

## Introduction: Victorian Informatics

*[N]either mimetic powers nor mimetic objects remain the same in the course of thousands of years. Rather, we must suppose that the gift of producing similarities . . . and therefore also the gift of recognizing them, have changed with historical development.*

— WALTER BENJAMIN, “ON THE MIMETIC FACULTY”

In early 1846, Charles Dickens wrote to the gardener-turned-architect and railway magnate Joseph Paxton with reports on two of their grand ventures. “I can’t sleep; and if I fall into a doze I dream of first numbers till my head swims,” declares Dickens; sponsored by Paxton and with Dickens as its founding editor, the *Daily News* would launch within days. Dickens’s other note concerned a scheme even more ambitious than the founding of a national newspaper, yet one that—in contrast to Dickens’s short-lived editorship of the *Daily News*—has not received recognition or comment. For even as Dickens and Paxton founded a new vehicle of daily communication, they also took part in a parallel but more visionary project, sponsoring what was probably the first serious plan to connect England to Europe via an underwater telegraph cable. The electric telegraph had only recently begun to prove itself on land, but for Dickens the prospects of an undersea link from Dover to Calais seemed encouraging: “Captain Taylor writes from Paris this Morning, that his Petition was received with the greatest interest

by the Count St. Aulaire [French Ambassador to Britain], and that the idea excited him extremely, as one of most uncommon importance. The Lords of the Admiralty have granted the permission on this side of the Water."<sup>1</sup> Although they received authorization from both governments and began making seaside experiments, Dickens and company never took their plans further; since then, his involvement has remained largely unnoted.<sup>2</sup> Like the *Daily News*, the project of establishing rapid electrical communication across the English Channel would ultimately succeed, but without the involvement of Dickens.

Yet his interest in the scheme represents the translation of recognizable Dickensian concerns into a new medium. The *Daily News* was funded largely by railway money and aligned with railway interests, and during his weeks as editor Dickens was eager to exploit these connections. To make a "preliminary splash," Dickens carefully arranged for its first issue to cover a free trade meeting in Norwich via a special express train, so that "our man or men can come up long before the Mail—write out, on the way—and give us his or their couple of Columns or so, in time for the first Edition."<sup>3</sup> After a similar feat a week later, Dickens would exult that "[t]he Express has done us a World of Good. We are going ahead famously"—aligning the newspaper's progress with the express trains', even as his general interest in editing it was waning.<sup>4</sup>

The first telegraphed news item in a British newspaper had appeared less than a year earlier.<sup>5</sup> But Dickens's enthusiastic involvement in the Anglo-French telegraph scheme, undertaken simultaneously with his work on the *Daily News* and in partnership with its main backer, surely intuits the journalistic possibilities of a communication system even faster and splashier than the railway. At the *Daily News*, observes Peter Ackroyd, Dickens often "seem[ed] more concerned with the speed with which news [wa]s transmitted than the content of the news itself," a parallel for his fiction's emphasis on "images of free flow as opposed to barriers and hindrances, of unimpeded circulation compared to stagnation and blockage"—for instance, in another great enterprise begun later that year, *Dealings with the Firm of Dombey and Son, Wholesale, Retail, and for Exportation* (1846–48).<sup>6</sup> For Dickens, the promise of instantaneous, intangible electric communication might also emphasize the material difference of other vehicles of circulation available in

1846. In *Dombey and Son*, the railway goes ahead, famously, as a bearer not of thrillingly rapid messages but of lethal physical force.

Dickens's period as a would-be telegraph pioneer was brief. But this conjunction of projects in 1846—a newspaper, a telegraph cable, a return to novel-writing after a two-year hiatus—aptly suggests the ties between nineteenth-century fiction and other modes of discourse, both established and emerging. Victorian writing was part of a world of new media, even as those media were just coming into existence.

