

# LSE Research Online

## Leah A. Lievrouw and [Sonia Livingstone](#) Introduction

### Book section

**Original citation:**

Lievrouw, Leah A. and Livingstone, Sonia (2009) Introduction. In: Lievrouw, Leah A. and Livingstone, Sonia, (eds.) New media. Sage benchmarks in communication. SAGE, London, UK, xxi-xl. ISBN 9781412947107

© 2009 [SAGE Publications Ltd](#)

This version available at: <http://eprints.lse.ac.uk/27104/>

Available in LSE Research Online: January 2011

LSE has developed LSE Research Online so that users may access research output of the School. Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Users may download and/or print one copy of any article(s) in LSE Research Online to facilitate their private study or for non-commercial research. You may not engage in further distribution of the material or use it for any profit-making activities or any commercial gain. You may freely distribute the URL (<http://eprints.lse.ac.uk>) of the LSE Research Online website.

This document is the author's submitted version of the book section. There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.

Published as Lievrouw, L., and Livingstone, S. (2009) Introduction. For L. Lievrouw and S. Livingstone (Eds.), *New Media. Sage Benchmarks in Communication (xxi-xl)*. London: Sage.

## **Editors' Introduction: New Media**

**Leah A. Lievrouw**

**Sonia Livingstone**

(Contact details for second author)

Department of Media and Communications  
London School of Economics and Political Science  
Houghton Street, London, WC2A 2AE, UK  
Tel. +44 (0)20 7955 7710  
Fax +44 (0)20 7955 7248  
Email [s.livingstone@lse.ac.uk](mailto:s.livingstone@lse.ac.uk)

### **Introduction**

No part of the world, no human activity, is untouched by the new media. Societies worldwide are being reshaped, for better or for worse, by changes in the global media and information environment. So too are the everyday lives of their citizens. National and sub-national forms of social, political and economic inclusion and exclusion are reconfigured by the increasing reliance on information and communication technologies in mediating almost every dimension of social life. International processes of policy deliberation across both private and public sectors now routinely examine the influence and potential of new media on their core businesses – whether governance, education, culture, health, commerce, information, transportation, or other industries. Indeed, these deliberations are themselves increasingly managed via new media, as global connections grow and transnational networks challenge traditional national hierarchies of decision-making. For the fast-growing proportion of the public in the developed world who spend their days in front of a computer, with mobile phones pressed to their ears and iPods in their pockets, the importance of new media is obvious, but no less important for that. For developing countries, however, the effects can be transformative, as indicated by the proliferation of call centres and software development in India or the rapid take-up of mobile telephony in parts of Africa -- though economic and technological disparities continue to reinforce inequality, poverty and exclusion for these and other parts of the world.

In parallel with the growing social, cultural and economic importance of communication technologies worldwide, diverse academic specialisms have turned their analytic lenses onto the new media. Whether one thinks of economists charting the rise of the information sector, political scientists hoping to revive public apathy through new forms of civic participation, legal experts elucidating the regulatory challenges for national systems of privacy, intellectual property and copyright, anthropologists investigating the diffusion and appropriation of new cultural forms into diverse societies, psychologists seeking to understand emerging practices of self-expression or identity play, archaeologists constructing 'fly-through' digital visualizations of ancient cities, or literature scholars debating the merits of new forms of digital culture, interest in new media extends right across the social sciences and humanities. The very plurality of disciplinary expertise now applied within the field of new media studies, combined with the common perception of rapid and comprehensive change, makes for an exciting but rather amorphous and, at times, overwhelming enterprise.

This perception of novelty – tied to the very label applied to this field – is both an excitement and a problem. The excitement is obvious: it is the optimistic sense of being on the precipice of change, of the potential for alternative visions of society, of the uses to which media

technologies may be put and the problems they may help to solve, that has attracted so diverse a body of research activity and scholarship. The term 'new media' itself conjures up the exciting moment before something becomes taken for granted. At the same time, this optimism is countered by an equally strong pessimism that has generated heated debates over the problems and dangers of new media, a fascination with the moments of design and marketing (du Gay, et al., 1997) and, more prosaically, the daily struggles by institutions, organizations and people to make the kit really work. The pessimism reflects not just a fear of technology, though that can play a role, but a fear of unconstrained social actors exercising their will through that technology – governments extending their surveillance and control of citizens, businesses reaching into hitherto public or non-commercial spheres, individuals disrupting or abusing the freedoms and rights of others. This wariness underlies a longstanding and resolutely critical strand of thinking within new media studies, rightly at the ready to challenge hyperbolic, often technologically determinist claims about 'the new'. The resulting field of study has been characterised, in its first few decades, by a roller-coaster of optimistic claims and pessimistic fears. Yet, arguably, divergent views have produced a lively and productive debate, as the selections in this *Benchmarks* collection demonstrate.

The present collection is designed to guide researchers through this complex landscape, with the understanding that readers may come from any of several starting points. Mass communication researchers with expertise in particular contexts, problems, or places may wish to explore the continuities between new media and established media systems and forms, as well as the extent to which they differ. For colleagues in disciplines that have lately confronted the consequences of new media – for example, political scientists investigating the civic possibilities of the internet, health scientists assessing the value of online medical advice and support, or sociologists concerned with labour markets for information work -- these volumes will provide a broad account of major trends and approaches in the analysis of new media forms, practices and institutions. For scholars just entering new media studies, the collection also maps out the 'back story' – revealing the key arguments and evidence, and including the work of important scholars and influential articles – that help explain how and why new media studies has taken the shape it has. For those who already work in the field but may lack access to the same range of electronic resources that are routinely available in wealthier academic cultures, we hope we have chosen just the articles that one would most wish to find.

### **Selecting the *Benchmarks***

Any collection of scholarly papers representing itself as the 'Benchmarks' of a given field would seem to be inviting trouble. With some justification, skeptical readers will ask: 'Benchmark' in what sense? To whom? For what purpose? When and where? When the field in question is one as disciplinarily eclectic, conceptually emergent, and empirically intricate as 'new media studies,' the challenge is that much greater. No matter how extensive the collection or how inclusive the criteria, inevitably some areas or perspectives will appear neglected, some over-indulged, and some inexplicably omitted.

Yet this is just the challenge we have accepted. When our original commissioning editor at Sage, Julia Hall, asked us to choose 'about 80' key works in new media research, scholarship, and critique, it sounded like a generous and simple assignment. We could include hard-to-find or 'forgotten' classics as well as the best recent writing about new media. We had the opportunity to give our readers a sense of the field's intellectual history as well as its current energy and productivity. As collaborators on and contributors to two previous editions of Sage's *Handbook of New Media*, and having disciplinary ties across a number of fields ourselves, we felt uniquely qualified to assemble a collection that would stand as a resource and a definitive statement of the accomplishments of and prospects for new media studies in the early twenty-first century.

