

## Bibliography for the new media

From the scroll, codex and myriad other manuscript forms to the printed book the world has seen many ways in which the written word could be transmitted. As once the manuscript codex dominated the Western world, so does its printed successor today. Still today, ours is the Order of the Book. Several newer media have presented themselves in the course of the past century, notably radio, film, television. However, in spite of the gloomiest predictions, the mass media have failed to cause the book's demise. Nor have they even begun to rival the status of the book as the single most effective vehicle for the preservation and transmission of human knowledge. We may *study* television, film, and radio; but the primary manner in which we communicate our research results is still through print.

After the invention of the World Wide Web in 1991 the networked computer started its meteoric rise. Its tremendous rate of growth has not abated since. E-mail, e-commerce and just about e-everything continue to insinuate themselves into our daily lives. This digital global network is also increasingly employed for the publication and distribution of books, journals, newspapers, periodicals, and other texts that would once have been published solely in print. The invention of the Internet and more particularly the World Wide Web has turned the computer from its role as a mere digital aid in the production of printed paper into a fully fledged medium for the transmission of text.

The advance of the World Wide Web, and thereby the challenge it presents to the printed book, is clearly unstoppable, and it touches the heart of the order of the book. Whether replacing or merely complementing their printed counterparts, the www offers an impressive panoply of digital newspapers, journals, fanzines, railway timetables, e-books and learning materials. The examples can be multiplied effortlessly. As these publications move into the digital element they may or may not be transformed from their print appearance, functionality, extent, degree of up-to-dateness, etcetera. Yet their relationship to their print forebears is always obvious and often close. In addition, the digital element has engendered wholly new digital genres of writing such as the web log and the discussion forum. Even the most passionate defender of the culture of the book will need to face the fact that digital forms of text are bound to affect the function and status of print in society, and the printed book in particular.

Clearly, the World Wide Web has become a serious competitor to the paper-based book and other print-based publication forms. But it would be a mistake

<sup>1</sup> The term is Michael Heim's, from *Electric language. A philosophical study of word processing* (New Haven & London 1987); see esp. pp. 101-3.

to regard it as just another challenge, after radio, film, and television. A challenge it is certainly, but one of a different order than that posed by the twentieth-century mass media. Unlike television, film or radio, the Internet shares with the codex the technology of writing. McLuhan's prediction was that books and print would no longer be central to Western culture. The influential essayist George Steiner followed him, pronouncing that the world was coming to the end of an historical era of 'verbal primacy'.<sup>2</sup> However, in portraying the Internet as a challenge to the paper-based book, I am less concerned with a shift of modalities (any decline in the status of the word in favour of, say, the image),<sup>3</sup> than with a shift of media in the transmission of what remains essentially the same verbal text. For the Internet is still predominantly a verbal medium, script based, even if it integrates words closely with image and sound. Among the many modalities that the computer facilitates (text, still and moving images, speech and music) writing is – still – central.<sup>4</sup> This is not to say that a shift in modalities is not going to take place; just that it will be a very gradual change, of which we are only seeing the very beginning.

Given these strong continuities between the www and the functions of the printed book, book historians<sup>5</sup> need to consider to what extent the discipline is to concern itself with this latest text-based medium. As it is, the demarcation is an ad hoc and largely implicit one. Even such a squarely digital publication as the online book history resource Bibliopolis in the Netherlands,<sup>6</sup> though it continues right to the end of the twentieth century, omits to deal with the advent of the World Wide Web. None of the prestigious histories of the book that are currently in the process of being written in the English-speaking world are projected to deal with the book's digital transformation. As Wim Heijting has made clear in a very perceptive review of recent Anglo-American book history handbook titles,<sup>7</sup> these handbooks, too, all exhibit a similar implicit, rather abrupt caesura. None of them attempt to define where they stand vis-à-vis digital

2 'The retreat from the word', in: *George Steiner. A reader* (Harmondsworth 1984), pp. 283-304, on 284.

3 Such a shift has been posited by many besides McLuhan and Steiner. See for example Mitchell Stephens, *The rise of the image the fall of the word* (OUP 1998).

4 Writing is also crucial in *how* the computer facilitates all of these modalities, through various markup and programming languages, which usually employ some form of English (see Lev Manovich, *The language of new media* (Cambridge, Mass. etc. 2001), p. 47).

