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The Mobile Media Reader

**EDITED BY Noah Arceneaux
& Anandam Kavoori**



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Historicizing Mobile Media

Locating the Transformations of Embodied Space

JASON FARMAN

On a morning in late May of 2010, I woke up to the sound of my iPhone alarm clock, went downstairs for a cup of coffee, and read the morning news through an app I had downloaded the day before. About halfway through my coffee, I came across a story with the headline “Foxconn Suicides Continue: Inside the iPhone Factory Plagued by Deaths.” The story noted that there had been 11 suicides since the beginning of the year in the Chinese factory that was responsible for the production of the majority of iPhone, iPad, and iPod units sold worldwide. I stopped my morning ritual to read about the working conditions in the plant, which included long hours of mandatory overtime and rigid management on the factory floor that enforced an incredibly fast assembly line. Just hours after the factory’s chairman gave reporters a tour of the facility, noting that the company would “work harder to prevent more deaths,” the 11th worker jumped to his death.¹ At that moment, it dawned on me: I had never wondered where my mobile phone came from. I knew about its design and I knew that it contained elements gathered from around the globe, but it was all very vague to me. This moment is what motivated me to look into the pathways (both historical and global) that led to my mobile phone.

As I sat in my home in the United States reading about the deaths of workers in China on the very device that they helped create, I realized that within this

one scene (in which I played the role of the consumer) are multiple histories of mobile media, their place within culture, and their role as a cultural force. By tracing the various histories of mobile media, I hoped to get a clearer picture of the pathways that led to my phone. In doing so, I discovered many important transitional moments throughout history in which a medium that was once considered geographically fixed or static becomes mobile. These moments are almost always situated among major cultural shifts. Part of the process of historicizing mobile media is to connect these moments and shifts to the cultural landscape and “old” media that led to the technologies and imaginaries of mobility. Emerging alongside these cultural shifts is a changing relationship between notions of intimacy and distance as they are attached to concepts of the local and the foreign. As I argue in this chapter, as various mobile media are created, their inherent social and spatial characteristics cause a continued interrogation of the relationships between proximity/intimacy and between distance/otherness.

An investigation into these cultural shifts necessitates a broad definition of mobile media. Currently, mobile media tend to be grouped into a larger category of emerging digital technologies, often termed new media. However, the notion that mobile technology is “new” is indeed shortsighted since, as we will see throughout this chapter, mobile technologies have been around in some form throughout human history. The historical blind spots in our contemporary imaginings of mobile media come out of a tradition of technological determinism, characterized by the notion that once a “new technology is introduced it reformulates society in its image.”² From a technological determinist perspective, media often storm the cultural landscape, appearing because they were the next logical step along a pathway to progress that is unstoppable. We always want our technologies to improve and to transform the ways we live our everyday lives. And while it is true that technologies shape and transform our lives to some extent, this perspective tends to ignore the cultural and historical forces that were responsible for the emergence of a particular technology. Thus, by historicizing mobile media, we can trace the rich genealogical roots that served as the foundation for the media you are currently reading this on, whether it be a print-bound book, an e-reader, or a laptop.

Before engaging in this type of historical inquiry, it is worth echoing Lisa Gitelman’s concerns about what exactly it is that we are historicizing when tracing the roots of new media. She asks, “Is the history of media first and foremost the history of technological methods and devices? Or is the history of media better understood as the story of modern ideas of communication? Or is it about modes and habits of perception? Or about political choices and structures?”³ In response to her own questions, she offers a cautionary word of advice for historians of media. For Gitelman, it is vital to historicize with the understanding that history is weighted

down with “a host of assumptions about what is important and what isn’t—about who is significant and who isn’t,” and these assumptions also echo into the various meanings of media. She writes, “If there is a prevailing mode in general circulation today, I think it is a tendency to naturalize or essentialize media—in short, to cede to them a history that is more powerfully theirs than ours.”⁴ Therefore, the act of tracing out the histories of mobile media requires us to be mindful that we aren’t simply discussing how one technology eventually conceived of a newer, more robust version that changed culture in its wake. Instead, we are positioning mobile media within the cultures that create them, locating the moments that cleared the way for these media to take hold and become dominant media forms for communication and art. Simultaneously, we are looking at, as N. Katherine Hayles puts it, the ways that culture and the people shaping culture “can and [do] transform in relation to environmental selective pressures, particularly through interactions with technology.”⁵