This book examines British fiction in the age of the Penny Post and the electric telegraph, arguing that imaginative writing responds in crucial and defining ways to the nineteenth century's new media and the ideas they encouraged about information, communication, and language. While I discuss many media, my detailed examinations of Victorian information technologies focus chiefly on transmission systems that directly incorporate or adapt *writing*—the post, electric telegraph, and wireless telegraphy—as opposed to photography, the telephone, the gramophone, or cinema. In particular, I highlight relationships between these new methods of transcoding and transmitting the data of real life and Victorian fiction's modes of mimesis. Examining these technical systems of alphabetic dissemination, and what fiction had to say about them, can help us read the changing nature of textuality in the nineteenth century—of the kind of existence written language seemed to have, its link to human minds and bodies, its connection to an author, its relationship to an audience. The age of the postage stamp and the electric telegraph decisively altered the meaning of the old technologies of writing and print. One powerful expression of these media shifts just behind the ink and paper of the era's written record, I am arguing, is Victorian fictional realism.

To that end, I intend this book as not simply a thematic study of new media technologies in fiction but an examination of how fiction could begin imagining itself as a medium and information system in an age of new media. Accordingly, the point of this study is not only to discuss fiction that weaves plots around particular Victorian media technologies, although several of the following chapters do just that. Rather, I have sought to delineate the deep ways in which new technologies, and the wider understandings that a culture could derive from them, register in literature's ways of imag-

ining and representing the real. I find this connection especially strong in nineteenth-century fiction, where it helps illuminate the logic and fortunes of realism. And in contrast to the era's poetry, fiction minimizes the formal markers that might separate it from a larger world of everyday printed information. My pages trace a changing informatic orientation through (for instance) Trollope's postal order, Charlotte Brontë's long-distance intimacies, Dickens's and George Eliot's mediumistic characters, Henry James's fictional telegraphy, and Kipling's intuition of a culture gone wireless.

Conversely, if more tentatively, I also point out ways in which imaginative writing anticipated and helped to shape these larger cultural understandings, how fiction could offer a forum for exploring a real world that had come to seem laden with information, or even constituted by it. In this light, a sprawling Victorian triple-decker looks like both a treatment of a world as information, and an affirmation that such a mass of information could be arranged and made meaningful while still remaining true. The multivolume novel with its intertwined plots; the historical romance; the detective story; the tightly drawn, consciously literary turn-of-the-century tale—these Victorian fictional forms and genres all have their own informational economies. But across literary works of many kinds, we can also see the outlines of a new idea emerging: the concept of *information* itself. An informatic history of literature also offers a literary history of information.

Even a cursory list of the new media devices and information systems developed during the latter two-thirds of the nineteenth century helps indicate the scope of the Victorian information revolution: the photograph (from daguerreotype and William Henry Fox Talbot's calotype to celluloid film), Rowland Hill's new Penny Post and the ubiquitous postage stamp, the electric telegraph, electric lighting, the telephone, the phonograph and gramophone, the typewriter, the electrotype process, the linotype machine, the motion picture, wireless telegraphy. Over the course of this period, the arrival of astonishing new media technologies, and the progression of each from marvel of the age to daily use, became familiar, as late-Victorian reviews of the century's technical achievements suggested.<sup>7</sup> Great Britain could claim a central role in the history of many of the century's new media, whether in their invention, development, commercialization, or all three, especially when it came to the innovations that offered primarily communication rather than data storage. "England has stood in the foreground"

of cable telegraphy, exulted the brother and collaborator of the great engineer Sir Charles Bright in 1867.<sup>8</sup> “London . . . is the principal centre of the Telegraphic enterprise in the world,” noted another telegraphic brother in 1873, the naturalized Briton William Siemens, representative of Werner Siemens’s famous electrical firm in the United Kingdom.<sup>9</sup> British boasting could also apply to postal reform a generation earlier or wireless telegraphy thirty years later. Even the telephone, invented in the United States, was developed by a Scotsman.

