

Why Media Matters: An Introduction

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Please send us also the larger volume of the letters of St. Augustine...for most of our copy was eaten by a bear in one of the outlying monasteries.
—Peter the Venerable to Guigo of Le Chatel

Whereas literature has been traditionally regarded as a self-sufficient category, one of the consequences of shifting theoretical articulations in the second half of the 20th century has been to re-position literature within the more comprehensive inquiry of media studies. These studies, which have concerned themselves with the communication, transmission and storage of information, originally developed with reference to cultural forms which deviated from the "status quo" of a printed literature, most notably electronic media such as film, radio and television. While the importance of the technological mediation of such forms, and of their social and economic context, was never taken for granted, the medium of the "book" or "literary work" as an information system was left largely unexamined. Although a certain type of literary scholarship, conducted by bibliographers, editors and paleographers, has and continues to be directed to what has been termed more recently the "materiality" of literature, this research took as its object the elucidation of the textual history of a discrete literary work, often with the express purpose of assessing authorial intention and reconciling conflicting textual authority. Recently, however, as Robert Darnton, Roger Chartier and Jerome McGann have observed, studies addressing the history of the book, which had previously been parcelled out among various disciplines, have re-constituted themselves as a much more broadly based interdisciplinary enterprise which Darnton terms a "new textology" (183). Hans-Ulrich Gumbrecht has called for a revisionist history of literature written from this perspective: "What stimulates me is the concept of a

literary history which combines and *could* combine, a pragmatic history of forms with functional history; this combination might be co-ordinated with a history of mental collectivities, or to put it differently, with a history of the distribution and transformation of the frame-constituants of social knowledge" (227). In focusing on the material deployment and social construction of meaning, studies of this kind—most prominent among them Friedrich Kittler's *Discourse Networks 1800/1900*—speak of writing systems rather than literature.

There is one overriding reason why, at this historical moment, we should be willing to look "at" the printed surface of texts rather than "through" them, to use Richard Lanham's formulation in *The Electronic Word* (43). Marshall McLuhan repeatedly pointed out that a successful media technology, appearing as a quasi-natural "extension of man," has a narcotic effect on its users: it creates an environment which tends to be taken for granted until new technologies challenge and demote the old technology. Just as in Brechtian epic theater alternative means of representation shatter the traditional dramatic framework and force the audience to distance itself from the occurrences on stage and question its own uncritical immersion, new media technologies disrupt the narcotic effects of their established counterparts. As if awakening from a trance, society is now able to investigate how print technology worked, to explore its materiality, to reveal its hidden bias, and to discover why it gained such acceptance. Fredric Jameson has further argued that because "postcontemporary people" live in a late capitalist media society, culture itself has become material and the underlying materiality of all things comes to light (67). It is not surprising, therefore, that a period which is witnessing the slippage of the authority of the book as a media form should pay such close attention to the circumstances under which it first gained prominence. A series of historical studies—most prominent among them Lucien Lefebvre and Henri Martin's *The Coming of the Book 1450-1800*, Elizabeth Eisenstein's *The Printing Press as Agent of Change*, Brian Stock's *The Implications of Literacy*, Michael Giesecke's *Der Buchdruck in der frühen Neuzeit*, and David Olson's recently published *The World on Paper*—have demonstrated the extent to which the manuscript and printed book, as technologies of information distribution, function, as Gumbrecht has noted, as "frame-constituants" within shifting social, economic and cultural contexts.

These new insights into the cultural construction of typographic hardware and its products have been complemented by a more critical appreciation of the accompanying software. The literacy required for print, whose worth has been underwritten by an educational and political system which aspires to make it the universal literacy, has been shown to be one among many

literacies (see Harvey Graff's *The Literacy Myth*), and its predominance has been challenged throughout the second half of the 20th century by the increasingly visual and iconic media environment, for which Gregory Ulmer has coined the neologism "videocy" (16-17). The valorization of literacy as a social goal has also been questioned in historical studies, such as Jonathan Goldberg's *Writing Matter*, which closely identify Renaissance literacy and pedagogy with the ideology of the state, rather than with progressive social development. Seen from this vantage point, the proliferation of schools during the 16th and 17th century in England, and the training of the writing hand which Goldberg so brilliantly theorizes, may be understood as inscribing subject positions which are based on a set of power relations. Kittler's remarks on handwriting in the first part of *Discourse Networks* illuminate to what extent the smooth and continuous flow of ink on paper in the late 18th century figured as the material basis for the new discursive practices which inscribed notions of soul and authorship—a coupling of technology and mind which received its highest blessing in 1807 when Hegel announced that the essence of an individual's action and fate has its "appearance and externality" in his mouth, hand, voice and writing.

