5] In this section some of the arguments of those who have questioned the meaning implied by the singular, dominant vision offered by the Information Society concept, linked as it is to the growing use of ICTs in the acquisition, storage and processing of information, are considered. Questions have been raised about this concept since the early contributions by Wiener and by Shannon and Weaver, and by those working within the discipline of sociology and the fields of science and technology and media and communication studies.

For example, Innis (1951) warned against the 'ideology of information technology', suggesting that the economic, social, cultural and political outcomes associated with a dependence on electronic information should not be straightforwardly associated with enhanced human well-being. He took this view notwithstanding the common criticisms of his work in *The Bias of Communication* for its technological determinism. Many scholars have since been critical of the dominant vision, often challenging the idea of a progression through stages of social and economic organization to achieve the Information Society. Robins and Webster (1987, p. 87) found fault with this perspective, maintaining that 'only when it becomes possible to confront the integral cultural and economic dynamic of contemporary transformations, will it be possible to assess the space for liberatory intervention as against the logic of domination and control in post-modern cultural forms' aided by innovations in technology. And in his *Theories of the Information Society*, initially published in the mid-1990s, Webster offers a comprehensive critique of the concept, drawing on various strands of

social theory. In the third edition in 2006, he says 'oppositional though they are, all scholars acknowledge that there is something special about "information"' (Webster, 2006, p. 2), indicating that with the passage of time there has been greater emphasis on people whose resources and dispositions shape the technology.

This emphasis on society and on social processes as a counter to the scientism and determinism associated with the dominant vision is apparent in the work of numerous scholars. For example, Golding and Murdock (1978, p. 347) maintained that a priority should be to develop a theory of society with a focus on the implications of media and communication (or information) industry developments for social inequality. As they put it, 'determinism, in its arbitrary allocation of an unwarranted and unsupportable significance to the subject matter at hand, distorts beyond reprieve a balanced view of social structure and process' and leads to a neglect of 'sources of social dissent and political struggle'. Beniger's (1986) *The Control Revolution: Technological and Economic Origins of the Information Society* underlined the importance of technological convergence, but in contrast to those who contended that the Information Society was being driven by technological advances, Beniger highlighted the way that organizational systems were contributing to the emergence of 'a single infrastructure of control', an infrastructure that drew upon, but was not determined by, the information machinery. Like others critical of the dominant vision, he said that society and its power relations provide the backdrop for an analysis of the technologies and their applications.

Lyon (1986, p. 586) argued that it was unlikely that the dynamics of industrial capitalism would be altered substantially by the spread of digital technologies, and Smythe (1977, 1981) challenged the premise that the Information Society would radically alter relations of political and economic dependency. Schiller (1981, 1984) examined concentrations of corporate ownership, which he argued were enabling the interests of capitalists to prevail in the Information Society. With Miège (Schiller and Miège, 1990), he argued that there was 'more menace than promise' in information technologies. What mattered was 'the structural character of the world community and the quality of life and social existence it offers to *all* people' (Schiller, 1980, p. 313), not only the privileged few with access to innovative technologies for communication and the production of content.

At about the same time, in the field of science and technology studies, Miles and Gershuny (1986) were examining the empirical evidence suggesting the growing economic significance of information in the economy. They concluded that even if information was of growing significance in the economy, this development was associated with very diverse service sectors, and that analysis must be open to such diversity (see also Miles, 2005). The statistical evidence pointing to a relatively homogeneous Information Society has continued to be questioned (Menou and Taylor, 2006). Like Masuda, who argued that changes in society should be 'chosen, not given', Miles and Gershuny advocated debates on the economic implications of the unequal distribution of information resources and on alternative designs of ICTs, *before* the new systems are installed. Freeman and Soete (1990b), whose work associated the new ICTs with the revolutionary potential of a new paradigm for the organization of the economy, also called for a resolution of conflicting interests through public debate, as institutions and ways of living were being reshaped *in parallel* with technological innovations.

Others stressed the continuity of historically formed relations of power in society, notwithstanding the newness of technology. Murdock (1993, p. 537), for instance,

stressed that, rather than concluding that everything is transformed into a post-modern age as a result of innovations in technologies, the modern era should be seen as 'a complex articulation of formations, operating in different domains and at different levels'. Somewhat later, Winston's (1998, p. 2) study revealed evidence of continuity between historical and modern social formations framed by the telegraph and the Internet. In contrast to those who focused on the disruptive or revolutionary character of innovations in ICTs, Winston and others, including Robertson (1990), Schement (1990), Tremblay (1995) and Mattelart (2002), acknowledged the opportunities, but found the technologies were being implemented in ways that replicated existing inequalities within society.