Histories of Mobile Media and Reconfigurations of Social Space

One common denominator among mobile media is the way our uses of these technologies transform our relationships to social space. Contemporary experiences with the Internet show one example of this transformation: while we have for decades connected to the Internet from stationary computers, with the move to mobile computing on devices like smartphones, we are able to link data to location in unique ways that give us a renewed sense of how social space is produced. While such an experience of using the Internet on the go is now commonplace, the affects (and artifacts) of this shift in usage should not be underestimated. As I will develop later in this chapter, this emergence of mobility through mobile computing devices creates a paradigm shift similar to the cultural changes brought about by mobile writing tools. Take papyrus as an example: being one of the earliest forms of mobile media, papyrus was a paper-like medium made up of thin cuts of the papyrus plant bonded together and used for writing in Egypt as early as the third millennium B.C. Here, the mobility of the medium worked in conjunction with the mode of writing it used. Moving from stone inscriptions, which required a great deal of time to complete, the use of brushes on papyrus allowed the mode of writing to more closely match the speed of thought. This was especially true, as Harold Innis notes, as the Egyptians’ use of hieroglyphic writing transformed into script that better matched the writing instruments used (brushes instead of chisels).⁶ This afforded more flexibility and experimentation in what could be inscribed, since the permanence and amount of time required for the inscription were much less significant than writ-

ing on stone. This speed of inscription matched the speed and distance of transmission: written ideas were no longer geographically bound to a specific location but could be transported across vast distances. People no longer had to travel to a site to read the writings inscribed on caves, monuments, or walls; instead, the ideas traveled broadly since the medium they were inscribed on was light and mobile. These changes are remarkably similar to the ones we're experiencing with mobile computing devices: we are seeing a rapid increase in the speed and frequency of communication as well as an alteration in our conceptions of social space.

This type of mobility has worked in conjunction with many political and cultural shifts throughout history. It's difficult to think about the mobility of ideas without thinking of the powerful cultural transformations brought about by the uses of the printing press and how it was used to launch the Christian Reformation. The printing press, invented by Johannes Gutenberg in 1440, created mobile media such as pamphlets and books and the press itself was transported to different cities and set up to make business with local businesses (such as churches) and citizens.⁷ The most revolutionary aspect of these mobile media was their ability to transform social spaces. The cultural shift that happened in conjunction with the printing press can be mapped onto our uses of mobile media (especially location-aware technologies): the cultural imaginaries of space became simultaneously about experiencing the expansion of space, an increase in speed of transmission, and a transformed view of the local. Space expanded, in part, because ideas were spreading across distant regions and it became very difficult to remain in a space that was unaffected by distant cultures. Extending the speed of writing that the papyrus, brush, and ink offered, the printing press allowed for the reproduction of ideas to move at an unparalleled pace, as a massive number of copies could be made from one typeset press. As these ideas spread rapidly, cross-cultural influences affected the space of everyday life, changing common practices as alternative forms emerged, and also forcing a reevaluation of the local practices and beliefs that had been engrained into local traditions.

