



Surveillance history and the history of new media: An evidential paradigm

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Abstract

New media are often addressed within the growing field of surveillance studies, but technologies predating the late twentieth century are rarely considered. This essay challenges conventional histories of modern surveillance by highlighting the cultural impact of three ‘old’ new media: photography, the phonograph, and the telephone. Drawing upon the work of historian Carlo Ginzburg (1990), I argue that new media produce new evidence and that late nineteenth-century media contributed to an emergent ‘evidential paradigm’. From this perspective, the intensification of contemporary surveillance can be seen as an elaboration of late nineteenth-century new media and the proliferation of evidence-producing communication technologies.

Keywords

camera, evidence, phonograph, photography, privacy, surveillance, telephone

When the first portable cameras were introduced in the 1880s, an amateur photography craze ensued in the United States. Compact and simple to operate, these new devices put the power of photography in the hands of hobbyists, aspiring artists, and journalists. Their chief appeal, however, was not simply their ease of use. Housed in innocuous-looking leather cases and significantly dubbed ‘detective’ cameras, it was also the ease with which they permitted users to capture candid images of other people. A new breed of stealth photographer thus took to the streets, parks, beaches, courtrooms, and society gathering spots in search of interesting subjects. Cataloging the range of potential

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targets, one writer noted that detective cameras could be used to photograph ‘a criminal, a “suspect,” a passing beauty, a person in a comical attitude or predicament, a Gladstone in the midst of an eloquent oration, a President on his wedding tour, a secret council of the Home Club, and endless other individuals and assemblies’ – all despite evasive ‘precautions against such a possibility’ (*New York Tribune*, 27 June 1886: 11).

Not surprisingly this popular new recording medium amused as much as it enraged. Detective cameras admitted ‘a new horror to life’, one editorialist complained, especially for ‘young and lovely women’ (*The Nation*, 20 February 1890: 153). Yet in short time the ubiquity of portable cameras had already begun to acclimatize Americans to an emergent culture of surveillance. ‘There is little need for hiding cameras nowadays,’ another writer observed, ‘as the public has become accustomed to the bombardment kept up from the pretty little highly-polished boxes’ (*New York Times*, 14 June 1891: 16). That one might be photographed without one’s knowledge or consent had become an uneasy fact of life.

The death of privacy, like many exaggerated deaths, is lamented today as an unprecedented calamity. Yet privacy has died many deaths. Between roughly 1850 and 1950 a succession of new technologies, from the telegraph to television, not only expanded possibilities for communication, including mass communication, but also changed the information environment in which people lived. One’s information footprint, to borrow a recent conservation metaphor, had become much larger. By the turn of the twentieth century it had become more difficult to be left alone. This of course is the central concern of Samuel Warren and Louis Brandeis’ (1890) celebrated legal summation on the right to privacy. The authors not only grappled with the predations of an aggressive press, but also the prying uses of photography and ‘other modern device[s] for recording or reproducing scenes or sounds’ (Warren and Brandeis, 1890: 206). New media of the nineteenth and early twentieth centuries had begun to reshape the evidential environment in which individuals emitted and gathered information.

In what follows I offer an account of modern surveillance history that focuses on three late nineteenth-century new media: the portable camera, phonograph, and telephone. Though the impact of new media is often addressed within the growing field of surveillance studies, the cultural significance of technologies predating the late twentieth century – that is, old new media – is rarely considered. Looking at the conventional history of modern surveillance, if we may call it that, it becomes apparent that there is a rather large hole in the middle. Broadly speaking, this history begins with nineteenth-century administrative recordkeeping and continues after a long and conspicuous silence with post-World War II computing and miniaturized electronics. The late nineteenth and early twentieth century appears as a nebulous void during which ponderous institutions laid the foundations of mass surveillance while new media played little or no role. This excluded middle is striking, for it was precisely during this time that a cavalcade of new communication technologies introduced radical possibilities for seeing, hearing, and recording distant and disembodied others. What happened during this interim period, between the age of administrative writing and the age of computing?

While eschewing technological determinism or the urge to construct a pat master narrative, this article seeks to contextualize late nineteenth-century new media in the longer history of modern surveillance. Drawing upon newspaper and popular press accounts, anecdotally and in the United States, I examine cultural anxieties surrounding the

portable camera, the phonograph, and telephone during this pivotal moment in modern surveillance history. In their ability to capture or reveal the unguarded speech, behavior, and semblance of individuals – to elicit clues to one’s inner feelings and nature – each of these new devices contributed to an emergent ‘evidential paradigm’ during the late nineteenth century. This paradigm, identified by historian Carlo Ginzburg (1990), was characterized by a new semiotics of detection and forensic proof. Expanding upon Ginzburg’s concept, I suggest that new media of this era augured a much wider proliferation of new evidencing-producing machines that continues to reshape social experience and normative understandings of privacy today. Significantly, new media produce new types of evidence, each with its own material form and truth claims. From this perspective, the intensification of contemporary surveillance can be seen as an elaboration of the late nineteenth-century new media and the multiplication of evidence-producing communication technologies.