For these scholars, if the dynamics of social reproduction were continuing to give rise to social and economic inequality, the likelihood was that innovations in ICTs would be complicit in this. For them, the social order was still characterized by 'the worst of times'. Castells' (1996, 1997, 1998) work highlighted the cultural and institutional manifestations of what he referred to as the 'network society' and its association with social formations and unequal relations of power. He was criticized by some scholars, such as van Dijk (1999, p. 129) and Stehr (2000), for offering a 'modern version of "technological determinism"', but he highlighted the enabling and the disabling characteristics of ICTs. Castells (2009) has continued to examine the network society, most recently in *Communication Power*, in which he emphasizes the consequences of exclusion from the dominant networks. Castells (2009, p. 25) proposes that:

> this fragmentation of societies between the included and the excluded is more than the expression of the time-lag required by the gradual incorporation of previous social forms into the new dominant logic. It is, in fact, a structural feature of the global network society.

For Castells, the dynamics of today's networks are associated with ideas, visions, projects and frames that generate actions that lead to exclusion and therefore to disadvantage (Castells, 2009, p. 44). Set against this bleak conclusion, he has come to regard 'mass self-communication' as offering at least the possibility that challenges to the powerful corporate producers of information may occur through the 'reprogramming' of networks developed by social movements and their agents, enabling new values and interests to come to the attention of the public. Castells' optimism regarding the ways in which networked insurgent communities can change hearts and minds is, nevertheless, tempered by his analysis of the way dominant organizations strive to create electronic enclosures to contain these actors. Set against this view is Poster's (1990, 2006) yet more optimistic observation, based on his study of *The Mode of Information*, that information societies will not necessarily reproduce the 'neoimperialisms' of the past.

Castells' effort to build a still incomplete theory of the network society resonates with Beniger's (1990) earlier call for a general theory of information, communication, decision making and control. Some of those who took up his suggestion include systems theorists, such as De Landa (1991) and Luhmann (1996), who offer similarly relational accounts of information developments, but in ways that people and their agency all but disappear. Lash (2002, p. 112), for example, maintains that 'in the information age the centrality of the means of production are displaced by the means of communication', that non-linear socio-technical assemblages replace the institutions of earlier societies, and that a critique of information must emerge from

information feedback loops within the communication system itself. Following Luhmann's (1996) systems theory, he argues that we can no longer (if we ever could) stand outside the system and critique it from some transcendent ideological position. Castells, in contrast, eschews the automaticity of the autopoietic or self-referential systems view.

What then are we to conclude about all this scholarly activity focusing in one way or another on the growing salience of information, on communication and, increasingly, on global networks? Has it challenged the dominant vision in ways that policy makers can understand? Indeed, has the Information Society concept been helpful and if so to whom? Garnham (2000) has concluded that the concept is not helpful if the goal is to understand the way the actions of people – both the included and the excluded – give rise to stability or instability in the social order and to changes in the way society advances in line with the specific interests of those wielding power within the capitalist system. The concept has been instrumental in mobilizing a large number of initiatives supported by those who associate the new ICTs and globally networked information with better prospects for the best of times. The concept and its Digital Economy, Creative Economy, and Knowledge Society brethren, have stimulated the imaginations of investors in hardware, software and content in many ways. There is no doubt that dominant power relations have been challenged in some places, and with variable consequences. This observation is not inconsistent, however, with the fact that there are deeply rooted inequalities in society and that these are not being magically overcome as a result of a digitally mediated society. This is so regardless of how often we are told that the poor can access new technologies, such as mobile phones, and many other digital artefacts.

The next section considers perspectives on the economics of the Information Society to demonstrate how these approaches downplay or avoid issues relating to the distribution of power, thereby yielding the dominant vision that suggests that we are all on the cusp of the best of times.

The Information Society puzzle

Economists conclude that knowledge creation is an important driver of the economy. Typically, they make little distinction between information and knowledge. It is a very short step for them from the Information Society to the Knowledge Society; that is, a society in which new knowledge 'fuels' development. As David and Foray (2003, p. 20) observe,

> knowledge has been at the heart of economic growth and the gradual rise in levels of social well-being since time immemorial. The ability to invent and innovate, that is to create new knowledge and new ideas that are then embodied in products, processes and organizations, has always served to fuel development.

The emphasis on knowledge-based economic growth reflects an interest in intangible sources of economic value as a key driver of the economy. As David and Foray (2003, pp. 20, 27) go on to say:

> The crux of the issue lies in the accelerating (and unprecedented) speed at which knowledge is created, accumulated and, most probably, depreciates in terms of economic relevance and value. This trend has reflected, *inter alia*, an intensified pace of scientific and technological progress … Knowledge-based activities emerge when people,

> supported by information and communication technologies, interact in concerted efforts to co-produce (i.e. create and exchange) new knowledge.

