CHAPTER THIRTEEN

The New Literacies

Technology and Cultural Form

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Given the centrality of the word *literacy* in this essay’s argument and the sense that its meaning has changed to the point that it must be invoked in the plural (even at the risk of creating a neologism), tracing its historical contours seems a useful place to begin. The *Oxford English Dictionary*, that chronicler of changing language usage, has something rather interesting to say about the terms “literate” and “literacy.” The former first appeared in English in the mid-fifteenth century, only a few years before Gutenberg’s demonstration of the printing press, and underwent significant modulation in the seventeenth century—a pattern of definitional activity that can easily be read against the very different explanatory backdrops offered by Adrian Johns, Natalie Zemon Davis, and Elizabeth Eisenstein. If the fifteenth-century usage of the term called into relief the strict demarcations between those who could read and had access to the written word and those who could not or did not, the seventeenth-century sense of the word was more concerned with letters and literature and assumed not only more widespread functional literacy but also hierarchies of readerly taste and relevance.

Key usages of “literacy,” by contrast, appear in two clusters: one in the late nineteenth century and one in the mid- to late twentieth century. In the case of the late nineteenth century, the term’s definitional activity must be read against the period’s great movement of populations, its project of urbanization, and the notions of social and national
cultural coherence that accompanied these changes. Such occurrences as the publication of Matthew Arnold’s *Culture and Anarchy* (1869), the rise of the public library movement, changes in the rotary press, and the panic over “dime novels” all, in various ways, testified to the potential social impact of literature—and literacy—as forces for maintaining social stability or undermining it. By the mid- to late twentieth century, the project of rationalization and specialization seen by Weber as characterizing the modern age seemed well established, with various new media channels and newly relevant cultural competencies (from “television literacy” to “economic literacy”) rising to the fore. Yet the relative stability of the definition of literacy (as the reading and writing of words) until this point seems curious. In the West at any rate, our long-term shifting and accreted emphases on the spoken word, the written and printed word, the photographic and acoustic trace, and most recently data sets and algorithms, all testify to an ongoing series of transformations, and not merely the changes introduced in the mid- to late twentieth century. The coincidence of photography and phonography, for example, with the theories of signs discussed by Charles Sanders Peirce and others by the end of the nineteenth century offers early precedents for a more embracing sense of the term “literacy.”

The histories of both “literate” and “literacy” map onto explicit social dynamics. This should not surprise us, given the inherently social dimension of any language-based system of expression. In any case, this realization helps to recall the residue of power and hierarchization that lingers on in these historically encrusted terms. And it provides one compelling reason to rethink these notions through our contemporary reorganization of social power, whether something as “simple” as shifting reader-writer relations or as diffused as globalization. There is also a second compelling reason to reconsider and perhaps redefine these terms. If we, like the *Oxford English Dictionary*, take literacy to mean “the quality or state of being literate; knowledge of letters; condition in respect to education, esp. ability to read and write,” then it is not at all surprising that the meanings of the word continue to shift, reflecting, in the case of our present, the demands of the digital media environment and the affordances it has provided for new forms of social interaction. Networked computers; data streams of word, image, and sound; the breakdown of traditional cultural filters and brokering mechanisms; the blurring of producer and user in some settings; and the rise of new collaborative literary forms such as wikis, bulletin boards, and blogs have all contributed to new and widely embraced practices.

Rather than offer a new definition, this essay will mark its departure from the established meanings of the word “literacy” by using the word *literacies*—a term still rejected by my word processing software’s spell check—to refer to the multiple competencies required by today’s cultural environment. The term is put forward as inclusive of both traditional modes of literacy and the new ones; of word-based modes of expression and the broader array of affordances associated with text, image, sound, and data in digital media. Lest there be any doubt about the relationship between shifts in media apparatus and literacy, this essay’s title references Raymond Williams (technology and cultural form), and it seeks to underscore an axiomatic assumption regarding the interdependence of the cultures of technology and letters.

