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ARTICLE

And lead us not into thinking the new is new: a bibliographic case for new media history

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Abstract

Must the concept of the study of new media seem so thoroughly ordinary? What does it mean to study new media other than to study media that exist now? Prompted by the 10th anniversary of *New Media & Society*, this article aims to help rethink and elongate the history of new media studies by merging new media studies and media history literatures. The recursive definition and use of the term 'new media' are reviewed. New media need to be understood not as emerging digital communication technologies, so much as media with uncertain terms and uses. Moreover, by recognizing that new media studies quickly become history and that most media history is already new media history, this article calls for a use of both literatures to focus on the renewable nature of media in history. It reflects on a complementary attitude toward history meant to help usher in a sounder future of the study of the past.

Key words

bibliography • digital media • historiography • language • literature review • media history • *New Media & Society* • new media history • new media studies

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> 'The past,' [the student] thought, 'is linked with the present by an unbroken chain of events flowing one out of another.' And it seemed to him that he had just seen both ends of that chain; that when he touched one end the other quivered. (Chekhov, 1985[1894]: 95)

INTRODUCTION

It is by now mundane to suggest that the human interest in new media is old – that in fact the history of new media is ancient. That even the most recent media have contingent and intelligible histories seems by now wholly commonsensical. Yet, the response that there is in fact something new afoot can sound, at times, equally valid and tired. One emphasizes historical continuity, the other change. Of course, both are partly right, but either emphasis alone is only one part of the modern dialectic of history, a pattern of back-and-forth in play ever since Thucydides wrote his history in opposition to Herodotus. While Hegel (1892[1837]) has asserted that the whole of history itself advances through dialectic tensions, it stands to reason that at least the writing of history does so. The way in which scholars understand history colors and shapes the evolving and contingent enterprise of understanding media, and specifically to study new media is to ride squarely atop the ever-unfolding crest between the past and the present.

This article reflects on the use and misuse of the term 'new media' over the last few decades of scholarship, traces some concrete guidelines (namely, the recurrence of ideas in media as a lighthouse for those struggling to find their way through the currents of media change), and outlines an attitude toward the practice of history compatible with a combination of the best of new media studies and media history scholarship.

There is no doubt some insight to be gained from a brief rehearsal of the continuity and change debate: the tension between, on the one side, that history is always past and, on the other, that new media are importantly now. On the one hand, at its extreme, the continuity argument of history holds that all things at all times are, have been and will forever more remain inseparably related and similar. In this view, modern humans live out life on the theatre of the richest of all datasets, the ever-present past; our language, habits, tools and environment all follow the course of historical forces unfolding in the present. The modern moment may not be predetermined but it is contingent on pre-existing contexts: the career of the conventional historian depends on it. On the other hand, those scholars prone to quote the preacher in Ecclesiastes, that there is nothing new under the sun, similarly may overlook the pressing and genuine problems that sustain contemporary media scholarship. We face daily dramatic and mundane ruptures, shifts and epistemological breaks in modern life. There is much to celebrate about and

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learn from the fact that today is not yesterday. Even (and the conclusion suggests, perhaps especially) top historians admit that devoting a career to the past is a circuitous path to understanding the present. New media matter and they matter now.

Alone, neither continuity nor change approaches to media history are fully satisfactory. However, viewed together, they complement one another: the historian's eye for contingent change can lead to a fuller understanding of the contemporary relevance of media; so too can new media scholars engage the present more forcefully with historiographical cautions in mind. We must push beyond the commonsense fact that history is past and that new media is now. Consider instead that new media once made the historical record possible and that ever since, history writing takes place importantly in the present. The insight that new media are ancient and history writing happens now helps to open a new chapter on the union of new media studies and media history.

This article proceeds by outlining, first, the potential and problems of the term 'new media', presenting two working definitions for the term and a five-step cycle of new media evolution, from obscurity to obviousness and back again. Second, it reviews the literature to make three points: that media scholarship can benefit from thinking of media as renewable (rather than as only new or not), that most media history is already new media history and that the strength of new media studies and media history lies in their merger. Lastly, the conclusion reflects on what a fresh understanding of renewable media may contribute to the media scholar's sense of history as an at-once cautious and imaginative enterprise.