Information is seen here as a prerequisite for knowledge production or co-production. This creates difficulties for the economic analysis of market developments because, from an economic vantage point, information has peculiar characteristics compared with tangible goods. Information is intangible, non-rivalrous, and non-excludable.[6] Conventional economic models are not designed to take account of these features of information. In particular, once information is produced, it requires considerable effort to prevent its being passed on to others. ICTs make the costs of information reproduction negligible, creating a paradox over how to finance its initial (first copy) production costs. Stigler (1961, p. 213) was quick to realize this, advising that 'one should hardly have to tell academicians that information is a valuable resource: knowledge *is* power. And yet it occupies a slum dwelling in the town of economics'. As the Internet has become the site of commercial activity, the argument that information is an 'experience good' has been popularized in the economics and management literature, notably by Shapiro and Varian (1999) in *Information Rules.* Thus, exclusion from participation in the benefits of the Information Society is manifested as the absence of experience. For most economists, this problem is addressed over time by the diffusion of the new technologies; it is not related to the likelihood of the reproduction of unequal power relations in society.

Without a vocabulary or model for considering power relations, economists turn instead to the factors that lead to increases in productivity; that is, to the possibility of producing more with constant capital and labour inputs. They seek to understand how technologies might be implicated in this. Increasing productivity is sufficient for economic growth, a central goal (or bias) of capitalist societies. ICTs are thought to play a special role because these technologies can be employed in many different contexts – across all sectors of the economy. They are regarded as general purpose technologies (GPT) (Lipsey *et al.*, 2005). Bresnahan and Trajtenberg (1995, p. 84) suggested that 'most GPTs play the role of "enabling technologies", opening up new opportunities rather than offering complete, final solutions'. Despite this caveat about the incompleteness of technological solutions, much like earlier pervasive technologies, such as the steam engine and electricity (David, 1990), it was assumed by many that the rapid diffusion of ICTs leading to 'informatization' would result in a boost in productivity.

One of the enabling features of ICTs for economists is their contribution to the increasing codification of information. Making little distinction between information and knowledge, it is argued that by codifying information in digital form, new knowledge can be circulated more widely, thereby fuelling growth and economic development. Some insist that these opportunities imply new styles of learning, while others stress the importance of tacitness (i.e. knowing more than one can say) and the continuing need for support to those who can now access digital information in new ways (see Antonelli *et al.*, 2000; Steinmueller, 2000; Cowan *et al.*, 2000; Johnson *et al.*, 2002). Once again, however, without a theory of the social processes of learning, or indeed, of individual cognitive processes, the economists are unable to do more than assert that certain transformations towards greater inclusiveness are possible.

In the contexts of these intellectual traditions, the Information Society vision remains problematically in the forefront of debate. Empirical evidence suggests that there are pronounced differences in the economic performance of countries which

cannot be explained fully by differences in their levels of investment in digital technologies. Solow (1987, p. 36) said that 'you can see the computer age everywhere but in the productivity statistics', which led to a debate among economists on the sources of productivity improvement (see Abramovitz and David, 1996; Jorgenson and Stiroh, 2000; Gordon, 2004). Some, such as Brynjolfsson and Hitt (2003) in the United States and Bloom and Van Reenen (2007) in Britain, have sought explanations for these different performances in enterprise-level data, identifying the contribution of specific business processes to their economic performance – instead of focusing on aggregate economic performance data. Their work suggests that the context of organizational structure and process does indeed influence developments in the economy associated with ICTs.

Research closely associated with the economics discipline, and which is very central to the field of science and technology studies, analyses how technological innovations lead to shifts in technological 'style' or in the 'techno-economic paradigm' (see Freeman *et al.*, 1982; Perez, 1985; Freeman, 1988; Freeman and Soete, 1990a, 1997). This work seeks to explain why changes in technologies may have destabilizing effects on the economy. These authors suggest that as a new technology spreads, a new 'common sense' starts to take hold that eventually pervades all aspects of individual and institutional endeavour. Change may be disruptive, resulting in the obsolescence of skills and qualifications, and wealth creation for some as well as new means of exclusion for others. However, the foundations of this work are in the economics discipline, which means that there are very limited conceptual tools to explain what this new common sense implies for individuals or groups, or, indeed, why this common sense might be contested.

None of these approaches explicitly discusses power relations. As a result, they have no theoretical means of tackling the political, economic, social and cultural dynamics that yield distorted and inequitable relations as a result of the production and consumption of technologies and information services. Insofar as such distortions are variable in their intensity, they generally do not consider the differences among so-called 'information societies'. When we turn to scholarship that draws upon various social theories, there is much greater scope to develop differentiated understandings of the dynamics of information societies, and to begin to unravel some aspects of the puzzles that challenge the economists.

