The Information Society- introduction to vol. 1

Book section

The Information Society

Critical Concepts in Sociology

Editor's Introduction

Volume 1, Information Societies: History and Perspectives

> Information is a name for the content of what is exchanged with the outer world as we adjust to it, and make our adjustment felt upon it. The process of receiving and of using information is the process of our adjusting to the contingencies of the outer environment and of our living effectively within that environment. … To live effectively is to live with adequate information. Thus, communication and control belong to the essence of man's inner life, even as they belong to his life in society.
>
> (Wiener, 1956: 17-18)

> In recorded history there have perhaps been three impulses of change powerful enough to alter Man in basic ways. The introduction of agriculture…. The Industrial Revolution … [and] the revolution in information processing technology of the computer. (Masuda, 1980b: 3, quoting Herbert A Simon,)

History and Early Debates

The origins of the emphasis on information and communication control systems, typical of much of literature on 'The Information Society', can be traced to a programme of scientific research, engineering and mathematics in the post World War II period and the publication in 1948 of Norbert Weiner'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. A year later, 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* (Shannon and Weaver, 1949). These men were interested in developing new approaches to automation and computerization as a means of providing new control systems for both military and non-military

applications. Weiner, especially, was concerned with the philosophical implications of their work. He observed that 'society can only be understood through a study of the messages and the communication facilities that belong to it' (Wiener, 1956: 16). Notwithstanding his interest in society, at this time there were few interdisciplinary collaborations with social scientists working on the implications of the insights arising from science and engineering.[1]

Fritz Machlup (1962, 1980-84), an economist, and Marc Porat and Michael Rubin (1977) undertook empirical work aimed at measuring the intensity of information activities and the growth in information-related occupations in the United States economy. This work was to give rise to comparative research aimed at mapping and measuring the The Information Society, initially focusing on industrialized countries. Machlup emphasized that over-concentration on information and its delivery systems could deflect attention away from equitable availability and distribution of the benefits of information, and he warned against the temptation to 'measure the unmeasurable' (Machlup and Kronwinkler, 1975), counsel that was not particularly well heeded. There has been considerable investment in indicator development, but relatively less effort has been devoted to understanding whether the data collected using these indicators can be used to infer behavioural change or applied to the analysis of the experiential aspects of information societies. In the 1970s research in Japan by Yoneji Masuda was developing a vision of The Information Society. The goal of the plan he devised for the Japanese government, was:

[1] An exception, in the United States, was the work of Gregory Bateson (1951).

> ‘the realization of *a society that brings about a general flourishing state of human intellectual creativity, instead of affluent material consumption’*. (Masuda, 1980b: 3, italics in original).

The Information Society was designated a ‘computopia’ (Masuda, 1980a: 146), 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’. A different approach to measurement in Japan was Youichi Ito’s (1991) work, which involves the many different modes of information and communication, including books, telephone calls, etc.

Daniel Bell’s (1973) *The Coming of the Post-Industrial Society: A Venture in Social Forecasting* brought the information age to the attention of social scientists in the United States and Europe, working in many disciplines well beyond those that had always focused on the media or communication systems. For Bell (1980: 501), ‘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,[2] and it was now necessary to focus on business and management issues as well as broader societal concerns. Peter Drucker (1969) employed the term ‘knowledge society’ in arguing that knowledge workers would have to change and adapt to its requirements. For these authors and many others, the task at hand was to forge a strong commitment to technological innovation as the mobilizer of economic and social progress.

[2] Bell (1979) is generally credited with having introduced the term Information Society.

Social scientists working in the field of communication in the United States generally emphasized the potentially transformative character of information and communication technology (ICT), although Harold Lasswell (1948, 1972) and Fritz Lazarsfeld and Robert Merton (1948) concentrated on the interactions between mass communication and social action, as did Wilbur Schramm (1955). Lasswell (1984: 37) emphasized that the social scientific study of communication meant a focus on 'who says what in which channel to whom with what effect', setting the stage for a tradition of media effects research with its problematic search for a stable set of effects.

The Canadian, Marshall McLuhan (1962), a Professor of English, popularized the term 'global village'[3] in his *Gutenberg Galaxy: The Making of Typographic Man*. McLuhan extended the work of fellow Canadian and economic historian, Harold Innis (1950, 1951), emphasizing features of communication in the written and oral traditions. McLuhan suggested that 'the advent of a new medium often reveals the lineaments and assumptions, as it were, of an old medium' (McLuhan, 1960: 567). This and similar observations sparked vociferous debate – which continues - about whether specific communication technologies are causally related to certain societal configurations. The American scholar, Ithiel de Sola Pool (1974) was one of several scholars in this period putting ICT at the centre of the case for an Information Society policy. Such policy discussions offered a normative prescription for the optimal way of capitalizing on the benefits of the production and use of ICTs. Information Society as injunction and prescription rather than description, a programme consistent with the dominant values in the wealthy western countries of the world, was well on its

[3] The term first coined by Percy W. Lewis (1948) in his *America and Cosmic Man*.

way to being developed. The papers in the second part of this volume have been selected to illustrate some of the arguments of those who criticized this programme.