5 Bibliographers is D.M. McKenzie's preferred term in *Bibliography and the sociology of texts* (London 1986; expanded edn. Cambridge 1999), but historians of the book – in which I include the older bibliographers – seems more apposite.

6 'Bibliopolis. Geschiedenis van het gedrukte boek in Nederland', [www.kb.nl/bibliopolis](http://www.kb.nl/bibliopolis).

7 His 'De oude en de nieuwe boekgeschiedenis' (*Jaarboek voor Nederlandse boekgeschiedenis*, 11 (2004), pp. 181-95) reviews R.J. Zboray & M. Saracino Zboray, *A Handbook for the study of book history in the United States* (Washington, D.C.: Center for the Book/Library of Congress 2000); *Perspectives on American book history. Artifacts and commentary*, ed. S.E. Casper, J.D. Chaison & J.D. Groves (Studies in print culture and the history of the book; Amherst etc.: University of Massachusetts Press, in association with the American Antiquarian Society, Worcester, Mass., and The Center for the

developments. The new medium is perceived as a faint threat, at best to be politely ignored; at worst to be defensively feared. Since there is little likelihood of this 'threat' disappearing again, however, a more positive attitude to it would be helpful. We could do worse than start by trying to define book history's boundaries openly rather than implicitly.

Apart from the growth of the World Wide Web itself, the publication of a spade of new histories of the book, and the appearance of various new bibliographical handbooks, what makes such definition especially topical, not to say urgent, is that a host of new courses and teaching programmes in the field of the history of the book have sprung up over the last few years.<sup>8</sup> What is it that students of the history of the book should be taught? What perspective should they bring to the discipline? To call this predicament an identity crisis might be a little alarmist. But there is a need for reflection nevertheless.

As the importance of the www continues to grow, what kind of relationship will historians of the book wish to establish towards it? Clearly, in terms of textual transmission, after the tablet, the scroll, the MS and printed book, the internet represents the latest avatar of an information exchange system based on recorded text. In many cases the very same texts that used to appear exclusively in print are now appearing also – or in some cases even exclusively – in a digital form. Equally clearly, it will be objected that there is no bookness in the digital realm except by such analogy and metaphor that has us speak of e-'books', 'bookmarks' and web 'pages'.<sup>9</sup> Both *bibliography*, in its narrower, philological, sense and book history, in its newer, *histoire du livre*, sense, have always concerned *books*. Their historical period is that of the printed book; their methods are optimised for the printed book, and their vocabulary, too, is tuned to the medium of the printed book. This being the case, it would seem to make little sense to advocate a broadening of bibliography's concern to other media than the printed book.

There is, however, a cogent reason for holding that, regardless of its name – which is no more than a historical contingency – bibliography ought not to

Book, Library of Congress, Washington, D.C. 2002); and *The book history reader*, ed. D. Finkelstein & A. McCleery (London etc. 2002).

8 To confine myself to postgraduate courses, programmes include the 'MA in the History of the Book' at the University of London; the MA 'Text and Book' at the University of Birmingham; the 'Joint MA in Library and Information Science and Graduate Certificate in Book Studies' at the University of Iowa; the interdisciplinary programme in Book History and Print Culture at the University of Toronto; Buchwissenschaft (Book Studies) programmes at Mainz and Erlangen (Germany); and the MA programme 'Book and Byte: Book and Digital Media Studies' at the University of Leiden.

9 Although the page as it has become codified in our culture through the codex has been a powerful influence on the development of the graphical user interface (GUI). Like cinema and television, all digital interfaces are based on the central concept of a rectangular window that may be filled with 'text' in any of its modalities in much the same way as the page of a book (see, for example, Manovich, op. cit. (n. 4), pp. 63-88, esp. pp. 74-5).

confine itself to books made of paper. Indeed, there is a long and reputable tradition of such a less literal definition of the term. Already W.W. Greg made a point of stating rather emphatically that bibliography was defined by its method and perspective, not by its objects. Despite its length and apodictic tone, I think the passage is worth quoting in full:

The view has been, and I believe still is, maintained by many able practitioners that bibliography is properly confined to the study of printed books. Manuscripts, they hold, belong to another department. Now, I do not wish to waste words over a matter of verbal definition. But when I read the accounts of bibliographical descriptions given by these same writers I observe that a large part of their method is just as applicable to manuscripts as to printed books. And as it happens to be in the methods of the science that I am at present interested, I regard the distinction between written and printed books as irrelevant. What I am concerned with is a system of investigation and a method of description, and if, with minor modifications, it can be made to apply to clay cylinders and rolls of papyrus as well as to codices of vellum or paper, so much the better. It is the method itself, not the object to which that method is applied, that gives unity to a science. You may state the laws of motion in a form more suitable to the movements of the planets, as did Newton, or in one more suitable to those of an electron, as is the modern tendency; but that does not affect the principles of rational dynamics. Thus it may be called bibliography, or it may be called by any other name you please, but what I want understood is that the characteristics of the science about which I am speaking cut far deeper than the distinction between writing and printing and apply to the transmission of all symbolic representation of speech or other ordered sound or even of logical thought. This will, I hope, obviate useless discussion. But I confess for my part that the view which would confine the term 'bibliography' to the study of printed books seems to me a very foolish one.<sup>10</sup>

Writing in 1968, Patrick Wilson agrees: "The printed book happened, for a while, to be the primary means of the exemplification of texts; but the problem of bibliographical control is not one arising simply from that physical form of exemplification of texts, for it might have existed had there been no printed books, and it would exist after printing was a forgotten art and books were found only in museums."<sup>11</sup> More recently, textual critics such as Thomas Tanselle, Jerome McGann, and Peter Shillingsburg have been prominent in pointing out the need to include the digital element in any study of textual transmission. They have written extensively on the challenges and problems of digital textual

<sup>10</sup> 'What is bibliography?' (1912), in: W.W. Greg, *Collected papers*, ed. J.C. Maxwell (Oxford 1966), pp. 75-88, at pp. 77-8.

<sup>11</sup> *Two kinds of power. An essay on bibliographical control* (Berkeley etc. 1968), p. 12. I am indebted to Mats Dahlström for this reference, fruit of a lively email exchange initiated by his SHARP-L postings on the application of the term 'prelims' to the new media (see the SHARP-L archives for Oct. and Nov. 2002, at <http://www.sharpweb.org/archives.html>).

transmission for text recension. But we can turn to D.F. McKenzie for the boldest suggestion to date for the expansion of bibliography across media, both in the sense of the physical substrate and modalities other than that of the written word. In his inaugural Panizzi lectures of 1985, published in 1986 as *Bibliography and the sociology of texts*,<sup>12</sup> McKenzie proposed two ways in which bibliography should extend itself, both indicated in the title, in the words 'sociology' and 'texts'. The 'sociological' direction of his proposed expansion has since found widespread acceptance, and few bibliographers today dispute that a sociological, *histoire du livre* approach is useful, even crucial to the study of the history of the book. It is the second extension, in which McKenzie regards the nature of the material (or 'texts') with which bibliography concerns itself that is most interesting – and most controversial. The term 'texts' in McKenzie's view of bibliography includes non-book texts, such as oral texts and computer-stored data, but even non-verbal texts, such as images, maps, and recorded music.

Notwithstanding McKenzie's impeccable credentials as an analytical bibliographer, there was a great deal of criticism of *Bibliography and the sociology of texts* on this count, some of it very harsh indeed. While many critics appeared to react more to the rhetoric than to the thrust of McKenzie's argument, one serious objection at any rate was widely shared. Extending bibliography's remit beyond the written record, to include such expressions of human culture as film, music, images, maps and digital data, was – mildly put – undesirable. The way Hugh Amory summarily dismissed the notion in his review of *Bibliography and the sociology of texts* in *The book collector* captures the general sentiment well:

[I]f 'books as physical objects' unduly cramps the function of bibliography, 'human constructions' is impossibly wide.<sup>13</sup>

The main problem, I suspect, is the terminological one. Bibliography has long been established as the study of all aspects of the printed book. It is understandable that its application to an 'impossibly wide' field was experienced by many bibliographers as an attempt at alienating a once familiar term. But book history, the newer and wider term, too, has by analogy been largely confined to the period of the printed book.