Information societies

A more differentiated set of expectations about the emergence of information societies is embraced by scholarship that focuses on the social order and only then on the mediating role of digital technologies. Considerably before the Internet began to be associated with the transformative potential of ICTs, for example, Murdock and Golding (1989) noted the tendency to assume that the spread of market-oriented communication and information systems is related to an enlarging of the space for people to make choices about their lives and to exercise control in ways that are empowering. More recently, this assumption is visible in the promise of Web 2.0 applications from Facebook to Flickr and the iPhone. Developments in behavioural economics and targeted advertising are being used to extend the reach of commerce into the online spaces created by the Internet and, arguably, little is being done to keep these commercial forces at bay.[7] Although these developments are discussed by scholars within the field of political economy (Van Couvering, 2010), they are largely

ignored by those who focus on other features of information societies, such as the potential for personal development and new forms of identity formation. Countless virtual community websites cater for an enormous variety of human interests. Blogging creates opportunities for online publishing and debate (see Brake, 2009), online gaming involves distant and proximate players, and the use of avatars in virtual spaces, such as Second Life, offers huge potential, especially for those with the skills to co-produce their identities and engagements with others (see Van der Graaf, 2009). There is an almost limitless opportunity for online experience, assuming a user has access and the resources to enter websites, but analyses of these opportunities have been only infrequently accompanied by assessments of whether they are unambiguously associated with enhanced human well-being.

For example, within the framework of psychoanalytic and sociological theory, a mixed picture of the relationship between ICTs and empowerment and disempowerment emerges. In the 1980s and early 1990s, there was a fascination with the virtual worlds in which identities can be constructed, often to the neglect of the offline environments in which people live. Sherry Turkle's (1995) path breaking work, *Life on the Screen*, focused on the multiple identities that avatars may assume on behalf of their creators. Her studies of users of multi-user dungeons (MUDs) were informed by psychoanalytic theory, demonstrating that users of online games cycle through different characters and genders as they adopt flexible identities (Turkle, 1997). Steinkuehler and Williams (2006) investigated the 'third spaces' where identity creation occurs online, finding signs of flexibility as well as associations with offline experience, but there are no normative claims in these works.

Some concerns about the implications of the intensity of virtual engagement for social and intra-psychic experience are beginning to be voiced. An American psychiatrist, Block (2008, p. 306), for example, argues that 'Internet addiction' merits inclusion in the DSM-V (the American Psychiatric Association's listing of mental illnesses and diagnoses). The American Psychological Association has formally acknowledged this category of addiction, but others claim that there is no reason to isolate difficulties associated with intense Internet use from other kinds of addiction. There are few reliable data in this area and claimed associations between intense Internet use and rates of suicide and depression are not easy to verify. The review of studies of online sexual compulsion by Cooper *et al.* (2000) suggests that such behaviour should not be perceived as a major problem. Similarly, Kraut *et al.* (2002) found that intensive use of the Internet generally is consistent with perceptions of well-being, although these findings have been called into question by Boles *et al.* (2004). Thus, the jury is out on the balance between positive and negative intra-subjective experience associated with the information societies emerging in different countries and regions around the world.

Sociologists working in the 'everyday life' tradition have made progress in making connections between public action and the mediation of life online. Research in this area is concerned with the strategies and tactics of what de Certeau (1984, pp. xiv–xv) called 'ways of operating':

> these 'ways of operating' constitute the innumerable practices by means of which users reappropriate the space organized by techniques of sociocultural production … to bring to light the clandestine forms taken by the dispersed, tactical, and make-shift creativity of groups or individuals already caught in the nets of 'discipline'.

In this tradition, it is acknowledged that 'there can be no knowledge of the everyday without knowledge of society in its entirety' (Lefebvre, 1962/2002, p .4) and so

research is aimed at understanding the contextual relations within which mediation occurs – how do users re-appropriate and resist dominant visions of the social order that become embedded in technological systems? Silverstone (1999), for example, drew on this tradition to analyse users' experiences online, focusing especially on people's strategies and tactics for resisting the producers' expectations about their appropriation of the new digital technologies (see also Morley and Silverstone, 1990; Silverstone, 1994; Silverstone and Haddon, 1996). Those who have examined mediation by technical means often understand that the consequences of the spread of new technologies are not homogeneous or universal. Martin-Barbero's (2002, p. 622) claim that 'the network society is not, then, purely a phenomenon composed of technological connections, but rather the systemic disjunction of the global and the local', reflects this realization of the complexity of the mediation process. Within the dynamics of global capitalism there are opportunities for social movements to resist dominant visions and the structures of the social order. Silverstone argued that 'mediated connection and interconnection define the dominant infrastructure for the conduct of social, political and economic life across the globe' (Silverstone, 2007, p. 26), but he observed that this dominance is neither uniform nor without ethical and moral implications.