These cultural shifts came about because of the uses of mobile media. Tracing similar relationships between mobile media and cultural shifts in knowledge and power can be easily accomplished. For example, we can trace this familiar pattern onto the remediation of the clock tower to the home clock, the pocket watch, and eventually the wristwatch.⁸ Each of these later remediations are powerful mobile media that have, in one way or another, transformed relationships to social space. The clock has been described as "an instrument of social control," which was seen as "supplanting nature and God with clocks and watches...[and] with secular authorities based on efficiency and convenience."⁹ The sense of expanding space and its impact on local space, as discussed above, was at the core of the adoption of this

technology. As the world became more mobile in the 19th century with railroads and in conjunction with communications across vast distances through the telegraph, people had to continually adjust their watches to account for local time. This meant that as someone traveled east or west across the United States on a train, this person had to adjust his or her watch by one minute for every 12 miles they passed. This was common in the mid-1800s until standardized time zones were created in the United States in 1883 and international time zones in 1884.¹⁰ Thus, after 1884, people carrying around a pocket watch were aware that the notion of "local time"—and thus what constituted local space—had changed dramatically. A watch with the "correct" time was set to international standards, based on Greenwich Mean Time in England. This mobile technology connected the individual to a sense of global space and time, while changing what it meant to travel and live in local space. The city of Detroit, for example, refused to comply with standardized time zones for many years since it was geographically located roughly halfway between the Eastern and Central time zones. To comply with these international standards meant that the citizens of Detroit would have to dramatically change their understanding of local time and space. For those who lived close to the borders between time zones, traveling just a few short miles could move time forward or backward by an hour, causing people who are spatially close to one another to live in different notions of "local" time.

As evidenced by these mobile technologies, there is an interesting tension between notions of proximity/intimacy and notions of distance/otherness in these cultural transformations that accompany the expansion of mobile technologies. This tension is seen in the mobile media players/listening devices that have been utilized in recent history. The remediation of personal music devices (such as the iPod or any generic form of digital music and media player) comes from, as Michael Bull notes, "previous generations of mobile music reception."¹¹ He goes on to argue, "Mobile sound technologies and their use do not exist in a cultural vacuum—prior to the Apple iPod came the personal stereo. Prior to that, the transistor radio and the portable record player and of course there exists a history of mobile listening in automobiles through radios and then cassette players."¹² Throughout the history of mobile sound technologies, their usage has either functioned to connect people (especially across distances, as seen with the transistor radio or CB) but also to "cocoon" people from those in their immediate vicinity. Mizuko Ito has argued that the personal listening device can serve to help isolate people from social situations, to "cocoon" them from the need to interact with others in a crowded environment. Ito, along with Daisuke Okabe and Ken Anderson, writes, "Cocoons are micro-places built through private, individually controlled infrastructures, temporarily appropriating public space for personal

use.... These cocoons also have specific temporal features, functioning as mechanisms for ‘filling’ or ‘killing’ in-between time when people are inhabiting or moving through places within where they are not interested in fully engaging.”¹³ Thus, mobile listening devices have served to help people fill “in-between time” by giving them an activity that removes them from the need for interacting with the people around them. The tension here exists in how a person exists in and among a crowd of people (in their intimate proximity) but is also removed from them (by making him or herself distant through mobile media).

The inverse of this spatial tension takes place with mobile technologies such as personal radios and citizens band (CB) radios: though people are geographically distant from one another, they experience a sense of community and intimacy through the use of these technologies. At a recent conference, a professor noted to me that while he had never used the mobile social media I was discussing—location-aware social networks such as the early examples of Foursquare, Gowalla, and Loopt—he immediately understood the concept of connecting with others in a spatial way through mobile media. He understood the idea of location-aware social media through his use of the CB while he made a cross-country drive when he was younger. He bought the CB especially for the trip and had never used one before getting in the car to make the journey. As soon as he embarked, he began a series of dialogues with people, often beginning by getting the person’s name, their location, and their destination. In this way, the travelers connected on the common themes of the journey, the landscapes, and the other drivers they encountered. The professor telling me the story remarked, “There were long stretches where I was driving alone on these vast, empty prairies. In any other situation, I would have felt extremely isolated from humanity. But by using the CB, I felt like I had companions with me as I drove.” This sense of social connection across distant geographies, gained through utilizing mobile media, is what Clive Thompson has termed “social proprioception.”¹⁴ Here, proprioception is understood as more than just “your body’s ability to know where your limbs are. That subliminal sense of orientation is crucial for coordination: It keeps you from accidentally bumping into objects, and it makes possible amazing feats of balance and dexterity,” as Thompson puts it. It is a sense of your body in its place, which always orients itself in relational space. You position yourself (both as a body and as a subject) through spatial relationships to others and to objects. Essentially, you know where your body ends and the social world begins and can chart your body through space, navigating to important locations such as where you left your car or how to get from your house to your classroom. In a sense, all proprioception is social. However, Thompson’s term gets to the heart of a unique feature of these technologies: we understand our space differently because of the social connections we make and these connections are increasingly