In a related development, there has been a re-evaluation of past media technologies and products which had been marginalized by the category "literature." For instance, the broadside ballads of the Renaissance—print-objects which might perhaps be recognized as an early form of mass media because of their staggering numbers and low cost—are now read as crucial documents in constructing subject positions and enforcing diverse ideologies, whereas they had been previously dismissed as the ephemeral refuse of hack writers who catered to a debased popular taste. In keeping with the current predisposition to "videocy," there has also been a more acute appreciation of these ballads as multimedia events which extend beyond the page, with the broadside sheet integrating text, woodcut and performance. William Nericcio, in his piece on graphic novels in the present volume, suggests that mainstream comics such as *Superman*, *Batman*, *Archie* and *Donald Duck* perform a similar ideological function through a powerful combination of graphic image and text.

Within the study of literature itself, theorists have challenged the formalist notion of the literary text as a unified, coherent, univocal artifact which constitutes a stable and authoritative site for interpretation. While many of these studies are not (and do not claim to be) "media" studies, it has become a commonplace—particularly since the publication of George Landow's *Hypertext*, with its programmatic subtitle *The Convergence of Contemporary Critical Theory and Technology*—to claim that a large portion of poststructuralist literary theory grows out of the shift toward digital technology

and has, therefore, more to do with computers than with books. Discussing recent developments in French philosophy, Norbert Bolz has gone even further by arguing that poststructuralist interest in media is the final stage of a "clear paradigm sequence" which started with the structuralist approach of Saussure and Lévi-Strauss, then transformed itself into Foucault's discourse analysis, and has now culminated in the increasingly important works of Paul Virilio on the interrelationship between media, military technology, and the history of perception (142-55). While the switch from Foucault to Virilio remains somewhat questionable, such an approach is an apt description of what has been going on in Germany. Bolz's own work as well as that of Kittler and Jochen Hörisch—all three were instrumental in introducing discourse analysis to Germany in the seventies—has been labeled "media discourse analysis": a blending, as it were, of Lacan, Foucault and McLuhan which grounds notions of self, truth, authorship and discourse in the materialities of communication.

One of the principle results of recent theoretical developments has been to dissociate "textuality" from the physical aspects of the text, thereby revealing the materiality of the print-object itself as a locus for social relations and as a site for the construction of meaning. Highlighting these material aspects may serve to correct some of the more one-sided assumptions of narratology and reception theory. For example, it becomes difficult to make a clear separation between "intra-" and "extra-textual" components or between narrative and meta-narrative levels once we recognize that readers are always mindful of the interplay between a text and its physical and typographic qualities when they construct its meaning. Likewise, we come to realize that readers are constructed in new ways, not just as minds and imaginations but also as physical beings that have been trained to interact with physical objects like books and pamphlets in certain ways. Scholars have therefore started to research how readers past and present appreciate and evaluate the material and visual qualities of a text, starting with hitherto marginalized aspects such as size, weight, color, typeface and layout. Keith Thomas has suggested that during the Renaissance, the multiplicity of scripts, typefaces and languages records various types of literacy (99-100). In an exemplary model of such theorized bibliographic study, D. F. McKenzie has discussed the ways in which changes in book design, typography and the disposition of space produce significant differences between the quarto and octavo editions of the plays of William Congreve. In the social realm, Darnton has written about the effects that the cost, supply and transport of printed paper had upon the production of literary text; he has also called our attention to the important role played by the "cultural middle-men" who distributed and sold literature.

These contextualizations of literature in turn have had a profound effect on the setting of stable margins and boundaries for texts, and on the disposition of texts by editors who previously distinguished "substantive" and "accidental" variant readings with some confidence. McGann's editorial theory, which takes into account the fundamental challenges to the status of the author (posed by Barthes and Foucault), has promoted an appreciation for the fluidity of the text, and of the considerable intervention practiced by editors who can no longer view their editions as a recovery of the author's original words, a fact which may be instantiated by the current movement away from the synthesis and conflation of the critical edition. In the present volume, Anthony Edward's piece on Chaucer contextualizes editorial methods of different periods, thereby demonstrating that the edition is a media form based on what McGann terms "a set of institutional practices" (23).

The previously stable margins and boundaries of the supposedly reified text have also been re-set. Gérard Genette's notion of the authorial and editorial "paratext"—which includes promotional blurbs, editorial prefaces, footnotes and marketing strategies—extends the boundaries of the text into areas of social and economic practice and reception. These marginal areas have been pushed open further by writers of metafiction: the rejection letters from publishers which preface Gilbert Sorrentino's *Mulligan Stew* create a textual limbo at the beginning of the book; Raymond Federman deliberately violates the blank space of marginal boundaries in his novel *Double or Nothing*. Within the more conventional confines of the text, a critical study such as Edward Levenston's *The Stuff of Literature* seeks to account for the ways in which meaning is generated by the conventional graphology of literature as it is written and rendered into print. The analysis of works which subscribe to such conventions, as well as those that deliberately flaunt them, may help us "to reconstruct the typographical limits imposed on the free appropriation of texts" (Chartier 9).