Historicizing modern surveillance

It is now axiomatic that surveillance is a defining feature of modernity (Giddens, 1985; Lyon, 2003; Haggerty and Ericson, 2006). After witnessing the proliferation of information-processing technology and new media during the late twentieth century, this claim seems more self-evident than controversial. For scholars interested in surveillance – until recently, this has been the province of sociologists – modernity begins in the nineteenth century. The concept and chronology of modernity is vigorously contested in some circles, but for those who study surveillance the narrative of classical sociology is generally accepted. True to its founders, this narrative locates the decisive break from pre-modern society in the forces of urbanization, industrialization, and liberal democracy during the nineteenth century. Consequently the rise of surveillance appears coeval with the rise of the nation-state and capitalism, as both implemented new administrative strategies to identify, track, and classify large populations of mobile, anonymous individuals.

But while surveillance is equated with modernity and the origins of modernity are placed in the nineteenth century, surveillance scholarship is devoted almost entirely to the study of late-twentieth and early twenty-first century technologies. We have numerous studies of database surveillance, video cameras, and biometrics, for example, but few studies of modern surveillance during its formative years. Connections between older and newer forms of surveillance, when noted, are often glossed over with vague gestures toward bureaucracy and the rationalization of social control. Despite a small but growing body of research that addresses surveillance during this earlier period – the military (Dandeker, 1990), passports and identification papers (Torpey, 2000; Caplan and Torpey, 2001; Robertson, 2010), state-based information gathering (Higgs, 2004), anthropometry and fingerprinting (Cole, 2001), photography (Sekula, 1986; Tagg, 1993; Jäger, 2001), and credit reporting (Lauer, 2008), to name a few – surveillance scholarship is overwhelmingly a thing of the present. A preoccupation with the here and now is understandable. Surveillance scholars have done much to illuminate the risks and inequities (though rarely the social benefits) of recent technological developments, particularly in the areas of policing, database convergence, consumer surveillance, and government infringements of individual privacy.

Yet such presentism also has its drawbacks. For one, it has made it difficult to understand the historical trajectory of surveillance from paper-pushing bureaucracies to digital networks. The history of modern surveillance, as already suggested, consists of two distinct narratives. The first establishes the origins of surveillance in the rise of bureaucracy and carceral institutions during the nineteenth century. This history rests heavily upon the edifice of Weber (1978) and Foucault (1977). Weber's description of bureaucracy reveals the administrative logic of mass surveillance, especially the use of files as a form of evidence and accountability, while Foucault's study of disciplinary power, including his well-worn analysis of Bentham's Panopticon, illustrates the efficiency and ideological effects of total visibility.¹ Together, Weber and Foucault present the history of modern surveillance as the rationalization of institutional power and social control in the hands of nineteenth-century government functionaries, businessmen, and legal-medical-scientific experts. This narrative has received added weight from Giddens (1985, 1995), whose own analysis of surveillance focuses on the accumulation and control of information as the technical basis of domination by nation-states and capitalists.

In addition to this first narrative, a second more familiar history takes up developments following World War II. This second narrative focuses on the arrival of new information technologies during the 1960s, most importantly the computer. Indeed, the emergence of surveillance studies itself might be traced to database anxiety in the late 1960s, which spawned government inquiries and journalistic exposés in the United States and informed the first major sociological study on the subject, James Rule's *Private Lives and Public Surveillance* (1973). While this second history often acknowledges the first as a foil against which to present the spread and intensification of contemporary surveillance practices, it rarely takes the first very seriously. The logic of administrative recordkeeping and visibility is duly noted, but earlier textualizing processes are too often dismissed as primitive or inconsequential by comparison. 'Personal records have been kept for centuries', one legal expert explains in a recent book on 'digital dossiers', but 'only in contemporary times has the practice become a serious concern' (Solove, 2004: 13). It is true, of course, that current surveillance technologies vastly surpass the capacity of earlier techniques. However, a narrative of progressive enclosure and depersonalization does not quite capture the complexity of surveillance in our own time. If anything, the ambiguity of surveillance as a form of both domination and pleasure is revealed in the popularity of user-generated content on the internet, social networking sites, and entertainment genres such as reality television.