TERMINOLOGICAL POTENTIAL AND THE PROBLEM OF NEW MEDIA

It is a running joke among peers that securing the ideal position in industry, the academy, or otherwise will depend on working the term 'new media' into the first sentence of one's elevator pitch introduction. This joke, like most, is an uncomfortable half-truth. Those already working on supposedly new media-related topics smile and nod knowingly, while those less inclined to study cutting-edge issues of computer-mediated communication (CMC), information and communication technologies (ICTs) and digital media alternate between giggling nervously and outright grumbling. The mistake lies not with those interested in new media per se, but in a shared failure of historical imagination. With a little conceptual attuning, the term 'new media' can seed rich ways of rethinking the whole enterprise of media history: in brief, that the idea of new media belongs primarily to media historians. Media historians should be seizing upon, and certainly not begrudging, the relatively recent discovery of the term.

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The term 'new media' began in the latter-half of the 20th-century. The *Oxford English Dictionary* attributes its first use to the master wordsmith, showman and communication scholar Marshall McLuhan (1960) in the *Journal of Economic History*. However, McLuhan used the term at least as early as 1953 in a *Queen's Quarterly* article on Harold Innis (McLuhan, 1953), which doubly roots the origins of new media theory in Canada. McLuhan first uses it in association with technical characteristics such as 'electronic information gathering' and 'global reach' which, although novel at the time, seem almost thoroughly ordinary to most users of digital media in the early 21st century. Of course, the growth of message transmission in volume, distance, speed and capacity is important. However, a technical basis for understanding media belongs more squarely to postwar sciences of information theory and signal engineering than it does to the social scientific study of emerging media.

Although McLuhan may be the origin for the misplaced technical emphasis, his association of the term with global commerce in 1960 appears increasingly on target. Since the early 1990s, it has grown exponentially in use. A simple tally of the number of times it appears in LexisNexis English-language world publications shows only a trickle of hits between 1972 and 1990. The number then rises slowly in the early 1990s, increases sharply in the late 1990s, peaks at more than 1000 mentions per day in 2000 and then plateaus at slightly less than peak strength in the years shortly thereafter. The term 'new media' came of age with the arrival and maturing of the new millennium. As Elihu Katz wonderfully observed, God gave television to the social sciences and film to the humanities (Pooley, 2005) – business, it seems, has inherited new media, while historians content themselves with hand-me-downs.

Most Anglophone students use 'new media' as a vague umbrella term for emerging communication technologies which happen to be digital. However, as of summer 2008, resources such as Wikipedia (www.wikipedia.org) and Google (www.google.com) indicate a consistent association of the term not with the emergent quality but the digital construction of those media. To this new media historians must protest: 'new' does not mean 'digital', or at least it cannot mean that for long; at the current pace of technological change, soon 'digital' will become ordinary and then 'old'. To be clear: the scholarship on the rise of the digit as a modern cultural trope is already deep-seated and fascinating (Siegert, 2003; Turner, 2005, 2006) but to keep it that way, scholars must look beyond the technical constitution of a medium as the best proxy for sustaining interest in it. Technological construction is only a temporary approximation for a medium's modern relevance. Yoking new media scholarship to digital technologies speeds the term – and the work that relies on it – toward conceptual obsolescence.

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Consider Roger Silverstone's characteristically compelling introductory remarks in the 1999 inaugural issue of this journal. In response to the question 'What's new about new media?', he writes:

> [T]he new is *new*. The technologies that have emerged in recent years, principally but not exclusively digital technologies, are new. They do new things. They give us new powers. They create new consequence for us as human beings. They bend minds. They transform institutions. They liberate. They oppress … Novelty is, at this point, our problem. (1999: 10; emphasis in original)

Of course, Silverstone is right, at least in part: digital media do these things and there is an undeniable urgency to study contemporary digital media. We are awash in them (Gitlin, 2003). However, five years later in her 2004 introduction to this journal, Leah Lievrouw responds to the prompt 'What's changed about new media?', with the following:

> If there is a single difference between the 'what's new' collection in 1999 and the present 'what's changed' collection, it is that the earlier hesitation about the role and significance of new media has given way to much more confidence … virtually every piece [in this journal issue] remarks on what might be called the 'mainstreaming' of new media. [The internet has become] banal [and CMC is] slouching toward the ordinary. (Lievrouw, 2004: 10)

What was new then is no longer now: the (digital) media identified as new in 1999 are more or less ordinary, commonplace and understood by 2009.