**CONDITIONS OF CHANGE**

Talk of rupture and radical change invariably generates skepticism. Apocalyptic claims seem to greet every change in the status quo, and the so-called digital turn has been no exception. But this time, there may be good reason to think that something quite distinct is at hand. First, to put things in perspective, we need to recall that digital technologies have been deployed more or less continuously since the fifteenth century (mechanical chimes; spiked drum assemblies for music boxes; perforated rolls for pianolas, organs, and monotype print systems; semaphore codes; even punched-card data-processing technology, deployed in the 1890 U.S. census). The digital is not in itself the agent of change; rather, it is an affordance that has recently been made use of in ways that are transformative.

On one hand, processing capacities and transmission speeds have looped back upon themselves, stimulating intensive development. Consider Moore’s law, which took as its starting point the invention of the integrated circuit in 1958, and which stated that the number of transistors that can be placed on an integrated circuit will double approximately every two years. It remains valid today, and manifest in the rapid growth of memory, processing speed, and ever-greater strides in miniaturization. Or consider optical data transmission, which has also undergone rapid change. In March 2007, Alcatel-Lucent broke the 25.6 terabit transmission rate, or—as explained in the company’s press release—something on the order of transmitting the content of six hundred DVDs in under one second. At this writing, breaking the terabit barrier seems immanent, meaning the equivalent of transmitting
the printed contents of the Library of Congress in just over four seconds. Although technologies capable of these capacities and speeds will not appear in our homes anytime soon, if we consider the future of networked computers in the light of these ongoing transformations of processing capacity, memory, and speed and consider the distance we have covered since the introduction of the World Wide Web in 1992, we can reasonably anticipate continued exponential change.

On the other hand, these steady improvements in computational technologies have enabled us to embrace a new approach to calculation evident in the intensive use of algorithms—a mathematical principle known since Euclid’s time, but only effectively deployed with processing machines. Algorithms offer a fundamentally different approach to representing the world (as dynamic, process, procedure) than the algorithmic regime that dominated the modern era (characterized by precision and fixed sums). Descartes epitomized the algorithmic era, which manifests itself in precisely demarcated subject-object relations, the calculation of three-point perspective, and certainty. One might contrast the fruits of the algorithmic and algorithmic eras by comparing Diderot’s *Encyclopedia* with the algorithmically enabled Wikipedia; or three-point perspective to Photosynth; or Mercator’s parallel grid cartography system to dynamic location-based navigation systems. In each case, computers enable the algorithmic processing and reassembly of multiple subjectivities and data streams into new composites, which, though lacking the old certainties, mathematical grids, and authority of fixed subject positions, enable dynamic new possibilities for manipulating data and even deploying our subjectivities.

These factors, combined with a steady increase in the online population and its global reach (even if weighted toward developed and developing nations), have given rise to ever-more complex and innovative social forms. Whether taking advantage of the network’s affordances for fast and cheap communication, or its potentials for anonymity, or the logics of “long tail” economics, or the various practices clustered together as Web 2.0 or “algorithmic culture,” such as Wikipedia, many people have used the web for their own purposes, despite the availability of traditionally structured systems of interaction. And yet, the most striking of these developments seem to hark back to community practices that lost ground to industrialized culture at the start of the twentieth century. Cultural practices such as collaboration, participatory communities, and aggregation are by no means unique to digitally networked environments; they can be found in earlier texts such as the Bible and folksongs, in traditions such as quilting, and in community activities such as barn raising. Yet the prominence of terms such as “participatory” in new media discourse points to their rapid acceleration, a shift in scale enhanced by their spread beyond embodied communities. Indeed, as Internet-enabled communities of interest continue to grow, opportunities for conflicts between the conditions of cultural citizenship (say, exchanging music—copyrighted—if one is a member of a music file exchange group) and national citizenship (obeying the nation’s intellectual property laws) continue to increase. If, as the fate of the recorded music industry suggests, the twenty-first-century state of these and related practices has threatened to overturn several of the twentieth century’s dominant creative industries, one can only imagine how these activities will fare with the ongoing transformation of environmental conditions. The point is simple: The pace of technological change continues to develop exponentially, both driven by and enabling a new configuration of cultural production and circulation.