An examination of late nineteenth-century technologies, for instance, suggests that new media of the era had already done much to erode, or at least complicate, conventional notions of privacy and publicity. Why, after all, did legal interest in privacy emerge with a vengeance in the United States during this time? In the rush to develop a surveillance theory of everything – specifically, one that convincingly displaces Foucault – too much is left unanswered. As Gary T. Marx recently observed of the field, 'there is too much talk [aka meta-theory] and not enough research' (Marx, 2007: 126). However, another problem, one that relates to that of fashionable theorizing, is that modern surveillance is under-historicized. Leading surveillance scholars such as David Lyon (1994) have championed the relevance of historical perspective, but studies of past practices and technologies remain at the margins of surveillance studies. To question the historical

development of modern surveillance is not to diminish the importance of contemporary issues or to argue that there is nothing new under the sun. Rather, surveillance history may be used to inform contemporary studies and enrich new theory. In the present case, comparative historical analysis reveals the conceptual significance of evidence – the production, circulation, and accumulation of semiotic traces emitted by new media – for understanding the development and intensification of modern surveillance.

Nineteenth-century new media: An evidential paradigm

According to Ginzburg (1990), a new evidential paradigm crystallized during the late nineteenth-century, one that inferred deeper truths from seemingly trivial and involuntary ‘clues’ – handwriting, fingerprints, and unconscious thought, for example. For Ginzburg, this epistemological shift is exemplified by three fields of inquiry that flourished during this time: physiognomy, detective fiction, and psychoanalysis. Art historians scrutinized the idiosyncratic shape of earlobes and fingernails in the paintings of the Old Masters, Conan Doyle had his Sherlock Holmes solve crimes by studying footprints and the shape of human ears, and Freud gained entry to the unconscious mind by probing memories and associations that were superficially unremarkable. This paradigm, whose origin Ginzburg specifically locates between 1870 and 1880, sought certain knowledge in physical features and material traces by which the individual could be positively identified.

In addition to Ginzburg’s three fields of inquiry, we should also add new media of the period: photography, phonograph, and telephone. Like the study of body shape, latent detritus, and mental states, each of these technologies offered new forms of evidence by which the individual could be known. Photography, the recorded image; phonography, the recorded voice; telephone, remote eavesdropping. Moreover, the evidential fields highlighted by Ginzburg – physiognomy, detective fiction, psychoanalysis – would become key elements of modern surveillance practice in the form of biometrics, forensic science, and both criminal and consumer profiling. The overlooked role of media in Ginzburg’s evidential paradigm has been noted by Friedrich Kittler (1999: 83–94), who comments on the affinity between phonographic recordings and psychoanalysis. As Kittler observes, new media such as the phonograph captured and stored information that would previously have gone unnoticed, and through which signs of betrayal were inevitably revealed. The same new media that opened new possibilities for communication thus also threatened to narrow the dimensions of personal seclusion.

Humans, like all animals, are surveillance machines by the very nature of our sensory organs and self-preserving instinct. Our ability to decipher environmental clues and to narrate events may even be traced to prehistoric hunting; this is Ginzburg’s (1990) starting point in his history of conjectural thought. In the pursuit of game, we learned to read the semiotics of animal footprints, scat, odors, and disturbed vegetation. As social animals, we are constantly attuned to each other as well. Interpersonal encounters, as sociologists and anthropologists have shown, are always complex, information-rich events. We cannot walk down the street without conveying something about our personality, social position, and intentions to anyone within sight, sound, or scent of us. We both ‘give’ and ‘give off’ information in all social interactions, as Goffman (1959) noted.

Such embodied surveillance, by which we informally and unsystematically identify, classify, and monitor each other, is the root of all social control. The history of surveillance, then, is as long as human history. However, the history of media is deeply implicated in this history (Gates and Magnet, 2007). Each new technological extension of human perception, from writing to webcams, introduces new possibilities for conveying and organizing information, including information used in repressive or coercive contexts. New media not only mediate, they produce new forms of authenticity and truth.

Viewed negatively, late nineteenth-century new media not only democratized access to news and cultural knowledge, but also introduced forms of evidence that threatened to limit or distort an individual's control over his or her persona. Such media might be used to produce evidence that contradicted or damaged one's reputation. Even more troubling, evidence in the form of photographs and audio recordings persisted and, in the case of the former, could be easily reproduced for public consumption. New forms of technical mediation produced evidential traces that impinged upon privacy. Implicit in the right to be left alone is the right to withhold information about oneself. Privacy, in other words, might be usefully described as the ability to suspend the emission of evidence about oneself – the right to be *non-communicative*. We sing in the shower, off-key and with abandon, under the assumption that we will not be humiliated later by evidence of our croaking. New media could be used to break one's semiotic silence – to capture one's likeness, voice, or thoughts unawares – thus producing nonconsensual evidence and inciting debate over the nature and rights of personal privacy.