Three years and hundreds of nominees later, we have learned that 80 works barely begins to represent the sweep and depth of work in this field. We immediately discovered that to build the collection we wanted, our own favorites and a few classics would not suffice. So we posted notices on relevant online lists, asking colleagues to nominate the top two or three 'must-reads' they used in their writing and teaching – and got scores of detailed replies from

all over the world. (They are too many to name here – but we do thank our colleagues for their thoughtful responses.) We trolled the panels and presentations of major conferences to learn about emerging research fronts and problem areas. We reviewed colleagues' syllabi and the myriad reference lists in the *Handbook* for works our contributors seemed to cite most often. And we searched online databases, such as Institute for Scientific Information's Web of Knowledge and Google Scholar, to identify highly-cited articles and authors.

The volume of high-quality material that we discovered forced us to apply some difficult exclusion criteria as we attempted to reduce the short list to a manageable size of around two hundred items. We decided quickly to omit important classics of social theory and research, such as works by Giddens, Goffman, Habermas, Hall, Beck, and others. Despite their relevance and the fact of being widely read in new media circles, they are generally available elsewhere and most do not, strictly speaking, address new media *per se*. We have included only one work by any given author. Generally, we decided against including comprehensive review articles (for example, DiMaggio et al., 2001), in favor of pieces that focus more narrowly on relevant theoretical ideas, empirical cases, or key problems. We also tried not to include pieces that have been frequently anthologized elsewhere, although we have included a few items, such as McLuhan's 'The Medium is the Message', and Carey's 'Cultural Approach to Communication,' that provide essential framing and contextualisation for other works.

Our choices were also limited by more mundane considerations. Beyond the problem of limited space, copyright demands made some crucial pieces unavailable or unaffordable – a particularly ironic development given that one strand of new media research actively critiques 'clearance culture' and advocates a 'creative commons' for cyberspace to counter the current 'intellectual property epidemic' (Litman, 2001; see also Cohen, 2007; Gillespie, 2007; Lessig, 2001). So that we could include as many hard-to-find pieces as possible, we also excluded important works that are widely available online (for example, Vannevar Bush's *As We May Think* and Eric Raymond's *The Cathedral and the Bazaar*).

Consequently, there are several things that *Benchmarks* is not. It is not intended to provide a technical account of how new media technologies work. Principally, this is because technological systems and products – the web services, network infrastructures, search engines, user-generated content, and consumer durables, indeed the seeming digitisation of anything and everything – change faster than any description that we could offer in print. Readers seeking this kind of information will find that technical reports, news services, and popular press outlets, especially those available online (e.g., C|Net, *Wired*, Slashdot, and so on), provide the most up to date sources of facts, figures and technical advances.

In addition, we have not dwelled on technical details because new media studies has developed mainly within the social sciences, humanities, and the arts, with occasional forays into professional fields like law, engineering, and management. Thus the field's central focus over time has been the social consequences of contemporary media and information technologies – how they are designed, used, managed, spread, regulated, and made meaningful at all levels of society, from the macro-level policies of governments and international organisations to the micro-scale practices of domestic and working life. As many chapters included here stress, the social, economic, political and cultural significance of new media owes more to the societal processes and contexts within which they are appropriated and become embedded than to particular technological features and affordances. Nonetheless, we have also sought to include critical pieces that take the material nature of new media seriously -- that avoid the trap of bracketing off the technologies themselves as a 'black box' that is less interesting or worthy of analysis than their social and cultural *milieux*. (The technology-society question is a particular focus of Volume 2, and is discussed at more length below.)

Another thing that *Benchmarks* is not is a 'canon' of new media studies. The canon in literary studies has been widely criticised in recent decades for reinforcing a Westernised, elitist, often male-dominated account of literary tradition that fosters a strategy of cultural avoidance, excludes diversity, represses critical challenge, and reasserts a status quo that is more backward- than forward-looking. Such an approach would be ironic indeed for a field like new

media studies, which is strongly prospective in its viewpoint, fascinated by the fulcrum of change, and often seeks to anticipate the future from the vantage point of the present as well as the past. We have taken a lesson from the experience of Elihu Katz and his colleagues, who recently edited a collection on the canon of media research. Their critics objected that those who choose also exclude, that there was no 'field' whose centre could be agreed upon, that the boundaries and intersections were more fertile than the oft-cited classics, and so forth. Yet, we agree with Katz that in the process of identifying – and, to whatever degree, constructing – a canon, it is possible to establish points of continuity with earlier work as well as provide 'a target to rebel against. Science works both within and against tradition' (Katz et al., 2003: 2). Ultimately, assembling a collection is 'a device of intellectual organisation', one that we all employ when we produce reading lists for our students or write critical overviews to contextualise our own work.

This is not to say that we necessarily agree with every argument made within these covers, for some arguments one 'loves to hate'. Moreover, we have included works by authors who disagree with each other in ways that we hope will spark critical reflection and debate among equally diverse readers. We have also tried to represent as much geographic, cultural, and gender diversity as possible among the authors and perspectives in the collection. But we must confess to our own limitations here – we are English speakers trained in Anglo-American traditions of social science. And while we sought advice from colleagues worldwide, it was striking how frequently they, too, proposed articles for inclusion by North American men! (It sometimes seems that, like so many of the latest technological innovations, much of the academic vanguard of new media studies hails from California.) New media studies, at least as published in the English language, has been clearly shaped by its cultural origins and intellectual history, and we have sought to reflect that history, inflected by a fair degree of intellectual and international diversity. We fully expect that as new media technologies, institutions, and practices proliferate across cultures, and as the field grows, so will its diversity, in every respect.

### **Literatures and Themes in New Media Studies**

Naming a new field of study is a weighty act. We cannot agree with Shakespeare that 'a rose by any other name would smell as sweet'. Students of communication are more inclined to agree with T.S. Elliot that 'the naming of cats is a serious matter' – the names of things are constructive, and guide interpretation and shape evaluative responses in obvious and subtle ways. In this spirit, we have organised the selections in *Benchmarks* by 'naming' key themes that, in our view, represent important intellectual threads in the field.

At the broadest level, we have organised the four volumes according to a definition of new media *infrastructure* that we elaborated in the two editions of the *Handbook of New Media*, where we took the work of Leigh Star as a point of departure (see Star, this volume). Rather than defining new media in terms of particular technical features, channels or content – an approach that has dominated mass media research, but is prone to rapid obsolescence in the new media context – we have organised our selections according to three interrelated aspects of new media infrastructure. The first is the *artefacts* or *devices* used to communicate or convey information, which comprises questions of technology design, innovation, and development (the main theme of Volume 2). The second aspect is the *activities* or *practices* in which people engage to communicate or share information; this aspect includes issues related to the social and cultural contexts of new media (Volume 3). The third is the *social institutions, structures, or arrangements* that develop around new media devices and practices, including how technologies and practices are organised and governed (Volume 4). Volume 1, entitled "Visions, Histories, Mediation," sets the stage for the other three, and includes works that place new media (and new media studies) in historical and cultural context. The pieces in Volume 1 demonstrate perhaps the most important principle of infrastructure: it is 'built on an installed base'. That is, the technologies, institutions, and practices that characterise any given infrastructure are crucially dependent on and continuous with the various technologies, institutions, and practices that have preceded them. (Each of the volumes is discussed at more length below.)