In medias res as we are, it is difficult to assess the import and character of the networked and collaborative practices so much a part of the lives of those under thirty (and many of us over thirty as well), but the data point to a significant increase in the posting of items—blog entries, photos, music—into publicly accessible places. Recent data in the United States suggest that some 57 percent of American teens post artifacts in public online spaces. Given the control strategies that have accompanied the dominant culture industry throughout much of the twentieth century, is it any wonder that the contemporary remixing of cultural texts necessarily impinges upon the corporate claim to ownership of much of our common and public culture? If some of these remixing practices transgress legal code, do they constitute piracy? Or do they mark a return to age-old folk traditions of collaborative modification, recycling, and repurposing, temporarily suppressed by the intellectual property regimes of the culture industry during the twentieth century? Regardless of how we answer the questions, the simple fact is that the new technologies have afforded their users greater agency than previous media technologies. Although digital production technologies have some advantages over their analog forerunners (including 8mm movie cameras, 35mm still cameras, typewriters, and tape-recording equipment), their real impact has been their ability to facilitate distribution and direct exchange and to both construct and maintain a (dispersed) collaborative community. Digital networks have broken the distribution
READERLY COMPETENCIES

As suggested before, the appearance of the word *literate* in English roughly coincided with the last major shift in technologies of the printed word—the fifteenth-century printing press. This technological advance, long understood by scholars such as Elizabeth Eisenstein as facilitating the comparison, stabilization, accretion, and spread of knowledge, occupied a key position in the linear regime of truth so important to the modern (algorismic) era. Eisenstein’s softly technological determinist stance is familiar to those who see in the Internet an equally striking instrument of change in social structures, the distribution of power and the spread of knowledge. And yet, there are good reasons to challenge this view—as much for the introduction of the book as for networked computers. Adrian Johns, for one, offers a sharp counterpoint to Eisenstein in his examination of the practices behind the material culture of the book during its first century or two. Johns’s *The Nature of the Book* argues that widespread social practices such as piracy, misattribution, and distortion introduced substantial noise into the system—not stabilization and the accretion of knowledge. Not only were such practices rife (the pirated edition of Martin Luther’s translation of the Bible, according to some sources, appeared on the street before the authorized version), their very existence undermined the veracity of any text—a problem that would exist into the eighteenth century. Johns tells the story of Theophilus Desaguliers, lecturer in Newtonian philosophy in the 1720s, who became so fed up with the countless fraudulent books that bore his name (and the countless others that contained his work but not his name) that he circulated an announcement that only books bearing his handwritten inscription were to be credited by readers. The handwritten word, at least for Desaguliers, trumped the aura of the print and binding.

Johns’s argument does much to restore social relations and readerly competencies to the definition of what it means to be literate. Literacy, Johns demonstrates, meant far more than reading and writing the word—it also involved understanding the status and provenance of the word. A reader may have been able to decode a text, but whether it was read as dogma or heresy, as fact or fiction, as authentic or fraudulent, had everything to do with its meaning and implications. His study goes on to show the strategies for textual stabilization and authenticity that emerged in the nascent publishing industry, emphasizing that these, too, were driven by social needs and enabled by human intervention.

Those of us who have been the beneficiaries of the ensuing regime of textual stabilization and who take for granted the authenticity of what we read in the form of published books probably have a far more circumspect view of digital publications. The transition that we have experienced as we have moved from the certainty of provenance and authority associated with the authored and printed book to the uncertainties and manipulability of the algorithmic text (say, a Wikipedia entry) or something posted with an unknown attribution plays itself out in ritualistic warnings to our students and a reflexive wariness of Internet citations. The intrinsic superiority of the *Encyclopedia Britannica*, with its attributions and editorial board, over the anonymously authored, collaboratively sourced, and ever-changing algorithmic composite Wikipedia seems obvious and immediate. And yet, to those digital natives who have grown up online, the situation is much more akin to those readers of texts during the book’s first centuries. Then as now, to be literate in this challenging environment requires far more than just mastery of the mechanics of reading and writing.