Photography

As an instrument for proffering evidence, the significance of the camera and its technical antecedents is difficult to overstate. Photographic technologies brought together the near and far, the extraordinary and mundane, the dead and the living. The daguerreotype, introduced in 1839, quickly achieved mass popularity in the United States as a means to immortalize one's likeness. The photograph and its immediate precursors may have diminished the aura of the original, as Walter Benjamin (1969) concluded, but it also encouraged new forms of authenticity and realism. Until the late nineteenth century the physical constraints of camera technology made it virtually impossible to capture a person's image without their knowledge. The size of the device and lengthy exposure time required a willing subject. Still, the seductive power of the living image invited subterfuge even with the cumbersome daguerreotype, which involved exposures so long that sitters were posed with metal braces to support their heads. In one such case a young woman discovered that an admirer had secretly acquired her daguerreotype image. This was baffling because she had not given him her portrait and daguerreotypes could not be duplicated. It was finally revealed that her admirer colluded with the daguerreotypist to take two images during her sitting, the first of which was pretended to have been imperfect and discarded, but was given to the man instead (Arthur, 1849).

By the time of Warren and Brandeis' (1890) essay, cameras were much smaller and more user friendly. They had also become more menacing. The potential of photographic evidence – real or doctored – was soon realized as a tool of blackmail and guerilla activism. Prohibitionists in particular used detective cameras to embarrass tipplers. Prominent

citizens were photographed entering bars in New York (*The Sun* [New York, NY], 24 December 1894: 1) and a political scandal erupted in liquor-free Kansas when the governor was allegedly photographed having a glass of whiskey in a Leavenworth saloon. The photographer threatened to post the damning image in all of the state's schoolhouses (*New York Times*, 10 February 1900: 1). It is telling that early handheld cameras were equated with weaponry – 'lethal' or 'deadly' Kodaks – and the aggression of surreptitious photography was frequently described in terms of hunting, ambushing, and killing (Mensel, 1991: 29). Metaphors of assault spoke to the reality that such images could inflict real social injury – even social death. Summarizing the impact of the portable camera, film historian Tom Gunning (1999: 57) writes that it 'brought on nothing less than a social revolution that affected the legal definition of self and privacy as well as the nature of embodied social behavior'.

In addition to blackmailers a new crowd of celebrity stalkers also emerged. Like 'autograph fiends' before them (Lauer, 2007), 'camera fiends' sought to possess the material trace of a living person, which might be gotten through cajolery, deceit, or theft. A thriving trade in studio photographs of statesmen, politicians, literary figures, and actresses existed before 1880, but the portable camera upped the ante by capturing candid images for popular consumption. Among the cases Warren and Brandeis (1890) cite to illustrate the intrusion of new media is a law suit brought against an early paparazzo. The litigant, Broadway starlet Marion Manola, became 'a victim of the deadly Kodak' when she was photographed wearing tights during a performance (*Brooklyn Eagle*, 15 June 1890: 10). Gossip-mongering newspapers also defied norms of propriety by publishing informal portraits of the famous and well-to-do whenever they ventured into public space.² The intrusion was enough for vacationers in Newport, Rhode Island, to seek a ban on cameramen who snapped photographs of women on the streets of the exclusive resort town (*New York Times*, 18 August 1899: 7). Business leaders such as J. Pierpont Morgan were similarly beset. Upon returning from Europe in the summer of 1902, he shielded himself from a 'camera brigade' and was forced to hunker down in his office when he spotted a waiting cameraman outside (*New York Times*, 21 August 1902: 2). Even President Theodore Roosevelt chafed at the constant presence of photographers who made a 'permanent pictorial record' of his every move. Defending Roosevelt's annoyance at the 'continuous ordeal of the camera', the *New York Times* (23 August 1902: 8) observed that the nerves of even 'reasonably thick-skinned citizens' were put to the test by such "chronic exposure".

While such exposure came to be expected among celebrities, as it is today, it could be intolerable for the average person. 'We have a good many citizens,' one journalist complained, 'who are not pretty and not always posing, and they are not much more fond of the man with the camera, who is everywhere in these days, than the Indian is' (*Brooklyn Eagle*, 19 July 1899: 4). Even the unimportant and obscure might find themselves permanently enshrined in an awkward or unflattering pose.³ By the 1890s a growing number of women were dismayed to learn that their images had been secretly captured and reproduced in unauthorized contexts, from advertising to risqué portraiture. In 1899 a young beauty in Rochester, New York, suffered a nervous breakdown after learning that a local flour company had used her image in its trademark, which it printed on 25,000 flyers and distributed to local businesses, including saloons (Mensel, 1991: 363–7). The case became

a lightning rod for the revision of privacy laws. Worse still, bathing houses and beaches attracted 'Paul Prys' who snapped images of scantily clad women for private consumption and back alley sale (*The Sun [New York, NY]*, 8 July 1890: 4). In a sensational case out of Boston, a rogue cameraman was reported to have been trawling the Charles River for couples that paddled into the moonless waters to 'spoon' (*Chicago Tribune*, 4 August 1889: 25).