Print-objects have been further destabilized by the recognition, advanced by reception and reader-response studies, of the importance of the readerly and contextual construction of meaning. Once again, the positing of such theoretical perspectives seems to point to the changing status of the book as a stable medium for communicating messages. Janice Radway's *Reading the Romance* presents an ethnographic study of the readership for Harlequins based on a series of personal interviews. Using methodologies developed in cultural studies and television research, Radway's analysis of the genre locates the generation of meaning as an act of consumption rather than production. Yet, as Radway notes, such consumption must also be referred to technological and economic contexts, for the Harlequin depends on developments in the technology of the paperbound book (such as a glue that is

sufficiently strong for the binding), as well as on the publishers' decision to market this literature in supermarkets and drug stores rather than in bookstores.

The relation of these print-objects to other forms of media has also called into question the independence of printed literature as a separate and discrete cultural artifact, or "artif[r]acture," to borrow Nericcio's densely packed neologism. Although our culture has long been committed to the idea of the printed work as authoritative and normative, it is now clear that textuality does not belong to, nor is it exclusively defined by, print. Recent studies of orality, conducted by folklorists, anthropologists and linguists, have suggested that oral communication is a sophisticated and complex transmission of information, which is grounded in a range of linguistic and social conventions, and that cultural biases in favor of print have served to impede this realization. The reverse side of such research has been to subject the practice of writing to the same ethnographic analysis and contextualization which had been previously reserved for oral exchanges (see, for example, Keith Basso's "The Ethnography of Writing"). In the early 20th century—and with reference to works like Sir Walter Scott's *Minstrelsy of the Scottish Border* or Francis J. Child's great scholarly edition of *The English and Scottish Popular Ballads*—folklorists became aware of the textual millstones with which they had been encumbered in seeking to address cultural forms whose performative aspect required social contextualization, as well as different forms of graphemic notation. Given these issues, it is perhaps not surprising to find that, at a relatively early date, media issues were raised by folklorists concerned with vocal registers and musical performance. Before the turn of the century, folklorists, such as Cecil Sharp and Percy Grainger, were already considering the relation between singers, texts and phonographic recordings (Yates). In an article published in 1964 which anticipates the theorization of the text in literary studies, Alan Dundes had already established important distinctions between text, texture and context.

While folklorists have traditionally devoted their attention to "artifecture," sociolinguistics and discourse analysis have taken conversation exchanges, in both personal and professional life, as their object of study, seeking to demonstrate the ways in which such exchanges pattern, construct and codify social roles. In a series of seminal studies, Deborah Tannen has opened several important lines of inquiry, most recently exploring the proposition that gender affects the style of verbal presentation and communication. Specifically focused microstudies—such as Sandra Harris's examination of the discourse of courtroom interrogations, Frederick Erikson's analysis of coherence in family dinner-table conversations, and Emanuel Schegloff's discussion of opening telephone greetings—provide a measure of the range of topics which are now being addressed. This research encourages us to

reconsider the relation between that which is spoken and written, and to recognize that social exchanges in the practice of everyday life achieve a level of textualization which had been previously reserved for the dialogue of characters in literature.

The development of electronic media during the 19th and early 20th centuries also accounts for the re-negotiation of the status of print. The growing hegemony of these forms, especially with the rapid growth of television after the Second World War, has caused an extremely profound shift in a media ecology that was formerly dominated by print. While technocritics (e.g., those of the Frankfurt school, and more recently, Neil Postman and Mark Crispin Miller) have been critical of the intellectual possibilities of these mass media because of the commercial interests which control their programming and advertising, Raymond Williams, Tony Bennett and others have rejected this critique as elitist (and equally applicable to literary production) and have sought instead to articulate the unique textuality of television. Williams argued that the structure of television watching, which he defined in terms of "flow," is fundamentally different from the consumption of printed texts, a notion which Elizabeth Klaver develops in the present volume when discussing the television "megatext" and its effect on other media and genres.

At the end of the 20th century, radio and television have established themselves as unrivaled sites for communal discourse, while, in the private sphere, the telephone—which Alexander Graham Bell originally conceived as a technology for the public broadcast of music—repositions social exchanges hitherto conducted by post and wireless. According to Jean Baudrillard's analysis of our current oversaturated media environment, the images produced by television and digital technology are now the *lingua franca* of a communicative exchange no longer anchored to the "real" but rather productive of hyperreal simulacra by which the real is now in turn judged. In declaring that the effect of such media is to reduce its audience to the passive consumption of images, a position from which there is apparently no escape, Baudrillard expresses a nihilistic view of our present media environment which represents a striking departure from the political and cultural outrage and activism advocated by an earlier generation of media critics who sought to counter the manipulative power of mass media.