Over the long haul, we have seen a shifting set of competencies inscribed within the domain of literacy, and they have changed over time and across culture. At times, only specific linguistic competencies (Latin) counted; at times, various degrees of writerly competences were needed (from mastery of writing one’s name to writing as we know it); and at times, certain social groups found themselves categorically excluded from consideration as literate. Today’s challenge is somewhat differently constructed. With higher levels of education and access than in the past, citizens in most developed societies are expected to have multiple literacies—cultural, visual, informational, mathematical, and the rest. Historically situated, these competencies have been (re)defined relative to changes in technology and cultural practice. We can describe these shifts in many different ways: from the scribe to the printing press to the computer circuit; from unique to multiple to on-demand; from inscribed to printed to digitized; and so on. But as Johns reminds us, more important and more determining than technology are the uses to which technologies are put. Consider the just-mentioned transformations reframed in terms of embodied authority (scriptorium); legal and
corporate institutional authority (the publishing house); and the disembodied authority of the algorithm (processing any and all opinions into new composites). Were one to trace a pattern across these changes, one might argue that we have seen steady erosion in the authority, provenance, and traceability of the written word. And yet, as the early history of the book so vividly demonstrates, this is less a technologically determined view than a testament to social demands and tolerances.

The historical accretion of literacies can be tracked through the changing nature of its practitioners: from a small priest and clerical class; to an ever-expanding array of reading classes, with a relatively small cohort of publicly producing members; to a broad array of digitally enabled readers and public producers. Such a perspective permits us today to redefine the public from the “reading” public (whose writing is largely “private” and takes the form of letters, memos, diaries, and bank drafts) to the “participating” public (whose online postings are potentially, and sometimes embarrassingly, “public”). This latter group benefits from significantly lower publication barriers (vetting and cost) and enhanced potential for expression and reach in e-environments. Just as important, opportunities for participation include interaction, collaboration, accumulation, and reappropriation, again, as potentially public acts. This writing public, however, often lacks the visibility and authority of authors from earlier eras, particularly when algorithmically enabled in settings such as Wikipedia (where the submitted text is effectively anonymous, combined with the texts of others, and subject to ongoing change); or when it appears through blogs (where it is part of a discursive ebb and flow, and again, as often as not anonymous).

THE PARTICIPATORY TURN

In 2007, Mieko Kawakami won the Akutagawa Literary Prize in Japan for her Breasts and Eggs, a novel written as a blog largely using a cell phone. While this might seem to be an anomalous instance, Japan is a world leader in the social use of new technologies, accounting for 37 percent of blog posts worldwide. In 2007, half of Japan’s top ten novels originated on the tiny screens of mobile devices, and novice mobile authors wrote the top three. The Japanese example not only suggests the rapid rate of change in some cultures, but underscores the notion that literacy, even defined as “the mastery of reading and writing the word,” is alive and well and has been extended to forms such as texting, blogs, SMS messages, and wikis. But this is only half the story. In a recent online literature search, I came across a link to a possibly relevant thirteen-year-old, two-page-long article from a traditional (printed) academic journal. In order to read it, I first had to make a $31 payment to the publisher. Although this example took place in a digital environment (PayPal accepted!), the logics of scarcity, commodification, and control characteristic of the traditional print industry dominated. The disjunctions between cultures of openness—openness to new authors, to new modes of writing, new technologies and audiences, new modes of circulation—and control are striking.