In the sphere of political theory, initially there was optimism that 'real world' democracy might be translated into online democracy: 'the public should be able to conduct meetings in cyberspace in ways that are as civil and democratic as in the real world' (Dutton, 1996, p. 288). The democratizing potential of ICTs is envisaged in Lessig's (1999, 2006) argument that software code, embedded in networks, sets limits and constrains the norms for information exchange, but that these norms could be established to provide a basis for empowerment of individuals. Feenberg (1992, p. 319) suggests that the new technologies embody a 'subversive rationalization'; that is:

> individuals who are incorporated into new types of technical networks have learned to resist through the net itself in order to influence the powers that control it. This is not a contest for wealth or administrative power, but a struggle to subvert the technical practices, procedures, and designs structuring everyday life.

Similarly, discussions about the potential of e-democracy often emphasize that online deliberation 'could provide a basis for a more dialogical and deliberative democracy in place of the dialogue of the deaf which tends to characterize contemporary political representation' (Coleman, 2005, p. 177). From a different starting point, Dahlgren (2005) argues that the Internet is destabilizing for some aspects of democratic practice. Research in these traditions employs different theoretical approaches to power, yielding varying assessments of the scope for differentiation of societies which rely in new ways on mediated relationships for the conduct of political processes.

Finally, within research traditions that focus on the role of culture, power and language within dispersed, increasingly networked communities, there is considerable emphasis on whether these developments offer a basis for political action and resistance. Ribeiro (1998), for example, emphasizes that the outcomes of cyberactivism are governed by power relationships enacted in the 'real', rather than in the cyber, world. Others, such as Karim (2007), focus on the potential for virtual communities to engage diaspora groups, creating the potential for 'globalization from below'. In addition, regardless of what kind of ICT mediated platform is in use – radio or the Internet – research shows that there is no consistent relationship between the presence of a free

and independent media and the strengthening of civil society in fragile states (James, 2004; Putzel and van der Zwan, 2007).

Overall, then, studies of developments linked to information societies that reach beyond the economic paradigm of intellectual work, reveal a very ambiguous, if not contradictory, set of expectations with regard to the interplay between the dynamics of technological development and social processes. What can or should be our position as academic commentators on the life and times of the Information Society? If we assume that our theories and empirical research do, in fact, offer a vantage point for social commentary on the policies and practices that should be encouraged, how should we position ourselves in policy debates that invoke this and related concepts?

The policy consequences

There are few instances of convergence between the different approaches to the Information Society in the scholarly literature and there are similarly few signs of cross-fertilization of insights from these traditions when they travel into the policy domain. The documents issued by policy organizations tend to be bifurcated between those offering a normative prescription for the optimal way of capitalizing on the claimed benefits of the production and use of ICTs in line with the dominant vision, and those challenging this vision and seeking to acknowledge diversity and redress for processes that result in social exclusion and economic disadvantage (Mansell, 2010). The Information Society concept serves as injunction and prescription for the former, and as a flashpoint of criticism for the latter.

In the policy domain, there has been much discussion of the life and times of the Information Society although a great many labels have been applied. In 1980, UNESCO published *Many Voices, One World*, the report of its International Commission for the Study of Communication Problems (ICSCP), also known as the MacBride Report (see Carlsson, 2005; Mansell and Nordenstreng, 2006), acknowledging the need for critical assessment of the way new technologies for information and communication were becoming unequally embedded in society. By the 1990s, the emphasis started to shift towards knowledge as the main driver of social and economic transformation. The OECD (1996) defined a knowledge-based economy as one that is very strongly dependent on the production, distribution and use of knowledge as embodied in human beings and in technology, a perspective consistent with the economists' models. Later, UNESCO (2005, p. 5) emphasized capabilities and the variety and the plurality of emerging societies: 'knowledge societies are about capabilities to identify, produce, transform, disseminate and use information to build and apply knowledge for human development'.

Notwithstanding UNESCO's effort to encourage a more explicit acknowledgement of the unequal social relations that provide the context for discussion in this area, it is the Information Society concept that informs most programmes of action sponsored by the donor community and development agencies. Debates about the need to envisage more inclusive online spaces for dialogue, and to facilitate action, vacillate between optimism and pessimism. It was optimism about the potential of ICTs to be used to reduce poverty that led to the World Summit on the Information Society (WSIS) in 2003 and 2005. Many countries have been encouraged to prepare strategies to encourage the development of the Information Society within their boundaries. The WSIS Action Plan on the Information Society[8] and the initiative of GAID (Global Alliance for ICT and Development)[9] are two of the more visible interventions. Most

of these initiatives rely on market-led investment strategies, disproportionately seek to act on the insights of advisors from the 'Global North', and follow a strongly technology-led agenda.