And yet the cross-pollination between imaginative writing and media innovation in nineteenth-century Britain still remains underexplored in literary and media history alike. This is surprising, especially given the fascination with which Victorian authors often viewed new media and information systems. It’s not hard to picture Dickens coming to Hampstead for a convivial dinner spent quizzing Roland Hill on the new postal system. Or to envision Kipling chatting knowingly with Marconi about wireless telegraphy over lunch; they would have had much to talk about, these two young technophiles who would go on to win Nobel prizes—and to become notorious for their reactionary politics. Either encounter is easy to imagine; both of them actually happened.

Inspired in part by our own contemporary experiences with new media, literary scholars have recently begun to emphasize the rich connections between the Victorians’ media and their literature.<sup>10</sup> The following chapters will attest to my indebtedness to such scholarship, as well as to Friedrich Kittler’s poststructuralist media history, and Katherine Hayles’s work on twentieth-century literature and informatics. In its attempts to approach a culture through its media, this book also takes inspiration from the classic media theories of Marshall McLuhan and Walter Ong, and from Jay David Bolter and Richard Grusin’s more recent analysis of the reciprocal “remediation” between old and new media. Yet I have also tried to take up a challenge suggested by Alexander Welsh’s groundbreaking *George Eliot and Blackmail* (1985): to read Victorian texts in relation not merely to particular media but more broadly to an emergent “culture of information,” to the growing importance of the large-scale production and rapid circulation of information in the nineteenth century—a culture that both reflected and inspired the creation of new media.<sup>11</sup> Welsh explores the blackmail plot as a lens through which fiction could view the passage from a culture of shared knowledge to

a new world of fungible information. In contrast to Welsh's emphasis on secrecy, publicity, law, and psychology, however, this book argues that Victorian literature registers the presence of new forms of information exchange most crucially in the complex of literary realism itself.

Again and again, the new ways in which real things could become information intersect with the ways in which fictitious stories treated a world of real things. Yet fiction also responded keenly to new information systems when it came to representing things we never see: for instance, the inner thoughts of others, or the structure of relations that makes for social coherence and meaning. The universalizing Penny Post, the lightning-fast electric telegraph, and the mystical and all-pervading wireless: as they increased the speed, ubiquity, and ineffableness of telecommunication, these instruments offered figures for the connections of interest and intersubjectivity that linked the members of a society, and for the multifarious networks of relation often postulated by Victorian literary realisms. Influential critics have found in such modes of realism both "a massive confidence as to what the nature of Reality actually was," with an assurance that it "lay in the material world," and a shaping self-consciousness and skepticism about what reality was and how fiction could represent it.<sup>12</sup> Viewing realism as part of a world of new media, accelerated knowledge production, and complex information systems clarifies why the elaboration of a recognizable fictional reality in prose could seem both excitingly possible and inherently dubious or tentative.

Victorian fiction obviously owes much to older literary forms, especially to the British and European novels that preceded it, texts that took shape as part of their own distinctive media environments. Scholars as diverse as Ong, Benedict Anderson, and Lennard Davis have emphasized the relationship between the British novel's development and the flood of print that began in the eighteenth century. While Ong argues for the connections between print, linear narrative, and closure, Anderson suggests the historical affiliation between novels, vernacular "print capitalism," and modern nationalism.<sup>13</sup> In greater detail, Davis traces the genealogy of the English novel—including the "constitutive ambivalence towards fact and fiction" that he identifies as realism—through its slow differentiation in the eighteenth century's surge of prose narrative.<sup>14</sup>