Scholars of literature, then, are caught in a strange situation: while the print products that they have been trained to investigate are losing cultural ground, some of their terms, theories and concepts are surviving, even flourishing, by virtue of their application to alternative or competing media technologies. The more that printed texts are destabilized, the more the notion of "textuality" asserts itself. Nowhere is this seeming paradox—first

commented upon by Jameson—more apparent than in the ongoing discussion of electronic literacy. In the present volume, the number of essays which are devoted to computer technology attests to the timeliness and significance of digital authoring environments, especially of hypertext, for reassessing the status of literary production in print. While calls for the death of the book are premature if not misguided, as Stuart Moulthrop notes, and while the recent issue of *Configurations* devoted to cyberspace and virtual reality has hopefully laid to rest some of the more fanciful claims concerning “electronic authorship,” there can be little question that ever since Robert Coover’s landmark announcement and survey of these new writing environments in *The New York Times Book Review*, hypertext has provided an important site for thinking through many of the issues tabled by poststructuralist criticism: e.g., authorship, composition, narrativity and textual boundaries. The deployment of digital technology in cultural settings, as authors and artists now become programmers, has also contributed to the growing awareness that, at the end of the 20th century, the fate of culture and technology is, and perhaps always has been, inextricably linked.

Jay David Bolter, Richard Lanham and George Landow are prominent among those who have sought to gauge the impact of digital authoring environments. It is significant that such research has itself been rendered in hypertext (Bolter’s and Landow’s books are authored in the Eastgate software program *Storyspace*; Lanham’s in the well-known Apple program *Hypercard*), though it is worth noting that, in keeping with the present economic realities and cultural habits of readers, these digital texts have also been published as books. While these efforts break new ground in their digital format, especially in their non-linearity and interactivity, the overwhelming predominance of sequential text screens makes one feel that they have been conceived along the lines of the old medium, just as the earliest printed works emulated the late Gothic manuscript page. Nevertheless, they provide clear examples of the writerly self-reflexivity which media change occasions. Landow, for example, composes with his eye on other textualities: “As I sit here writing a work on hypertext and hypertextuality that will eventually result in an old-fashioned form, a book, I feel continually frustrated, because having gathered and typed in hundreds of passages from a range of critics and writers on computer hypertext, I long for a hypertextual mode...” (78). As Moulthrop suggests in his piece, there are other on-line writing environments, such as the collaborative writing project *Hypertext Hotel* and the combinations of text and programming generated in virtual communities such as MUDs and MOOs that represent a more radical departure from the digital products that are conceived along the lines of discrete printed works.

As on-line communication becomes increasingly iconic, the World Wide Web provides yet another model of hypertextuality in which graphics and audio enter into an integral relation with text, with the latter being demoted from its previously dominant status in the printed book accompanied by illustrations. Here readers become navigators and browsers, moving, according to their interests through a series of linked Web sites: reading becomes but one of several activities at a multi-media Web site, as users press buttons to download and activate materials, an action which has more in common with the practice of turning a light switch on or off than it does with reading. Tellingly, the button “lights up,” when one clicks on it, by turning a different color as a visual confirmation of the selection which has been made. At the present time, 1995, it seems that the Web, with its phenomenal growth (in May, one source counts 27,000 WWW sites, with a doubling of that number every 53 days) and rapid sophistication, will be the digital media form which may serve as the vehicle for realizing Ted Nelson’s visionary “docuverse,” a hypertextual relation of all existing documents, which Nelson, according to his own account, first conceived of as early as 1960 (46-47). The computer promises to become on a technical level what other media technologies were only in the mind of its advocates: the medium of media integration.

In the late 19th century, the German scholar Viktor Hehn attempted to describe the history of literature and writing by focusing on a series of writing instruments: first, there was the age of the cut reed, followed by the age of the goose quill which, in turn, was succeeded by the age of the steel pen. Unfortunately, as he sees it, the latter promoted the growth of journalism and its inevitably detrimental effects on the art of writing. This negative view of a technology which makes writing “easier” is still very much with us, particularly in the way that word-processing programs are frequently blamed for the debilitation of prose style. More importantly, this type of historical classification according to specific technologies is characteristic of early media studies which sought to define the characteristics of each medium and to assign it to a specific and discrete historical period. Up to a point such studies did recognize a certain degree of intermediality by demonstrating the extent to which early print-objects were conceived according to the previous medium, or scribal copying—as is recognized by the contemporary term *usus artificialiter scribendi* (i.e., the practice of mechanical writing). Many of these studies, however, operated with a set of binary distinctions (orality/literacy, script/print, print/electronic) which implied a mutually exclusive relation between media forms. H. J. Chaytor’s *From Script to Print* may be cited as an example of early research which

addressed media change by seeking to distinguish a culture of print—largely identified with a Protestant and capitalist Renaissance—from the communal, Catholic manuscript and oral culture of the Middle Ages. More recently, Elizabeth Eisenstein's *The Printing Press as Agent of Change* represents a major contribution to the examination of the social, political and economic implications of this shift in media technologies, though her study remains very much in the tradition of conceiving binary oppositions between scribal and print culture.