I should like to suggest a two-tier solution for this long-existing problem of the demarcation of book history, exacerbated by the digital developments, but also relevant for the manuscript book. First, for three chief reasons I will discuss below, I believe that it is untenable that book history should confine itself to the study of the material book. I believe that, as a matter of principle, bibliography should be extended to include all *verbal* texts, even if they are not in

<sup>12</sup> Op. cit. (n. 5); translated into Dutch by Berry Dongelmans and Adriaan van der Weel as *Bibliografie en de sociologie van teksten* (Leiden 2004).

<sup>13</sup> Hugh Amory, *The book collector*, 36 (1987), pp. 411-18, on p. 418.

the form of print. Second, I should like to regard book history as a particular sub-discipline of a more general discipline: history of the media – perhaps in itself a sub-discipline of the history of human communication. This solution neither resigns itself to preserving the status quo, nor, I hope, will be felt as violating bibliography's current sense of identity.

(1) The first reason to extend the definition of book history in this way is that no-one can practise book history today without having a thorough understanding of the way text is transmitted digitally. It may be objected that bibliography, which literally means the description (or study of) books (*biblia*) and not other media, and book history are semantically confined to books proper, and that there will always remain a need to study printed books as one particular medium for the transmission of text as distinct from any other. However, I believe that the arrival of digital book forms and the World Wide Web has utterly and irreversibly changed our perception and understanding of the printed book. In the same way as our understanding of Shakespeare is influenced by – even depends on – our knowledge of later literature, as well as the methods and theories we devise to study that literature, our understanding of the printed book is influenced by and depends on our knowledge of later media for the transmission of text, and the methods we evolve for studying them.

'The study of the history of textual transmission' as a new definition of book history would cover the book historical (*histoire du livre*) approach, both in a longer historical framework, aimed at examining the role of the book in society, and in the philological sense of analytical bibliography and textual criticism aimed at establishing texts of literary works according to various principles.

In addition to this more general and diffuse – but very real – way in which the digital element impacts on book history, there is a purely pragmatic reason why an understanding of digital media is indispensable to any bibliographer. This is that it is simply impossible to isolate analogue from digital elements in the production, distribution and consumption of the printed book today. No straightforward distinction is possible between analogue and digital textual worlds: the print and digital elements are thoroughly enmeshed. Printed books are now usually produced largely or entirely by the same digital means that create their digital counterparts, whether online, on the www, or offline, in the form of e-books, CD-ROMS, DVDs and so on. In the case of printing on demand (P.o.D.) digital transmission over the Internet is becoming important even for books that would otherwise appear to all intents and purposes completely conventional as they end up on readers' bookshelves. As printing on demand gains territory, the internet, besides being a medium in its own right, serves as an alternative to distribution by physical means of conventional texts. Even conventional analytical bibliography, applied strictly to the printed book, is thus not immune from the need to keep up with digital developments. At this stage of the development of digital means of textual transmission the considerable overlap with

the analogue book means that, even if we wish to confine our interests to the study of the production of the printed book, we would, for the period beginning in the 1960s, need to immerse ourselves in the digital element.

Again, if we concentrate on one of bibliography's abiding central concerns, to gain insight into the vicissitudes of textual transmission with a view to constituting a particular text, whether this is the one that embodies authorial intention or a particular social construct, surely the medium through which that text, or versions of it, have been transmitted is irrelevant *in principle*. We have for decades been happy in that process to consider manuscript, typescript and printed versions of a text. Why would we now stop at considering digital ones?<sup>14</sup>

(2) The second reason for extending the definition of bibliography is that, as I have suggested, the diachronic development from the oral transmission of texts to their manuscript, print and digital transmission forms a thick and continuous strand in the history of human communication.<sup>15</sup> There is no reason why, in studying 'texts as recorded forms, and the processes of their transmission',<sup>16</sup> we should suddenly stop when one medium gives way to another. In the context of the present widespread adoption of a new medium there is no reason to stop when paper gives way to computers. Why would we make a book historical study of the production of encyclopedias published in print, but not of the same encyclopedia published in a digital form, online or offline? The internet is just one further step in what Walter Ong in his *Orality and literacy* (1982) has termed 'the technologizing of the word', from its non-technological oral origins to manuscript, to print, and now to its digital transmission.