The point is that material systems and technologies are inextricably articulated with the ways people use and understand them, with expert knowledge, and with the social and cultural values, conventions and processes that frame all of these elements together. A familiar example is print on paper, which has become so thoroughly embedded in our culture and history that we barely notice how the uses of print (or, as Hoggart put it, the uses of literacy, 1998 [1957]) shape and are shaped by the material quality of the medium itself (books, presses, bookshelves, catalogues) and the institutions associated with it (libraries, schools, booksellers, learning, authority, knowledge, literacy; see Kress, this volume; Eisenstein, 1979; Luke, 1989). That something so fundamental is barely noticed is, of course, another essential characteristic of infrastructure: as Star puts it, successful infrastructure is ready-to-hand and 'transparent', becoming visible only when it breaks down. This is rapidly becoming the case for many forms of new media; mediated processes of information retrieval and interpersonal interaction have become the norm rather than the exception in every dimension of life from politics to entertainment, from work to self-expression, education, and health care.

Students of mass communication will see parallels between the three elements of infrastructure and the familiar but different three-part framework of *production, text, and audience*, which has long dominated mass media studies (McQuail, 2005). As in our framing of infrastructure, each part of this triad is essential. The dialogue among the various disciplines that study each part has helped make media studies a compelling field (e.g., Hall, 1980). However, the differences between the familiar triad of media studies and our infrastructural approach are also important. Not only are *artefacts, practices, and social arrangements* broader terms than *production, text, and audience*; they are also more thoroughly 'socialised' and inherently culturally and historically conditioned.

In addition, we do not specify *a priori* any set relationship among the three elements of infrastructure. Where the mass communication and media studies traditions have spent decades struggling to elucidate what is an essentially *linear* relationship among production, text, and audience (i.e., production generates texts which have effects on audiences, consistent with the sender-message-receiver model of communication), in new media research no such linear assumption is necessary. It is precisely the dynamic links and interdependencies among artefacts, practices and social arrangements (including the ways in which they become routine, established, institutionalised, and embedded to various extents, and so become taken for granted in everyday life) that have guided the development of theory and method in new media studies to date. This basic move, from the more linear accounts of mass communication to the multiplex, concurrent consideration of all elements of new media infrastructure as an *ensemble* has led us to conclude that it is now time for the communication discipline to rethink theories of media and society predicated primarily on 'the mass', a construct that increasingly seems peculiar to 20<sup>th</sup>-century, industrial-style patterns of goods production and consumption (Thompson, 2005; Trow, 1992).

#### *Volume 1: Visions, Histories, Mediation*

The opening 'Visions' section of Volume 1 brings together pieces by thinkers whose ideas have had a profound and lasting influence on new media studies and have helped define what new media are and why they matter. The prescience of Marshall McLuhan's observations in 'The Medium is the Message' and 'Automation: Learning a Living' is striking, and laid the groundwork for what he and his son and collaborator Eric McLuhan would later elaborate as the four 'laws of media' that have since become axiomatic in new media studies: What does the new medium *enhance*, intensify or accelerate? What does it push aside or *make obsolete*? What does it revive or *restore* that was previously obsolete? When pushed to its limits, which of the medium's original characteristics will be *reversed* (McLuhan & McLuhan, 1988). Poster shows how the openness or underdetermination of new media distinguishes them from mass media technologies and content. Debord and Baudrillard elaborate the notion of media *spectacle* and the actor's role in confronting or participating in it. Appadurai proposes five fundamental avenues for global cultural flows, including ethnoscaping, finanscaping, ideoscaping, technoscaping, and mediascaping. Each of these concepts or frameworks has had an important influence on contemporary understandings of what can and should be done with new media.

Articles in the 'Histories' section of Volume 1 show that while 'new' media research often focuses on what's novel at any particular moment, there has also been an important strain of new media scholarship that takes a decisively historical perspective, whether by looking at studies from the past of what was new then, or by examining now what was new, once. These studies reveal crucial continuities and breaks in the history of communication technologies, institutions, and practices. From Marvin's classic retrospective view of the early days of modern electric media to Flichy's history of private communication practices; from Innis's alignment of ancient empires and their respective media forms to Turner's account of the libertarian, countercultural roots of internet culture and 'virtual community'; and from Winston's historical sweep of continuities from the telegraph to the internet and Beniger's description of the nineteenth-century 'control revolution' that drove the development of twentieth-century communication technologies to Huhtamo's 'archaeology of media', these studies demonstrate how the very notion of media has developed over time and across cultures.

Whether reading back, or reading across, it is clear that the very concept of media has evolved continuously over time. We agree with Silverstone (2005) that 'the media' should not be viewed simply as powerful message-generating entities that influence behaviour and society, but also as resources that provide people with opportunities to cultivate their agency and as tools that allow them to act. It is time to move away from a view of 'mass media' as relatively fixed, stable and depersonalised institutional entities that have effects *on* people, to a view that considers what people do *with* media and each other -- an ongoing process of *mediation* that enables, supports or facilitates agency, communicative action and representation.

We have therefore chosen 'Mediation' as the third theme in Volume 1: Not simply the insertion of technology into an otherwise pristine process of human communication or information production, but in both senses of how technological channels are used, and the interpersonal process of participation or intervention. Mediation comprises all three elements of infrastructure: artefacts (e.g., alphabets, electrical grids, keyboards and mice, operating systems, telephone switches, film stock, satellite dishes, money, etc.), practices (e.g., gestures, vocalisation, telephone or email etiquette, language, manuscript formatting, typing, online file sharing, fashion, contract law, television programme schedules, blogging, etc.), and social arrangements (e.g., single-parent families, recorded music labels, think tanks, national film boards, political campaigns, community advice networks, movie studios, etc.).

Mediation is not a new concept in communication study. Attempts to theorise the nexus between technologically-mediated communication processes and interpersonal interaction date back at least as far as Katz and Lazarsfeld's *Personal Influence* and the two-step flow theory of mass media effects (Katz & Lazarsfeld, 2006 [1955]). Over time, communication scholars have proposed a variety of important theoretical frameworks for understanding 'the points of contact between interpersonal networks and the media' (Katz, 2006: xxii), including uses and gratifications theory, contagion/diffusion theories of persuasion and innovation, and reception theory. However, these efforts have generally been presented as specific to particular problems or contexts (e.g., popular culture and consumption, political opinion formation, or economic development) rather than as integrative concepts spanning communicative action, society, and technology more broadly.