incorporating a notion of the social that happens across vast geographic distances. The story offered by this professor who utilized CB radio is an especially apt one, since the mobile phones we use in very similar ways were dependent on the advancements made in radio communications.

The History of the Mobile Phone

Our contemporary uses of mobile phones might better resemble the CB radio communications of travelers than what the first mobile phone actually looked like. Built in 1910 by a Swedish electrical engineer by the name of Lars Magnus Ericsson, the first mobile phone was built into his wife’s car. Ericsson, who retired early to a life on a farm after famously founding the telecommunications company named after him, would make journeys away from the farm and sought to find a way to stay in contact while he was on the move. John Meurling and Richard Jeans describe this early version of a mobile car phone:

In today’s terminology, the system was an early “telepoint” application: you could make telephone calls from the car. Access was not by radio, of course—instead there were two long sticks, like fishing rods, handled by Hilda [his wife]. She would hook them over a pair of telephone wires, seeking a pair that were free.... When they were found, Lars Magnus would crank the dynamo handle of the telephone, which produced a signal to an operator in the nearest exchange.¹⁵

Though technically serving as the first “mobile” phone in the strictest sense, this concept was never utilized by the LM Ericsson Telephone Company and never served as the technological origins for modern wireless mobile phones.

The mobile phone as we know it was founded on technologies that sought to bring together the invention of the landline telephone in the 19th century and the invention of the radio around the turn of the 20th century. As radio became increasingly popular in the 20th century, people were able to have two-way communication while on the move in very similar ways to our voice communication on a mobile phone; yet the limits of the technologies at the time hindered this radio communication in many ways. One of the first problems faced was the conflict between the power source and the portability of radio. Early radios required a massive amount of power and thus required an equally massive battery. This limited the use of radio to naval ships initially, and automobiles later on, which were each large enough to house the equipment and the battery required to power the device. Here, there is a significant distinction between *portable* and *transportable*. These early radios were transportable, but far from serving as a portable/mobile technology as we under-

stand it. Jon Agar notes,

One of the most important factors allowing phones to be carried in pockets and bags has been remarkable advances in battery technology. As batteries have become more powerful, so they have also become smaller. Partly because improvements in battery design have been incremental, their role in technological change is often underestimated.¹⁶

Here, there is an indelible connection between the power source and the portability of the device.

A second limitation faced by radio, as it informs its eventual remediation onto mobile phones, was the scarcity of radio frequencies. Radio waves traveled across limited frequencies and, as more users populated those frequencies with their conversations, the radio waves became crowded with overlapping conversations, eventually making them unintelligible. As Rich Ling and Jonathan Donner point out, “In the first radio telephone systems for New York City, only a handful of users were able to simultaneously make a call. In that system there was only a single radio cell for a whole city.”¹⁷ To address this issue for our current mobile phone communications technologies, engineers at Bell Laboratories came up with the concept of the “cellular idea” in 1947. This concept, which gives us the term “cell phone,” allowed for true mobility with early radio telephones without interference from other callers. Agar describes the “cellular idea” in detail:

Imagine a map of New York City and imagine a clear plastic sheet, ruled with a grid of hexagons, placed over it. Now, imagine a car, equipped with a radio telephone, driving through the streets, passing from hexagon to hexagon.... If each hexagon, too, had a radio transmitter and receiver, then the radio telephone in the car could correspond with this “base station.” The trick... was to allocate, say, seven frequencies to a pattern of seven hexagons (a–g), and repeat this pattern across the map. The driver started by speaking on frequency a in the first hexagon, then with g, then c, and then back to a again. If the first and last hexagon were far enough apart so that the two did not interfere... then a radio conversation could take place without interference.... Suddenly, if the hexagons were made small enough, many more mobile telephones could be crammed into a busy city, and only a few scarce resources would be needed.¹⁸