But over the course of the nineteenth century, new media and informa-

tion systems offered inspiration for reimagining how the world might register in prose. For instance, from the beginning of electric telegraphy in the 1830s and 1840s, accounts of the technology celebrate it for allowing “the instantaneous transmission of thought”: by “dissolving a few pieces of metal connected with a long wire, we can developo [*sic*] instantaneously, a thousand miles off, a force which will speak for us, write for us, print for us, and, so far as the conveyance of our thoughts is concerned, annihilate space and time.”<sup>15</sup> By the time Alfred Russel Wallace looked back on the century’s achievements, he could use the same description to celebrate the telephone and wireless as well, all of them new devices for the “conveyance of thought.”<sup>16</sup> Such language is more conventional than accurate, since the telegraph conveyed not raw “thought” but messages sent for someone to read—not mentalese but signals, coded characters, language. Yet this attention to how “thought” was transmitted in the flows of an electric network could inspire new considerations of what consciousness might look like outside the human mind and in prose, just as thinking about how visible things appeared in a photograph could encourage new interest in how words might render a frozen, repeatable image that was also a true impression.

As my emphasis on the realistic treatment of things unseen hints, this book will sometimes proceed by examining the discourse of the real even where fiction subtly or sensationally exceeds the bounds of everyday verisimilitude. For often it is in these leaps between an imagined reality and a more orthodox realism that fiction registers the force of information systems or the power of new media. George Levine provides a pattern for such a move when he takes Mary Shelley’s *Frankenstein* (1818) as a starting point for *The Realistic Imagination* (1981); for Levine, Frankenstein’s creature offers a paradigm for fiction’s ability to create a simulacrum of the real and to animate it with the force of imagination.

But, in keeping with the focus of this book, we might also describe the creature as a headily powerful blend of inscription and technology that takes on a life of its own, a walking discourse network, to borrow the phrase used to translate Friedrich Kittler’s *Aufschreibesysteme*, or inscription systems. For Kittler, a *discourse network* “designate[s] the networks of technologies and institutions that allow a given culture to select, store, and process relevant data.”<sup>17</sup> In these terms, Frankenstein’s creature represents Shelley’s astonishing experiment upon what Kittler calls the discourse network of 1800.

In his account, this Romantic-era system domesticated writing by treating it as “a virtual orality” linked to nature and desire through the figure of the mother.<sup>18</sup> Using masculine science to eliminate maternity from this network, *Frankenstein* unravels the system—and fatally destabilizes the Romantic alignment of writing, speech, and nature. The creature learns speech and writing together; he studies both the “godlike science” of “articulate sounds” and “the science of letters” by spying on the De Laceys as they integrate a foreign bride into their self-contained familial and linguistic circle.<sup>19</sup> But his hideous artificial construction and wavering creator turn the creature’s own domestic desires into rage and murder. With his rhetorical skill, powerful enough to elicit Frankenstein’s warnings to Walton and to ensure that those warnings fail, the creature achieves the status not simply of a realized idea but of something like autonomous language—haunting, defying, and outliving its producer. Placed outside of nature, and where mothers are absent, the creature becomes the unnatural, technological, contumacious side of writing itself.

Like Kittler, and like *Frankenstein*, this book is concerned not merely with new technologies but with how they could form *systems* for setting down, processing, and circulating discourse, systems that linked media to each other as well as to the bodies and minds of their users. After analyzing such systems in the age of Goethe, Kittler takes up their history again at the nineteenth century’s end, when an array of new media (*Gramophone, Film, Typewriter*, as another of his book titles puts it) encourages attention to the properties of alphabetic writing as one medium among many. Kittler emphasizes the epistemological distance between these media moments. But thinking about the midcentury media that he hardly mentions (photography, penny postage, telegraphy) provides a starting point for considering what we could call the discourse networks of 1850.<sup>20</sup> As we examine their relationship to imaginative literature, writing appears neither purely as a form of natural speech (as in Kittler’s 1800 discourse network) nor as a disenchanted, combinatory technology (his 1900). For if nineteenth-century realism partakes of a Romantic belief in the integrative power of written language, it also reflects and could encourage an emergent understanding of writing as a specific technology.

What is true of nineteenth-century realism applies more broadly: writing in 1850 is neither the song of the bard nor the stimulus of the psycholinguist.