The need for such concepts became acute in the 1980s and 90s as innovative information and communication technologies based on networked computing and telecommunications diffused into everyday life, work, and leisure. Mass media researchers confronting changes in media 'consumption' habits sought to reframe audiences as 'active' (Livingstone, 2004), diffused or embedded (Abercrombie and Longhurst, 1998), or more broadly, as the 'new audience' (Gray, 1999; see also Ang, 1990; Hartley, 1988). On the other hand, communication scholars studying new communication technologies attempted to capture the qualities that seemed to distinguish the experience of new media from mass media, including telepresence (Short, Williams & Christie, 1976), propinquity (Korzenny, 1978), disinhibition (Sproull & Kiesler, 1986), and (especially) interactivity. Crucially, they also criticised of the divide in the field between the study interpersonal or 'human' communication and the study of media, which often cast interpersonal communication and engagement with media as

fundamentally different phenomena and experiences (e.g., Kreps, 2001; Lievrouw & Finn, 1990; Reardon & Rogers, 1988; Rubin & Rubin, 1985). Because they afforded the creation and circulation of mass media-style 'content' as well as networks of interpersonal and group relations and interactions, new technologies brought into stark relief the theoretical, empirical, and institutional differences between the 'two subfields' of communication study (Rogers, 1999).

By the late 1980s, several researchers had adopted the term *mediation* as a conceptual bridge between the subfields. For example, in their seminal edited book, *Inter/Media*, Gary Gumpert and Robert Cathcart (1986; see also Gumpert & Cathcart, 1990, and Cathcart & Gumpert, this volume) presented a range of different authors' perspectives on the shifting boundaries between interpersonal (i.e., face-to-face) and technologically-mediated communication. Contributors to another influential collection edited by Hawkins, Wiemann and Pingree (1988) explored the concepts of mediated interpersonal communication and interactivity. Focusing on meaning as the common foundation of communication across all social contexts, Anderson and Meyer proposed 'accommodation theory' and asserted that 'we do not believe that there is a useful mediated communication theory that is separate from an interpersonal or organisational communication theory' (Anderson & Meyer, 1988: 6; see also Meyer, 1988). Altheide and Snow's 'theory of mediation' (1988) was proposed and debated in volume 11 of the *Communication Yearbook*. A special section, 'Theories of Mediation', appeared in volume 3 of *Information & Behavior* (Ruben & Lievrouw, 1990), and included pieces by Gumpert and Cathcart, Joshua Meyrowitz, Kathleen Reardon, Sheizaf Rafaeli, Joseph Turow, Sari Thomas, and Leah Lievrouw and T. Andrew Finn (Lievrouw & Ruben, 1990).

Since the 1990s, communication researchers have debated the continued prospects for 'mass communication' as a useful conceptual category (see Morris & Ogan, this volume; Turow, 1992). Meanwhile, scholars from a range of perspectives and disciplines have elaborated new theories of mediation grounded in ethnographic and cultural studies of new media (Barbero, 1993 and this volume; Jouet, this volume; Licoppe, this volume; Licoppe & Smoreda, 2006; Silverstone, 2005; Thompson, 1995). For example, echoing McLuhan's famous observation that older media in turn become the content of newer forms, Bolter and Grusin (this volume) have argued that new media *remediate* and renew those that preceded them, whether by repackaging, augmenting, enhancing, refashioning, or absorbing older content or forms. In some ways, the dual character of mediation (technological channels and interpersonal intervention) also parallels Carey's classic distinction between 'transmission' and 'ritual' views of communication (this volume).

A full review of the literature related to the mediation perspective is outside the scope of this introductory chapter. However, by focusing on mediation, we want to suggest the extent to which people's engagement with and understandings of media and interpersonal communication have become intertwined in the new media context. Mediated content and interaction are now seen as socially and culturally diversified and selective, as well as mass-produced and -consumed. Some forms of communication are highly individualised, some are collective, and some are mixed modes; in many situations, it is no longer easy (or necessarily meaningful) to separate producers and consumers, senders and receivers, content and channel. Socially-embedded communication technologies can also be seen as 'doubly material': They are both the tangible means of communicative expression and culture, and tangible cultural expressions in themselves (Boczkowski & Lievrouw, 2008). Thus, in a real sense, new media fulfill McLuhan's insight that 'the medium is the message' (McLuhan, this volume). We hope that the pieces we have included in Volume 1 will generate further discussion and debate regarding the mediation perspective as a way forward for new media studies.

#### *Volume 2: Technology: Artefacts, Systems, Design*

A primary tenet of new media studies, which we have elaborated at some length in our previous work, is that new media and information technologies, like other classes of technology, only take the form they do, are only developed when they are, are only marketed and used as they are, precisely because of the societal processes that generate them. In other words, new media are socially shaped as well as social in their consequences. This



'mutual shaping' perspective on the development of new media is a central theme of Volume 2.

One important outcome of mutual shaping is that new media infrastructure has a distinctive quality, often referred to in new media studies as 'convergence', that is already taken for granted in everyday practice as businesses adapt, governments formulate policy, and citizens routinely appropriate and reconfigure the latest technological applications. Indeed, as we have noted elsewhere (Lievrouw & Livingstone, 2006), the rush of technological innovativeness and novelty that seemed so pervasive in the 1990s has given way to more incremental refinements and adaptations in the 2000s. The bursting of the dot-com bubble and the events of September 11, 2001 ushered in a period of reduced expectations and a growing sense of danger posed by global economic, political, technological, and environmental systems. Consequently, popular interest in new media has shifted from cutting-edge invention, novelty, and risk-taking to regulation, reliability, and safety, and demands for media and information technologies that are easily accessible, stable, and ubiquitous. As several contributors to the fifth anniversary issue of the journal *New Media and Society* noted in 2004, the previous five years had been notable for the growing 'banalisation' of ICTs, and their assimilation and reconfiguration to suit the demands, norms and expectations of everyday life, including expectations about communication itself and its constitutive role in society (Lievrouw, 2004). Researchers could be freed from the relentless focus on novelty and begin to study the internet 'as it descends from the firmament and becomes embedded in everyday life' (Wellman & Haythornthwaite, 2002: 4).