But, in 1947, the technology was not prepared to handle this rapid mobility, in which the handoff between cells needed to be so rapid that the user didn’t notice (and the user could be sufficiently tracked so that the handoff—and the payment—could be monitored by the telecommunications infrastructure). Thus, the advancements of the mobile phone needed to be backed by computing technologies that could support these rapid handoffs between cell towers and also required an obvious demand

from the public to create a system that moved beyond radio conversations to devices that could communicate directly to a landline telephone.

When the technologies and the demand were both in place, the first cellular phone system was installed around Chicago in 1977. A few years later, in 1981, the system had 2,000 subscribers, which was all it could handle.¹⁹ In 1980, trials of a cellular system were built in the Baltimore/Washington, D.C. area, and the demand for car phones became significant. As Agar notes, Motorola anticipated this demand and filed patents for cellular technologies as early as 1973.²⁰ Toward the end of 1983, Motorola released its first handheld mobile phone in the United States. Called the 8000x (and sometimes referred to as the “brick” phone due to its shape). Beyond the size and the exorbitant costs of the phone, the cellular technology it connected to was better suited to car phones, and the public’s perception of the mobile phone initially pigeonholed it as a technology designed for the automobile. This last concern was one particularly centered in the United States, since “the entire US way of life revolved around the automobile.”²¹

Mobile Device and Asynchronous Communication

Mobile phones have evolved significantly since the brick phone of the 1980s—both in shape, technological specifications, but perhaps more noticeably in the way that they are used. Howard Rheingold begins his book, *Smart Mobs*, with an observation he had in Japan that changed the way he thought about the uses of a mobile phone: “The first signs of the next shift began to reveal themselves to me on a spring afternoon. That was when I began to notice people on the streets of Tokyo staring at their mobile phones instead of talking to them.”²² This trend of looking at the phone (as a computing or texting device) instead of talking into the phone (as a voice communication tool) hit its nexus in 2009. In this year, for the first time ever, people used their mobile phones more for data transfer (web usage, mobile applications, and text messages) than for voice communication.²³ As a result, we are connecting with each other differently and also connecting with our spaces differently. As mobile media users continue to demonstrate a preference for asynchronous communication through either sending text messages or emails in lieu of making phone calls, these choices are coming under the age-old critique that media create social and spatial distance. Asynchronous communication (i.e., the creation of documents such as text messages instead of real-time interactions) is often seen as removing people from the immediacy of voice communication.²⁴ As Kenneth J. Gergen argues about forms of mobile communication that prioritize “absent presence” rather than synchronous engagement, “The erosion of face-to-face commu-

nity, a coherent and centered sense of self, moral bearings, depth of relationship, and the uprooting of meaning from material context: such are the repercussions of absent presence. Such are the results of the development and proliferation of our major communication technologies of the past century.”²⁵

As I note in my book, *Mobile Interface Theory: Embodied Space and Locative Media*, the nostalgia in this sentiment is one which has accompanied all emerging forms of media, especially the advances in mobile media which often transmit various kinds of documentation.²⁶ By historicizing our mobile media, we see that such critiques of presence versus absence accompanied even the telegraph, which was criticized by Henry David Thoreau as that which will “distract our attention from serious things. They are but improved means to an unimproved end, an end which it was already but too easy to arrive at; as railroads lead to Boston or New York. We are in great haste to construct a magnetic telegraph from Main to Texas; but Main and Texas, it may be, have nothing important to communicate.”²⁷ The landline telephone was also criticized as that which would distance neighbors from each other since there would no longer be a reason to visit when someone could just as easily call. The spatial anxieties noted in these two examples match the distance currently applied to our asynchronous forms of communication. Texting is a more “absent” way, a more “distant” way, to communicate. Voice conversations are better at giving “presence” because of the synchronicity, the ability to engage in dialog and emulate being face-to-face. However, as noted, each of these notions of absence and presence has deep historic roots.