The continuum between these media is illustrated too by the way in which they always overlap. There is never a clean break, and existing media continue to co-exist with the new.<sup>17</sup> It is a continuum that demands continuity also in

14 Piet Verkrusse is content to signal the bibliographer's quandary, but does not venture to suggest a solution: 'Wie soll es aber weitergehen zu einer Zeit, in der Drucker keine Verleger mehr sind und jeder Internet-Benutzer sein eigener Editor ist? Das scheint mir ein Thema für das nächste Jahrhundert zu sein.' ('Schwierig und dogmatisch, aber auch aussergewöhnlich reichhaltig. Vergangenheit, Gegenwart und Zukunft der analytischen Bibliographie', in: *Text und Edition. Positionen und Perspektiven*, ed. Rüdiger Nuth-Kofot et al. (Berlin 2000), pp. 369-86, on p. 386; a Dutch version of the article was published in the *Jaarboek voor Nederlandse boekgeschiedenis*, 9 (2002), pp. 7-23).

15 Obviously, oral transmission presents challenges of its own. Individual oral texts (at least in the 'primary' sense) can not be treated in the same way as instances of individual written or printed texts: there is no objective access to them, unless they are in some way recorded. Note that this is a practical problem (especially for the study of pre-literate cultures before the invention of sound recording devices); not a principle justifying exclusion. Moreover, the practical problem of discussing individual oral texts should not stop us from making observations about orality as a whole, and recognising the crucial differences between oral and written forms of communication.

16 McKenzie, *op. cit.* (n. 5; 1986), p. 4; (n. 5; 1999), p. 12.

17 A number of studies on the co-existence of the manuscript and print media (the oral dimension is sadly underrepresented) have appeared in recent years, three of which deserve specific mention: Harold Love's *Scribal publication in seventeenth-century England* (1993), republished as *The culture and commerce of texts. Scribal publication in seventeenth-century England* (Amherst 1998), and Arthur F. Marotti's *Manuscript, print, and the English Renaissance lyric* (Ithaca & London 1995) and Margaret

the means to study them. It makes eminent sense to study each of these textual media from the same perspective, using largely the same tools and methods as we use to study the printed book. (As Berry Dongelmans<sup>18</sup> has remarked, descriptive bibliography has shown the way here. Library catalogue programs have long been capable of describing other materials than manuscript and printed books and periodicals, including digital text forms, and analogue and digital film and sound.)

The case for continuity from one text-based medium to the next should, of course, not blind us to the huge differences between them, and especially that between the printed text on the one hand and electronic text on the other. Beneath the typographic surface<sup>19</sup> lurk a host of entirely new possibilities, unheard of in the world of the printed book. But illustrative comparisons between the uses and social implications of manuscript, print and digital text forms can only be made precisely if we regard the history of textual transmission as one of continuity *in principle*. Only if we study all successive forms of textual transmission using the methods and vocabulary of a single discipline can we truly evaluate the continuities and discontinuities between them. It is often precisely in the transitions from one medium to another that we begin to understand the true nature of each. Just because in practice codicologists and palaeographers have tended in their study of the manuscript book to remain aloof from analytical bibliographers does not mean that it is not highly instructive to observe the continuities and discontinuities between the manuscript and the printed book from the vantage point of a unified perspective.<sup>20</sup> Some texts, such as the Homeric epics, have survived across the full range of these media. By studying the appearance of the same text in different media, book historians are in a position to map the role of the book in a particular culture or society, contributing much to our understanding of the culture that produced the text in a particular form.

(3) The third reason for extending bibliography is that it has a long and reputable history, and is better equipped than any other discipline for the sort of tasks that need to be performed (think of its historical perspective; methodologies; vocabulary; theoretical models, etc.) and would therefore in any case be central to it.

That this is so is illustrated by the fact that, just as many bibliographers and book historians have begun to take an interest in digital textual transmission,<sup>21</sup>

J.M. Ezell's *Social authorship and the advent of print* (Baltimore & London 1999). This has sparked a new, 'multimedial' perspective, exemplified by the announcement of a panel on 'The Fate of Script in an Age of Print' at the 2005 ASECS conference.

18 I am indebted to him for his kindly critical reading of a draft version of this article.

19 Frans A. Janssen stressed the typographic nature of the computer in his Tiele lecture of 2003, published as *Verleden en heden van het gedrukte boek* (Zutphen & Den Haag 2003).