Considerations of the relationship between orality and writing have also been cast according to this binary formula. In *Orality and Literacy* Walter J. Ong identifies the media of voice and writing as belonging to different cognitive domains. According to Ong, the ability to preserve information in a written record leads to qualitatively different mental and psychological processes, and to a higher level of social and cultural organization. Jack Goody's early work also drew distinctions between the levels of cultural and societal sophistication which might be achieved by societies whose primary form of communication was oral rather than written, though in his more recent studies Goody has noted that "it is a mistake to divide 'cultures' into the oral and the written: it is rather the oral and the oral plus the written, printed, etc" (xii).

In early folklore studies, oral transmission was seen as a separate communicative network, which depended for its survival on being shielded from the "contamination" of literacy, writing and print. Thus, David Buchan, in his important book *The Ballad and the Folk*, characterized Mrs. Anna Brown, an 18th-century singer of ballads whose repertoire is of enormous importance in Scott's anthology as well as in later editions, as having a "bi-cameral mind" constituted of both an oral and literate side. The study of classical and medieval texts also provided fertile ground for the investigation of orality and literacy, and again binary distinctions were invoked. Based on inferences drawn from the oral performances of 20th-century Yugoslav oral bards, Milman Parry and Albert Lord sought to identify and distinguish oral as opposed to written forms in earlier literatures by citing the high proportion of formulaic language as evidence that certain works had been composed and transmitted orally, despite their exclusive survival in written documents. In addition to the binary of orality and literacy, the pivotal work of Eric Havelock on the origins of Greek literacy posited yet another binary in accounting for the difference between the new Greek phonetic writing system and its allegedly inferior syllabic and hieroglyphic predecessors. And in the most famous binary of all, McLuhan hailed the advent of electronic media, especially television, as having re-established a "global village" which would free a strait-laced print culture by re-oralizing communication.

McLuhan's valorization of the liberating effects of this electronic re-oralization suggests that binary distinctions are rarely introduced without one term being privileged over the other. Elizabeth Eisenstein's bias in favor of print is almost as obvious as McLuhan's bias in favor of its current effacement. Indeed, the use of binary distinctions seems to operate in accordance with an underlying narrative which conceives of the history of media technology as a tale of fall and redemption. In the case of McLuhan, a pristine world of immediacy and togetherness was shattered by the advent of print with its alienating and reifying characteristics, but the old communal world will be retrieved by means of post-print communications technologies. McLuhan's private letters tend to confirm this reading, especially those addressed to Ong, who, in turn, has been said to be committed to a similar theology of media change. In an *ad hominem* aside, Kittler has speculated that Ong "in his function as a Jesuit priest" with a "professional interest in the spirit of the Pentecostal mystery, celebrates a primal orality of tribal cultures, as opposed to the secondary orality of our media acoustics" (105). Yet Kittler himself has been charged with espousing a similar agenda: a discourse network dominated by ghost-like apparitions called authorship, nature and spirituality, in which all data streams are monopolized by writing, is broken apart as Edisonian technology provides acoustic and visual data with their own, far more appropriate channels; these, in turn, are reintegrated by a digital environment that does away with all obsolete signifieds, thus finally allowing technology to come to itself. As observant reviewers have noted, this is a repolarized form of Hegelian philosophy in which a positively charged media technology takes the place of the absolute spirit.

These underlying assumptions have been cast as historical narratives by being plotted against a graph which would lay out a chronological and progressive evolution of media forms. According to such views, one may trace a continuous line of development in technologies of communication, punctuated by the occurrence of momentous cusps, such as the invention of the printing press or the introduction of television, in which a "new" form eventually displaces the "old." There has been a wide-ranging consensus that the epochs of media history are marked off by the introduction of writing in antiquity, then by the shift from a scribal to print culture at the end of the Middle Ages, and finally by the development of electronic and digital technologies during the later 19th and 20th centuries. It is interesting to note that this last shift to digital forms of communication (including electronic mail, hypertext programs and virtual-reality environments) has been compared to the dramatic and momentous "invention" of Gutenberg's press rather than to the gradual social accommodation of mechanical and electronic media, especially since the social deployment of the computer is in

many ways positioned more closely to the latter. But passing oneself off as Gutenberg's heir allows one to claim the authority and legitimacy which is still reserved for print, even at the end of the 20th century.