In my estimation, one of the key concerns that generates these anxieties is the alterations of social space that are produced in conjunction with emerging media. Recently, I was in a local bar with several friends, two of whom were on their phones texting. As they read messages on their phones, they alternated laughter, one after the other. It took me several minutes to realize that they were actually texting each other (even though they were sitting only three feet apart). Proximity here did not accomplish the presence they needed to communicate their ideas. They could have easily have spoken with each other, in whispered tones if discretion was needed. Instead, the space of the mobile interface better served as a private space for conversation. In this scenario, Sherry Turkle’s notion of being “alone together” is a bit more nuanced: the mobile phone serves to produce a space that is both private and public simultaneously. We use our mobile technologies to reach out, to connect, and to communicate. At the same time, we are using devices that typically resist group involvement: it is difficult for a crowd to gather around a mobile phone screen to all share in a common experience. However, crowds frequently use their *own* mobile phones (designed, in fact, for individual consumption) to connect in common experiences. Here, the anxiety between presence and absence is

mirrored in the anxiety between proximity and distance. The connotations of these words and, in fact, the very practice of these words has troubled their division as distinct and separate ideas.

Locative Mobile Media

To demonstrate how mobile media trouble the distinctions between presence/absence, proximity/distance, and, ultimately, public/private, we can turn to the ways that people are using location-aware applications to interact over mobile devices. On May 1, 2000, President Bill Clinton opened civilian access to accurate GPS signals. Immediately after the “selective availability” to these GPS signals was lifted, people began experimenting with creative uses of their GPS devices (and later, their GPS-enabled mobile phones). From playful uses, such as the GPS treasure hunt game, Geocaching (launched only days after selective availability was removed), to the explosion of popular location-based services that inform users of geolocated information, location-aware mobile devices have forced a reevaluation of the role of proximity in our connections across mobile media. Computing has been characterized by social interactions since at least 2002 or 2003 (with the launch of social networking sites like Friendster and MySpace in those years), and the sites that have drawn the most traffic through most of the early 2000s fit within the category of “social media.” It is clear that the ways we have used our computing devices during this era have been centered on social interaction. The same is true of the ways we use our *mobile* computing devices. The distinct change here is a shift in spatial interaction. One of the key features of online social media was the ability to connect globally; mobile media, however, tend to prioritize the local. From applications that map your location and tell you what stores, historical sites, or friends are nearby to applications that allow users to engage and contribute to the meanings and stories of a certain location, uses of smartphones have taken advantage of their media-specificity by connecting people on the go to information about their location.

As mobile phones became computing devices that were able to access the Internet, the device’s combination of being used for voice and text communication, location-awareness, and data retrieval from the Internet offered an important change in the way we spatially interact with each other and with cultural objects. For example, in 2010 the Museum of London released a smartphone application called Street Museum. This app took the museum’s collection of historic photographs and paintings and geotagged them with location information. The resulting application utilizes “augmented reality” (AR), which superimposes imagery

and information onto the physical landscape through your phone. As someone loads the app onto their smartphone, the phone is able to locate their position and show them which locations nearby have a photograph associated with it. Thus, as someone walks down Queen Victoria Street in London, they can hold their phone up and see an image of the Salvation Army Building from 1941 overlaid onto the current street where this building no longer stands. The image the user sees transposed onto the street is of the building collapsing from World War II bombings, “the most severe attack London had sustained throughout the Blitz,” as described by the caption in the application.