20 J.P. Gumbert's article "'Typography' in the Manuscript Book" (*Journal of the Printing Historical Society*, 22 (1993), pp. 5-28) illustrates well the fruitfulness of such a comparative approach.

21 Especially textual critics such as Jerome McGann, Thomas Tanselle and Peter Shillingsburg

many practitioners in the digital field have found themselves turning to bibliography and textual studies for a methodology and a terminology to tackle the very same and similar questions and issues with which bibliography has traditionally been concerned regarding the printed book. The question what constitutes a text, for example, is, if anything, even more burning in the digital arena than it has been among textual scholars in the field of text recension. It is a subject of continuing and very wide-ranging debate which is already heavily indebted to bibliography, but to which bibliography continues to have much to offer.<sup>22</sup>

A number of efforts – of a more or less tentative nature – have been made to apply bibliographical tools to digital text forms, for example by John Lavagnino (analytical bibliography);<sup>23</sup> Matthew Kirschenbaum ('theorizing electronic textuality');<sup>24</sup> Katherine Hayles (the nature of the (digital) text; see op. cit. above). Towards the end of 2002 Mats Dahlström's question on the application of bibliographical terminology to the digital media prompted a brief, and inconclusive, discussion on SHARP-L.<sup>25</sup> Just as language at large skews our perception of the world, the use of a book historical vocabulary directly affects the concept we have of the discipline's objects.

If, say, we wished to compare two versions of a digital text – one published originally on CD-ROM and a later web version – would it not be perfectly acceptable to use the term 'collation' for this? It may be so that we need to employ sophisticated digital techniques to aid the task of determining which textual variations may be attributable to technological and which to human agents,<sup>26</sup> but that would not change the essential purpose of the exercise. Even if we find it useful to designate some of the specific techniques employed in a digital environment with a new terminology, using the existing term 'collation' for the overall concept would indicate that we are in essence talking about the same intellectual pursuit.

have written extensively on the challenges and problems of digital textual transmission for text recension. Book historians have been less ready to cross the boundaries of the printed book. Examples are Frédéric Barbier, *Histoire du livre* (Paris 2000), Jean-François Gilmont, *Une introduction à l'histoire du livre. Du manuscrit à l'ère électronique* (Liège 2000), and Frederick G. Kilgour, *The evolution of the book* (New York & Oxford 1998).

22 A good recent example is Katherine N. Hayles, 'Translating media. Why we should rethink textuality', in: *Yale journal of criticism*, 16.2 (2003).

23 John Lavagnino, 'The analytical bibliography of electronic texts'; paper presented at the ALLC-ACH'96 conference, University of Bergen, 1996, <http://www.hit.uib.no/allc/lavagnin.pdf>.

24 'Editing the interface. Textual studies and first generation electronic objects', in: *TEXT. An interdisciplinary annual of textual studies*, 14 (2002), pp. 15-51. As we shall see, Kirschenbaum is adamant that textual criticism and bibliography offer an excellent tool for dealing with digital texts.

25 He has since explored the subject in a substantial article, 'Nya medier, gamla vertyg', in: *Human IT*, 6.4 (2002), pp. 71-116; also published on the web at <http://www.hb.se/bhs/ith/4-02/md.pdf>.

26 See John Lavagnino, op. cit. (n. 23).

Creating a whole new terminology to encompass both the (MS and print) book and the digital media would probably be feasible only under a communist regime. At any rate, it would have the major drawback of not doing justice to the central role of venerable bibliography and obscuring the continuities that we have just observed. Rather than let the digital media develop their own terminology, they could use the book's. Of course, wherever the existing vocabulary was felt to be inadequate, it should be augmented by new terms, either specifically for the new media, or, as a neutral compromise, for all media at once.

The point here is of course not to decide the issue, but to recognize that, practical though it is, it is an issue that is directly connected with bibliography's perspective on its own pursuits. It is possible to place the form of the communication first – which we may term the medium-based approach, stressing the unity (and uniqueness) of the period of the printed book. But the question is whether it does not make more sense to stress the content of the communication – the text-based approach, stressing diachronic continuity. The choice between the long view, based on the primacy of the textual content, and the short one, based on the primacy of the medium of the printed book, has major repercussions.