More familiar to scholars of modern surveillance is the use of photography for criminal identification and policing. Here the respectable soft surveillance of family albums and honorific photography can be contrasted with the camera's repressive function as an instrument for detecting, classifying, and controlling social deviance. Unlike voluntary subjects of middle-class portraiture, the criminal and insane were, as John Tagg (1993: 11) puts it, 'forced to emit signs' as docile objects of institutional knowledge. Allan Sekula (1986) has similarly argued that the idea of the criminal type emerged hand in hand with photography, complementing the pseudo-science of physiognomy and the search for predictive markers of abnormality. As both scholars note, however, photography was only one element of this new surveillance regime; the application of administrative recordkeeping was equally important. Here the evidential paradigm described by Ginzburg (1990) can be seen to intersect with the history of new media. By merging photographic evidence with extensive systems of disciplinary writing, the criminal photograph became part of a vast bureaucratic archive used to identify and study suspect populations.

The most famous of these systems was developed by Alphonse Bertillon, the French police clerk who paired individual mug shots with meticulous physical measurements and descriptions of attributes such as hair color and ear shape to produce a 'spoken portrait' (Ginzburg, 1990: 120–121; see also Jäger, 2001). Bertillon's evidential assemblages broke down bodies and identity into discrete informational fields that could be neatly stored in cabinets. This combination of text and image offers an object lesson in the coexistence of new media and old; the camera did not displace scribal systems but supplemented and extended their power. Even more, the capacity to arrest objects in time was only one of photography's achievements. Photographs could also be enlarged to view objects too minute or rapid for the naked eye to perceive. In this way photography was not only used as a form of evidence itself, but to enhance other forms of evidence, such as handwriting and fingerprints, both of which could be magnified by photography to assist expert analysis.

Phonograph

In 1878 Thomas Alva Edison unveiled his new device for recording sound, which he demonstrated to delighted audiences throughout the United States. During the same year he also published an essay that described the achievement and potential uses of his machine. Among the technological 'faits accomplis' cited by Edison (1878: 530) was the phonograph's ability to capture 'all manner' of previously 'fugitive' sounds, 'with or without the knowledge or consent of the source of their origin'. These recorded sounds, he added, could be preserved indefinitely, copied without limit, and reproduced in perfect verisimilitude 'at will, without the presence or consent of the original source'. For Edison,

the most promising application of the phonograph was to take dictation, thus eliminating the need for stenographers and clerks. He reasoned that audio correspondence would not only speed communication among businessmen, but also create a 'perfect record' for consultation and allow for 'perfect privacy' in transmission (nosy and imperfect stenographers having become obsolete). For a man with legendary commercial sense, Edison's failure to recognize the entertainment potential of his phonograph, except as a novelty for toys and clocks, has long perplexed scholars. Edison, it seems, viewed his invention primarily as an apparatus for producing perfect evidence. This is further reflected in his enthusiasm for the phonograph's use as a family chronicle – superior to photographic albums, he boasted – with which the inimitable voices, wisdom, and deathbed conversations of one's kin might be preserved for posterity. 'An evening over the old, odd speeches of the youngsters of a family will be as amusing as is now an evening over the quaint, old-fashioned pictures in old albums', a journalist explained (*Chicago Inter Ocean*, 14 March 1878: 4).

As an analogue to photography, Edison's recordings were frequently described as photographs of the voice. But unlike photography, which had prehistoric precursors in pictorial representation, the inscription of sound did not. Phonographic technology, as Lisa Gitelman (1999) has shown, introduced new forms of material evidence and documentary proof. For some, the 'bottling up of the human voice' was so implausible that news of its achievement was dismissed as a 'huge joke' (*Chicago Inter Ocean*, 14 March 1878: 4). As an instrument of surveillance, the phonograph elicited a mixture of anxious bemusement. It appeared in a number of satirical sketches as a secret informant, often in battles of the sexes and usually with spouses turning it against one another. When one woman asked her husband about Edison's new phonograph, he replied, 'It's a little machine the husband leaves on the table while he is down town, and on his return he turns a crank, and it informs him of everything that has been said on the premise during his absence.' Not amused, his wife scolded, 'The fool men are always getting up some pesky invention, and if you bring one of those things into the home I'll leave' (*Times Picayune [New Orleans, LA]*, 19 September 1878: 2). But careless men were also undone by the device. The arrival of a phonograph in Georgia revealed the extreme care with which it should be handled, lest one find oneself on the wrong end of the recording. After receiving a phonograph, the first in the city, a local man took it with him to drink with friends. Later, when demonstrating the device to his wife, the 'depraved instrument' played back the bar-room banter of the husband and his male companions – 'Fill the flowing bowl! Who's afraid of the old woman?' (*New Orleans Times*, 11 April 1878: 4).