Scholars, including Hamelink (2004) and Splichal (2006), concluded that the hegemony of the dominant vision of the Information Society persists with little opportunity in policy forums to enable the voices of civil society representatives and critical scholars to be heard – though here, too, there are some who are more optimistic about the opening of a dialogue to a multi-stakeholder community (Calabrese, 2005). Many policy measures designed to encourage progress towards the Information Society are influenced by neo-liberal assumptions about the need for 'free' markets and for 'light touch' regulation (Mansell, 2001, 2006). Despite the fact that ICTs are acknowledged as a target area in the Millennium Development Goals,[10] policies show few signs of opening a space for 'alternative pathways' (Lugo and Sampson, 2008) towards information societies.

Many discussions about the digital divide tend to emphasize dualisms (e.g. information 'haves' and 'have nots') without addressing the structural dynamics and power relations that influence the terms upon which people are able to participate in their information societies (Mansell, 2002). Warschauer (2004) calls for an analytical framework that focuses on social inclusion and Norris's (2001) and van Dijk's (2005) work, for example, highlight the need for comparative research to examine the underlying dynamics of differentiation within and between information societies.

In the absence of agreement about the normative foundations for information societies, it may be that policy makers can benefit from research findings that enable them to articulate alternatives to the dominant perspective. Garnham (1997), for example, turned to Sen's (1999) work on capabilities and the choices people can exercise in their lives as the basis for decisions about whether to intervene in market-led developments. In this context, the emphasis is on the multiple ways in which information societies might contribute to the well-being and achievements of human beings.[11] Garnham suggested that as connectivity to networks becomes essential to people's abilities to conduct their lives, there will be a requirement for some kind of regulatory intervention in the interest of fairness and equity. Unfortunately, insofar as there is concern about fairness and equity, discussion has focused on access to technology and rarely on the kinds of well-being and potentials for achievement that are fostered. And, as the Internet spreads and digital platforms (mobile phones) of all kinds become more accessible, it becomes more difficult to argue for policy or regulatory intervention as the neo-liberal agenda envelops the new technologies as progressive in every way (Couldry, 2003).

There are ongoing discussions about the need for formal regulation (or informal co- or self-regulation) of the Internet. In Western countries, formal regulation is rarely attractive because of the prevailing view that the development of the Internet (the Information Society) requires unrestricted experimentation and an open space in which voluntary contributions can be made. This area is dominated by claims about the importance of 'net neutrality'; that is, the retention of a network architecture that does not privilege or discriminate among content and applications, rather than by debates about the public's interest in various types of content or services (see Bar *et al*., 2000; Owen, 2007). Net neutrality invokes the idea that the Internet should be available to all on a uniform, non-discriminatory basis without differentiation in terms of quality of service; that is, it should be a transparent, end-to-end network. But as McChesney (1996) argues, the Internet is not neutral because developers and users

include large commercial companies. Insofar as these companies set policy and practice with respect to such issues as privacy, security, and copyright, there are often good grounds for policy or regulatory intervention. Self-regulation by Internet service providers, such as that encouraged by the UK's Internet Watch Foundation,[12] which aims to remove child abuse images,[13] continues to be discussed, but such debates frequently are conducted within the frame offered by the Information Society vision [see Livingstone (in press) for a comprehensive review of arguments about children's rights].

If greater emphasis on human well-being within differentiated information societies is to be present in policy debates and to inform the actions of the many actors who influence the formation of our societies, then attention must be given to how, and to what extent, information and communication-related rights are respected. Adoption of the United Nations Charter in 1945 and the Universal Declaration of Human Rights (UN UDHR) in 1948 obliged all States to establish, protect and enforce human rights at the global, regional, national and local levels. Article 19 of the UN UDHR declares that: '[e]veryone has the right to freedom of expression and opinion; this right includes the freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers'. There is a strong relationship between recognition of the inherent dignity and equal and inalienable rights of all people, and their right or entitlement to participate in information societies.[14] The question, therefore, should be: what legal and other conditions are constraining social groups from attaining the capabilities for shaping their information societies?