While these media studies remain useful in defining the characteristics of predominant forms, and in contextualizing media forms, including literature, according to the private and public social practices of a particular historical period, more recent work has shown just how complex the articulation of information networks might be. First of all, a technology has to be invented and accepted. George Basalla has sketched the contingencies of this process: not everything that technology offers is selected by society; there is no rule which can predict or determine why a particular technology was selected over another; and, as the history of the alignment of the letters QWERTY on the typewriter keyboard shows, it is not always the "fittest" technology which survives. Similarly, the introduction of a technology does not preclude its use in retrograde ways: one thinks of Colard Mansion, the Renaissance printer who used his press to produce single copies (Eisenstein 37), or of a 19th-century lady's confusion of media forms when she reproached a telegraph clerk who sought to open a sealed envelope containing the message she wished to send (Marvin 24-25). Brian Winston's polemically entitled *Misunderstanding Media* shows that the path leading from conception to invention and to the establishing of a prototype is far more labyrinthine than most media historians care to admit, and that more often than not the success of a media technology is bought at the expense of its radical social potential.

Furthermore, the articulation of media history according to large historical blocs runs roughshod over important technological and contextual distinctions. For example, while the term "print culture" has achieved a certain currency, there has been a recognition that the production and consumption of printed texts over the course of more than five hundred years cannot be construed as a single continuous enterprise. Microstudies of various kinds, well represented in the recent collections edited by Roger Chartier and Sandra Hindman, have called attention to the variety of print-objects that can circulate, in very different formats and social contexts, at any given historical moment. Studies of ephemera, such as those of English broadsides by Natascha Würzbach and Tessa Watt, as well as Chartier's own analysis of *occasionels*, or chapbooks, in France, have been particularly instructive in extending our understanding of a textual production and reception which extends well beyond the range of canonical literary works, and beyond the margins of the printed page into social practice. Moreover, different technologies of printing belong to a very different set of socio-economic circumstances: James Beniger has accounted for the deployment of the rotary steam

press during the 19th century, in place of the wooden hand press which had served for almost three hundred years, as part of a highly integrated system of transportation and communication which increased the speed of the societal processing system.

Similar objections may be raised about the positing of a uniform manuscript or scribal culture during the Middle Ages. Taking exception to the tendency to see writing as constituting a historical break with oral culture, Aron Gurevich cites an example of complex intermediality by noting that a verbal decree might have the force of law when accompanied by parchment, without writing on it, that bore a seal (173). Previous bold assertions about minstrel recital and performance during the Middle Ages have given way to an informed and cautious skepticism which recognizes that allusions to oral performance and audience response do not constitute proof of orality, and that such allusions may have been entirely appropriate in a textual, rather than performative, setting. Sylvia Huot reminds us that "throughout the medieval period, writing retained a certain dimension of orality, being understood as the representation of speech" (2). As Michelle Wright notes in her essay on the Codex Altona in this volume, medieval textuality should not be confused with more modern experiences of the text.

Further questions about the traditional watershed which demarcates medieval and Renaissance book production have been raised by a number of studies which describe the production of vernacular and religious texts during the later Middle Ages in terms that invite comparison with the efficiency, standardization and commercialism usually reserved for Renaissance printing (e.g., Edwards and Pearsall). As Michael Clanchy has explained, the invention of printing around 1450 can be "overdramatized" by those who wish to view it as "the starting point of a new age" (7). By the later Middle Ages, pressures were already being felt, in various institutional contexts, for the production and consumption of texts in relatively large numbers. On the other side of this chronological divide, it has been suggested that the notion of publication has to be broadened to include the circulation of written manuscripts to both private and public audiences during the 16th and 17th centuries (e.g., Saunders, Marotti). Finally, in our own time, there seems to be an indeterminacy about digital forms of textualization. Indeed, even the relatively few hypertexts which have been composed—it had been a long time since the literary output in a media form could be exhaustively documented, as in Coover's review—show sufficiently radical differences in software design, content and graphics to challenge the notion that a single form will predominate.

Intermediality has also called into question the validity of clear-cut discriminations between separate media forms, especially insofar as they may

be said to be characteristic of an epoch. Binary constructions of "old" and "new" do not allow sufficiently for the interpenetration of media forms, as Kathleen Woodward has recently pointed out by questioning whether such usage, with respect to media, does not "conceal an ideology of age" (56). From this perspective, the idea of leaving one communication technology behind in favor of another fails to account for intermediality as the condition of media ecologies over time: the use of speech in cultures with writing, the continuing production of handwritten documents in the "age of print," the orality of the telephone and radio as well as the "secondary orality" of television, the simulation of a typewriter by word-processing programs. In their contributions to this volume, Elizabeth Klaver and Joseph Tabbi have directed attention to texts which seek to foreground the interpenetration of media and which, by doing so, succeed in challenging the preconceived notions of what form of representation is appropriate to the respective genres of drama and novel. Klaver reads Ted Tally's *Coming Attractions* as a work which addresses the difficulties of staging theater in a media environment dominated by television. Tabbi argues that the unreadability of William Gaddis's *JR* results from the novel's insistence on representing the dissonant and vacuous communication of electronic mass media.