Thus, we begin Volume 2 with a section, 'Technology and Society,' with a handful of classic works drawn from science and technology studies (S&TS) and design studies that have helped establish the social construction of technology (SCOT) and mutual-shaping approaches as a foundational framework in new media research and scholarship. Essentially, SCOT and related perspectives (such as social informatics [Kling, Rosenbaum & Sawyer, 2005] and participatory design [Suchman, 2007]) insist that even the apparently esoteric and expert practices of technology developers and innovators depend on the cultural contexts, perceptions of system users, moral and cultural norms, political imperatives and economic logic that prevail in the societies in which they work. These conditions are even more crucial for the army of new media designers, product-testers, marketers, regulators, and investors. In moving beyond *technological determinism*, many in these pages would, with Raymond Williams, reject the assumption that 'The new technologies are invented as it were in an independent sphere, and then create new societies or new human conditions' (Williams, 1974: 13). They would agree with MacKenzie and Wajcman that 'the technological, instead of being a sphere separate from social life, is part of what makes society possible – in other words, it is constitutive of society' (1999: 23). Or, in Bruno Latour's memorable phrase, 'technology is society made durable' (Latour, 1991).

The second section of Volume 2, 'Communication Technologies in Transition,' includes compelling case studies of how media and information technologies have developed over time, given the dynamics of mutual shaping. Colin Cherry's analysis of the social implications of the wireline telephone system in the United States, for example, provides rich evidence of the relationship between invention/innovation and cultural expectations and practices. Other pieces in this section deal with media systems as diverse as book publishing, mobile telephony, videotex, audio recording, broadcast television, and urban cable systems – all of which have evolved at the intersection of the design of technological affordances and institutional constraints. Together, the pieces here show the extent to which the conventional technological 'silos' that typified discussions of mass media – print, broadcasting, cinema, audio recordings – have become less useful in contemporary studies of communication and media technologies.

We close Volume 2 with 'Computers as Media,' to highlight the central role of computation in the technical and cultural foundation of contemporary digital media, and the profound shifts in the understanding of 'media' that have been wrought by digitisation. Articles in this section range from the early days of networked computing in the 1960s (Licklider & Taylor, this volume) to today's debates about search engines and games (Introna & Nissenbaum, and Haddon, this volume), to a discussion of genres for computer-based new media (Agre, this

volume). We have also included Turkle and Papert's consideration of gender issues in the design and use of computers and Janet Abbate's account of how the internet evolved from a platform for shared computing power among engineers and researchers to today's scaffolding for popular culture, commerce, and personal expression.

*Volume 3: Practices: Interaction, Identity, Culture*

Just as the relation between technology and society depends on the many activities of designers, marketers, regulators and investors, so too does it depend on the activities of those who use technology. Whether conceived in terms of the activities of individual citizens and consumers, of communities of practice (Wenger, 2000) or of whole populations, these practices play a crucial role in shaping the actual and potential meanings of new media. Further, as new media gradually become embedded in ever more spheres of life – communication, education, work, political participation, economy, entertainment, creativity, and so forth – so too is an ever greater diversity of ordinary activities drawn into the social shaping and social consequences of new media. In conducting their daily lives, people play computer games, surf the web, search databases, send and reply to emails, chat in chatrooms and message boards, shop online, write blogs, download and upload, create and receive using a diversifying but also converging array of technologies. This volume, therefore, focuses on the activities of 'people', a term we prefer given our disquiet with the term 'users', although this is still in common use (Lievrouw & Livingstone, 2006). As we have noted, though people indeed use new media technologies, the term 'user' applies as well to washing machines or automobiles as it does to telephones and computers – in other words, it has no intrinsic relation to media and communication (unlike the terms 'audience', 'reader' or 'viewer' that it displaces). The word 'user' also connotes individualism – there is no associated collective noun, one may merely aggregate users. Thus the meso- or macro-level implications of collective action, in the civic or political domain, for instance, are easily obscured by a singular focus on 'the user'.

In this volume, very different conceptions of people's relation to new media are discussed, sometimes illustrating compatible approaches but at times also conflicting, especially in their conception of people's agency or power to shape and redefine the potential of technology. But each, in one way or another, takes agency and action seriously, contributing to a reframing of media and information technologies to encompass not only their role as powerful message-generating entities that, as many would put it, impact on behaviour and society, but also their importance as resources that provide people with opportunities to cultivate their agency and as tools that allow them to act (cf. the mediation perspective in Volume 1).

We begin with a classic and, in retrospect, prescient article by Sara Keisler, Jane Siegel and Timothy McGuire (this volume) which applied a social psychological approach to face to face interaction to the then-new phenomenon of computer-mediated communication in order to map out how it differs from, or is consistent with, what has long been known about interpersonal communication. Since that article was published, many researchers have sought to identify the varying conditions under which communication is shaped in specific ways by the technological conditions that mediate the relations among participants, primarily focusing on collaborative working practices though more recently also considering the mediation of interpersonal relationships. Central to mediated communication is the concept of interactivity, as examined in a much-cited article by Sheizaf Rafaeli (this volume). Of course, interactivity is entirely characteristic of face-to-face communication. However, its importance in computer-mediated settings has also attracted considerable attention, marking a new communicative mode distinct from the twin concepts of interpersonal and mass communication whose contrasting characteristics have long fascinated communication scholars. The implications for agency, control, mis/understanding and power in this new form of communication continue to be pursued in research today – as exemplified by Christian Licoppe's (this volume) subtle account of the sense of 'connected' presence that characterises intimate relations mediated by mobile telephony and, equally subtle but focused on the organisation rather than the dyadic relationship, in Joanne Yates and Wanda Orlikowski's post-Giddensian structural analysis of genres of communicative action in institutional settings (this volume; see also Giddens, 1984).

The hotly contested question of whether mediated communication not only connects people but also gives rise to new forms of social formation has pivoted on the notion of virtual, or mediated, or networked conceptions of community. Notwithstanding to the popular argument that the internet undermines offline friendships, James Katz and Philip Aspden (this volume) provide powerful evidence to the contrary. This position is developed by Nancy Baym (this volume) in her analysis of how a soap opera usenet community sustained deeper yet playful explorations of soap opera fandom than may be readily found offline, and by Keith Hampton and Barry Wellman (this volume) in their methodologically insightful account of Netville, a wired suburb in which offline/online connections became complexly interwoven into everyday life. The possibly utopian or dystopian consequences of blurring the public/private boundary long established offline but now reconfiguring our 'sense of place' through the appropriation of new media are explored by Joshua Meyrowitz (this volume) while John Macgregor Wise (this volume) draws on actor network theory (Latour, 1999) to reconceptualise technologies (as well as users) in terms of agency. Thus far we have considered the intimate connections between people and technologies generically, in terms of potential transformations in the human condition. But online as well as offline the question of difference has exercised many scholars, offline differences and inequalities often being reproduced rather than eliminated online, notwithstanding the optimism of some. Examining what she terms the 'globalising Coca-Colonisation of cyberspace', Lisa Nakamura (this volume) shows how this plays out for race, though Lisbet van Zoonen identifies greater potential for the reconfiguration of gender relations in households with Internet access.