This is a fundamental question that deserves further conceptual elaboration: what are the implications of the rights-based discourse in different societal contexts? Does this discourse focus too much on the individual, and insufficiently on the potential of organized social movements to resist dominant discourses and exclusively market-led developments? Arguments are needed in support of the diversity of information societies from multiple perspectives, not only from the standpoint of the legal discourse on individual human rights, or from the standpoint of a single discipline, such as economics with its concern with market-led and technology-based solutions to economic growth. In recent years, the Information Society (or knowledge-based economy) vision has been challenged for its neglect of broader considerations of well-being or happiness (Engelbrecht, 2007, 2009). Considerations of happiness offer a subjective evaluation of an individual's condition in the world that reaches beyond production and the money economy to consider people's beliefs and the things they value. In this area, efforts are being devoted to the development of metrics to assess national happiness and the results suggest that increasing wealth is related in complicated ways to measures of happiness.[15] In this work we find economists turning to insights from the psychology discipline to understand the complexity of societies and the information base that can best serve decision makers who seek to guide them.

Others go further to challenge the academy and decision makers to eschew the rationality and objectivity of (social) science and to draw insight from traditions that value wisdom. This work is concerned with ethical practice or practical wisdom, drawing upon the classics including the Aristotelian concept of phronesis, and arguing that in the context of management and organizational learning, a more humanistic epistemology is needed to ensure that choices that affect the lives of all people are informed by wisdom and ethical virtue (Rooney and McKenna, 2005, 2008; Rowley and Gibbs, 2008). These approaches do not lend themselves easily to the quantifiable

metrics so valued by those who are guiding society.[16] Although these approaches offer interesting reflections on the relations between, and valuations of, the information – knowledge – wisdom nexus, they do not offer an easy answer to questions about whose wisdom or insight is to count or matter insofar as there may be multiple contending priorities for investment and action. This brings us to the question of whether there is evidence of any greater receptivity to those who want to put the case for a more variegated, pluralistic and open vision of societies which does not presume that investment in ICTs and information or knowledge creation, following the dominant models developed in the Global North, are the solutions to persistent human disadvantage and poverty.

Conclusion

Whether the opportunities created by the spread of digital technologies make a beneficial difference in people's lives in the future will be strongly influenced by the extent to which the dominant vision of the Information Society is successfully challenged in ways that reach out to those best-positioned to formulate policy and decide on investment strategies with respect to technology *and* the cultural and social contexts of their uses. Scholars who regard themselves as legitimate participants rather than just spectators in domains of policy or practice may criticize the Information Society vision and argue that it diverts attention from economic inequality and social exclusion, but we cannot ignore it. The consequences of the dominance of this vision are playing themselves out in people's lives, often producing new articulations of inequality. We need to know why and how this occurs so that resources can be mobilized to reduce the social, political and economic harms that emerge. We need to challenge the prevailing 'common sense' or 'wisdom' to consider a broader range of alternatives than those normally considered within the framework of the Information Society vision. Proponents of alternative visions of information societies will continue to struggle to convince decision makers, in policy forums and in the commercial world, that asymmetrical relationships perpetuated by the Information Society vision are replicated elsewhere. Challenges to this prevailing vision inevitably threaten power structures and are often interpreted as threats to the survival of incumbent firms.

Societies in the twenty-first century are very fluid and diverse, mediated increasingly by networks underpinned by convergent ICTs. In challenging the Information Society vision, it is important to ensure that we do not become caught between the rejection of 'a hegemonic Eurocentrism' (Dirlik, 2004, p. 146) – that is, a view informed by the principles and common sense norms consistent with the experience of the Global North – and a reactionary localism that rejects developments in ICTs and all digital sources of information, espoused in the name of the Global South. In imagining information societies that foster greater efficacy, social justice and well-being, analysis should focus on the values informing initiatives to build these societies. The fact that such values are contested needs to be acknowledged much more explicitly than is typical in policy debates today [for a review of research in the area of communication and media 'for development' see Manyozo (2008)].

Is this feasible in the light of the hegemonic position of the dominant Information Society vision? There are some signs in the policy and donor communities of a growing curiosity about context-sensitive and enabling approaches to the development of information or knowledge based societies. It is unclear whether this is a reflection of growing pressures to demonstrate effectiveness and impact as a result of investment

in ICT-related programmes, or a recognition of the merits of the arguments offered by critical scholars, whatever their disciplinary attachments. The Dutch-funded International Knowledge Management Emergent Programme, for instance, has encouraged researchers to put issues of power at the heart of its work,[17] insisting on the plurality of visions about future information societies.[18] Although programmes of this kind are developing in the margins of development initiatives that consider the role of ICTs and information societies, the shift in emphasis suggests that there are opportunities for scholars who are critical of the dominant vision to be heard in forums previously denied to them.

As long as the emphasis is primarily on the Information Society, the dominant vision will flourish, camouflaging the underlying dynamics of social and economic change and fostering the exclusion of those lacking the resources to benefit from the opportunities that are becoming available. There are analytical approaches that emphasize values aimed at enhancing human well-being and inclusivity, without presuming that inclusivity in a homogeneous Information Society will be valued by everyone. A renewed commitment to critical assessment of the Information Society is essential if we are to appreciate that technologies provide only the stage and some of the sets for the enactment of the cultural, social, economic and political life and times of our societies.