In the 19th century, literary works such as *Dracula* had already attempted to co-opt an impressive array of Edisonian technologies into the uniform printed page of the novel. By striving to capture the vision of newly emergent media forms, such works recall the famous observation of Walter Benjamin in his essay, "The Work of Art in the Age of Mechanical Reproduction," that "there are art forms that aspire to effects which can only be fully obtained in a new technology" (237). Similar arguments have been made by Landow, and in the present collection, by Moulthrop, who see literature as being conceived according to digital technologies which have yet to be incorporated into social and cultural practices. The social contestation which accompanies such change, of which Carolyn Marvin has written, is apparent in the current academic, corporate and political controversies about the status and future of such technologies as the Internet and Virtual Reality. The debates about control and marketing of the Internet raise issues which might profitably be compared to those that were raised when the Company of Stationers was established during the 16th century to exercise political and economic control over printers in England, or when telegraph lines, yet another "invisible" communication network, were laid across North America during the 19th century.

The appreciation of the social construction of media has resulted in a move away from the media-object itself to the social and political relations which are "bundled" in it. As Marvin has declared: "Media are not fixed

natural objects; they have no natural edges....The history of media is never more or less than the history of their uses, which always leads us away from them to the social practices and conflicts they illuminate" (8). A given medium serves as a nexus for a broad range of practices, behaviors and phenomena. Donna Haraway and Stanley Aronowitz have sounded admonitory warnings about the social and economic realities, such as the production of microchips by a largely female workforce in Southeast Asia and the loss of jobs through de-industrialization, which constitute a subtext hidden by the incantatory rhetoric accompanying the introduction of digital technology. According to Aronowitz, "the current celebration of the coming of the cyborg, the possibilities of transforming labor into play, the hype about the wonderful world of the electronic superhighway and the vast horizon of the deployment of computers for music, film, and other visual arts must be tempered by the recognition that the *main* use of computers and other cybernetic technologies is to *destroy paid work*" (29). Finally, in *The Virtual Community*, Howard Rheingold's rather quaint picture of the *Well* as a small-town community reminiscent of 19th-century American homesteading confirms Marvin's view that new media technologies are often framed by traditional, if not reactionary, social negotiations and contestations.

The social contextualization of media is particularly important to students of literature because in the course of historical developments closely aligned to the history of media technology, literature has opened up a space in which, under the guise of fiction (e.g., *Tristram Shandy*, *Dracula*, *Gravity's Rainbow*), the social role and potential of media are discussed. While it is well known that media are developed in relation to well-established and conventional forms, these initial constrictions are offset by radical conceptualization in the realm of literature. By expressing what media—including those that are challenging literature—will, can or might do, literature has become an indispensable part of the social construction of media. Ever since Plato's *Phaedrus*, society has used literature to express the hope and fears associated with new media technologies. This can be the work of non-fiction authors who have a stake in the new medium (as shown in the abbot Johannes Trithemius's defense of scribal culture in the 15th century, as well as Marvin's analysis of the rhetoric, both specialized and popular, which accompanied the introduction of electric technologies in the 19th century), or it can belong to the realm of fiction. In the present collection, Mario Klarer considers Margaret Atwood's *The Handmaid's Tale* as a site for the gendered contestation of literacy and orality. With regard to computer technology, William Gibson's *Neuromancer* occupies the same position as Villiers de l'Isle-Adam's *Tomorrow's Eve* or Jules Verne's *Carpathian Castle* do vis-à-vis early phonography. However, the glance need not always be forward looking, as

suggested by the use of the mouldy medieval manuscript as a convention in the printed Gothic novel of the 18th century (Donatelli 445-46).

The development of more complicated models has been driven by a realization that the notion of a revolutionary media change, in which there is a dramatic and momentous shift from the old medium to a new one, is unnecessarily reductive, and often results in a distortion of the evidence. Moreover, while case studies may show that at a given point in time certain media were associated with certain social practices, there is a growing reluctance to view these practices as the direct and inevitable result of innate media characteristics. Although Harold Innis was right in pointing out that every medium has a "bias"—runestones do not function in the same way as smoke signals—this bias is not a simple algorithm but rather a set of possibilities, the realization of which depends on a number of interrelated historical circumstances. As exemplified by the late 18th-century "reading revolution," with its momentous shift from intensive to extensive reading habits, the change in the perception and use of one and the same medium can be every bit as dramatic as the change from one medium to another. In short, recent media studies have shifted away from explanations based on technological determinism in favor of theories which admit a greater appreciation of intermediality and contingency.