The association between the phonograph and alcohol, both media of loose lips, is striking. As one writer joked, a phonograph hidden in the presence of young men 'would swear worse than a Bret Harte poem when the handle was turned' (*New Orleans Times*, 29 May 1878: sup. [1]). But the profanity of men and volubility of women recorded by the phonograph was not extraneous; it was consistent with unvarnished truth. As Kittler (1999: 86) notes, the indiscriminant nonsense recorded by the phonograph paralleled the revelatory nonsense of the unconscious mind. Whether its recordings were coarse or boring, the phonograph was a sort of truth serum. 'A flask of whiskey', a newspaper wit cracked, 'is a liquid phonograph, with no particular quantity or quality of speech' (*Columbus [GA] Ledger-Enquirer*, 7 May 1878: [4]). In vino veritas; to have

one's conversation recorded, like consuming alcohol, produced deeper truths amid much foolishness. And the truth that frequently emerged was that husbands were drinking on the sly. "This is devilish good whiskey, Barsty", the machine ejaculated' when one woman replayed a phonograph's recordings of her husband while she was away from home (*Times Picayune [New Orleans, LA]*, 28 April 1878: 11).

The phonograph's ability to record sound was never widely embraced – early users preferred to listen to commercial recordings rather than make their own (Gitelman, 2006) – but the humor of such stories belied genuine anxiety. When the invention of the phonograph was explained to an ignorant old woman in one fictional sketch, she fulminated, 'It's the doings of Satan, and there won't be no good come out of it to nobody.' Imagining the widespread harm caused by the device, she asked, 'What's to hinder these newspaper folks from slipping into every house and rigging one of 'em up along side the gas meter?' (*Pomeroy's Democrat [Chicago, IL]*, 6 July 1878: 7). A short story of the 1890s summarized the nightmare of complete transparency. After an evening at a phonographic exhibition, the protagonist dreams of an encounter with a knavish 'fiend of the phonograph' who records private conversations in which absent others are mercilessly criticized. The fiend then replays the conversations for the subjects of their derision – a second-rate suitor, a duped girlfriend, a Scrooge-like businessman, a dowdy schoolmarm, and a young writer. When the protagonist finally confronts the fiend – whose mischievous device she compares to a detective camera – the dark figure explains that he is bringing the 'Light of Truth' to humanity. "Ignorance and truth", he said oracularly, "cannot exist together" (*Overland Monthly*, 1891: 185). Perfect communication and perfect knowledge, the protagonist realizes, would be inhumane.

That the phonograph might be used for nefarious purposes was cause for concern among other commentators. Casting Edison as the authoritarian 'Napoleon of inventors', one writer announced that the phonograph 'literally gives to every wall its ear, and hereafter there can be no actual certainty in any conversation unless held in the desert, or through the medium of the deaf and dumb alphabet' (*The Sun [Baltimore, MD]*, 22 May 1878: sup. [2]). Fear of phonographic and telegraphic invasions was also expressed in letters sent to Edison by members of the public (Gitelman, 1999: 888–9). Even more, recorded sound could be used as a tool for identification as well as audible evidence of one's thoughts and deeds. Noting the 'great value' of the phonograph from a 'detective standpoint', one writer explained that the unique timbre of one's voice could not be disguised. Thus a phonographic recording would be as accurate and reliable for identifying individuals as a photograph, signature, or Bertillon's anthropometric system (*Philadelphia Inquirer*, 21 September 1890: 12).

Edison's phonograph, when combined with his 'auraphone', a device for amplifying sound, further suggested that one's ability to circumscribe the boundaries of self-exposure – to limit the emission of evidence pertaining to oneself – was in jeopardy. 'When all the walls have ears, literally, what is to become of our confidences? With a spy ever in wait for us, not only to repeat them, but to also manufacture their indispensable proof for transmission and preservation, what are we to do? Will society become thoroughly honest, virtuous and good? or will it be torn asunder by dissension and relegated to savagery?' (*The Sun [Baltimore, MD]*, 22 May 1878: sup. [2]). Edison believed his machines would elevate the plane of discourse. 'The phonograph, in one sense, knows more than

we do ourselves. For it will retain a perfect mechanical memory of many things which we may forget, even though we have said them' (Edison, 1888: 649–650). By forcing individuals to confront the truth of their speech and its reception in the ears of others, the phonograph, Edison contended, would 'teach us to be careful what we say' and impose 'a decidedly moral influence' upon society by making conversations more succinct, direct, and courteous (Edison, 1888: 650). Edison, like Jeremy Bentham and so many other boosters of technology, saw only the salutary effects of his disciplinary apparatus.