Reflections and Perspectives

Among those who criticized the emerging normative vision of The Information Society was Jacques Ellul (1964) whose outlook was deeply dystopian. Critical reflections in the period from the late 1960s to the present have come from a variety of locations within the social sciences. Some challenge the idea of a progression through stages of social and economic organization to achieve The Information Society. Others criticize the statistical evidence, arguing that the definitions used to collect data are questionable. Still others are concerned about a strong focus on technology and those who are emphatic about the significance of information, in either philosophical or symbolic terms.

Mapping and Measuring The Information Society

In Britain Ian Miles and Jonathan Gershuny (1986) examined the empirical evidence suggesting the growing economic significance of information in the economy, concluding that movement toward The Information Society was associated with very diverse tertiary (services) sectors of the economy and, therefore, that analysis must be equally diverse as The Information Society was a 'moving target' (Miles, 2005). Miles and Gershuny advocated debate on the distributional implications of information resources and on the design of new ICTs, commenting that questions

'need to be asked *before* the systems are developed and installed'. This view was echoed by Christopher Freeman and Luc Soete (1990) who called for debate and a resolution of conflicting interests as institutions and ways of living were being re-shaped in parallel with technological innovations. Their aim was to humanize the many new and potential applications of ICTs.

Miles (1993) develops research on the interdependencies between manufacturing and services, insisting that arbitrary divisions between services and manufacturing are unhelpful, and emphasizing the need to examine specific services rather than to assume that the take-up of ICT will have the same implications for all kinds of societies. Michel Menou and Richard Taylor (2006) were strongly critical of mapping and measuring efforts, especially those seeking to track advances in information societies in developing countries, arguing that there was little if any coherence in the definitions and indices in use. Other criticisms of research emphasizing ICTs came from those who saw the overemphasis on technology as technological determinism.

Putting Society First

In Britain, Peter Golding and Graham Murdock maintained that a priority for social science research should be to develop a theory of society with a focus on the implications of media and communication 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' (Golding and Murdock, 1978: 347). In the United States, James Beniger's (1986) book *The Control Revolution: Technological and Economic Origins of the Information Society* underlined the implications of technological convergence, a development that is continuing to spark innovations in information and communication service applications. In contrast to those who contended that The Information Society was being driven by technological advances in tools, Beniger also highlighted the way that organizational systems were contributing to the emergence of 'a single infrastructure of control', an infrastructure that drew upon rather than being determined by the information machinery, and which emerged as The Information Society vision. Also in the United States, Caroline Marvin's (1988) book *When Old Technologies Were New*, provided the basis for parallels between current experience and the development of electronic communication in the late 19th century.

Understanding Power in Network Relations

During the time since the 1960s, there has been considerable scepticism about the likelihood that fundamental relationships in societies would be altered as a result of innovations in technologies.[4] For example, David Lyon (1986) suggested that it was unlikely that the dynamics of industrial capitalism would be altered substantially by the spread of digital technologies,[5] and rather that technology should be examined critically, rather than taken as a given. A collection of papers edited by Jacques Berleur et al. (1990) brought together the work of a number of European and

[4] For critiques of The Information Society as an analytical concept, see Duff (2000), May (2002) and Webster (2006).
[5] Drawing on Kumar (1978).

American scholars calling for the need to undertake research on the ethics, ideology, culture, politics and economics of information societies.[6]

In his development of a tradition of research on the political economy of media and communication, Dallas Smythe (1977, 1981), a Canadian, challenged the premise that The Information Society would radically alter relations of political and economic dependency. Similarly, Herbert Schiller (1981, 1984) in the United States, examined concentrations of corporate ownership, which, he argued, were enabling the interests of capitalists to prevail in The Information Society. Together with French scholar, Bernard Miège (1990), he argued that there was 'more menace than promise' in information technologies. What mattered, he insisted, was the 'the structural character of the world community and the quality of life and social existence it offers to *all* people' (Schiller, 1980: 313).

In Britain, Nicholas Garnham (2000), who contributed substantially to the political economy of the media and communication industries throughout the 1980s and 1990s, by the beginning of the new century had concluded that the concept of The Information Society had failed to achieve much analytical purchase. This, he suggested, was because it is internally incoherent and the use of the terminology simply advances specific interests in the capitalist system. Kevin Robins and Frank Webster (1987: 87), had also found fault with the analytical traditions in cultural studies and political economy research, maintaining that 'only when it becomes possible to confront the integral cultural and economic dynamic of contemporary

[6] Tom Forester's (1992) 'Megatrends or Megamistakes? What Ever Happened to the Information Society?' also provides a review of a literature that raises similar issues.