This is not to advocate a resolution of conflicts over the values that should be embedded in technologies *prior* to investment in them. Especially in the case of the ICTs that underpin today's economies, this is unrealistic. The argument is not that we can, or necessarily should, try to halt investment in creative developments in ICTs, pending a resolution of such conflicts. Instead, we should acknowledge that there are contested values and interests in the kinds of information societies that different groups and individuals are promoting:

> A principal aim of social science investigation is to illuminate processes that would otherwise be obscured by common habits of thought or belief. Our analysis has demonstrated the value of shifting the perspective away from the supply of new technologies and from a concern with the economic determinants of diffusion and assessments of social and economic impact. Instead, we have developed our analysis with a focus on uses and users and on the economic, social, technological and institutional issues surrounding participation in the information society. (Mansell and Steinmueller, 2000, p. 462)

The polarization of views between the worst and the best of times, between utopians and dystopians, between those who envisage many benefits for all in virtual worlds and those who resist the dominant vision, is unhelpful. More productive is a view that acknowledges that we are involved in neither a revolutionary digital era nor in an era of straightforward incremental change and continuity with the past. Norms, values, conventions and aspirations for the societies within which we live are changing, but they are not changing autonomously in response to the technologies of the Information Society. They are changing in response to human actions and decisions that are ongoing, contested and uneven in their outcomes. This is so despite the persistence of the voices of those who promote the singular, universalizing vision of the best of times. Acknowledgement of this within the corridors of power may open up greater opportunities to admit 'evidence' from those who do not share the narrow focus of the economists and mathematicians on information processing and control systems. It surely is time to move on from linear, S–R theories of the 1940s and 1950s to take advantage of a more varied set of analytical traditions.

Acknowledgements

A version of this paper was prepared for the Fifth Anniversary Conference of the Department of Media and Communications, London School of Economics and Political Science, London, 21–23 September 2008. I am grateful to two anonymous referees for their comments.

Notes

1. Eighty-six of these works were included in edited volumes under the title, *The Information Society (Critical Concepts in Sociology)* (see Mansell, 2009).
2. The large literature which focuses mainly on how individuals and organizations learn, or on the values they may have which inform their learning process, is not considered here.
3. Bell is credited with having introduced the term 'Information Society'.
4. The term first coined by Lewis (1948) in his *America and Cosmic Man*.
5. The title of *The Information Society* (Mansell, 2009) was proposed initially as *Information Societies* before a contract with the publisher was signed. This was in recognition of the diversity of societies in which information and communication play significant roles. That title was reviewed by the editorial group and rejected on the grounds that it was inconsistent with maximizing marketing advantage.
6. There is a long tradition of work in the economics field that has tackled this problem (for example, Lamberton, 1971, 1984).
7. There is legislation in most countries to protect personal information, but initiatives are being devised to collect data on consumer preferences at the individual level, albeit anonymously, without much evidence of resistance on the part of citizens or legislators.
8. See http://www.itu.int/wsis/index.html [accessed June 2010].
9. See http://www.un-gaid.org/ [accessed June 2010].
10. See http://www.un.org/millenniumgoals/global.shtml [accessed June 2010].
11. There are aspects of Sen's approach that need to be developed and critiqued (see, for instance, Clark, 2005).
12. See http://www.iwf.org.uk/ [accessed June 2010].
13. In 2008, the European commission adopted a proposal continuing its Safer Internet Programme (2009–13), which addresses communications services from Web 2.0, such as social networking, and is aimed at fighting illegal content and harmful conduct, such as grooming and bullying. Available from http://ec.europa.eu/information_society/activities/sip/programme/index_en.htm [accessed June 2010].
14. This relationship was acknowledged in the Millennium Declaration, 18 September 2000, which under 'V. Human rights, democracy and good governance' resolves 'to ensure the freedom of the media to perform their essential role and the right of the public to have access to information'.
15. See Layard (2005) and the report of the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz Commission), which argues for the development of measures to assess well-being and sustainability and a focus on income and consumption rather than production. See summary at: http://www.stat.si/doc/drzstat/Stiglitz%20report.pdf [accessed June 2010].
16. This work is informed by Maxwell (1984), who argued that human welfare can be improved only by strengthening wisdom, rather than knowledge alone. This work is philosophical in orientation and leaves us with the challenge of deciding whose wisdom is to count.
17. See http://ikmemergent.wordpress.com/ [accessed June 2010].
18. The writer is a member of the steering committee for this programme.

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