In the section on everyday/domestic contexts of new media, we draw together key articles articulating the theoretical claims underlying much of the empirical work outlined above. Roger Silverstone (this volume) reflects on the 'domestication' approach which complemented the design and marketing emphasis of the social shaping paradigm by exploring, through an ethnographic lens, the practices of everyday life which render new media meaningful, while Maria Bakardjieva (this volume) offers a theory of the user and user agency situated broadly within this approach. Everyday responses to media are partly shaped by external discourses, of which the moral panics regarding media influences are perhaps the most persistent through history (Wartella and Jennings, 2000), though the implications of changing media for literacy, insightfully revealed by Gunther Kress (this volume) have also attracted widespread public as well as research attention. These two themes combine in the modern image, perhaps myth, of the youthful internet expert (see Livingstone, this volume), a figure also widely held to be an agent of globalisation. Undoubtedly, children's enthusiasm for the latest, interactive, readily-commodified media contents drives the commercial spread of new media world wide (Wasko and Meehan, this volume), a trend which is even reshaping that sphere generally considered opposed to entertainment media, that of education – through the profitable rise of new media forms of branded 'edutainment' (Buckingham, Scanlon and Sefton-Green, this volume).

We conclude this volume with two articles which eloquently capture the unfolding threads of these debates, for each explores the interplay between creative user agency and the commercial strategies of corporate media organisations as they struggle to define the potential of new media to suit their very different interests. Henry Jenkins (this volume) and Mizuko Ito (this volume) critically explore this bottom-up/top-down contestation, for each rightly recognises that this is centred now on convergent media (rather than the separate technologies of internet, mobile, television, fan magazines, etc). While both identify some grounds for optimism by showing users' creative appropriations and reappropriations of new media in the interstices left open by even the most controlling of media corporations, such analyses can only be provisional, for these two articles bring us right up to date with current developments in this fast-changing domain. New media, and new media practices, are fast changing not only because of the pace of technological innovation, but more significantly because of the unfolding social changes, particularly globalisation and individualisation, which set the conditions within which new media are understood and used. In other words, these volumes map out the phases in a dynamic, cyclic process of the mediation of social life (what du Gay et al., 1997, term the 'circuit of meaning'), for social and cultural practices both shape and are shaped by new media. In the final volume in this series, we shift the focus not away from this circuit but to the institutional structures within it that counter-balance or, critical

scholars would argue, substantially determine the conditions within which people can ordinarily appropriate new media in their own or the wider public interest.

*Volume 4: Social Institutions, Structures, Arrangements*

We open this volume with the key articles that map the intellectual shift from the notion of the 'information society', itself central to understanding the postindustrial conditions of late twentieth century western societies, to that of the 'network society' with which scholars are now beginning to understand the global social arrangements of the twenty first century. Daniel Bell's classic statement (this volume) compares the information society with the industrial and preindustrial societies that preceded it in order to understand how modern telecommunication services are central to the transformation not only of the communication environment but, more profoundly, of labour, economy and society, leading to the advent of information work, the information economy, the information society. The empirical agenda that this maps out for communication research was developed in one direction (the 'johoka shakai' approach) by Youichi Ito (this volume) and, very differently, by critical scholars Frank Webster and Kevin Robins (this volume). While Webster and Robins express concerns regarding the attempts of established power to maintain control within an information society, Manuel Castells (this volume) observes the decentralising, even anarchic potential of technologically mediated communication networks. Although by no means optimistic, Castells argues that in the network society "political institutions are not the site of power any longer. The real power is the power of instrumental flows, and cultural codes, embedded in networks" (66).

Here, then, is a new domain for struggles over power, highlighted in the second section of Volume 4 – struggles over what Ithiel de Sola Pool called the 'technologies of freedom' (this volume). As he warns us, however, "it is not computers but policy that threatens freedom" (67), an argument taken up by Robert McChesney (this volume) in his critical analysis of American communication policy-making in relation to the internet. While in the United States, the primary struggle here is between the corporate interests of global industry players and the principle of freedom of expression enshrined in the constitution, in Europe there is also space to articulate positive public interest purposes in policy making, though there too the struggles are intense (see van Cuilenburg and McQuail, this volume). Policy debates are today being played out in a range of highly specialised domains (e.g., Braman, 2006; Lessig, 2001), as illustrated by Tarleton Gillespie's account (this volume) of the changing legal framework regarding copyright and digital rights, and how it is being used to reinforce the market advantages of dominant firms.

Policy issues, of course are inextricably tied to economics, the third focus of Volume 4, as exemplified by Paul David's (this volume) classic reflections that compare contemporary debates about computerisation and productivity to the early growth of the electrical grid in the nineteenth century. We have also included Eli Noam's farsighted economic analysis (this volume), now over twenty years old, of the implications for public telecommunications networks for radically changing business models in the ICT sector. Just as the future for public communication services, especially as regards universal service (or universal access) and privacy (or freedom from surveillance or state interference), brings into focus the critical and cyclic interlinkages between state and commercial policy debates and the experiences of the general public, so too does the process by which innovative ideas and technologies gradually and unevenly spread through society – a process carefully charted by Everett Rogers in his influential statement of diffusion theory (this volume). In a challenging update of earlier celebratory treatments of 'information work,' Tiziana Terranova (this volume) asks difficult questions about those she calls 'NetSlaves,' who freely (or inexpensively) spend their labour to create online content while large media interests reap the economic benefits – and profits.

Indeed, the theme of struggles over power, of whether new media can either be harnessed to undermine, or will instead prove to exacerbate, sources of inequality and exploitation, is a defining theme of this volume (see Mansell, 2004). In the 'Politics and Power' section of Volume 4, these and related themes are developed. In highly stratified capitalist societies, offline inequalities are, argue Graham Murdock and Peter Golding (this volume), extended online with serious consequences for the privatisation of citizenship, while simultaneously affording technological possibilities for increasing state surveillance and control over citizens

(Lyon and Zureik, this volume). Yet as online control grows, so too does resistance to control. Richard Kahn and Douglas Kellner (this volume) provide a useful guide to some of the most important activist and oppositional uses of new media in recent years. Likewise, Geert Lovink's account of the Adilkno project in the Netherlands and its roots in the Amsterdam squatters' movement illustrates the adoption of new media networks by new social movements; indeed, in many ways Adilkno has been a 'call to arms' to independent citizens' media groups to exploit the interstitial or 'extramedial' spaces of media and society where it is still possible to resist established power.

Collectively, can such activities constitute an online public sphere? The very diversity of online debate, and the multiple means by which citizens' groups escape surveillance, create alternative forums and so destabilise and reform norms of citizen deliberation, has led many to argue 'yes' (see Dahlgren, this volume). As so often in new media debates, the jury is still out. However, in the final section of Volume 4 we have included three pieces that consider the consequences of new media for space and place. Robins and Morley (this volume) examine the implications of ICTs for national and regional identity in the changing context of contemporary Europe. Pippa Norris (this volume) looks at the international prospects for e-democracy, and concludes that the so-called digital divide in terms of access to information and communication technology is, in turn, generating a new democratic divide. Miller and Slater (this volume) discuss both the 'place' of 'being Trini' and the 'space' of Trinidad as a geographic, material reality represented in a global communications arena.