Of course, there is ample room for many types of new media study. Not only can technical, presentist and historical work coexist in the same field, they can and should at times coexist in the same scholar – all the more reason to work for the cross-fertilization of intellectual fields. In short, the concept of 'new media' cannot refer to any particular set of technologies: the term must sustain fascination across time and space divisions, history and social groups. The present 10-year anniversary special issue of *New Media & Society* sounds a timely response to Silverstone's call 'to confront history and historiography, theory and methodology, both in the context of adjucating between evolution and revolution and in framing our judgments about cause and effect' (1999: 11) and, in the process, offers a performative corrective to his fine phrase: novelty must be, at all points of history, not only this one, our problem.

TOWARD TWO DEFINITIONS OF 'NEW MEDIA'

The 'new' part of new media may be what makes workable the merger of new media studies and media history scholarship. The term needs to be rethought: moreover, it needs to be continually rethought. That is, 'new media' needs a definition that demands that the novelty of media be repeatedly re-examined: a definition that lives in the time and place of its

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making. The principle of recurrent change is reflected in the two provisional definitions that follow: first, new media can be understood as emerging communication and information technologies undergoing a historical process of contestation, negotiation and institutionalization. Here of course, the phrase 'communication and information technologies' playfully reverses the term ICTs in the hopes of pushing beyond the transmission of information to include any environment that constructs and coordinates meaning. In addition, the terms 'contestation', 'negotiation' and 'institutionalization' are meant to suggest ways to think through how media arc from social obscurity to invention, innovation, obviousness and obsolescence. The arc concept is sketched below.

Many scholars have worked on the problem of charting, naming and conceptualizing the sweeping trajectories of media evolution: the work of Joseph Schumpeter (1934), Eric Von Hipple (1990, 2005), Norbert Wiener (1993), Everett Rogers (1995) and Rudolph Stöber (2004), for example, all offer schematic looks at the influences that make media more or less new. Synthesizing and adapting their work into a piece of intellectual scaffolding (for temporary use and thorough dismantling), this article suggests that most modern media pass through the following five periods:

1. technical invention – during which media are recognized rarely as 'new' and usually thought of as 'old plus';
2. cultural innovation – during which media develop new social uses;
3. legal regulation – during which the interested parties explicitly contest and negotiate for media power;
4. economic distribution – which continues until media become
5. social mainstream – the point at which media are no longer new.

Then, facing a new and improved version of itself, a medium may fade from obviousness to obsolescence, sometimes disappearing entirely from social memory. Of course, not all media make it through all, let alone any, of these stages. However, at some point, historical forces – perhaps through a breakthrough in use, technology, law or socio-economic demand – spark the core idea of a medium (e.g. the telegraph or television) to express itself in new form and the next cycle begins anew.

The second definition of new media is much simpler: 'new media are media we do not yet know how to talk about'. They are uncertain objects, their terms are unclear; their use, purpose and impact are not yet fully understood. Such uncertainty can attend both cutting-edge technologies (e.g. cloud or quantum computing) as well as, perhaps more importantly, everyday mass media. For example, it seems harder to talk about television today than it was 20 years ago: YouTube (www.youtube.com), videophones and online cable programming are renewing it. In a strange way, the typewriter can be as new

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to me as the personal digital assistant (PDA), although it is likely that any present cross-generational study will show that the typewriter is, on a whole, a more stable object of discourse. However, this will remain true only until at some point in the future both the typewriter and PDA are equally forgotten and ready for renewal. The novelty of new media is a function of our account of who is talking and who is remembering.

In short, new media are, by definition, definitional puzzles. These two provisional definitions may be used together to suggest useful concepts as well as categories for study, such as actors (inventors, early adopters, advertisers), social mass influences (public opinion, democratic legal norms, popular demand) and institutions (press, courts, markets). Perhaps the key conceptual question of new media – for whom and when are which media new – asks scholars to engage and become those who openly struggle to classify, name and codify media. The assertion that new media scholarship is recursive and self-reflexive in design will surprise few: for even as we hope to advance social understanding of media, we recognize that our success will only help to make ordinary the very things whose novelty attracted widespread attention in the first place.