At stake here is far more than coping with new forms of textuality (hypertext, image-word relations, or even the aesthetics of code), more than the introduction of new literary genres and transformations of spelling and syntax. We are witnessing a paradigm shift in the nature of cultural production. Growing evidence suggests that the use of networked computers is facilitating new cultural practices and new types of participation, as just mentioned; new types and sources of cultural texts; and new logics of distribution and access. It is no exaggeration to say that the “heavy industries” of “mass” culture that have dominated since the end of the nineteenth century—the recording, publishing, press, film, and broadcast industries—are facing significant challenges and even collapse in some sectors as a networked public increasingly circumvents old industrial models and generates its own alternatives (fan fiction, garage band music, YouTube videos). We can discern a discursive shift from an individual (one to one; the letter; or one to many; the publishing industry) to a networked model, with its own “spreadable” logics of circulation and its own systems of algorithmic aggregation (evident in various models from Wikipedia to Flickr to Google). These developments have shifted the position of agency and access, and made new forms of collaboration—even unconscious collectivity—possible. We are seeing the outlines of a major cultural struggle; the old cultural aristocracy (high culture) is as much under siege as the old twentieth-century cultural industries (popular culture). And what is under siege is a model of production: from the few (the taste-elite or cultural industry) to the many, to the many to the many.

We inhabit a moment of transition, and just as the first decades of the printed word gave rise to curious hybrids and saw the persistence of handwritten manuscripts, we too feel the presence of long-dominant industries, routinized ways of operating, and the stubborn residues of the familiar. Paradoxically perhaps, the convergence and concentration
of media ownership accelerated greatly in the early 1990s just as the Internet grew in popularity. The Internet, too, has given rise to massive new corporate presences such as Google and Microsoft, and with them, new tactics for control. And old industrial giants such as those represented by Rupert Murdoch have quickly repositioned their might, spending fortunes to acquire social networking sites such as MySpace. Issues of power and dominance continue to appear in the uneven distribution of computers, network access, and speeds, and like other inequities, we can expect them to remain in place until more balanced regimes of wealth and power emerge. These contradictions testify to the momentum of the past as embedded in our institutional cultures, our legal systems, our communication infrastructures, and our memories. But the affordances of networked digital media, like those of the book, permit many new alternatives. Raymond Williams offered an apt description of this dynamic, noting how an era’s dominant mode of engagement is informed by the lingering strategies of the past while imposing itself on newly appearing ideas, in his description of culture as “residual, dominant and emergent.” The developments that I have been describing are emergent, and as often as not, they are reinscribed within the terms of the dominant; in the process, their radical potential tends to get suppressed. But such is the nature of transition, and we should not misread the “taken-for-grantedness” of the dominant for the failure of an emergent cultural practice.

The new logics of space bound up in micro-level interpenetrations of private and public and macro-level globalization; new distributions of algorithmically mediated agency; new social forms; and a landscape characterized by what Colin McCabe calls the “promiscuity of media,” all require new literacies. Networked culture brings new conditions to the project of reading and writing, including the means for greater participation, enhanced ease of interaction, new modes of distribution (person-to-person, viral), mobility, immateriality, mutability, and of course the previously discussed collaborative dimension.

LITERACIES MATTER

Richard Hoggart’s 1957 book The Uses of Literacy—originally titled The Abuses of Literacy—took up the issue of mass literacy and popular culture in ways that resonate with our present. His project, and that of some colleagues associated with the British brand of cultural studies, sought in part to reveal the working of power in the marginalization of the popular. And although written more than fifty-five years ago, some of Hoggart’s key observations ring true. Consider the past one hundred years of mass nonprinted media (film, recorded music, radio, television). These media forms enjoyed participation rates that consistently superseded those of the printed word; and yet, despite their centrality as expressive and communicative forms, they generated virtually no interest in audio or visual literacy. Harvard, Yale, and the leading universities of the Netherlands did not formally include film studies in university curricula until the medium was a respectable one hundred years old—and fast waning as an industry and cultural force. But fewer than twenty years into the era of networked computers, “new media” have been finding widespread curricular presence and support. While one might speculate about many reasons for this disjunction (perhaps we really do learn from our past mistakes!), surely concern about the circumscription of cultural and industrial filters, and the empowering of a new public in cultural production and distribution, must be central among them.