If it could be agreed to expand the scope of book history in the way I have suggested, the field to be covered would include the entire history of the transmission of verbal text. However, the digital medium would present a complication. In considering the possibility of applying bibliography to the digital medium so far we have concentrated on writing. But the digital medium does not restrict itself to character-based materials. Bytes don't distinguish between texts in the narrow, character-based, sense and still or moving pictures, maps, spoken word or music. In combination with its input and output devices, the computer is an extraordinarily versatile instrument. The computer is a technology, like the printing press, for setting up type and placing it on a substrate that enables it to be multiplied and distributed. But unlike the printing press, which represents no more than one tool of many in the chain of producing, distributing and consuming print, the computer can represent any of the links in the chain: writing; design; multiplication; distribution, down to the carrier or substrate (equivalent to paper). In that sense it is all of the medium. In addition, it is also the carrier or substrate of any number of existing analogue media, such as film, speech, and text, or art forms such as visual arts and music.

This is where the second tier of my proposal comes in, which would make book history (defined as the study of the history of textual transmission) a sub-discipline of a history of the media. In this new, broader church of a history of the media, we could, but would not be forced to cordon off an area of textual studies in the narrow sense. A history of the media would, as a matter of course, include everything the networked computer produces and distributes as a new medium. It would not be necessary to lift just one modality arbitrarily

out of the digital element. Acknowledging the synchronic and diachronic continuum in which the book has its being, we could create a unified perspective from which to study the way texts (in the narrow sense of employing recorded forms of script) have been transmitted and their meanings created regardless of the medium. For if anything should have become clear from the discussion so far, it is that bibliography cannot afford to ignore the wider historical context in which the printed book has been hegemonous for some five and a half centuries.

While it is true that McKenzie's suggestions for broadening the definition of bibliography were dismissed widely – and rather rudely – when he first made them, the networked computer has since become infinitely more prominent, and indeed has risen to the status of a text-based medium in its own right. In this new situation it makes perfect sense to adopt a method of studying it which includes all modalities that the computer produces and distributes. There is no principled distinction between them; all are bytes. If we don't recognise this, we cannot hope to understand the computer's potential as a medium. It is for a large part by virtue of these additional capabilities that the digital medium acquires its very different nature from paper-based media.

Such a larger history-of-the-media approach is an emerging field, with publications such as that by Asa Briggs and Peter Burke in their *A social history of the media* mentioned earlier, and Frédéric Barbier and Catherine Lavenir in *Histoire des médias. De Diderot à Internet* of 1996. It might be objected that bibliographers should be content to let others establish and develop that larger field. This, I would emphatically argue, is not a good idea. Who would be the alternative candidates? Media studies or computer studies colleagues? Surely bibliographers have the tools and methods, as well as the necessary historical perspective. Bibliography is well placed to have a central position within it, as Matt Kirschenbaum has also pointed out:

Given the origins of textual criticism and bibliography in the study of printed matter like manuscripts and books, the premise that its deliberations are relevant to digital content may seem odd and counter-intuitive. But in fact, textual criticism and bibliography should be recognized as among the most sophisticated branches of media studies we have evolved. Only the most literal-minded reader could think that because they have historically focused on parchment and paper these disciplines have nothing to say to the new artifacts and technologies of the digital age.<sup>27</sup>

A history of the media, centrally informed by the methods, vocabulary etc. of traditional bibliography would offer precisely the frame of reference needed

<sup>27</sup> Matt Kirschenbaum, 'Materiality and matter and stuff. What electronic texts are made of', in: *Electronic book review*, [http://www.electronicbookreview.com/v3/servlet/ebvr?command=view\\_essay&essay\\_id=kirschenbaumrip](http://www.electronicbookreview.com/v3/servlet/ebvr?command=view_essay&essay_id=kirschenbaumrip), 2001 (revised 2003).

to perform bibliographic tasks properly. Looking back, we can see a line of influential authors who have laid the groundwork for such a perspective: from Walter J. Ong to Harold Love, etc. Within that larger field anyone can specialise.

Of course this is not to say that traditional bibliographical tools and methods are all that will ever be needed by a history of the media. Cinema, graphic arts, radio each require tools of their own. But all can benefit from the combined strengths of *histoire du livre* and analytical bibliography to provide a unifying 'media studies' perspective.