LITERATURE REVIEW

New media history and the idea of media renewability

Examples of consciously and unconsciously new media history scholarship are legion. Among them, Lev Manovich's (2001) compelling and popular work *The Language of New Media* is among the first in a recent wave of books to draw out explicitly a longer history of new media using digital media scholarship. The accomplishment of bringing to light the work of new media history overshadows the work's reliance on a technical definition of new media. A leading new media scholar in cinema and visual arts, Manovich defines new media as computing and cinema technologies that share five characteristics: numerical representation, modularity, automation, variability and transcoding, writing at one point 'a new media object can be described formally (mathematically)' (2001: 27). His approach has serious virtues: his elegant yet short history traces these characteristics back to Charles Babbage's 'analytical engine' and the daguerreotype in the 1830s, and makes substantial contributions to digital media scholarship along the way. He also sees in almost two centuries of digital media a spellbinding shift in the structure of information from narrative to database form. The recent rash of concern about the construction and future of narrative, he suggests, may be a result of the fact that for the first time we can observe narrative from outside it.

Yet whatever its brilliance, Manovich's historical work wholly mistakes digital visual media for new media and, in the process, leaves too little room for questions of how contemporary media share affinities with their

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predecessors. Surely numerical representation, modularity, automation, variability and transcoding do not capture the singular essence of 19th-century new media developments in radio, magnetism, mesmerism, artificial intelligence and acoustics? No single definition could or should do all this. Manovich's work also reasserts the dominance of the eye as the subject and tool for studying new media in cinema and visual arts. Stimulating work by Siegfred Zielenski (2006) and Jonathan Crary (1992) takes important steps toward a multisensory, if still heavily visual, study of the arts. While in Manovich's case, the eye may rightfully rule visual arts, media studies need not cling to that sensory experience as its dominant paradigm.

Instead, equal attention should be paid to emerging sound studies surrounding new media (Millard, 1995; Sterne, 2003; Thompson, 2002; Wurtzler, 2007) as well as the developing research of touch, taste, smell, heat, pain, location, balance and other sensory experiences (Taussig, 1993). Of particular note is Jonathan Sterne's (2003) *The Audible Past: Cultural Origins of Sound Reproduction*, which provides historical and philosophical foundations for rethinking the modern place of sound and communications as a whole, as an act of the many rather than the single, isolated individual. Sterne's nudge of the field of communications and media history away from an exclusively visual focus is reminiscent of the even more expansive work done by a recent wave of German scholars that spans, often at once, metaphysics, physics and the humanities (Hagen, 2005; Kraemer, 2008; Siegert, 2003): from the human physique of pain and pleasure in media (Winkler, 1998) to examinations of media as historical records themselves; from card catalogs and paper (Krajewski, 2008), to paper machines (Dotzler, 1996) to files (Vismann, 2008). (Many articles by the aforementioned scholars are available online in both German and English.)

Also consider Lewis Mumford's *Technics and Civilizations* (1934), which sets a high standard for those inclined to grand histories of technological influence. In combining 'wishes, habits, ideas, goals' with 'industrial processes' and technologies, he saw in the social-material complexes of 'technics' the shadows of much larger civilizational changes. Consider three such technics: clock, mining and glass. First, the clock reoriented Europe from the cosmological sense of time as an eternal now to a unidirectional timeline (see also Anderson, 1991; Fleck 1981[1937]; Galison, 1987, 2003). Second, Mumford saw the mine's dirt, smoke and danger leading to innovations in ventilation, water pumps, furnaces, air conditioning and train cars, as well as to free workers giving into slave-wage labor and early labor value abstraction for the first time. Much of industrial society sprung from the earliest forms of mining in central Germany. Third, glass in Renaissance Europe transformed indoor life as well as the study of the outside natural world. Windows let in the first indoor light in the winter, led to more interest in domestic

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cleanliness, personal hygiene and a mentality friendly to scientific sterilization; glass spectacles lengthened literate life; non-conducive glass beakers, test tubes, flasks, thermometers, lenses, prisms and slides gave the natural sciences analytical power and stewarded in a culture tolerant of demands for external evidence. Of course, Mumford has been faulted by Harold Innis, Marshall McLuhan and Friedrich Kittler for relying too heavily on the intrinsic logics of technologies, but still the study of 'stuff' persists.