If the study of media has led to a rethinking of the binary opposition of technology and culture, it has also had implications for understanding the relation between technology and the body. In keeping with the current recognition that biological and technological systems may share similar organizational processes—an idea which has been driven by recent developments in theory of self-organizing systems and in biotechnology—Manuel De Landa has traced transfers of information processing from the human to the machine and, in a feedback loop, back to the human. Hence, one of the consequences of rethinking the relation between the organic and technological has been to reposition the body in relation to media. Whereas McLuhan originally envisioned media as prosthetic extensions of a "natural" body (although he was willing to recognize that the perceptions would adapt to new media environments), in more recent assessments, it has been argued that the body itself is deeply implicated in media systems rather than merely using them as "extensions." It is significant that in studies of orality, voice and bodily gesture are now regarded as technologies rather than as natural physical attributes, though there remains a strong tradition of viewing technology as disruptive to these natural (read face-to-face) modes of expression. Current controversies about whether bodily presence is required for authentic

interaction—a topic which Paul Malone and John Rice explore in their essay concerning the possibilities of virtual-reality technology for theater—are usefully compared to other "dematerializations" of the body which seemed to accompany the introduction of writing, telegraphy and telephony. Luc Courchesne, a Montreal-based artist, has addressed these issues in his hypermedia installation, *Family Portrait* (1993), in which simulacra of personalities, of an uncertain ontological status, flicker on a screen before viewers who engage in interactive conversations with them.

A final removal of the body has been identified with the downloading of consciousness into cyberspace. Indeed, digital environments such as MOOs and MUDs seem to invite the creation and projection of on-line identities dissociated from the physical body, but the scenario of leaving "the meat" behind, as *Neuromancer's* console cowboy Case yearns to do, has been questioned and challenged, especially by feminist theorists. In a refreshingly skeptical piece, "Will the Real Body Please Stand Up?," Allucquere Rosanne Stone has usefully compared the projection of bodily cues into cyberspace to similar projections by telephone-sex operators. She concludes, "No matter how virtual the subject may become, there is always a body attached" (111). Vivian Sobchack has rejected Baudrillard's notion of the technobody—"a body with neither organs nor organ pleasures, entirely dominated by gash marks, excisions, and technical scars"—as a dangerous mental objectification of lived experience, arguing that it is imperative that we preserve a "subjective kind of bodily sense as we negotiate our technoculture" (329). Marvin has demonstrated the extent to which applications of electric technologies during the later 19th century were conceived in terms of the body: women were adorned in electric jewelry, and with a lit torch in hand, their bodies were asked to stand in for electricity, as Mrs. Cornelius Vanderbilt did when she appeared as "The Electric Light." Finally, Marvin documents an example of the porous boundary between the technological and biological when she cites examples of the fear that infectious diseases could be spread over the telephone lines (81).

These objections should compel us to revise the crude analysis of media history as a step-by-step seclusion of the body. While Gumbrecht has asserted that the introduction of the printing press effectively removes the human body from communication, it could be argued that the shift to a print culture reconfigures the body rather than eliminating it. In *The Tremulous Private Body*, Francis Barker has suggested that after the Restoration the body ceased to be perceived as public spectacle, with the subject retreating inward by substituting a "rarefied body of text" for its corporeal body: "The carnality of the body has been dissolved and dissipated until it can be reconstituted in writing at a distance from itself" (62-63). The growth of

literacy during this period may also be regarded as the training of the body according to a sedentary regime. Goldberg talks about the detachment and training of the writing hand, and of the establishment of a continuous circuit between the hand, the eye and the page; in the 19th century, the typewriter breaks this feedback loop. With reference to the remaking of our "social and bodily realities" by current technologies of information processing and biotechnology, in her famous essay "A Manifesto for Cyborgs" Haraway has declared the political value that the cyborg, as a hybrid of machine and organism, might have in rewriting traditional discourses of the body concerning power, gender and reproduction.

To the extent that media constitute the operating system for both the private and social body, there is a sense that we have yet to achieve the appropriate level to discuss the totalizing effects of media. Recent models have become sufficiently complex that they now propose to account for media as *the* subject: some theorists, such as Fredric Jameson and Mark Poster, have seen media as a condition of a post-industrial society, while others, such as Niklas Luhmann and Siegfried J. Schmidt, have turned to systems theory in their attempt to account for the complexity and contingency of mediation in our social and cultural life. Luhmann's willingness to consider money, power, truth and love as "generalized" media demonstrates the far-reaching effects of this discourse, giving it a power that, as Baudrillard makes clear, stems from the dynamics of our media-saturated society. In keeping with a Pynchonesque awareness of the improbability of meaningful communication, media are regarded as a way of reducing complexity and effacing contingencies—of destroying information, perhaps—that enables people to join with others "in a narrow world of common understandings, complementary expectations, and determinable issues" (512). Undoubtedly, the current obsession with media reflects our own image at the end of the 20th century. Still, we might also wonder whether traditional categories of culture, such as literature, will survive as anything more than archaic enterprises, like the Seven Liberal Arts of the Middle Ages.

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