Dutch coffeehouses and cafés generally have a table stacked with newspapers and magazines—a tradition going back to the eighteenth century and called upon by Jürgen Habermas in his discussion of the emergence of the public sphere. The combination of caffeine (or alcohol), a social space, the news of the day, and a literate readership triggered the shift from a “representational” culture of absolutism to a “critical” culture—the democracy that we take for granted today. Literacy provided a key means for staying critically informed, for enabling contributions to the public sphere and participating in the politics of self-rule. Although Habermas, consistent with critical theorists such as Adorno and Horkheimer, sees much twentieth-century popular culture and mass media as complicit in a culture of passivity and consumerism, it is difficult not to wonder if such perceptions attest to widespread illiteracy in domains outside the printed word. We certainly lack the refined critical instrumentarium for analyzing sound and image that we have long enjoyed for assessing the word. But as we enter an era in which the once-dominant media industries and state organizations are struggling to concentrate their holdings in the face of the Internet’s dispersed logics and rapidly growing participation rates, one suspects that even a critical theorist would see the wisdom of advocating multiple literacies, and seizing the opportunity to enhance the critical participation of the public. Add to this the affordances of computer networks
for grass-roots distribution and deterritorialized community formation, and the civic implications of the new literacies also loom large.

Just as Johns tracks the slow shift toward stabilization of the publishing world, and with it, a particular regime of knowledge and expertise, we too are witnessing a new set of social dynamics emerge, a struggle between vested interests and newcomers, between an industrial elite and elements within the mass. On one hand, we can discern strategies for control (the actions of MySpace, Google, and their handmaids in the regulatory sector); on the other, new practices that have yet to be scaled, and that may yet hold the seeds of an unseen future. These new practices range from purpose-made (MIT’s Open Course Initiative, Brewster Kahle’s Internet Archive, koriškin and other forms of collaborative news networks) to the—at some level unintended—social and informational aggregates that can be found online. Again, we are only two decades into this process, but already we can see needed competencies. As we move toward increased cultural participation (productive participation, not just participation through consumption), we need to reframe the domain of literacy (literacies) and revamp our research agendas and curricular processes accordingly.

The old certainties—the truth of the vetted, authorized written word in the book (where we only had to master the codes that Gérard Genette calls paratexts)—are past; like the literacy of the sixteenth and seventeenth centuries, today’s literacies require the assessment of uncertain utterances, the ferreting out of provenance and reliability, and the critical understanding of point of view. The great difference between the advent of the book and today’s new media technologies regards participation. While the book opened the way to vast new readerships and facilitated authorship as well, networked computers have opened the way to vast new authorships (while enhancing access to the text), have enabled unfiltered distribution, and have stimulated suggestive new collective cultural and social forms.

CHAPTER FOURTEEN

Visibility, Blogging, and the Construction of Subjectivity in Educational Spaces

ASUNCION LÓPEZ-VARELA AZCÁRATE

As part of a blogging project on personal democracy, Julie Bark Germany wrote in 2008:

Four years ago, in the middle of the 2004 primaries, the online political community heralded the rise of the political blogosphere as an evolution in—and improvement upon—the printing press. Political bloggers became the new pamphleteers, and more than one journalist compared online political discussion groups, blogging communities, and listservers to coffee houses, where people go to get their daily fix of information. It is not a coincidence that we embraced the metaphors of the printing press, which once led Western Europe to question the traditions established by religious and political authorities, and coffeehouse, where so many connections were made, business transactions were conducted, and ideas were debated during the Enlightenment.1

Barko regards the rise of the blogosphere as being part of an ongoing development of free speech and education since the Enlightenment. The dawn of digitization has, for that matter, always carried with it the legacy of Enlightenment ideals of free speech, accessible education (Condorcet), and democratization. Has the digital age, with its transhumanist or posthumanist explorations into the improvement and extension of human life as a radical realization of individuality thus more or less materialized the seeds of Enlightenment? The question may be too broad to answer here—and it may be an all too problematic question, since the opposite can be (and has been) formulated just as easily: that