If there is an emerging tradition of openly self-reflexive new media history – one that looks to the co-evolution of media and their publics – its founding classic is arguably Carolyn Marvin's (1988) first book *When Old Technologies Were New*, which engages questions of the cultural reception of electrical technologies, especially the telephone and (wonderfully) the electric light, in the late 19th century. Marvin's conclusion on Hirmondô subscription telephone broadcasting in early 20th-century Budapest sets the stage for future scholars to think through further how yesteryear's new media may re-emerge in the present.

As John Peters (2004) argues, the novelty of media often comes in employing and combining fresh configurations of what already existed but what was never present before. Consider how early cinema merged the daguerreotype (early photography), magic lanterns (early slideshow projectors) and kinetoscopes (an early individual movie projector using perforated sequential images and a high-speed shutter); the first newspapers in Germany combined the stagnant industries of the printing press with daily circulation; and emergent telegraphy technology has a surprisingly long history. As Carolyn Marvin writes:

> In a historical sense, the computer is no more than an instantaneous telegraph with a prodigious memory … all the communications inventions since have simply been elaborations on the telegraph's original work. (1988: 3)

Alexander Graham Bell thought of his telephone as an 'improvement in telegraphy' and the radio was first called 'ethereal telegraphy', whose core idea – to write across distances – appears in the optical telegraphy of military towers and mountaintop bonfire signaling.

Following the core idea of telegraphy rather than any particular instance of telegraph technology, Peters (2006) expands upon James Carey's (1988) classic telegraph essay to point out that a larger 19th-century complex of optical, magnetic, physiological, chemical, acoustic and electromagnetic telegraphic technologies helped to rethink body–machine metaphors (wired nerves and organic networks), prepare the way for process-switching computing, imagine microscopic and astronomical periods of time and led to Einsteinian insights of space–time relativity. The long sweep of new telegraphy history, it seems, is both ancient and spreading.

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It is not necessarily true that a medium need be new only once: again, *media are renewable* and they tend to renew themselves in the gaps, silences and white spaces left by the media that displaced them. While it is true that all media were once new before they were old (i.e. widely diffused, mainstream, standardized, no longer contested), it is also possible for a later incarnation of the communication form of the medium to appear as new, if not newer, than the first. In her smart *Always Already New: Media, History and the Data of Culture*, Lisa Gitelman (2006) analyzes the gendered economy of the Edison phonograph in juxtaposition with how scientists in the Defense Advanced Research Projects Agency fixed a digital document with units that change over time, and in the process she distinguishes between media as technologies (such as the phonograph) and as institutions (such as Universal Studios) as two ways in which to understand media in the process of media history. Public memory for media begins to forget the messy process of new-media formation (a combination of both technologies and institutions), she argues, the moment that society accepts a particular use for a medium as obvious or as no longer new. Her forcible call (Gitelman, 2006; Gitelman and Pingree, 2004) is to read forgotten media back onto their histories, thus making them freshly intelligible. Again, media cannot die for they do not live; they molt, transform and, as Gitelman (2006:13) puts it, achieve 'commonsense intelligibility' repeatedly.

Herein lies the crux of the idea of media renewability. Each medium may have a few basic ideas (e.g. telegraphy or distance writing) that take many forms in material technologies. While various institutions and actors clothe a medium in ever-changing outfits and external forms, the operative idea of a medium as an environment for communicative action connects it back to other similar media throughout time. (Institutions make new media new, ideas make new media old and perhaps variation in users and uses bridges the difference.) The idea of distance writing, for example, permeates the post, all forms of the telegraph and the computer; distance seeing, the telescope and television; mathematical calculation, the abacus and computer; the letter, literacy; the mouth, oral speech; etc. Manovich (2001) and Jenkins (2006) are famous for pointing out how ideas converge easily in digital platforms, yet their emphasis on digital media overlooks the simple fact that all media contain, constrain and combine fundamental ideas about what constitutes communication itself.

Media behave a lot like words, or syntactical units identifiable to those fluent in the circumstances of their use. Peters (1980) notes that the verb 'to spill' meant 'to kill' four centuries ago. With the rise of the verb 'to kill', the verb 'to spill' has assumed since then a secondary but related meaning preserved in the phrase 'to shed blood'. In the same way, new media displace old media of their primary meaning, leaving them with a secondary form of meaning. Media as words reminds that users make up much of the study of

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media and that, contra organic metaphors (e.g. dead media, old media, middle-aged media, stillborn media, etc.), media cannot die for they do not live: rather, like grammatical units, they blur old forms of syntax, shed circumstantial skins and incorporate neighboring grammars. Media histories have etymologies of part-idea, part-technique, part-actors and institutions.