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'.

Graham Murdock (1993: 537) 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'. And Brian Winston (1998) found continuity between historical and modern social formations in his research on the period framed by the telegraph and the Internet. In general, in contrast to those who had focused on the disruptive character of innovations in ICTs, many of these scholars acknowledged the opportunities associated with the innovations, but found them to be implemented in ways that replicated the sources of inequality in society. Research undertaken by Armand Mattelart (2002) in France, Jorge Schement (1990) in the United States and Gaëtan Tremblay (1995) in Canada, offered similar criticisms of the dominant discourse of The Information Society vision and its consequences.[7]

The influential work of Manuel Castells (1996, 1997, 1998, 2000) has highlighted the cultural and institutional manifestations of network societies and the importance – or logic – of emergent social formations. Castells work has been criticized by scholars such as Nico Stehr (2000: 83) and Jan van Dijk (1999) for its 'modern version of "technological determinism"'. Despite this, however, Castells' work is very important for understanding the enabling as well as the disabling characteristics of what he calls 'mass self communication', that is, the possibilities created by the Internet, including

[7] Douglas Robertson (1990) provides a critical survey of these various arguments.

an ever-growing number of social networking sites, and greater access to mobile communication.

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James Beniger (1990) advocated the development of a general theory of information, communication, decision and control, an approach that was taken up by systems theorists such as Niklas Luhmann (1996). Philosopher Manuel De Landa (1991) was also drawn to systems theory and focused on the chaotic properties in the evolution of systems, re-emphasizing a focus on information processing, to explain developments in intelligent machines, especially those used for military purposes. Suhail Malik (2005) also took a systems perspective to the examination of information societies - in this case, making an attempt to integrate insights from developmental systems theory, biology and the social sciences.

Other scholars have begun the quest for a general theory of information paralleled by some political economists' quest for a general theory of society. For example, Tom Stonier (1991: 262) envisaged a theory that would encompass 'information, intelligence, meaning, and understanding'. Others, such as Haridimos Tsoukas (1997), while still focusing on information, argued that information overload might diminish understanding in society, while Luciano Floridi (2002) is among those intrigued by the ethical implications of information. Scott Lash (2002: 112) maintained 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, therefore, that a critique of information must emerge from information feedback loops within the communication system itself.

Following Luhmann's (1996) systems theory, Lash argues that we can no longer stand outside the system and critique it from a transcendent ideological position.

The proponents of research in the critical traditions of scholarship on the Information Society have struggled to provide a theoretically robust account of how the interpenetration of asymmetrical relationships within today's information societies perpetuates inequalities and injustices. Research in the more critical traditions has had relatively little influence on the priorities of those promoting The Information Society vision. This vision continues to be driven strongly by those in a position to make design and other choices regarding the nature and use of technology, including those individuals using the technology in the search for profit and according to the values of global capitalism.[8] The virtual spaces enabled by the Internet provide opportunities now for more people to represent their views and to participate online in communicative dialogues of many kinds. The uncertainty over these developments is whether these new voices will be heard and responded to by the traditionally powerful actors in society, and whether these voices are heralding a more profound shift of influence and control towards action to address inequality and exclusion.

Conclusion

This volume includes work by information society enthusiasts whose hope for a better world is based on their faith in technological progress and innovations in information processing and organizational control systems. It also includes critiques of The Information Society vision. The scholars in this category call for 'accounts that [are],

[8] Alternative visions can be found in Mansell and Steinmueller (2000).

empirically testable and conceptually sensitive, [and] strive to identify the most consequential characteristics of how we live' (Webster, 2005: 454). A substantial amount of research in the social sciences, in both traditions, is being conducted outside North America and Europe. For the reasons noted in the preface, in this volume the North American and European bias is particularly important because it tends to emphasize the claims that the normative vision of The Information Society should be shared globally, notwithstanding criticisms of this vision from some of the papers' authors.

Sohail Inayatulla (1998: 243) wrote of the need to 'find ways to enter global conversations, that is, to protect local ways of knowing' as one means of countering the hegemony of The Information Society vision and its detrimental consequences. Some, including Mark Poster (1990, 2006), have concluded that information societies will 'not necessarily reproduce neoimperialisms'. There is a need for research on whether the new spaces of communication opportunity are engendering outcomes for human beings that are consistent with social justice and greater equality. This possibility is considered further by some of the scholars whose work is included in Volumes 2, 3 and 4 of this Master Work on The Information Society.

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