A similarly intermediate understanding characterizes mid-Victorian treatments of the age's new information technologies. For instance, in the 1840s and 1850s, even experts wrote about transmission on the electric telegraph as an experience of virtual orality—a paradigm echoed in *Jane Eyre* (1847)—yet they also treated it as a form of neutral truth-telling that achieved the impartiality of a machine. My object in this book is not only to explore one aspect of Victorian life as treated in novels, but ultimately to recognize nineteenth-century realism as part of a world of new media and industrialized information.<sup>21</sup>

### *Fictional Writing in the Victorian Media Ecology*

Perhaps the Victorian period deserves the title of “The First Information Age”—unless, as various writers have declared, that designation belongs to the Gutenberg era, to the time of Diderot’s *Encyclopédie*, or to the mid-twentieth century that turned information into mathematics and made its study a science.<sup>22</sup> Inevitably, such a retrodescriptive label undercuts the claim toward which it gestures, the fact that the concept of information, and not just specific technologies or media, has a history. But whatever its claims for the title of information epoch, the nineteenth century saw not only astonishing technological advances in the transmission and storage of information but also crucial developments in the history of information as an idea.

For one thing, the century witnessed a continuing explosion in the amount of information available, a primitive accumulation permitted by developments such as imperial expansion, a rapidly growing and increasingly literate populace, the professionalization of science and other knowledge-work, an immense acceleration in invention, and a transport revolution (from mail coaches and canals to railways and steamers—all of which appear in the following pages).<sup>23</sup> In *When Information Came of Age*, Daniel Headrick analyzes many of the new systems for information management which developed in the eighteenth and early nineteenth centuries—scientific taxonomies, statistics, graphs, dictionaries and encyclopedias, postal and semaphore communication—but concedes that his survey offers only “a sampling.”<sup>24</sup> From 1840 to 1901, while the population of the United Kingdom increased from 26.5 million to 41.5 million, the annual number of letters handled by the

Post Office rose from 169 million to 2,323 million, now in addition to 419 million postcards and 566 million telegrams.<sup>25</sup>

This growth in the quantity of information was accompanied by technical innovations in publishing such as the stereotype printing and steam press of the century's first decades and the cheap wood-pulp paper and machine typesetting of its second half.<sup>26</sup> Over the period, but with increasing urgency in its final decades, the cultural emphasis moves from the raw accretion and static organization of information to the use of tools for managing its flows. The publication of government papers and bluebooks "seemed to explode" from the 1830s on, garnering widespread complaints "that the public was inundated with excessive factual material"—an important backdrop for the selective use of such material, for instance, in the social problem fiction of the 1840s.<sup>27</sup> By the end of the century, *Dracula* (1897) stanches the gothic predations of the Count with a bureaucratic romance of information management.

It was not only new technologies that helped this information super-railway pick up steam; books and other printed materials fully participated in the era's information explosion. But the appearance of newer media helped alter the meaning of print textuality in the nineteenth century's media environment. As a technology, writing combines the functions of transmission and data storage. Print publication makes this arrangement especially clear, for the mass production of identical texts creates both the possibility of wide dissemination and a supply of backup copies. As long as writing and print held a comparative monopoly on communication across time and space, storage and transmission remained united. But the new media technologies invented and popularized in the Victorian era decoupled that alliance. One way to explore the textual implications of this change is by considering the question of the embodiment of writing, an issue that arises in many of the chapters ahead.