### ***Metaphors for New Media Studies***

In a plenary session at the 2007 meeting of the International Association for Media and Communication Research, held at UNESCO in Paris, one of us (Livingstone), in her then-capacity as president of the International Communication Association, was asked to respond to a panel of colleagues who debated whether organisations like IAMCR and ICA can foster communication and media research that is sufficiently international and interdisciplinary in the new media era. She proposed four different models or archetypes for thinking about the diverse disciplinary, geographic, and social issues that preoccupy communication scholars at the beginning of the 21<sup>st</sup> century. We close this introduction by suggesting that these same four metaphors might serve just as well as useful frames for thinking through the daunting multiplicity of questions, interests, literatures, methods, and values that make up new media studies, and that this four-volume project so richly demonstrates.

The first metaphor is the *coffeehouse* – an historical reference to the legendary seventeenth- and eighteenth-century public rooms where people of diverse classes, occupations, and literacy levels met to read (or hear) and debate the latest news while consuming their favourite beverage. This metaphor suggests not only the 'polyglot' character of new media studies, but also the importance of discourse, controversy, and critique that crosses social and disciplinary boundaries within the field. (As well as the passion for caffeine so characteristic in academic circles!)

The second metaphor is the *patchwork*, in which a structure of relations or 'stitches' join different elements in such a way that patterns emerge across the field as a whole. The patchwork metaphor suggests that it is probably futile to expect (or strive for) unity in new media theory, methods, or intellectual influences. What is more generative is the joinery itself – the choices and creative linkages that many contributors may make over time as they discern new patterns, elaborate them in interesting and new ways, and produce a dynamic, emergent body of work.

A third metaphor is the *twisted rope*, where multiple threads or plies are spun into a continuous line, like yarn or cable. Threads can begin and end at any point in the line, but because each thread begins or ends in a different place from any other, and because each thread is replaced in turn by another, and then another, a continuous line is produced that is flexible, strong, and holds up under tension. This metaphor may be particularly apt because it suggests that the diversity of new media studies – in both its continuities and its breaks – can still produce a coherent and adaptable line of scholarship and commentary.

The final metaphor is the *Gestalt* image, used to suggest both a sense of 'wholeness' and the sense of the famous 'switch' that viewers often make between figure and ground in a single image. This metaphor in particular suggests the necessity of comparative and collaborative 'visions' in the field, and of triangulated methods and theoretical heterodoxy, partly to prevent the parochialism that plagues so many academic fields, but also to enable scholars to see across and among all the elements that must come into play in any effective study of new media in society. In new media studies, the 'whole picture' is never stable: what is context or ground in one instance is the figure or object of study when seen from a different perspective, or when studied long enough.

Given the enormous range and diversity of the field, four metaphors can hardly be expected to exhaust all the ways that new media studies (to say nothing of its prospects for future work and lasting intellectual influence) might be approached or described. If we have managed to communicate its creativity, scope, and sheer energy in these four volumes, we will feel that we have achieved what we intended for new media studies at the start.

## References

- Abercrombie, N. and Longhurst, B. (1998) *Audiences: A Sociological Theory of Performance and Imagination*. London: Sage.
- Altheide, D.L. and Snow, R.P. (1988) 'Toward a theory of mediation,' in James A. Anderson (ed.), *Communication Yearbook 11*. Newbury Park, CA: Sage. pp. 194–223.
- Anderson, J. A. & Meyer, T. P. (1988) *Mediated Communication: A Social Action Perspective*. Newbury Park, CA: Sage.
- Ang, I. (1990) *Desperately Seeking the Audience*. London: Routledge.
- Barbero, J.M. (1993) *Communication, Culture and Hegemony: From the Media to Mediations*. Tr. E. Fox and R.A. White. London and Newbury Park, CA: Sage.
- Boczkowski, P.J. and Lievrouw, L.A. (2008) 'Bridging STS and communication studies: Scholarship on media and information technologies', in Edward Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman (eds.), *New Handbook of Science, Technology and Society*. Cambridge, MA: MIT Press. pp. 951-977.
- Braman, S. (2006) *Change of State: Information, Policy, and Power*. Cambridge, MA: MIT Press.
- Cohen, J.E. (2007) 'Creativity and culture in copyright theory', *UC Davis Law Review*, 40: 1151.
- DiMaggio, P., Hargittai, E., Neumann, W.R., and Robinson, J.P. (2001) 'The social implications of the Internet', *Annual Review of Sociology*, 27: 307-336.
- du Gay, P., Hall, S., Janes, L., Mackay, H., & Negus, K. (1997) *Doing Cultural Studies: The Story of the Sony Walkman*. London: Sage.
- Eisenstein, E. L. (1979) *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early Modern Europe* (2 vols.). Cambridge and New York: Cambridge University Press.
- Giddens, A. (1984) *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity.
- Gillespie, T. (2007) *Wired Shut: Copyright and the Shape of Digital Culture*. Cambridge, MA: MIT Press.
- Gray, A. (1999) 'Audience and reception research in retrospect: The trouble with audiences', in P. Alasuutari (ed.), *Rethinking the Media Audience*. London: Sage. pp. 22-37.
- Gumpert, G. and Cathcart, R. (1986) *Inter/Media: Interpersonal Communication in a Media World*. 3<sup>rd</sup> edn. Oxford and New York: Oxford University Press.
- Gumpert, G. and Cathcart, R. (1990) 'A theory of mediation', in Brent D. Ruben and Leah A. Lievrouw (eds.), *Mediation, Information, and Communication: Information & Behavior, Vol. 3*. New Brunswick, NJ: Transaction. pp. 21–36.
- Hall, S. (1980) 'Encoding/decoding', in Stuart Hall, D. Hobson, A. Love, and P. Willis (eds.), *Culture, Media, Language: Working Papers in Cultural Studies, 1972-79*. Boston: Unwin Hyman. pp. 128-138, 294-295.
- Hartley, J. (1988) 'The real world of audiences', *Critical Response*, 5(3): 234-43.

Hawkins, R. P., Wiemann, J. M., and Pingree, S. (eds) (1988) *Advancing Communication Science: Merging Mass Media and Interpersonal Processes*. Newbury Park, CA: Sage.

Hoggart, R. (1998) *The Uses of Literacy*. New Brunswick, NJ: Transaction. (Originally published in 1957.)

Katz, E. (2006) 'Introduction to the Transaction edition: Lazarsfeld's legacy – The power of limited effects', in Elihu Katz and Paul F. Lazarsfeld, *Personal Influence: The Part Played by People in the Flow of Mass Communications*. 2<sup>nd</sup> ed. New Brunswick, NJ and London: Transaction. pp. xv-xxvii. (Originally published in 1955 by The Free Press.)