Before we dismiss this appeal to bibliography's services too hastily, it may help to consider to what extent even traditional bibliography is already multi-medial. It deals with prints, maps and illustrations, which, being products of the printing press along with the book, are accepted without question as being inside the proper realm of bibliography. This means that, in fact, bibliography concerns itself with characters and illustrations, but also with graphics by themselves, in the form of prints and maps. If we transfer this way of thinking to the computer we have to accept that we now need to expand bibliography to include the study of all that the computer can be used to produce and distribute: text and (still) images, but also spoken text and music and moving images. Looking back from the computer to the printing press, we can't help observing that the only reason that bibliography never included moving images is for the simple but purely practical reason that the printing press, through an accident of history, was not capable of producing them.

In *Bibliography and the sociology of texts* McKenzie made the very practical point that as texts adapt themselves to the needs of their times, the discipline ought at the very least to consider if it, too, might have to adapt. The coming of the digital revolution has already contributed to bibliography's renewed vigour. Surely it is not altogether a coincidence that the heighening of book history's profile over the last decade or two<sup>28</sup> has coincided with the growth of the Internet. If bibliography is to stay relevant, McKenzie writes, it has to move with the times: 'The politics of survival, if nothing else, require a more comprehensive justification of the discipline's function in promoting new knowledge.' Here, as elsewhere, McKenzie's wording is less felicitous than it might have been, for 'The politics of survival' is a bit of a red herring.<sup>29</sup> As I have suggested, I think

<sup>28</sup> The international success of the Society for the History of Reading, Publishing, SHARP, for example, is matched in the Netherlands by that of the Nederlandse Boekhistorische Vereniging, NBV.

<sup>29</sup> McKenzie, op. cit. (n. 5; 1986, p. 4; 1999; p. 12). Tanselle's reply to this (in his review of *Bibliography and the sociology of texts*, 'Textual criticism and literary sociology', in: *Studies in bibliography*, 44 (1991), pp. 84-144) was that: 'The phrase "if nothing else" does not accomplish its mission of making the point seem casual and subordinate. To speak at all of the "politics of survival" trivializes the discussion beyond redemption. A "discipline" does not exist for the purpose of self-perpetuation; if it requires "justification" as a political strategy for survival, it had better be allowed

that the real reason why book history and bibliography should re-invent themselves and include the digital element is that they are already being changed by the digital realities. Bibliography can, and I think ought to, take full advantage of the special opportunity afforded by the fact that this digital revolution is happening right here and now. In its *histoire du livre* approach<sup>30</sup> bibliography has already devoted, and continues to devote, a great deal of research on the examination of the continuities and discontinuities in the transmission of texts as it moved from manuscript to print.<sup>31</sup> Gutenberg's invention marked the beginning of a lengthy era in which the products of the scriptorium and those of the printing press vied for ascendancy. An understanding of their peculiar symbiosis is surely as helpful for making sense of the present period after the digital revolution, in which we can observe the increasing competition between printed and electronic texts, as, vice-versa, a study of the present digital events will help us to understand the slow rise of the printed book.

Not every bibliographer or book historian might wish to be bother with the digital developments that envelop us, and that is not what I advocate. But the very least we can do is recognize that a future generation of book historians will need to be equipped to face and understand these developments even if we choose not to confront them ourselves.

to die.' (pp. 89-90) This is an example of one of the more vitriolic criticisms of McKenzie's ideas. Not only is it extremely forcefully worded, but on the surface it appears to be a very reasonable criticism. However, the criticism makes its point at the cost of a proper understanding of McKenzie's overall vision of his own discipline. Tanselle's victory here was just a little too easy. Rather than denounce McKenzie's imputed opportunism, we should welcome the openness towards the boundaries of his discipline and his willingness to remake himself as a bibliographer.

30 The term 'histoire du livre' is older and derives from another source than the 'New Historicism' that we have recently seen reclaim territory once ceded to Deconstruction and similar fashionable theoretical approaches to literature. I should like to regard this new appreciation of the historical method as a return to a more sensible condition rather than as representing a new fashion.

31 Besides the examples of Love, Marotti and Ezell mentioned earlier, more recently David McKitterick (*Print, manuscript and the search for order, 1450-1830*, CUP 2003) and Gerd Dicke and Klaus Grubmüller (as editors of *Die Gleichzeitigkeit von Handschrift und Buchdruck*, Wiesbaden 2003) have contributed important work in this area.