In comparison to the new technologies that *stored* data without writing, written texts might seem disembodied, might generate a Derridean sense of absence where we look for a producer or an origin. Photography or sound recording could well seem ghostly; they arrested the moment, kept it hauntingly available in a technologically altered and alienated form. But compared to printed writing, the photograph and phonograph bespeak a presence at their origins, a physical contiguity between the recorded object and the me-

dium of representation. After all, photographs were—in a phrase often used to describe them at midcentury—“painted by the sun,” the chemical result of light that glanced off objects themselves. Early technologies for direct, one-of-a-kind recording, such as daguerreotypy or Edison’s phonography, make that sense of presence clearest, as the metal plate or wax cylinder memorializes its former proximity to the sight or a sound whose marks it bears. But even the arrival of photographic negatives and pressed gramophone discs would not altogether dispel that lingering sense of physical connection. By the end of the century, moreover, technologies such as the typewriter and linotype had attenuated the traditional roles of the author’s or compositor’s body in the production of texts—placing bodies at a further remove from the scene of printed writing.

Yet if nineteenth-century technologies of storage could make print textuality seem abstract and disembodied, the century’s new technologies of real-time *transmission* could make texts seem material and embodied by comparison. The electric telegraph used codes that referred to the written alphabet, but it replaced physical marks on paper with fugitive pulses of current from afar, on-off rhythms distinct from any particular way of writing them down. Wireless telegraphy went a step further, sending its tattoo of Morse into the void via an undetectable medium, the luminiferous ether, that would turn out not to exist at all. Alongside these media, print textuality seems tangible, material, and embodied. Like a photograph or a phonograph cylinder, a written text was at least a physical object, not just a fleeting electrical or ethereal pattern.

The new media ecology of the nineteenth century tended to align storage with materiality, transmission with immateriality, so that writing—with its dual capacity for storage and transmission—occupied a shifting and ambiguous ground between the two. Along these lines, we should think of Victorian realism itself as an exploration of the power and the limits of written textuality in an age busy producing alternatives to it. These alternatives did not replace print and writing in any simple way but changed them, remediated them, counterpointed or reaffirmed their various potentials. Like telegraphy, photography, or early motion pictures, fictional realism sets out from the attraction and advantages of transposing daily discourse to a powerful medium with its own principles of order.

In order to consider the multiple relationships of fiction to other media

forms, this book draws on the idea of a media ecology. This concept emphasizes that a culture's range of technologies and codes of communication dramatically shape and are shaped by human experiences, thoughts, and values. Recognizing that media are not simply technological but social, it suggests the rich possibilities of studying media within the cultures that employ them and of reading cultures in terms of the media they employ. As a label, *media ecology* is hardly perfect; it may sound too naturalistic, wrongly implying a static world in which media spontaneously find their destined niches. Yet the concept can help plot a course between social contingency and technological determinism, emphasizing how a society understands itself through its media and understands its media in relation to the rest of its culture.

For a media-rich society such as nineteenth-century Britain, the sum of the media ecology would come close to the whole of its culture, especially when we add the term *information* and consider the era's practices of organization and taxonomy. Major components of the Victorians' changing media ecology would include printed books, pamphlets, and periodicals; new technologies of recording (photograph, phonograph, stereoscope, moving picture) and transmission (Penny Post, electric telegraph, telephone—even electric lights); orations and sermons; dramatic and musical performances; lectures and exhibitions (for instance, panoramas, dioramas, and the magic-lantern shows that helped inspire fictional effects from Dickensian phantasmagoria to Proustian reverie). Furthermore, a thorough account of these media should consider their production, distribution, and reception. Such a survey might exceed the scope of any study; it certainly lies beyond this one. Rather, by focusing specifically on the relationship of fictional realism to new communication systems and the ideas about information they encouraged, this book treats Victorian fiction as a critical part of the shifting media ecology in which it arose, circulated, and had meaning and value.