The simile of media as words also suggests that media scholars take seriously at least one organic metaphor from linguistics and philosophers of language, namely Ludwig Wittgenstein's (1953) idea of family resemblance, which suggests how exacting definitions betray the richness found in the overlap between categories. Perhaps it is not tighter definitions but a fuller canvassing of the interplay between past and present media that the historical study of new media could use most.

Why most media history is already new media history

Many media histories address a period when a particular medium was new for the first time, and thus are, in a strong sense, already histories of new media. For example, Susan Douglas in *Inventing American Broadcasting* (1989) gives the prehistory of radio from 1899 to 1922 as it passed through invention, innovation and regulation, literally when radio was first new. Her second book on radio goes beyond the novelty period: *Listening in: Radio and American Imagination* (1999) canvasses public response to radio over nearly the whole 20th-century, from jazz in the 1920s to Rush Limbaugh in the 1990s. However, even this sweeping scope overlooks how the basic communicative form of radio – wireless broadcasting – has renewed itself in forms such as AM and FM technologies, maritime navigation, Radar, the microwave oven, low-power broadcasting and mobile telephony. The radio has never ceased to be socially novel; it has simply sought new expressions. In a strong sense, media history as a scholarly enterprise has focused too much on the first time that media were new and overlooked iterant moments of renewed media. Most media historians already study 'once-new' media but too rarely do those studies engage with how media renew themselves overtime, a question fit for the historically-minded new media scholar.

The gambit of recent media histories focusing on once-new media histories could range from the work of Friedrich Kittler to Paul Starr, to Daniel Czitrom, to say nothing of the well-known work of Manuel Castells (1996). A close and creative reader of technical detail, Kittler (1999) spells out in *Gramophone, Film, Typewriter* counter-intuitive stories buried in early 20th-century media history, from the weapon-like aiming and shooting of the camera to the feminine gender of early typewriters. Starr's (2005) encyclopedic *The Creation of the Media: The Political Origins of Modern Communication* works on the post office, the press and the telegraph as 'constitutive moments' for rethinking the importance of political action in

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American media history. Lastly, Czitrom's (1983) *Media and the American Mind: From Morse to McLuhan* surveys the early periods of telegraph, radio and film in America, backed by cultural Chicago School theory and ritual notions of communication. To flag a few more histories of when mass media were recognizably new for the first time, there is notable work on the printing press (Anderson, 1991; Eisenstein, 2005; Johns, 1998; Ong, 1982), the post office (Henkin, 2007; John, 1998; Siegert, 1999), the railway (Schivelbusch, 1986), the telegraph (Carey, 1988; Downey, 2002; Peters, 2006; Standage, 1999), the radio (Douglas, 1989, 1999; Smulyan, 1994), the television (Abramson, 2003; Meyrowitz, 1985; Schwartz, 2003; Spigel, 1992) and the telephone (Fischer, 1994; Levin, 1995; Martin, 1991). Other less-known works could include Forty (1992) on design studies or Tichi (1987) on the interlacing of literature and machines. Taken as a whole, such a disparate list of works help to represent the irreparably diverse character of new media history.

Two streams in the science and technology studies literature seem particularly noteworthy: first, the classic works on the historical social construction of technologies such as Wiebe Bijker's key works (Bijker, 2001; Bijker et al., 1987; see also Fulk, 1993), James Beniger's (1986) seminal book on the origins of the information society and Leo Marx and Robert Heilbroner's fine essays on the history of the idea of technology (however an uncomfortable pairing on the question of technological determinism; Heilbroner, 1967; Marx, 1994, 1997). The second stream of science and technology studies literature, namely the social construction of computers (Abbate, 1999; Trogemann et. al., 2001), cybernetics (Edwards, 1996; Gerovitch, 2004; Hayles, 1999) and digitized media (Boczkowski, 2004; Mosco, 2004), also speaks to present-day new media historians. In spite of any lasting contributions to questions of postmodern prognostication (Bell, 1973; Harvey, 1989; Nye, 1996), the philosophy and politics of technology (Feenberg, 1999; Winner, 1986) and complications to the term 'new media' itself (Bolter and Grusin, 1999; Hansen, 2006; Schwartz, 1973), much but not all of this literature engages new media either as a given set of usually digital technologies or through a particular period of society. Thus while the work of new media history is well under way, there remains much room for rethinking the enterprise of media history writing itself.