Telephone

By the time Edison unveiled his phonograph he was already at work on an improved microphone for the telephone, a device patented by Alexander Graham Bell in 1876. Bell's telephone, like Edison's phonograph two years later, beguiled audiences at public demonstrations. But not all were pleased. One concerned citizen decried the telephone as a conspiratorial instrument of surveillance. The 'frightful capabilities of the telephone', the writer alleged, were apparent in a plan to connect wires to lampposts throughout New York City, ostensibly to aid the police, but by which the confidential conversations of passersby would be overheard (*New York Times*, 13 October 1877: 4). To another writer, the telephone threatened to expose sewing circle gossip, secret society affairs, and the 'sweet cooings' of private courtships. 'Young men and maidens should rise up with one voice and demand the execution of the inventor of the telephone and the destruction of his work' (*San Francisco Bulletin*, 3 March 1877: sup. [2]). These reactions, facetious and perhaps unrepresentative, suggest that deeper currents of unease flowed beneath a placid optimism in the emergent media environment. As an apparatus for producing evidence, the telephone was somewhat less startling than the phonograph. Though able to transmit disembodied voices over increasingly vast distances, the conversations themselves were naturalistic insofar that they were ephemeral. Eavesdropping listeners were more distant but speech remained fleeting.

Instead, the telephone was initially perceived as an instrument of spatial invasion rather than one of time-binding testimony. As Carolyn Marvin (1988) has noted, the telephone threatened to breach physical barriers of gender, race, and class by facilitating direct contact between individuals traditionally separated by norms of propriety. Male suitors spoke into the ears of unsupervised young women, charlatans called on the unsuspecting wealthy, English royalty listened in on plebian London theaters, and married men flirted with solicitous telephone girls. 'Simply put,' Marvin (1988: 88) writes, 'new media provided new opportunities for the wrong people to become too familiar.' Until the 1890s, the telephone was primarily used by physicians and businessmen. But since it did not produce recorded evidence, its appeal was limited among the latter, for whom written correspondence and telegrams served this purpose (Fischer, 1992: 41). Edison hoped that the evidential perfection and privacy of his phonograph would ultimately supplant these modes of business correspondence. He even had plans to combine the phonograph with the telephone so that conversations could be converted into 'permanent and invaluable records' rather than 'momentary and fleeting communication' (Edison, 1888: 646).

But even without being recorded, telephonic communication could easily become a medium of surveillance for eavesdroppers. In fact, eavesdropping was literally integral

to early switchboard technology. Operators listened in to confirm that calls were connected and to determine when a conversation had ended so that the switches could be disconnected. This was a professional function and female telephone operators, like male telegraphers before them, were sworn to confidentiality by codes of conduct. Still, this did not prevent abuses. In 1899, for example, a San Francisco newspaper railed against the local telephone company for eavesdropping on private calls and sharing confidential information. 'The private spy, the sneak and the eavesdropper have always been despicable,' the editors shrieked, but the telephone gave such 'contemptible rascals a greater opportunity for their vile trade than they ever had before.' 'It amounts virtually to an eavesdropper listening at the keyhole of the door of nearly every office, parlor, sitting room and boudoir in the city,' they concluded, fanning public outrage (*San Francisco Call*, 9 January 1899: 4).

But telephone operators were not the only offenders. The introduction of party lines at the turn of the twentieth century, an affordable alternative to more costly private lines, made eavesdropping virtually inevitable. 'It isn't even possible for a fellow to make an evening engagement with his best girl over the telephone without letting all the other subscribers know of it,' one writer complained (*New York Times*, 28 August 1904: SM7). In cases where as many as ten families shared the same line, it must have been difficult for even the most respectful neighbor to avoid hearing snatches of private conversations while answering and vying for the telephone. According to Fischer (1992: 71), the frequency with which party-line customers were warned against eavesdropping suggests that 'the rule of privacy was perhaps as often breeched as honored'. That one might be overheard by an unseen listener while speaking privately is nothing new, except that preventative measures, such as closing doors and windows and speaking softly, offered no defense. One simply could not know if he or she was speaking privately, even if physically alone. Perfect silence, one panicked writer warned, was the only protection against the telephone. 'No matter what extent a man may close his doors and windows, and hermetically seal his key-holes and furnace-registers with towels and blankets, whatever he may say, either to himself or a companion, will be overheard. Absolute silence will be our only safety' (*New York Times*, 13 October 1877: 4). Such was the chilling effect on speech that flowed too freely.

Communication, privacy, and evidence-producing media

Between the age of administrative writing and the age of computing, a new evidential paradigm emerged in which mediated individuals emitted new semiotic traces. Communication technologies from the telegraph to television reshaped the information environment in which individuals interacted with institutions as well as one another. It is well known that nineteenth-century new media were greeted by the public with enthusiastic fanfare and awe. But they also sparked new insecurities about the potential for unwanted exposure. By severing communication's essential linkage to transportation and embodiment, nineteenth-century new media placed people and their messages in new spatial and temporal proximity. The distant, disembodied, and dead commingled.