Reading the histories of media and literature together helps us understand literary forms in relation to cultural history. By sketching out a particular history of Victorian fiction from the Penny Post to wireless, this book indicates what media studies might bring to literary studies, and vice versa. But in a larger sense it should also suggest that neither media nor literature are so self-contained. Many of my chapters highlight the electric telegraph, the medium that makes the informatic orientation of the century's new media technologies clearest—and one with direct implications for the status of

textuality. Yet in literature, the broader informatic awareness encouraged by the telegraph or photograph lets fiction examine, and sometimes prefigure, a realm of newer technologies that would turn our time- and space-bound experience of reality into a stream of analog information: the telephone, the phonograph, the motion picture, broadcast. As realistic fiction not only responds to existing technologies but also hints at potential ones, it comes to exemplify Walter Benjamin's art form that "aspires to effects which could be fully obtained only with a changed technical standard."<sup>28</sup> This may seem uncanny, but—like the uncanny in Freud's analysis—it also comes as no surprise; part of the point of realism is imagining how the real world might be channeled.

Like David Thorburn and Henry Jenkins, I believe that in order to understand media transitions, "we must resist notions of media purity, recognizing that each medium is touched by and in turn touches its neighbors and rivals," a recognition with implications for literary history.<sup>29</sup> Clifford Siskin's *The Work of Writing* analyzes the consolidation of print culture in Britain over the long eighteenth century, a process leading to what he calls "the modern . . . fully 'naturalized' . . . world of print" by the 1830s.<sup>30</sup> This world might seem to contrast with our own media multiplicity; however, even in the 1830s, the world of print was not a world of print alone. Likewise, Ong's *Orality and Literacy* treats realistic fiction—with its norms of character development, structured plotlines, and the quest for closure—as the quintessential application of the norms of print literacy to storytelling.<sup>31</sup> Yet this book challenges and broadens that formula, locating Victorian realism in relation to a specific, changing media ecology, one that includes not just the dominance of print but the emergence of newer media. By the final third of the century, fiction explicitly comes to register the presence of the technologies that redefined print. But as I show, these developments could also shape works that hardly cite new media by name.

It is not only writing that changes with developments in the information ecology. As the oldest of electric media, the telegraph helps to change the character of print and writing, and later the telephone and radio shift the place of the telegraph. Media are not hermetic but hybrid. Most readers' earliest experience of telegraphic discourse would have been in newspapers of the late 1840s and early 1850s, which made strong claims for the status of electric information. A few decades later, when personal telegrams had be-

come common, receiving one of them might give a Victorian a first glimpse of typescript.<sup>32</sup> Likewise, photography enters this study chiefly as it becomes part of a combined technology for the reproduction and distribution of images by printing, a development that coincides with the photographic visions of Eliot's "The Lifted Veil."

Furthermore, the impurity and complexity of media arise not only among them but also within them—a state of affairs writ large by the novel and its freewheeling engagements with other forms of print and writing, from letters, journals, and travelogues to newspapers, legal documents, parliamentary bluebooks, and advertisements. My account of fiction in the era of Penny Post, telegraph, and early wireless highlights the implications of these systems as ideas, but it also attends to practical developments within them, especially as they become publicly apparent. A telegraph isn't just a telegraph. It is private or state-owned, printing or signaling, visual or acoustic, manual or automatic, simplex or duplex or quadruplex; it registers signals in Morse's code or Cooke and Wheatstone's, on a needle, a register tape, an alphabetic dial, ringing bells, or a clacking magnetic lever.

The literary field of course has its own, more familiar, differentiations. Although the main point of this study is to place Victorian fictional realism in the context of the nineteenth-century information revolution, it regularly tracks fictional realism by stalking it across contrasting genres, modes, and techniques: nonfiction narratives that turn to fiction's methods to represent the real; tales of adventure or sensation; naturalism; modernism. The point of this strategy isn't to imply that realism has no limits—although the best accounts of it have long recognized its flexibility and pragmatism—but to examine realism by thinking about its imprint on other texts as they imagine reality. This approach has an eminently Victorian precedent. Shortly before Marian Evans became George Eliot, essays such as "Silly Novels by Lady Novelists" and "The Natural History of German Life" (1856)—the first about fiction that was not realistic, the second shaped around nonfiction that essentially was—helped her map the bounds of a realism that her novels would soon fill in.