CONCLUSION: A CAUTIOUS CASE FOR NEW MEDIA HISTORY

In summary, this article has reviewed some of the terminological potentials, problems and literature surrounding the historical study of new media. While in many ways much of the reviewed literature is exemplary, it also relies on digital processing power as the defining constraint of new media. Further, while it is natural for the bulk of media history scholarship to treat only

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one period (usually the first) that a given medium appeared new, this article has suggested that the renewable quality of media presents a richer yet significantly underdeveloped framework for understanding media in history than is widely adopted. That is, media history can bring perspective to new media studies, but the study of new media as renewable phenomena can also improve media history. What 'renewable media history' might look like – or the kind of work that follows the long march idea of a medium through its many forms (e.g. telegraphy from hand gesture to computers) – is an open question for further discussion. The thrust of this article has been less to invoke a new topic (i.e. renewable media history), and rather to signal, rename and reappraise a tradition of new media history already long in the making.

The case for intersecting media history and new media studies has both advantages and caveats. Among the short list of advantages is the fact that history provides a set of lenses, such as the five stages of media renewability suggested earlier, through which to pique and sustain intellectual interest in new media for more than the fact that media matter now. In addition, once applied, the renewable, historical nature of media inoculates the 'new' part of new media against the near-instant obsolescence of studying new media in a world of torrential technological change, offering in its place a conceptual constancy in the idea of novelty with which to elongate and synthesize the study of new media history. Thus new media scholars may perpetually postpone awkward constructions such as *new* new media and *old* new media that otherwise the successor to digital communication will force upon our studies.

New media history also reminds scholars that by explicitly stating our interests in writing on the subjects, our work can find its fit in both the present and the stories that future generations of historians will tell about our times. Scholars have the privilege of leisure time to contemplate and take seriously our responsibility to become self-conscious stewards of the record of modern times. All of what we write will become history, although little of it may make the historical record. Future generations of historians will appreciate whatever candor we may muster.

Whatever the virtues, historical scholarship remains an irreparably demanding and cautious enterprise. At best, it provides ambiguous evidence and uncertain answers to almost any question, whether past, present or future. In any case, by comparing the amount of new media studies oriented toward the future and the past, we must admit that at the moment, the future of new media appears longer than the history of new media. This is not the proper balance. Considering two somewhat counter-intuitive claims: first, since each medium was new before it was old, the history of new media extends farther into both the past and the present than the history of old media. In other words, new media history is older than old media history. Second, the

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historical record itself is a product of new media history, beginning with written script. In the beginning, media were new. History came only later. Thus, how new media keep history is a key subject for further study.

Even in its flights of imagination, history is an engagement with, not an escape from, the present: we may note with Walter Benjamin how history reanimates the present as today's version of the past. New media must be understood historically especially (and not even) if we are discussing the present. Historical study complicates prognostic arguments; the uncertainties of the past combine as a negative check against the future. Perhaps best thought of as a defensive maneuver, a strategy for defusing the powder kegs of prediction and a gauge of how little we know about ourselves, history cannot teach us to avoid past mistakes or to predict the future. It is not, as George Santayana said, that those who forget the past are condemned to repeat it. Rather those who do history well are condemned to admit its ambiguity.

The cautious case for new media history rests on a tension between the profound sense of ignorance to which all scholars must admit before the ever-incomplete record of fact, and the equal depth of insight found in the exercise of the human imagination. Of the many insights to which the past points, only one is certain: that history is an ever-renewable resource for discovering our own ignorance. Yet, as the epigraph suggests, the many gaps in the recording, transmission, translation and interpretation of the historical record provide the space necessary to re-examine the stories we modern humans tell about ourselves. In short, the balance of the future of new media studies lies in the return to the communicative past. The past at least has happened, while the future has not; and if we sometimes enjoy the imaginative character of prognostication, we need not forget that historical study enjoys the same *plus* ample (if incomplete) data. The historical record and continual rethinking of the path to the present await such a refreshed attitude – at once imaginative and cautious, literary and literal – of the new media historian.

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