Katz, E. and Lazarsfeld, P. F. (2006). *Personal Influence: The Part Played by People in the Flow of Mass Communications*. 2<sup>nd</sup> ed. New Brunswick, NJ and London: Transaction. (1<sup>st</sup> edn, 1955. New York: Free Press.)

Katz, E., Peters, J. D., Liebes, T., and Orloff, A. (2003) 'Editors' introduction', in Elihu Katz, John D. Peters, Tamar Liebes and A. Orloff (eds.), *Canonic Texts in Media Research*. Cambridge: Polity. pp. 1-8.

Kling, R., Rosenbaum, H., & Sawyer, S. (2005) *Understanding and Communicating Social Informatics: A Framework for Studying and Teaching the Human Contexts of Information and Communications Technologies*. Medford, New Jersey: Information Today.

Korzenny, F. (1978). 'A theory of electronic propinquity', *Communication Research*, 5(1): 3-24.

Kreps, G. L. (2001) 'The evolution and advancement of health communication inquiry', in William B. Gudykunst (ed.), *Communication Yearbook, Vol. 24*. Thousand Oaks, CA: Sage. pp. 231-253.

Latour, B. (1991) 'Technology is society made durable', in John Law (ed.), *A Sociology of Monsters: Essays on Power, Technology and Domination*. London: Routledge. pp. 103-131.

Latour, B. (1999) 'On recalling ANT', in John Law and J. Hassard (eds.), *Actor Network Theory and After*. Oxford: Blackwell Publishers/The Sociological Review. pp. 1-14.

Lessig, L. (2001) *The Future of Ideas*. New York: Random House.

Licoppe, C. and Smoreda, Z. (2006) 'Rhythms and ties: Toward a pragmatics of technologically mediated sociability', in Robert Kraut, M. Brynin, and Sara Kiesler (eds.), *Computers, Phones and the Internet: Domesticating Information Technology*. New York: Oxford University Press. pp. 296-313.

Lievrouw, L.A. (2004) 'What's changed about new media? Introduction to the fifth anniversary issue', *New Media & Society*, 6(1): 9-15.

Lievrouw, L.A., and Finn, T.A. (1990) 'Identifying the common dimensions of communication: The communication systems model', in Brent D. Ruben and Leah A. Lievrouw (eds.), *Mediation, Information and Communication: Information and Behavior, Vol. 3*. New Brunswick, NJ: Transaction. pp. 37-65.

Lievrouw, L.A., and Livingstone, S. (2006) 'Introduction to the updated student edition', in *Handbook of New Media* (updated student ed.). London: Sage. pp. 1-14.

Lievrouw, L.A., and Ruben, B.D. (1990) 'Introduction to Part I: Theories of mediation – Views of the communication process', in Brent D. Ruben and Leah A. Lievrouw (eds.), *Mediation, Information and Communication: Information and Behavior, Vol. 3*. New Brunswick, NJ: Transaction. pp. 3-7.

Litman, J. (2001) *Digital Copyright*. Amherst, NY: Prometheus Books.



- Livingstone, S. (2004) 'The challenge of changing audiences: Or, what is the audience researcher to do in the internet age?', *European Journal of Communication*, 19(1): 75-86.
- Luke, C. (1989) *Pedagogy, Printing and Protestantism: The Discourse of Childhood*. Albany, NY: State University of New York Press.
- MacKenzie, D. and Wajcman, J. (eds) (1999) *The Social Shaping of Technology*. 2<sup>nd</sup> ed. Buckingham: Open University Press. (1<sup>st</sup> edn, 19??.).
- Mansell, R. (2004). Political economy, power and new media. *New Media and Society*, 6(1), 96-105.
- McLuhan, M. (2003) *Understanding Media: The Extensions of Man* (Critical edition, ed. and introduction by W.T. Gordon). Corte Madera, CA: Gingko Press. (1<sup>st</sup> edn, 1964.)
- McLuhan, M. and McLuhan, E. (1988). *Laws of Media: The New Science*. Toronto: University of Toronto Press.
- McQuail, D. (2005) *McQuail's Mass Communications Theory* (5<sup>th</sup> ed.). London: Sage. (1<sup>st</sup> edn, 1987.)
- Meyer, T.P. (1988) 'On mediated communication theory: The rise of format', in James A. Anderson (ed.), *Communication Yearbook 11*. Newbury Park, CA: Sage. pp. 224–229.
- Reardon, K.M., and Rogers, E.M. (1988) 'Interpersonal versus mass media communication: A false dichotomy', *Human Communication Research*, 15: 284-303.
- Rogers, E. M. (1999) 'Anatomy of the two subdisciplines of communication study', *Human Communication Research*, 25: 618-631.
- Ruben, B. D., and Lievrouw, L. A. (eds) (1990) *Mediation, Information and Communication: Information and Behavior, Vol. 3*. New Brunswick, NJ: Transaction.
- Rubin, A.M., and Rubin, R.C. (1985) 'Interface of personal and mediated communication: A research agenda', *Critical Studies in Mass Communication*, 2: 36-53.
- Short, J., Williams, E., and Christie, B. (1976) *The Social Psychology of Telecommunications*. New York: Wiley.
- Silverstone, R. (2005) 'The sociology of mediation and communication', in Craig Calhoun, Chris Rojek, & Bryan S. Turner (eds.), *The Sage Handbook of Sociology*. Thousand Oaks, CA: Sage. pp. 188-207.
- Sproull, L. and Kiesler, S. (1986) 'Reducing social context cues: Electronic mail in organizational communication', *Management Science*, 32(11): 1492-1512.
- Suchman, L. (2007) *Human-Machine Reconfigurations: Plans and Situated Actions*. New York and Cambridge: Cambridge University Press.
- Thompson, J. B. (1995) 'The rise of mediated interaction', in *The Media and Modernity: A Social Theory of the Media*. Cambridge: Polity; and Stanford, CA: Stanford University Press. pp. 81-118.
- Thompson, J.B. (2005) 'The new visibility', *Theory, Culture & Society*, 22(6): 31-51.
- Turow, J. (1992) 'On reconceptualizing "mass communication"', *Journal of Broadcasting and Electronic Media*, 35: 105–110.

Wartella, E., and Jennings, N. (2000) 'Children and computers: New technology – old concerns', *The Future of Children*, 10(2), 'Children and Computer Technology,' Autumn-Winter: 31-43.

Wenger, E.C. (2000) 'Communities of practice and social learning systems', *Organization*, 7(2): 225-246.

Wellman, B., and Haythornthwaite, C. (2002) *The Internet in Everyday Life*. London: Blackwell.

Williams, R. (1974) *Television: Technology and Cultural Form*. London: Fontana.