The history of communication, as John Durham Peters (1999) has observed, rests upon a fundamental duality: the dream of perfect communication between self and

other versus the pathos of incommunicability. The former imagines communication as a transcendent bridge, the latter as a woeful chasm. Yet as new media enlarged the evidential field during the late nineteenth century and increased opportunities for self-exposure, incommunicability was not entirely unwelcome. Privacy – the ability to reduce or temporarily suspend one’s evidential emissions – required chasms. Paradoxically, the transparency of perfect communication, the very thing that photography, the phonograph, and telephone promised, was also the enemy of privacy. While each of these new machines reinforced an ideology of limitless technological progress, they were also disquieting in their capacity to bring people closer together, to eradicate barriers of time and space that insulated individuals from one another and posterity. One’s own words and image acquired a new verisimilitude, fixity, and longevity that diminished the technical – but socially and psychologically useful – problem of ambiguity and loss in communication. Late nineteenth-century new media raised concerns that communication was becoming *too* perfect. This was the cardinal truth revealed by the ‘fiend of the phonograph’: civil society requires gaps in transmission, blind spots where one’s judgmental, embarrassing, or self-incriminating emissions are vouchsafed. Ironically, the cosmopolitan global village beckoned a return to the claustrophobia of small-town familiarity.

The history of media, as already noted, is embedded in the larger history of surveillance. While acknowledging important precursors in pre-modern bureaucracy (Giddens, 1985) and ordeals of the flesh (Nock, 1993), it would be foolish to suggest that contemporary surveillance – modern or now postmodern – is not radically different. The difference, as I have attempted to illustrate, is not simply the organization and intensification of institutional surveillance, but the intensification of evidence-producing media. New media produce new evidence. Of course the uses and truth-claims of media are never pre-determined or inherent. We must be taught to trust the veracity of new media (Clanchy, 2002); this is a historical and cultural process in which norms, ethics, and legal protocols are continuously negotiated (Marvin, 1988; Mnookin, 1998; Gitelman, 2006). The proliferation of novel communication technologies during the nineteenth and early twentieth century expanded the field of evidence from which we make inferences about the world and others. Where once one worried of divulging private information only in writing or co-present speech, media such as photography, the phonograph, and telephone introduced new possibilities for witnessing and recording. Within several decades the evidential environment was further enlarged by radio, motion pictures, and television as well as x-ray machines, lie detectors, blood testing, and ballistics.

Anxiety surrounding late nineteenth-century new media reflected a growing awareness that one’s image, words, and deeds could potentially acquire a technological double existence beyond one’s control. By 1890 one’s information footprint – the sum of semi-otic clues by which one is identified, tracked, measured, classified, and adjudicated – had already begun to grow exponentially. Apprehension over the use, and misuse, of the portable camera, phonograph, and telephone reveal continuities in the cultural reception and social implications of new media today. Rather than viewing new media of this era as disconnected from or irrelevant to contemporary new media, an evidential perspective provides a conceptual framework for understanding twenty-first-century technologies as

an elaboration of nineteenth-century antecedents. From this vantage, new media of the late nineteenth century can be seen as a missing link in the history of modern surveillance, a link that connects administrative writing to late twentieth-century computing, telecommunications, and digitalization. The semiotic detritus of new media, past and present, has contributed to an intensification of surveillance by introducing new forms of evidence – texts, images, sounds, data – by which individuals might be identified, their motives and thoughts inferred, and future behavior predicted. Consider, for instance, how one's information footprint in the contemporary developed world would dwarf that of one's ancestors in the 1890s. Yet the semiotic profusion of late twentieth-century new media – from video cameras and mobile phones to personal computers, the internet, and databases – began a century earlier and was attended by parallel privacy concerns.

By contextualizing nineteenth- and early twentieth-century new media as part of an emergent evidential paradigm, one that included bureaucracy as a technology of institutional mediation, we may also begin to reconceptualize modern surveillance as something more than the history of rationalization and control. A media-saturated society is evidence rich. We give and give off more evidence about ourselves than perhaps at any previous time. Though much of this evidence is institutional and compulsory – we must leave transactional clues as a *condition* of communication when using the internet or mobile phones, for example – we also use new media as a source of self-expression and pleasure in constructing identities, histories, and webs of affiliation. Tensions between the liberating and oppressive uses of new media – the dream of perfect communication versus the horror of continuous inquisition – is directly related to the indeterminacy of media as tools for producing evidence. It is not the proliferation of new surveillance technologies per se that threatens privacy or creates power asymmetries, but the proliferation of mediated evidence that institutions and individuals produce, preserve, and scrutinize. This intensification was touched off by nineteenth-century bureaucratic recordkeeping, but long before computers or late twentieth-century new media posed a threat to privacy, the estrangement of identity and information was already underway.

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Notes

1. For important critiques of panopticism, see Deleuze (1992) and Haggerty and Ericson (2000).
2. For an account of detective cameras and the tabloid press in Edwardian England, see Hiley (1993).
3. For additional discussion of photographic mischief in the United States and Europe, including many illustrations, see Henisch and Henisch (1998).

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