These kind of location-aware applications that draw from a rich database transform the user’s sense of emplacement. In other words, by experiencing a simultaneous layering of space and time, the user is offered a deeper sense of context and meaning for the place that defines their sense of self and body. Many of these applications also allow users to contribute to the information in these databases to expand the context of the place and include site-specific stories that may have never been recorded otherwise. These apps thus serve as an important example of another important shift in embodied space that accompanies an emerging mobile media: the clear lines between mediated space and material space are no longer distinct. A user’s everyday physical world is now informed by the way their mobile media contextualize and give meaning to a space. In this way, the production of space is achieved both through a person’s embodied sense of the space and through how the media extend and inform that situated perspective.

As users of mobile computing technologies find increasingly innovative ways to attach histories, narratives, and stories to locations, they are also changing the definition of what’s important about a space. Site-specific and context-aware mobile media projects seek to address how to best attach a wide array of histories and narratives to a location. For example, *[murmur]* is a project started in Toronto that places large ear-shaped signs on street corners with a phone number that people can call to hear histories about the place at which they are standing, recorded by people from that community. People can also contribute to the history of the location by recording their own story about that place for others to hear. Mobile and locative media thus address Gitelman’s concern mentioned at the beginning of this chapter: instead of putting forward one version of history, these mobile media projects use locative, context-aware computing to offer a multiplicity of meanings of a location.

I end on this example to point to an important idea that I hope will frame my historicization of mobile media: within the emergence and the uses of mobile media are woven many histories. There isn’t one history of mobile media, there are many. Drawing again from Gitelman’s work on historicizing new media: “Their histories must be social and cultural....Any full accounting will require, as William

Uricchio puts it, ‘an embrace of multiplicity, complexity and even contradiction if sense is to be made of such’ pervasive and dynamic cultural phenomena.”²⁸ Thus, as we continue to write the histories of mobile media, it is vital to undo notions of an “official history,” which tends to obscure the deeper cultural moments and processes that inform the creation and use of a particular medium. Such “totalizing narratives,” as performance studies theorist David Román suggests, will over-determine the arrival and meaning of our cultural objects.²⁹ Ultimately, such totalizing histories will flatten and erase the rich and varied histories that inform and give meaning to our mobile media.

Notes

1. Bianca Bosker, “Foxconn Suicides Continue: Inside The iPhone Factory Plagued By Deaths,” *Huffington Post*, May 27, 2010, http://www.huffingtonpost.com/2010/05/27/foxconn-suicides-continue_n_591616.html#s94014
2. Rich Ling and Jonathan Donner, *Mobile Communication* (Cambridge, UK: Polity Press, 2009), 16.
3. Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge, MA: The MIT Press, 2006), 1.
4. *Ibid.*, 2.
5. N. Katherine Hayles, *Electronic Literature: New Horizons for the Literary* (Notre Dame, IN: University of Notre Dame Press, 2008), 104.
6. Harold Innis, “Media in Ancient Empires,” in *Communication in History: Technology, Culture, and Society*, 6th ed., ed. David Crowley and Paul Heyer (Boston: Allyn and Bacon, 2007).
7. For further details about the mobility and the social transformations of the printing press, see James Burke, “A Matter of Fact,” *The Day the Universe Changed*, DVD, directed by Richard Reisz (London: BBC, 1986). See also Lewis Mumford, “The Invention of Printing,” in *Communication in History: Technology, Culture, and Society*, 6th ed., ed. David Crowley and Paul Heyer (Boston: Allyn & Bacon, 2007).
8. “Remediation” is a term coined by Jay David Bolter and Richard Grusin in their book by the same name (Cambridge, MA: The MIT Press, 1999). Throughout this work, they note that remediation is more than a simple refashioning of one medium into another, but a more complex incorporation of various media into a single medium (and the cyclical effects as old media change from forces imposed by emerging media).
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 24. This critique is simply a refashioning of Plato's argument in the *Phaedrus* that art and writing (as documents) signal distance and absence since the document can never engage in dialog and answer for itself. It thus offers a false sense of knowledge and connection. This mode of thinking was brilliantly critiqued by Jacques Derrida in his chapter "Plato's Pharmacy," in *Dissemination*, trans. Barbara Johnson (Chicago: University of Chicago Press, 1981).
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